



बीसीसीएल  
BCCL

भारत कोकिंग कोल लिमिटेड  
Bharat Coking Coal Limited



भारत 2023 INDIA



आज़ादी का  
अमृत महोत्सव

भारत कोकिंग कोल लिमिटेड

(कोल इन्डिया लिमिटेड की एक अनुषंगी कंपनी)

Bharat Coking Coal Limited

(A Subsidiary of Coal India Limited)

(एक मिनिरत्न कंपनी / A Miniratna Company)

(भारत सरकार का उपक्रम/A Government of India Undertaking)

**Office of General Manager Kusunda Area**

Ref No. BCCL/KA-6/GM/2026-27/ 129

Date: 30.5.26

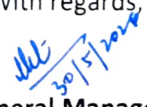
To,  
The Director(s)  
Ministry of Environment, Forest and Climate Change (MoEFCC),  
(Govt. of India)  
Regional Office (ECZ),  
Bungalow No. A-2,  
Shyamali Colony,  
Ranchi - 834002

**Sub : Six monthly compliance report on Environmental Clearance Conditions for the period from October'2025 to March'2026 in respect of Cluster-VII Group of mines, EC order no.: J-11015/238/2010-1A.II (M) Pt dated 12-10-2018 and amended 20th August, 2020 and EC order no.: J-11015/238/2010-1A.II (M) Pt dated 13<sup>th</sup> August, 2024**

Dear Sir,

Enclosed please find herewith six monthly compliance report on environmental clearance conditions for the period from **October'2025 to March'2026** in respect of **Cluster-VII** Group of mines, **EC order no.: J-11015/238/2010-1A.II (M) Pt dated 12-10-2018 amended 20th August, 2020 and EC order no.: J-11015/238/2010-1A.II (M) Pt dated 13th August, 2024** for your kind perusal.

With regards,

  
General Manager  
**Kusunda Area, BCCL**

## **COMPLIANCE OF EC CONDITIONS of CLUSTER-VII**

**EC order no.: J-11015/238/2010-1A. II (M) Pt dated 12th October, 2018**

**(Oct.' 2025 to March' 2026)**

| <b>Sl.no.</b>   | <b>Specific Conditions by MOEF:</b>                                                                                                                                                                          | <b>Compliance</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <b>4 (i)</b>    | The project proponent shall obtain Consent to establish from the State Pollution Control Boards of Jharkhand for the proposed peak capacity of 11.42 MTPA prior to commencement of the increased production. | <b>Being complied.</b> Consent to Establish has been obtained from JSPCB for the coal mining projects, where increase in production capacity has been granted. CTE is attached as <b>Annexure- I.</b>                                                                                                                                                                                                                                                                    |
| <b>4 (ii)</b>   | Transportation of coal from face to coal heap shall be carried out by truck. Further, the coal transportation from coal heap to Coal Handling Plant shall be carried out through covered trucks.             | <b>Being complied.</b><br><br><b>From face to coal heap</b> – Coal is being transported through trucks.<br><br><b>From Coal heap to CHP/sidings</b> - Coal transportation is being done by trucks covered with tarpaulin cover. Covering of trucks has been made mandatory in the transportation contract. <b>Picture 1</b>                                                                                                                                              |
| <b>4 (iii)</b>  | Mitigation measures to be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient numbers of water sprinklers.                                                   | <b>Being complied.</b><br>1) Mobile Water Sprinklers are being used for sprinkling water on transportation roads.<br>2) Additionally, Mechanical Sweeper has been operated to clean public roads on routine basis. <b>Picture-2</b><br>3) Truck mounted Fog Canon-Mist sprinkler is also used for spraying mist on transportation roads. <b>Picture-3</b>                                                                                                                |
| <b>4 (iv)</b>   | 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.                                           | <b>Being complied.</b><br>Sufficient coal pillars have been left around air shafts as per Coal Mines Regulations 2017 and DGMS Orders.                                                                                                                                                                                                                                                                                                                                   |
| <b>4 (v)</b>    | Solid barrier shall be left below the roads falling within the block to avoid any damage to the roads and no depillaring operation shall be carried out below the township/colony.                           | <b>Being complied.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>4 (vi)</b>   | Depression due to subsidence resulting in water accumulating within the low-lying areas shall be filled up or drained out by cutting drains.                                                                 | <b>Complied.</b> Though all the operational projects are Open Cast projects still nonoperational underground mines are monitored for subsidence, if any. As well time to time depression created by the mining operations have been filled by the locally available noncombustible material and over burden.                                                                                                                                                             |
| <b>4 (vii)</b>  | Sufficient number of pumps of adequate capacity shall be deployed to pump out mine water during peak rain fall.                                                                                              | <b>Being complied.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>4 (viii)</b> | The company shall obtain approval of CGWA for use of groundwater for mining operations at its enhanced capacity of 11.42 MTPA.                                                                               | <b>Being complied.</b> NOC for groundwater abstraction from CGWA has been granted. Further, renewal application for the grant of NoC is under process. <b>(Annexure-II)</b>                                                                                                                                                                                                                                                                                              |
| <b>4 (ix)</b>   | Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.                                                                                        | <b>Being complied.</b> Proper safety, health hazards and the corrective measures are being taken by Area and HQ Level Safety/Medical Board on regular basis. For proper monitoring of occupational safety, Safety officers are deputed in each mine and at Area Level, Area Safety officer looks after the same. And for health hazards doctors and dispensaries has been provided in each mine. Periodical Medical Examination Report enclosed as <b>Annexure - III</b> |

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| <b>4 (x)</b> | The fire dealing operations by excavating out fire should be expedited. | <b>Being complied.</b> Mining is being carried out by OC Method and fiery coal is being excavated out. <b>(Picture 4)</b> |
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### Generic Conditions by MOEF:

| <b>A. Mining</b>                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <b>i</b>                                          | Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Being complied.</b> All stipulated provisions and subordinate legislations of Mines Act, 1952 are being followed under the guidance of DGMS.                                                                                                                                                                                                                                                  |
| <b>ii</b>                                         | No change in mining method, calendar programme and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forest and Climate Change.                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Being complied.</b>                                                                                                                                                                                                                                                                                                                                                                           |
| <b>iii</b>                                        | Mining shall be carried out as per the approved mining plan including Mine Closure Plan, abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Being complied.</b> Mining is being carried out abiding by mining laws and relevant circulars issued by DGMS in accordance to approved mining plans. Mine Closure Plan, has been prepared for each mine in the cluster. Progressive mine closure has been implemented regularly as per the approved Mine Closure Plan prepared by CMPDIL.                                                     |
| <b>iv</b>                                         | No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980 and also adhering to The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 read with provisions of Indian Forest Act, 1927.                                                                                                                                                                                                                                                                                                                                     | <b>Complied. No forest land is present in the Cluster.</b>                                                                                                                                                                                                                                                                                                                                       |
| <b>B. Land reclamation and water conservation</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>i</b>                                          | Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 4:50000 scale shall be submitted to Ministry of Environment, Forest and Climate Change/Regional Office (RO).                                                                                                                                                                                                                                                                                                                                   | <b>Being complied.</b> Land Use Map of Cluster VII has been prepared by CMPDIL using remote sensing data for monitoring of land use pattern and for post mining land use. The land use map is attached in <b>Annexure IV</b> .                                                                                                                                                                   |
| <b>ii</b>                                         | The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc., shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/Gol Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS. | <p><b>Being complied.</b> The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EMP report. Approval from competent authority of State Govt. shall be sought in case of diversion of Natural Water Courses.</p> <p>Embankment has been constructed along the mine boundary to prevent inrush of surface water. <b>(Picture 5)</b></p> |

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| <b>iii</b> | The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be handed over to the respective state government as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27 <sup>th</sup> August, 2009 and subsequent amendments.                                                                                                                       | <b>Being complied.</b> <ul style="list-style-type: none"> <li>▪ Backfilling process in abandoned pits and decoaled has been carried out along with the mining operation.</li> <li>▪ Ecological restoration and Plantation shall be carried out on finalization of dumps.</li> <li>▪ Abandoned Pits will be utilized for Pisciculture in Post Mining Phase as per approved Mine Closure Plan.</li> </ul>                                                                                                                                                                               |
| <b>iv</b>  | The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the “during mining”/“post mining” land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the Ministry of Environment, Forest and Climate Change/Regional Office on six monthly basis.                                                                                                                                                                                                                                        | <b>Being complied.</b> <ul style="list-style-type: none"> <li>▪ Backfilling of decoaled area/ excavated area has been carried out and ecological restoration and plantation shall be carried out after finalization of dumps as per approved Mine Closure Plan.</li> </ul>                                                                                                                                                                                                                                                                                                            |
| <b>V</b>   | The top soil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized for long. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilized with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office on six monthly basis. | <b>Being complied.</b> <p>Topsoil dumps have been created separately. The topsoil is spread over the slopes of OB dumps and utilized for plantation activities. In addition, grass seed balls are dispersed over the treated slopes to promote grass cover and reduce soil erosion. Once the OB dump reaches its final stage, the area is taken up for three-tier plantation and eco-restoration measures. Seeds of native flora species are also broadcast across these sites to support natural regeneration and enhance biodiversity.</p> <p><b>Picture – 6, 7, 8 &amp; 9.</b></p> |

### **C. Emissions, effluents, and waste disposal**

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| <b>i</b> | Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc. shall be carried out in critical areas prone to air pollution (with higher values of PM10/PM2.5) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board. | <b>Being complied.</b> <p>Presently, coal transportation is being carried out through trucks covered with tarpaulin sheets. Covering of trucks has been made mandatory under the transportation contracts to prevent spillage and fugitive dust emissions. Mobile water sprinklers and truck-mounted fog cannons are being deployed regularly to mitigate airborne dust generated from haul roads. In addition, mechanical sweeping of public roads used for coal transportation is being undertaken on a routine basis to maintain cleanliness and minimize dust pollution.</p> <p><b>Picture – 1 &amp; 3</b></p> |
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| <b>ii</b>  | Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area in a phased manner. The green belt comprising a mix of native species shall be developed all along the major approach/ coal transportation roads.                                                                                                                    | <b>Being Complied.</b><br><br>Plantation is being developed along mine lease area in available spaces in a phased manner. Green belts are also being developed along transportation roads.                                                                                                                                                                                                                                                                                                                                                                    |
| <b>iii</b> | The transportation of coal shall be carried out as per the provisions and route proposed in the approved Mining Plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated. | <b>Being complied.</b><br><br>The transportation of coal is being carried out as per the approved Mining Plan.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>iv</b>  | Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centers.                                                                                                                                                        | <b>Being complied.</b><br>Vehicles used for transportation of coal have PUC certificate from authorized pollution testing centers. Copy of Pollution Under Control certificate has been enclosed as <b>Picture 10</b> .                                                                                                                                                                                                                                                                                                                                       |
| <b>v</b>   | Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.                                               | <b>Being complied.</b><br>Crushers/feeders breakers are fitted with water sprinklers<br>Coal handling plant are enclosed with metal sheets and are fitted with water sprinklers to check fugitive emissions.<br>Wet drilling along with dust extractors drill are used for drilling.                                                                                                                                                                                                                                                                          |
| <b>vi</b>  | Coal handling plant shall be operated with effective control measures viz. bag filters/water or mist sprinkling system etc. to check fugitive emissions from crushing operations, conveyor system, transfer points, etc.                                                                                                                                                                     | <b>Complied.</b><br>Coal handling plant are enclosed with metal sheets and are fitted with water sprinklers to check fugitive emissions.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>vii</b> | Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.                                                                                                                                                                                                          | <b>It is being complied.</b><br>Mine water is used for the industrial as well as domestic purposes. Mine water is also supplied to colonies and community after filtration. Mine water supply to nearby village/community is taken up under Mine Water Utilization of the company. Mine water is also used for fire dealing/ firefighting. Rain Water Harvesting has been constructed. 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 <b>Annexure V</b> . |

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| <b>viii</b>                                   | Catch/garland drains and siltation ponds of appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly desilted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilized for dust suppression measures and green belt development. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies. | <p><b>Being complied.</b></p> <p>In phased manner, garland drains, siltation ponds, toe wall are constructed around OB Dumps to prevent run off water and flow of sediments directly into the river &amp; water bodies.</p> <p>Garland drains/ponds are desilted before on set of monsoons.</p> <p>Mine water collected in mine sump is utilized for dust suppression and green belt development.</p> <p><b>(Picture 3 and 9)</b></p>                                                                                                                                                                                                                                                                  |
| <b>ix</b>                                     | Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Oil and grease trap shall be installed and maintained fully functional with effluents discharge adhering to the norms. Sewage treatment plant of adequate capacity shall be installed for treatment of domestic waste.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p><b>Being complied.</b></p> <p>Effluent discharge standards for the Cluster VII Coal Mining Project are being regularly monitored by CMPDIL. Mine water is treated through filter plants, including pressure and sand filters, for further utilization in industrial purposes and supply to nearby residential areas. The mine water monitoring report has been enclosed as <b>Annexure VI</b>.</p> <p>In addition, oil and grease traps have been installed to prevent contamination from hydrocarbon residues <b>(Picture 11)</b>. For the management of domestic sewage generated from residential colonies, soak pits have been provided to ensure proper disposal and groundwater recharge.</p> |
| <b>x</b>                                      | Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><b>Being complied.</b></p> <p>Rain Water Harvesting has been constructed. Mine water is also supplied to colonies and community after filtration through pressure filters. Mine sumps also act as a recharge structure for its whole catchment area. <b>Picture 12</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>D. Illumination, Noise &amp; Vibration</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>i</b>                                      | Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six-monthly basis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p><b>Being complied.</b> Adequate illumination is being ensured in all mine locations as per DGMS standards and the same is being monitored by Area &amp; HQ Level Safety Committees on regular basis. Illumination survey is conducted mine wise and proper records are maintained.</p>                                                                                                                                                                                                                                                                                                                                                                                                              |

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| <b>ii</b>  | 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 personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored. | <b>Being complied</b><br>Personnel operating HEMMs, drilling machine and other machines comply with safety regulation and are equipped with PPEs. Training programs are also conducted at VTC for awareness. Noise monitoring data has been enclosed as <b>Annexure VII</b> . |
| <b>iii</b> | Controlled blasting techniques shall be practiced in order to mitigate ground vibrations and fly rocks as per the guidelines prescribed by the DGMS.                                                                                                                                                                                                                                                                                                     | <b>Being complied.</b><br>DGMS regulations are followed strictly for blasting. Additionally, Personnel operating HEMMs, drilling machine and other machines are given training on regular basis.                                                                              |
| <b>iv</b>  | The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.                                                                                                                                                                                                    | <b>Being complied.</b><br>Noise level monitoring is done by CMPDIL on monthly basis. Noise monitoring data has been enclosed as <b>Annexure VII</b> .                                                                                                                         |

## **E. Occupational health & safety**

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| <b>i</b>   | The project proponent shall undertake occupational health survey for initial and periodical medical examination of the workers engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any. | <b>Being complied.</b><br>Initial and Periodical Medical Examination (PME) of all the mining and other personnel is being carried out regularly at Area Hospital, as per the Statutes and guidelines of Director General of Mines Safety (DGMS). PME also includes checkup of occupational diseases and hearing impairment. Enclosed as <b>Annexure VI</b> .                                                                                         |
| <b>ii</b>  | Personnel (including outsourcing employees) working in dusty areas shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.                                                                                                                                                                                                                                                                         | <b>Being complied.</b><br>Protective respiratory devices & other PPEs are supplied to personnel working in dusty areas. Also, a separate full-fledged Human Resource Development (HRD) Department is conducting regular training programme on these issues. Apart from this Vocational Training Centers (VTCs) are existing in all the Areas of BCCL, which provides periodical training on the safety and occupational health issue to the workers. |
| <b>iii</b> | Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.                                                                                                                                                                                                                                                                                                                  | <b>Being complied.</b><br>HRD Department & Area level Vocational Training Centers are conducting regular training programs. Status of training enclosed as <b>Annexure VIII</b> .                                                                                                                                                                                                                                                                    |

| <b>F. Ecosystem and biodiversity conservation</b> |                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                     |
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| <b>i</b>                                          | The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.                                                                     | <b>Being complied.</b><br>No endangered flora/fauna has been reported in the mining area. However, Conservation and Protection of endangered flora/fauna shall be taken with utmost priority, if spotted/reported.                                                                                                                  |
| <b>G. Public hearing, R&amp;R and CSR</b>         |                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                     |
| <b>i</b>                                          | Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land ousters shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable. | <b>Being complied.</b><br>The issues raised during Public Hearing is mentioned in the EMP and measures are being taken to ensure its implementation.                                                                                                                                                                                |
| <b>ii</b>                                         | The project proponent shall ensure the expenditure towards socio-economic development in and around the mine, in every financial year as per the Corporate Social Responsibility Policy as per the provisions under Section 135 of the Companies Act, 2013                                                                                                                                              | <b>Being complied.</b><br>BCCL is implementing CSR activities from HQ. A separate department of CSR is engaged for the said work. <b>Annual report is available on BCCL Website and attached as Annexure</b>                                                                                                                        |
| <b>iii</b>                                        | The project proponent shall follow the mitigation measures provided in this Ministry's OM No. Z-11013/5712014-IA.11 (M) dated 29" October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.                         | <b>Being Complied.</b><br>Rehabilitation of project affected families is being done as per Revised Jharia Master Plan for Dealing with Fire, Subsidence & Rehabilitation of affected families in Jharia Coalfield approved from the President of India. The points mentioned in the said OM are being complied. <b>Annexure-IX.</b> |
| <b>iv</b>                                         | The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.                                                | It shall be complied.                                                                                                                                                                                                                                                                                                               |

## H. Corporate Environment Responsibility

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| <b>i</b>   | The Company shall have a well laid down environment policy duly approved by Board of Directors. The environment policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions. Also, the company shall have a defined system of reporting of non-compliances/violations of environmental norms to the Board of Directors and/or shareholders/stakeholders. | <b>Being complied.</b> 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. Enclosed as <b>Annexure X</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>ii</b>  | The project proponent shall comply with the provisions contained in this Ministry's OM dated 1 <sup>st</sup> May, 2018, as applicable, regarding Corporate Environment Responsibility                                                                                                                                                                                                                                                                                                                   | It shall be complied.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>iii</b> | The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions should be displayed on website of the Company.                                                                                                                                                                                                                                                                                 | <b>Being complied.</b> A hierarchical system of the company to deal with environmental issues from corporate level to mine level already exists.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>iv</b>  | A separate environmental management cell both at the project and company headquarter level, with suitable qualified personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.                                                                                                                                                                                                                                                        | <b>Complied.</b> <ul style="list-style-type: none"> <li>A full-fledged Environment Department, headed by a 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.</li> <li>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.</li> <li>The cell Look for implementing and look after Socio-Economic Issues, an executive of Community Development Cadre is also posted at area level.</li> </ul> |
| <b>v</b>   | Action plan for implementing EMP and environmental conditions shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.                                                              | <b>Action plan has already been made and its implementation is being complied.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>vi</b>  | Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.                                                                                                                                                                                                                                                                                                                                                                           | <b>Complied.</b> Internal audit is done periodically and third-party audit has been done by ICFRE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| <b>I. Statutory Obligations</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>i</b>                        | The environmental clearance shall be subject to orders of Hon'ble Supreme Court of India, Hon'ble High Court, NGT and any other Court of Law from time to time, and as applicable to the project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Agreed                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>ii</b>                       | This environmental clearance shall be subject to obtaining wildlife clearance, if applicable, from the Standing Committee of National Board for Wildlife.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Agreed                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>iii</b>                      | The project proponent shall obtain Consent to Establish/Operate under the Air Act, 1981 and the Water Act, 1974 from the concerned State Pollution Control Board.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Complied.                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>iv</b>                       | The project proponent shall obtain the necessary permission from the Central Ground Water Authority. (CGWA).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Complied.</b> NOC for usage/extraction of Ground water has been obtained by CGWA for Cluster VII group of Mines. Further, Renewal Application is under process. <b>(Annexure II)</b>                                                                                                                                                                                                               |
| <b>J. Monitoring of project</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>i</b>                        | Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>x</sub> and NO <sub>x</sub> . 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. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months. | <p><b>Complied.</b> Regular Monitoring is being carried out by CMPDIL.</p> <p>PM10 Analysers has been installed in each operational unit.</p> <p>COAAQMS is under procurement and may be delivered soon.</p> <p>Establishment of ambient environment quality monitoring stations has been finalized in consultation with Jharkhand State Pollution Control Board. Enclosed in <b>Annexure XI.</b></p> |
| <b>ii</b>                       | The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.                                                                                                                                                                                                                                                                                                                               | <b>Complied.</b> Ambient Air quality monitoring Data is regularly submitted to ministry along with compliance report. Ambient Air Quality monitoring report attached as <b>Annexure XII.</b>                                                                                                                                                                                                          |
| <b>iii</b>                      | The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Complied.</b> Effluents discharge standards are regularly monitored by CMPDIL for Cluster VII Coal Mining Project. Mine water is being treated using filter plants (Pressure, Sand filters etc.) for its further use in industrial purpose and supply to the residential colonies. Mine water monitoring report has been enclosed as <b>Annexure IV.</b>                                           |

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                        |
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| <b>iv</b>               | The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-IA.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.                                                                                                                                                                                                                                  | <b>Complied.</b>                                                                                                                                                                                                                                                                                                                                                                       |
| <b>v</b>                | Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to Ministry of Environment, Forest and Climate Change/Regional Office. | <b>Being Complied.</b> <ul style="list-style-type: none"> <li>Drilling of Piezometric well has been completed and DWLR has been installed for monitoring of Ground Water level. <b>Picture-12.</b></li> </ul> CMPDI is regularly conducting study of groundwater level and quality of areas within Cluster VII. Groundwater monitoring data has been enclosed as <b>Annexure XIII.</b> |
| <b>vi</b>               | Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.                                                                                                                                                                                                                                                                                      | <b>Complied.</b> CMPDI RI-II is regularly conducting study water quality. Water Quality report attached as <b>Annexure IV.</b>                                                                                                                                                                                                                                                         |
| <b>vii</b>              | The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental conditions to the Ministry of Environment, Forest and Climate Change/Regional Office. For half yearly monitoring reports, the data should be monitored for the period of April to September and October to March of the financial years.                                                                                                                                                                         | <b>Complied.</b>                                                                                                                                                                                                                                                                                                                                                                       |
| <b>viii</b>             | The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.                                                                                                                                                                                                                                                                             | <b>Complied.</b>                                                                                                                                                                                                                                                                                                                                                                       |
| <b>K. Miscellaneous</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>i</b>                | Efforts should be made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy.                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Being complied.</b> Conventional bulbs are being replaced by LED bulbs and conventional fans are being replaced by BLDC fans in official/industrial premises. Energy efficient High Mast Lighting towers, energy efficient fans are being procured replacing the old ones. Solar Energy is also being harnessed at different locations in BCCL.                                     |
| <b>ii</b>               | The project authorities shall inform to the Regional Office regarding commencement of mining operations.                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Agreed.</b>                                                                                                                                                                                                                                                                                                                                                                         |

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                           |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>iii</b> | A copy of the environmental clearance shall be marked to concerned Panchayat. A copy of the same shall also be sent to the concerned State Pollution Control Board, Regional Office, District Industry Sector and Collector's Office/Tehsildar Office for information in public domain within 30 days.                                                                                                                                                        | <b>Complied.</b>                                                          |
| <b>iv</b>  | The EC shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain.                                                                                                                                                                                              | <b>Being complied.</b>                                                    |
| <b>v</b>   | The project authorities shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of this clearance, informing that the project has been accorded environmental clearance and a copy of the same is available with the State Pollution Control Board and also at website of the Ministry.                                                    | <b>Complied.</b> Enclosed in <b>Annexure XIV.</b>                         |
| <b>vi</b>  | 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&CC by e-mail. | <b>Complied. EC Compliance is regularly updated on company's website.</b> |
| <b>vii</b> | The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter.  | <b>Agreed</b>                                                             |

# **COMPLIANCE OF ADDITIONAL EC CONDITIONS of CLUSTER-**

## **VII**

**EC order no.: J-11015/238/2010-1A.II (M) Pt dated 20<sup>th</sup> August, 2020**

| <b>Sl.no.</b> | <b>Conditions by MOEF:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Compliance</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>(i)</b>    | Mitigating measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression, arrangement at loading and unloading points, etc. | <p><b>Complied.</b> Mobile Water Sprinklers are being used for Sprinkling water on transportation roads. <b>Picture - 3</b></p> <p>Additionally Manual Sweeping is done on public roads on routine basis. Truck mounted fog canon has also been procured and is in operation. <b>Picture - 3</b></p> <p>Green belt is being development along railway sidings and transportation roads. <b>Picture - 9</b></p>                                                         |
| <b>(ii)</b>   | Continuous monitoring of occupational safety and other health hazards, and the corrective actions needs to be ensured.                                                                                                                                                                                                                                                                                                                                                                                          | <b>Complied.</b> Proper safety, health hazards and the corrective measures are being taken by Area and HQ Level Safety/Medical Board on regular basis. PME conducted regularly.                                                                                                                                                                                                                                                                                        |
| <b>(ii)</b>   | Persons of nearby villages shall be given training on livelihood and skill development to make them employable.                                                                                                                                                                                                                                                                                                                                                                                                 | <p><b>It is being complied.</b></p> <p>Company is organizing training on regular basis through Vocational Training Centre and Human Resource Department. Also, skill development for PAPs is being undertaken. Sewing Centre has been established. <b>Picture 14</b></p> <p>CSR department is selecting candidates from PAFs and sending them for training at <b>CIPET, Ranchi</b>. Students from CIPET after training has also got placements in different firms.</p> |
| <b>(iv)</b>   | Thick green belt of adequate width at the final boundary in the downwind direction of the project site shall be developed to mitigate/check dust pollution.                                                                                                                                                                                                                                                                                                                                                     | <b>It is being complied.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>(v)</b>    | Efforts shall be made for utilizing alternate sources of surface water, abandoned mines or else whatsoever and thus minimizing dependability on a single source.                                                                                                                                                                                                                                                                                                                                                | <b>It is being complied.</b> 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. Rain Water Harvesting is being implemented in phased manner.                                                                                                                                                          |
| <b>(vi)</b>   | Continuous monitoring of occupational safety and other health hazards, and the corrective actions needs to be ensured.                                                                                                                                                                                                                                                                                                                                                                                          | <b>Complied.</b> Proper safety, health hazards and the corrective measures are being taken by Area and HQ Level Safety/Medical Board on regular basis PME conducted regularly.                                                                                                                                                                                                                                                                                         |

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                  |
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| <b>(vii)</b>  | A third party assessment of EC compliance shall be undertaken once in three years through reputed Government Institutes or any other expert agency identified by the Ministry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Complied.</b> Third party audit has been done by ICFRE.                                                                                                                                                                                                                       |
| <b>(viii)</b> | Active OB Dump should not be kept barren/open and should be covered by temporary grass to avoid air borne of particles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>It is being complied.</b> Grass seed balls are spread over slopes of active OB Dumps. <b>Picture – 6 (OB Dump Pic)</b>                                                                                                                                                        |
| <b>(ix)</b>   | Project Proponent shall obtain blasting permission from DGMS for conducting mining operation near villages and explore deployment of rock breakers of suitable capacity in the project to avoid blasting very near to villages. There shall be no damages caused to habitations/structures due to blasting activity.                                                                                                                                                                                                                                                                                                                                                                                             | <b>Complied.</b> Blasting is done after obtaining necessary permission from DGMS.                                                                                                                                                                                                |
| <b>(x)</b>    | The Project proponent shall comply with all the statutory requirements and judgement of Hon'ble Supreme Court dated 2 <sup>nd</sup> August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors. State Government shall ensure that the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department in strict compliance of judgement of Hon'ble Supreme Court dated the 2 <sup>nd</sup> August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.                                                                                     | <b>Agreed.</b>                                                                                                                                                                                                                                                                   |
| <b>(xi)</b>   | Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; The prevention measures for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities. | <b>Complied.</b> Initial and Periodical Medical Examination (PME) of all the mining and other personnel is being carried out regularly at Area Hospital, as per the Statutes and guidelines of Director General of Mines Safety (DGMS). Report attached as <b>Annexure III</b> . |
| <b>(xii)</b>  | Project proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29 <sup>th</sup> October, 2014, titled “ Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or habitations and the village are surrounded by the mine lease area.”                                                                                                                                                                                                                                                                                                                     | <b>Agreed.</b>                                                                                                                                                                                                                                                                   |
| <b>(xiii)</b> | The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>It is being complied.</b>                                                                                                                                                                                                                                                     |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                            |
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|       | darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                            |
| (xiv) | The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.                                                                                                                                                                                                                                                                                                                                                                                          | <b>It shall be complied if any endangered fauna spotted. No endangered flora/fauna has been reported in the said area.</b> |
| (xv)  | Hon'ble Supreme Court in a Writ Petition(s) Civil No. 114/2014, Common Cause v Union of India & Ors vide its judgment dated 8 <sup>th</sup> January, 2020 has directed the Union of India to impose a condition in the mining lease and similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna, etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to Regional Office of the MoEFCC. | <b>It is being complied.</b>                                                                                               |
| 5     | The Project proponent shall abide by all the commitments and recommendations made in EIA/EMP reort and also that during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Agreed.</b>                                                                                                             |
| 6     | The project proponent shall obtain all necessary clearances/approvals required before start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulate any further condition for environmental protection.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Complied.</b>                                                                                                           |
| 7     | Any appeal against this environmental clearance lies with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Agreed.</b>                                                                                                             |

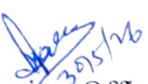
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| 8  | The coal company/project proponent shall be liable to pay the compensation against the illegal mining, if any, and as raised by the respective State Governments at any point of time, in terms of the judgement dated 2 August, 2017 of Hon'ble Supreme Court in WP (Civil) No. 114/2014 in the matter of 'Common Cause Vs Union of India & others'. | <b>Agreed.</b> |
| 9  | The concerned State Government shall ensure no mining operations to commence till the entire compensation for illegal mining, if any, is paid by the project proponent through their respective Department of Mining & Geology, in strict compliance of the judgement of Hon'ble Supreme Court.                                                       | <b>Noted.</b>  |
| 10 | This environmental clearance shall not be operational till such time the project proponent complies with the above said judgement of Hon'ble Supreme Court, as applicable and other statutory requirement.                                                                                                                                            | <b>Agreed.</b> |
| 11 | This issues in suppression of the earlier EC granted vide letter No.J-11015/238/2010-IA.II (M) dated 6th February, 2013, with approval of the competent authority.                                                                                                                                                                                    | <b>Agreed.</b> |

## **COMPLIANCE OF ADDITIONAL EC CONDITIONS of CLUSTER-VII**

**EC order no.: J-11015/238/2010-1A.II (M) Pt dated 13<sup>th</sup> August, 2024**

| <b>Sl.no.</b> | <b>Conditions by MOEF:</b>                                                                                                                                                                                       | <b>Compliance</b>                                                                                                                                 |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1           | PP shall expedite the full compliance existing EC Conditions and submit the ATR after the inspection RO within next 6 months.                                                                                    | <b>Being complied.</b>                                                                                                                            |
| 1.2           | The plantations done by the PP need to be adequately densified during the current monsoon season and audited by a third party preferably a forestry institution of MoEFCC (e.g. ICFRE) to assess their efficacy. | <b>Being Complied.</b> The densification of plantation is under process and will also be taken up in upcoming monsoon. <b>Picture 15.</b>         |
| 1.3           | PP to ensure installation of Wind barrier wall / Vertical Greenery System at suitable locations.                                                                                                                 | <b>Being Complied.</b> The identification of suitable location for installation of Wind barrier wall / Vertical Greenery System is under process. |
| 1.4           | Miyawaki plantation in an area of 25 Ha will be taken up during the current monsoon period.                                                                                                                      | <b>Being Complied.</b> The identification of suitable area for Miyawaki planation is under process.                                               |
| 1.5           | The other terms and conditions of earlier granted ECs and EC amendments shall remain the same                                                                                                                    | <b>Complied.</b>                                                                                                                                  |

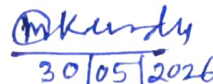
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| 1.6 | No Mining should be done in Safety zone                                                                                                                                                                                                                                                                                                     | <b>Complied.</b>                                                                                                                 |
| 1.7 | PP is advised to implement the 'Ek Ped Maa Ke Naam' Campaign which was launched on 5th June 2024 on the occasion of the World Environment Day to increase the forest cover across the Country. This plantation drive is other than Green belt development. The action in this regard shall be submitted concerned RO in six monthly report. | <b>Being Complied.</b> The plantation drive has been conducted to implement 'Ek Ped Maa Ke Naam' Campaign. <b>Picture 16,17.</b> |
| 1.8 | PP shall also carry out a study of impact on health and environment in the local area due to continuous unabated fire.                                                                                                                                                                                                                      | <b>Being Complied.</b> The Status of the study is enclosed herewith <b>Annexure-XIV (xv)</b>                                     |

  
Project Officer

Ena OC

  
Project Officer

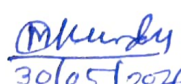
ADIC

  
Project Officer

Rajapur/S-Jharia

  
Project Officer

Kusunda OC

  
Project Officer

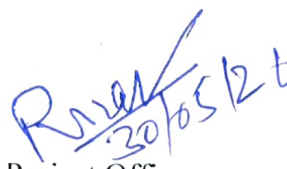
AEBSC

  
Project Officer

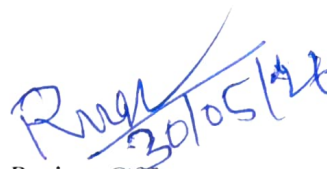
Alkusa UG

  
Project Officer

Burragarh UG

  
Project Officer

Hurrladih UG

  
Project Officer

Kustore UG



## JHARKHAND STATE POLLUTION CONTROL BOARD

TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004

Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/2400139

Ref No.: JSPCB/HO/RNC/CTE-3618783/2019/221

Dated : 2019-03-29

**Consent to Establish (CTE) under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974  
and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981**

1. Reference: Application (s) No.- 3618783 / dated : 30/10/2018 of Amalgamated Dhansar - Industry Colliery, Project Officer for consent under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981

**2. Documents Relied Upon:**

(a) The content of Inspection Report (I/R) Checklist dated 04.10.2018 issued vide Ref. No. 1364 dated 06.10.2018 of R O-Cum-Laboratory, J.S.P.C.Board, Dhanbad.

(b) The content of Environmental Clearance issued by MoEF, Govt. of India vide Ref. No. J-11015/238/2011-IA-II.(M) Pt dated 12.10.2018 for the Expansion of Cluster VII Coal mining project from 8.16 MTPA to 11.42 MTPA in mine lease area of 2127.70 Ha of M/s BCCL with details of Khata No. , PLOT No. and Area.

(c) The content of Copy of CTO issued vide Ref No. JSPCB/HO/RNC/CTO-1291497/2017/1281 Dated : 2017-09-25 for Coal (Peak capacity 0.484 MTPA, Normal capacity-0.372 MTPA valid up to 31.03.2018 with details of Khata No., Plot No.

(d) The content of Unit has uploaded certificate issued by Dy. Manager vide Ref. No. 239 dated 07.12.2017 mentioning that the mining lease has been expired in the year 2002 & 2003, but in the interest of Coal mines the said lease has been extended to further 30 years under MMDR Act, 1957 (mentioned in the letter issued by Ministry of Coal and Mines) and has uploaded copy of legal opinion dated 19.08.2015 of Sri Kaushik Chanda, Additional General Solicitor for India in the matter related.

3. The consent is granted under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 to establish the project in Mauza- details attached, P S -Dhansar, District-DHANBAD as follows:

| Project      | Site-Area                                                        |               | Investment<br>(Rs)/ Year | Product & Capacity              | Period of CTE                  |
|--------------|------------------------------------------------------------------|---------------|--------------------------|---------------------------------|--------------------------------|
|              | Plot Nos.                                                        | Area          |                          |                                 |                                |
| In Expansion | As per<br>uploaded<br>Mauza, Khata<br>No. & Plot<br>Nos. with EC | 2127.70<br>Ha | 14418.04<br>Lacs         | COAL - 2.07 MTPA<br>(as per EC) | Date of issue to<br>Six months |



## JHARKHAND STATE POLLUTION CONTROL BOARD

TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004

Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/2400139

Ref No.: JSPCB/HO/RNC/CTE-3630377/2019/590

Dated : 2019-10-10

**Consent to Establish (CTE) under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981**

1. Reference: Application (s) No.- 3630377 / dated : 11/09/2019 of ENA COLLIERY, SS Singh for consent under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981

**2. Documents Relied Upon:**

(a) The content of Inspection Report (I/R) Checklist dated 04.10.2018 vide Ref No. 1361 dated 06.10.2018 of R O-Cum-Laboratory, J.S.P.C.Board, Dhanbad.

(b) The content of copy of EC issued vide Ref. No. F.NO. J-11015/238/2010-IA.II (M) Pt dated 12.10.2018 for expansion of Cluster VII COal Mining Projecct from 8.16 MTA to 11.42 MTPA mine lease area of 2127.70 Ha of M/s BCCL locted in Jharia Coal fields, Dist- Dhanbad (Jharkhand).

(c) The content of Copy of CTO issued vide Ref. No. JSPCB/HO/RNC/CTO-518168/2016/556 Dated : 2016-09-10 for Coal (Peak capacity- 0.221 MTPA, Normal capacity- 0.170 MTPA valid up to 31.12.2020

(d) The content of Form - I & Proposal for one time 40% capcity enhancement for Cluster VII of BCCL Mines in which the name of ENA OC is mentioned with Balance Life of Mine (years) as 25.

3. The consent is granted under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 to establish the project in Mauza- BHAGATDIH, P S -ENA, District-DHANBAD as follows:

| Project      | Site-Area                      |            | Investment (Rs)/ Year | Product & Capacity          | Period of CTE               |
|--------------|--------------------------------|------------|-----------------------|-----------------------------|-----------------------------|
|              | Plot Nos.                      | Area       |                       |                             |                             |
| In Expansion | Mauza- Bhagatdih and as per EC | 2129.70 Ha | 2559.561 Lacs         | Coal - 3.0 MTPA (as per EC) | Date of issue to Six months |

**(A) Specific Conditions:**

## Annexure II



भारत सरकार  
जल शक्ति मंत्रालय  
जल संसाधन, नदी विकास  
और गंगा संरक्षण विभाग  
केन्द्रीय भूमि जल प्राधिकरण  
Government of India  
Ministry of Jal Shakti  
Department of Water Resources,  
River Development & Ganga Rejuvenation  
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)

### NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

|                                                                                                   |                                                                                                                                              |                     |                      |                          |                      |                     |                      |
|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|--------------------------|----------------------|---------------------|----------------------|
| Project Name:                                                                                     | Cluster Vii Group Of Mines Of Bccl                                                                                                           |                     |                      |                          |                      |                     |                      |
| Project Address:                                                                                  | Office Of The General Manager, Kusunda Area, Bccl                                                                                            |                     |                      |                          |                      |                     |                      |
| Town:                                                                                             | Dhanbad (m Corp.)                                                                                                                            |                     |                      | Block:                   | Dhanbad              |                     |                      |
| District:                                                                                         | Dhanbad                                                                                                                                      |                     |                      | State:                   | Jharkhand            |                     |                      |
| Pin Code:                                                                                         |                                                                                                                                              |                     |                      |                          |                      |                     |                      |
| Communication Address:                                                                            | Gm Office Godhur, Dhanbad, Dhanbad, Jharkhand - 828116                                                                                       |                     |                      |                          |                      |                     |                      |
| Address of CGWB Regional Office :                                                                 | Central Ground Water Board Mid Eastern Region, 6th & 7th Floor, Lok Nayak Jai Prakash Bhawan, Frazer Road Dak Banglow, Patna, Bihar - 800011 |                     |                      |                          |                      |                     |                      |
| 1. NOC No.:                                                                                       | CGWA/NOC/MIN/REN/1/2025/11500                                                                                                                |                     |                      | 2. Date of Issuance      | 24/04/2025           |                     |                      |
| 3. Application No.:                                                                               | 21-4/274/JH/MIN/2018                                                                                                                         |                     |                      | 4. Category: (GWRE 2024) | Semi Critical        |                     |                      |
| 5. Project Status:                                                                                | Existing With Additional Ground Water Requirment                                                                                             |                     |                      | 6. NOC Type:             | Renewal              |                     |                      |
| 7. Valid from:                                                                                    | 02/11/2023                                                                                                                                   |                     |                      | 8. Valid up to:          | 01/11/2025           |                     |                      |
| 9. Ground Water Abstraction Permitted:                                                            |                                                                                                                                              |                     |                      |                          |                      |                     |                      |
| Fresh Water                                                                                       |                                                                                                                                              | Saline Water        |                      | Dewatering               |                      | Total               |                      |
| m <sup>3</sup> /day                                                                               | m <sup>3</sup> /year                                                                                                                         | m <sup>3</sup> /day | m <sup>3</sup> /year | m <sup>3</sup> /day      | m <sup>3</sup> /year | m <sup>3</sup> /day | m <sup>3</sup> /year |
| 0.00                                                                                              | 0.00                                                                                                                                         |                     |                      | 29218.00                 | 10664570.00          | 29218.00            | 10664570.00          |
| 10. Details of ground water abstraction /Dewatering structures                                    |                                                                                                                                              |                     |                      |                          |                      |                     |                      |
| Total Existing No                                                                                 |                                                                                                                                              |                     |                      | Total Proposed No        |                      |                     |                      |
|                                                                                                   | DW                                                                                                                                           | DCB                 | BW                   | TW                       | MP                   | MPu                 |                      |
| Dewatering Structure*                                                                             | 0                                                                                                                                            | 0                   | 0                    | 0                        | 0                    | 5                   | 0                    |
| *DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps      |                                                                                                                                              |                     |                      |                          |                      |                     |                      |
| 11. Ground Water Abstraction/Restoration Charges paid (Rs.):                                      | 135642563.00                                                                                                                                 |                     |                      |                          |                      |                     |                      |
| 12. Environment Compensation (if applicable) paid (Rs.):                                          | 0.00                                                                                                                                         |                     |                      |                          |                      |                     |                      |
| 13. Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism. | No. of Piezometers                                                                                                                           |                     | Monitoring Mechanism |                          |                      |                     |                      |
|                                                                                                   |                                                                                                                                              |                     | Manual               | DWLR**                   | DWLR With Telemetry  |                     |                      |
| **DWLR - Digital Water Level Recorder                                                             | 2                                                                                                                                            |                     | 0                    | 1                        | 1                    |                     |                      |

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011

Phone: (011) 23383561 Fax: 23382051, 23386743

Website: cgwa-noc.gov.in

पानी बचाये - जीवन बचाये  
SAVE WATER - SAVE LIFE

## Application for Issue of NOC to Abstract Ground Water

Government of India  
Ministry of Jal Shakti  
Department of Water Resources, River Development and Ganga Rejuvenation  
Central Ground Water Authority (CGWA)

Application Number : MIN/JH/2025/13731/R-2

| APPLICATION BASIC DETAILS                                                                                                                                            |                                                             |                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------|
| PREVIOUS NOC NUMBER:<br><b>CGWA/NOC/MIN/REN/1/2025/11500</b>                                                                                                         | PREVIOUS NOC VALID FROM: <b>02/11/2023</b>                  | PREVIOUS NOC VALID TO:<br><b>01/11/2025</b>     |
| APPLICATION TYPE: <b>Mining</b>                                                                                                                                      | APPLICATION SUB TYPE: <b>Open Cast cum Underground Mine</b> | PROJECT TYPE: <b>Sandstone</b>                  |
| WATER QUALITY TYPE: <b>Fresh Water</b>                                                                                                                               | WHETHER INDUSTRY IS MSME: <b>No</b>                         | Renewal Applied For: <b>INCREASE IN QUANTUM</b> |
| Commercial Use: <input checked="" type="checkbox"/><br>Drinking Domestic Use: <input checked="" type="checkbox"/><br>Dewatering: <input checked="" type="checkbox"/> |                                                             |                                                 |

|     | PREVIOUS NOC QUANTUM (A) | CHANGE IN QUANTUM (B) | FINAL QUANTUM APPLIED [C = A-B] |
|-----|--------------------------|-----------------------|---------------------------------|
| KLD | 29218.00                 | 5920.50               | 35138.50                        |
| KLY | 10664570.00              | 2160982.50            | 12825552.50                     |

| PROJECT DETAILS                                                          |                                                                 |                                                                         |
|--------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------|
| PROJECT NAME: <b>CLUSTER VII GROUP OF MINES OF BCCL</b>                  | STATE: <b>JHARKHAND</b>                                         | DISTRICT: <b>DHANBAD</b>                                                |
| ASSESSMENT UNIT(BLOCK/TEHSIL):<br><b>DHANBAD (Status: Semi Critical)</b> | ADDRESS: <b>OFFICE OF THE GENERAL MANAGER KUSUNDA AREA BCCL</b> | PINCODE: <b>826116</b>                                                  |
| LATITUDE: <b>23.780000</b>                                               | LONGITUDE: <b>86.400000</b>                                     | Geology: <b>NON-ALLUVIUM (HARD ROCK)</b>                                |
| WATER REQUIRED FOR GREEN BELT: <b>Yes</b>                                | GREEN BELT AREA(SQ METER):<br><b>5104000.00</b>                 | PROJECTS FALL WITH IN 500M IN THE PERIPHERY OF WETLAND AREAS: <b>No</b> |

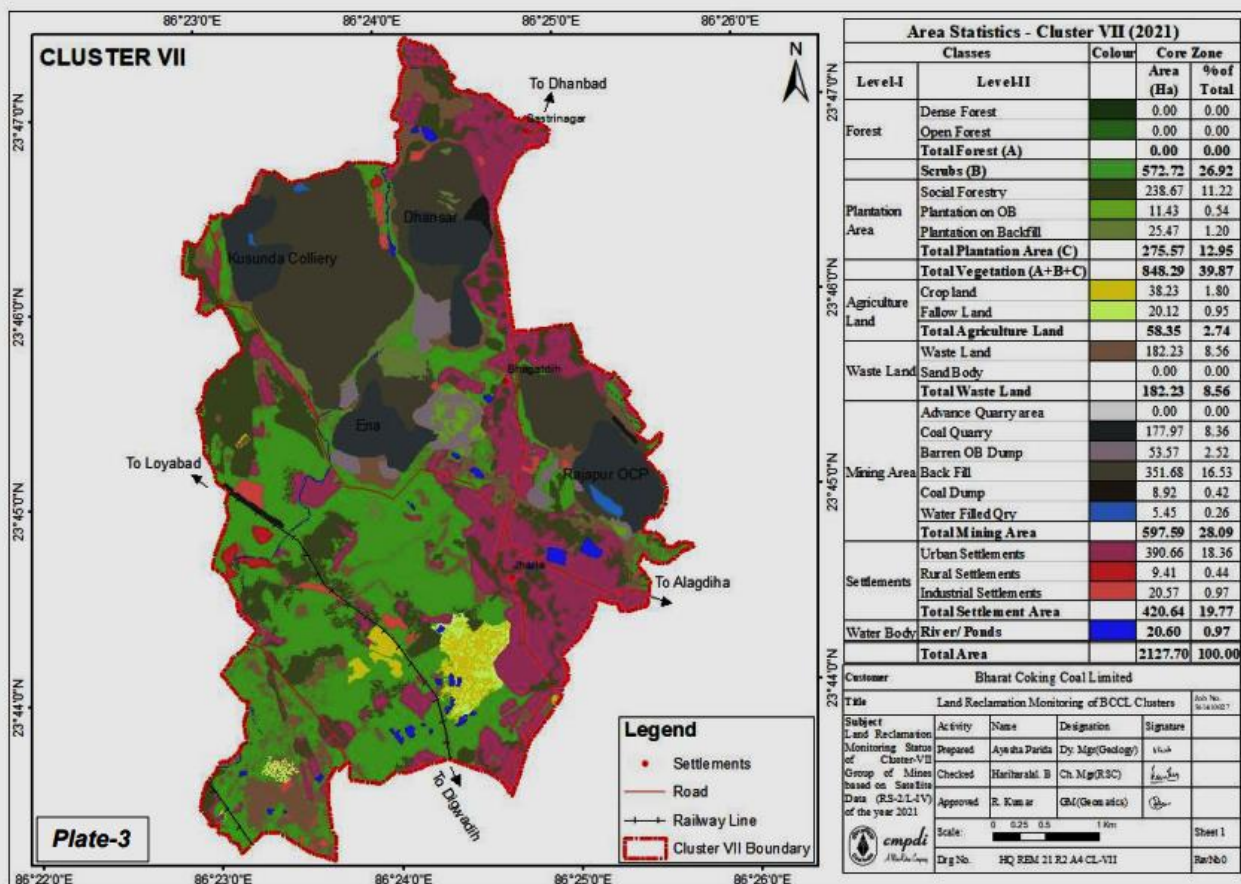
| COMPANY DETAILS                         |                                                  |                                          |
|-----------------------------------------|--------------------------------------------------|------------------------------------------|
| COMPANY NAME: <b>BCCL</b>               | COMPANY PHONE NUMBER: <b>8580026215</b>          | COMPANY GST NO.:                         |
| COMPANY PAN CARD NO.: <b>AAACB7934M</b> | COMPANY EMAIL: <b>amenv.cv.bccl@coalindia.in</b> | COMPANY POSTAL ADDRESS: <b>Chirkunda</b> |
| COMPANY STATE: <b>JHARKHAND</b>         | COMPANY DISTRICT: <b>DHANBAD</b>                 | COMPANY PIN CODE: <b>828202</b>          |

| DRINKING DOMESTIC USE                  |            |                                          |                           |                                            |                             |                                     |                                     |                               |  |
|----------------------------------------|------------|------------------------------------------|---------------------------|--------------------------------------------|-----------------------------|-------------------------------------|-------------------------------------|-------------------------------|--|
| NBC NON RESIDENTIAL APPLICATION DETAIL |            |                                          |                           |                                            |                             |                                     |                                     |                               |  |
| BUILDING TYPE                          | POPULATION | PERMISSIBLE LIMIT FOR FRESH WATER (LPHD) | FRESH WATER DEMAND (LPHD) | PERMISSIBLE LIMIT FOR TREATED WATER (LPHD) | TREATED WATER DEMAND (LPHD) | TOTAL FRESH WATER REQUIREMENT (KLD) | TOTAL TREATED WATER AVAILABLE (KLD) | TOTAL WATER REQUIREMENT (KLD) |  |
| Hostel                                 | 450        | 90                                       | 90.00                     | 45                                         | 0.00                        | 40.50                               | 0.00                                | 40.50                         |  |

**Annexure III**  
**Status of Periodical Medical Examination**

**PME**

| S. No. | Colliery                  | PME | IME |
|--------|---------------------------|-----|-----|
| 1.     | Ena Colliery              | 42  | 1   |
| 2.     | ADIC                      | 122 | 0   |
| 3.     | NGKC<br>( <u>Godhur</u> ) | 83  | 25  |
|        | NGKC<br>(Kusunda)         |     |     |
| 4.     | GKKC                      | 8   | 10  |
| 5.     | EBC                       |     |     |
| 6.     | RSOCP                     | 71  | 0   |
| 7.     | AEBS                      | 33  | 0   |
| 8.     | <u>Kustore</u> UG         |     |     |
| 9.     | <u>Huriladih</u> UG       |     |     |
| 10.    | <u>Buragarh</u> UG        |     |     |
| 11.    | <u>Bhutgoria</u> UG       |     |     |



## **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 30<sup>th</sup> 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 water available 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 of mines where water is available in mine voids in CCL and in mine water discharge in BCCL and ECL are 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 various mine sites (voids or mine discharge), to assess the suitability for potability, agricultural or other uses will be done by a third party having a recognized environmental laboratory and the 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 sites from where water is to be drawn. The cost of running these facilities would be borne by Government 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

For Government of Jharkhand

Department of Industries, Mines &  
Geology

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

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.

(.....)

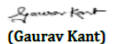
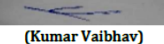
Witness 1 (Soumitra Singh)

Witness 1

30/10/16  
(Ajay Nath Singh)

Witness 2

Witness 2

|                                                                                                                                                                                                                   |                                                                                                                    |                                                                                                                                                       |                                                                         |                                                                                                                                       |                                                                                                                                        |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|                                                 |                                                                                                                    | <b>CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED</b><br><b>Environment Laboratory, Regional Institute-II</b><br><b>MINE EFFLUENT TEST REPORT</b> |                                                                         | CMPDI, RI-II<br>KOYLA BHAWAN COMPLEX<br>DHANBAD - 826005<br>Phone: 0326-223-850<br>email: rdi2cmpdi@coalindia.in                      |                                                                                                                                        |                          |
| <b>Test Report for Mine Effluent samples</b>                                                                                                                                                                      |                                                                                                                    |                                                                                                                                                       |                                                                         |                                                                                                                                       |                                                                                                                                        |                          |
| Month & Year                                                                                                                                                                                                      | 03/2026                                                                                                            | Cluster                                                                                                                                               | Cluster VII                                                             | ULR No.                                                                                                                               | TC143212600002482F                                                                                                                     |                          |
| Customer                                                                                                                                                                                                          | Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in) |                                                                                                                                                       |                                                                         |                                                                                                                                       | Date of Issue                                                                                                                          | 04.05.2026               |
| Project                                                                                                                                                                                                           | Dhansar OCP                                                                                                        | Sampling Ref. No.                                                                                                                                     | REM/BCCL/2026/03                                                        | Sampling Method                                                                                                                       | IS 3025 (Part-1) CMPDI/RI-II/LPM 13                                                                                                    |                          |
| Sampling Stations                                                                                                                                                                                                 | (i)                                                                                                                | Dhansar OCP                                                                                                                                           | Sample Collected in 2.5 Ltr Jerrycane, Color as observed is transparent |                                                                                                                                       | Period of Analysis                                                                                                                     | 02.03.2026 to 31.03.2026 |
|                                                                                                                                                                                                                   |                                                                                                                    |                                                                                                                                                       | Date of Sampling                                                        | 02.03.26                                                                                                                              | 16.03.26                                                                                                                               |                          |
| Sl. No.                                                                                                                                                                                                           | Parameter                                                                                                          | Method of Analysis                                                                                                                                    | Observed Values                                                         |                                                                                                                                       | STANDARDS FOR COAL MINES<br>(Stipulated by Ministry of Environment and Forests (MoEF), Vide Notification No. GSR 7426, Dt: 25.09.2000) | LDL                      |
| 1                                                                                                                                                                                                                 | Total Suspended Solids                                                                                             | IS 3025/17:1984, R : 2017, Gravimetric                                                                                                                | 41                                                                      | 42                                                                                                                                    | 100 (Max)                                                                                                                              | 10                       |
| 2                                                                                                                                                                                                                 | pH                                                                                                                 | IS-3025/11:1983, R-2017, Electrometric                                                                                                                | 7.85                                                                    | 7.88                                                                                                                                  | 5.5 - 9.0                                                                                                                              | 0.2                      |
| 3                                                                                                                                                                                                                 | Oil & Grease                                                                                                       | IS 3025/39:1991, R : 2019, Partition Gravimetric                                                                                                      | <4.0                                                                    | <4.0                                                                                                                                  | 10 (Max)                                                                                                                               | 2                        |
| 4                                                                                                                                                                                                                 | COD                                                                                                                | APHA 23 <sup>rd</sup> Edition 5220 C Titrimetric Method                                                                                               | 28                                                                      | 24                                                                                                                                    | 250 (Max)                                                                                                                              | 4                        |
| <p style="text-align: center;">**All units in mg/L unless specified otherwise. *LDL indicates Lower Detection Limit &amp; BDL indicates Below Detection Limit, **Grab sampling carried out for water samples.</p> |                                                                                                                    |                                                                                                                                                       |                                                                         |                                                                                                                                       |                                                                                                                                        |                          |
| <br><b>ANALYSED BY</b>                                                                                                           |                                                                                                                    | <br>(Gaurav Kant)<br><b>REVIEWED BY</b>                              |                                                                         | <br>(Kumar Vaibhav)<br><b>Authorised Signatory</b> |                                                                                                                                        |                          |
| Note: The results above relate to the samples tested as received. This report can not be reproduced in part or full without the written permission of the HOD(Env), CMPDI, RI-II.                                 |                                                                                                                    |                                                                                                                                                       |                                                                         |                                                                                                                                       |                                                                                                                                        |                          |
| 2024---- End of Report ----                                                                                                                                                                                       |                                                                                                                    |                                                                                                                                                       |                                                                         |                                                                                                                                       |                                                                                                                                        |                          |
| Page -1 of 1                                                                                                                                                                                                      |                                                                                                                    |                                                                                                                                                       |                                                                         |                                                                                                                                       |                                                                                                                                        |                          |

|   <b>CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED</b><br><b>Environment Laboratory, Regional Institute-II</b><br><b>Ambient Noise Level Test Report</b> |                                                                                                                    |                    |                                                   |                                                    |                                                          |                           |                  |                                                                |                      | <b>CMPDI, RI-II</b><br><b>KOYLA BHAWAN COMPLEX</b><br><b>DHANBAD - 826005</b><br><b>Phone: 0326-223-850</b><br><b>email: rdi2cmpdi@coalindia.in</b> |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------|----------------------------------------------------|----------------------------------------------------------|---------------------------|------------------|----------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Month & Year                                                                                                                                                                                                                                                                                                                    | 03/2026                                                                                                            | Cluster            | Cluster VII                                       |                                                    |                                                          |                           |                  | ULR No.                                                        | TC1432126000002498F  |                                                                                                                                                     |            |
| Customer Project                                                                                                                                                                                                                                                                                                                | Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in) |                    |                                                   |                                                    |                                                          | Sample Ref. No.           | REM/BCCL/2026/03 |                                                                | Sampling Method      | Date of Issue                                                                                                                                       | 04.05.2026 |
| Sampling Stations                                                                                                                                                                                                                                                                                                               | i                                                                                                                  | Kusunda OCP        | Date of Sampling                                  | 13.03.26                                           | 30.03.26                                                 | Zone Category of Station: | Core Zone        |                                                                | CMPDI/RI-II/LPM 22   |                                                                                                                                                     |            |
| Sl. No.                                                                                                                                                                                                                                                                                                                         | Parameter                                                                                                          | Hour / Time of day | Observed Values (in Leq dB(A))<br>First Fortnight | Observed Values (in Leq dB(A))<br>Second Fortnight | Method of Analysis                                       | Range Of Testing          | LDL              | NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 Standards |                      |                                                                                                                                                     |            |
|                                                                                                                                                                                                                                                                                                                                 |                                                                                                                    |                    |                                                   |                                                    |                                                          |                           |                  | Zones                                                          | Limits in dB         |                                                                                                                                                     |            |
| 1                                                                                                                                                                                                                                                                                                                               | Noise Level dB(A)Leq - Day                                                                                         | 06:00 - 07:00      | 50.1                                              | 52.2                                               | CPCB, Protocol for Ambient Level Noise Monitoring - 2015 | 35 dB-135 dB              | 35 dB(A)         | Industrial<br>Commercial<br>Residential<br>Silence             | 75<br>65<br>55<br>50 |                                                                                                                                                     |            |
| 2                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 07:00 - 08:00      | 52.3                                              | 54.8                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 3                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 08:00 - 09:00      | 54.8                                              | 54.7                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 4                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 09:00 - 10:00      | 60                                                | 62.5                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 5                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 10:00 - 11:00      | 62.2                                              | 65.4                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 6                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 11:00 - 12:00      | 60.8                                              | 63.8                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 7                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 12:00 - 13:00      | 63.7                                              | 66.8                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 8                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 13:00 - 14:00      | 65.2                                              | 67.5                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 9                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 14:00 - 15:00      | 65.2                                              | 62.3                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 10                                                                                                                                                                                                                                                                                                                              |                                                                                                                    | 15:00 - 16:00      | 57.7                                              | 63.3                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 11                                                                                                                                                                                                                                                                                                                              |                                                                                                                    | 16:00 - 17:00      | 57.8                                              | 68.5                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 12                                                                                                                                                                                                                                                                                                                              |                                                                                                                    | 17:00 - 18:00      | 57.4                                              | 60.2                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 13                                                                                                                                                                                                                                                                                                                              |                                                                                                                    | 18:00 - 19:00      | 55.9                                              | 59.3                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 14                                                                                                                                                                                                                                                                                                                              |                                                                                                                    | 19:00 - 20:00      | 56.1                                              | 58.3                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 15                                                                                                                                                                                                                                                                                                                              |                                                                                                                    | 20:00 - 21:00      | 54.6                                              | 57.6                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 16                                                                                                                                                                                                                                                                                                                              |                                                                                                                    | 21:00 - 22:00      | 55                                                | 57.7                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
|                                                                                                                                                                                                                                                                                                                                 |                                                                                                                    | <b>Leq DAY</b>     | <b>60.1</b>                                       | <b>63.3</b>                                        |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 1                                                                                                                                                                                                                                                                                                                               | Noise Level dB(A)Leq - Night                                                                                       | 22:00-23:00        | 56.6                                              | 45.9                                               | CPCB, Protocol for Ambient Level Noise Monitoring - 2015 | 35 dB-135 dB              | 35 dB(A)         | Industrial<br>Commercial<br>Residential<br>Silence             | 70<br>55<br>45<br>50 |                                                                                                                                                     |            |
| 2                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 23:00-00:00        | 55.7                                              | 46.7                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 3                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 00:00-01:00        | 54.5                                              | 48.8                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 4                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 01:00-02:00        | 50.3                                              | 49.5                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 5                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 02:00-03:00        | 48.6                                              | 48.5                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 6                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 03:00-04:00        | 47.5                                              | 47.6                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 7                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 04:00-05:00        | 46.3                                              | 47.1                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 8                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | 05:00-06:00        | 46                                                | 50.7                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
|                                                                                                                                                                                                                                                                                                                                 |                                                                                                                    | <b>Leq NIGHT</b>   | <b>52.6</b>                                       | <b>48.6</b>                                        |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |

\*LDL indicates Lower Detection Limit  
 \*\*All noise measurements are integrated for a 01 hour period. All units in dB(A)

|                     |               |  |                      |
|---------------------|---------------|--|----------------------|
| Sampling Assistants | (Gaurav Kant) |  | (Kumar Vaibhav)      |
| ANALYSED BY         | REVIEWED BY   |  | Authorised Signatory |

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|   <b>CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED</b><br><b>Environment Laboratory, Regional Institute-II</b><br><b>Ambient Noise Level Test Report</b> |                                                                                                                    |                    |                                                   |                                                    |                                                          |                           |                  |                                                                |                      | <b>CMPDI, RI-II</b><br><b>KOYLA BHAWAN COMPLEX</b><br><b>DHANBAD - 826005</b><br><b>Phone: 0326-223-850</b><br><b>email: rdi2cmpdi@coalindia.in</b> |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------|----------------------------------------------------|----------------------------------------------------------|---------------------------|------------------|----------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Month & Year                                                                                                                                                                                                                                                                                                                        | 03/2026                                                                                                            | Cluster            | Cluster VII                                       |                                                    |                                                          |                           |                  | ULR No.                                                        | TC1432126000002498F  |                                                                                                                                                     |            |
| Customer Project                                                                                                                                                                                                                                                                                                                    | Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in) |                    |                                                   |                                                    |                                                          | Sample Ref. No.           | REM/BCCL/2026/03 |                                                                | Sampling Method      | Date of Issue                                                                                                                                       | 04.05.2026 |
| Sampling Stations                                                                                                                                                                                                                                                                                                                   | i                                                                                                                  | Hurlidih UGP       | Date of Sampling                                  | 05.03.26                                           | 19.03.26                                                 | Zone Category of Station: | Core Zone        |                                                                | CMPDI/RI-II/LPM 22   |                                                                                                                                                     |            |
| Sl. No.                                                                                                                                                                                                                                                                                                                             | Parameter                                                                                                          | Hour / Time of day | Observed Values (in Leq dB(A))<br>First Fortnight | Observed Values (in Leq dB(A))<br>Second Fortnight | Method of Analysis                                       | Range Of Testing          | LDL              | NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 Standards |                      |                                                                                                                                                     |            |
|                                                                                                                                                                                                                                                                                                                                     |                                                                                                                    |                    |                                                   |                                                    |                                                          |                           |                  | Zones                                                          | Limits in dB         |                                                                                                                                                     |            |
| 1                                                                                                                                                                                                                                                                                                                                   | Noise Level dB(A)Leq - Day                                                                                         | 06:00 - 07:00      | 46                                                | 45.6                                               | CPCB, Protocol for Ambient Level Noise Monitoring - 2015 | 35 dB-135 dB              | 35 dB(A)         | Industrial<br>Commercial<br>Residential<br>Silence             | 75<br>65<br>55<br>50 |                                                                                                                                                     |            |
| 2                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 07:00 - 08:00      | 51.2                                              | 52.2                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 3                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 08:00 - 09:00      | 55.7                                              | 55.7                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 4                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 09:00 - 10:00      | 59.2                                              | 62.1                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 5                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 10:00 - 11:00      | 61                                                | 63.9                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 6                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 11:00 - 12:00      | 60                                                | 62.1                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 7                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 12:00 - 13:00      | 63.1                                              | 63.7                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 8                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 13:00 - 14:00      | 54.8                                              | 55.5                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 9                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 14:00 - 15:00      | 48                                                | 51                                                 |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 10                                                                                                                                                                                                                                                                                                                                  |                                                                                                                    | 15:00 - 16:00      | 46                                                | 45.8                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 11                                                                                                                                                                                                                                                                                                                                  |                                                                                                                    | 16:00 - 17:00      | 46.5                                              | 46.6                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 12                                                                                                                                                                                                                                                                                                                                  |                                                                                                                    | 17:00 - 18:00      | 39.1                                              | 40.7                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 13                                                                                                                                                                                                                                                                                                                                  |                                                                                                                    | 18:00 - 19:00      | 48.1                                              | 47.3                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 14                                                                                                                                                                                                                                                                                                                                  |                                                                                                                    | 19:00 - 20:00      | 45.8                                              | 45.2                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 15                                                                                                                                                                                                                                                                                                                                  |                                                                                                                    | 20:00 - 21:00      | 47.1                                              | 46.6                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 16                                                                                                                                                                                                                                                                                                                                  |                                                                                                                    | 21:00 - 22:00      | 48.5                                              | 48.2                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
|                                                                                                                                                                                                                                                                                                                                     |                                                                                                                    | <b>Leq DAY</b>     | <b>56.0</b>                                       | <b>57.7</b>                                        |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 1                                                                                                                                                                                                                                                                                                                                   | Noise Level dB(A)Leq - Night                                                                                       | 22:00-23:00        | 45.7                                              | 44                                                 | CPCB, Protocol for Ambient Level Noise Monitoring - 2015 | 35 dB-135 dB              | 35 dB(A)         | Industrial<br>Commercial<br>Residential<br>Silence             | 70<br>55<br>45<br>50 |                                                                                                                                                     |            |
| 2                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 23:00-00:00        | 45                                                | 44.3                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 3                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 00:00-01:00        | 44.8                                              | 43                                                 |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 4                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 01:00-02:00        | 44.6                                              | 45.3                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 5                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 02:00-03:00        | 45                                                | 45.6                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 6                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 03:00-04:00        | 41.7                                              | 44.6                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 7                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 04:00-05:00        | 41.8                                              | 39.8                                               |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
| 8                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    | 05:00-06:00        | 41.4                                              | 39                                                 |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |
|                                                                                                                                                                                                                                                                                                                                     |                                                                                                                    | <b>Leq NIGHT</b>   | <b>44.0</b>                                       | <b>43.7</b>                                        |                                                          |                           |                  |                                                                |                      |                                                                                                                                                     |            |

\*LDL indicates Lower Detection Limit  
 \*\*All noise measurements are integrated for a 01 hour period. All units in dB(A)

|                     |               |  |                      |
|---------------------|---------------|--|----------------------|
| Sampling Assistants | (Gaurav Kant) |  | (Kumar Vaibhav)      |
| ANALYSED BY         | REVIEWED BY   |  | Authorised Signatory |

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## Annexure VIII

### Status of Training

| S. No. | Colliery                  | VTC |
|--------|---------------------------|-----|
| 1.     | Ena Colliery              | 41  |
| 2.     | ADIC                      | 149 |
| 3.     | NGKC<br>( <u>Godhur</u> ) | 164 |
|        | NGKC<br>(Kusunda)         |     |
| 4.     | GKKC                      | 84  |
| 5.     | EBC                       |     |
| 6.     | RSOCP                     | 120 |
| 7.     | AEBS                      | 32  |
| 8.     | <u>Kustore UG</u>         | 9   |
| 9.     | <u>Huriladih UG</u>       | 3   |
| 10.    | <u>Buragarh UG</u>        | 0   |
| 11.    | <u>Bhutgoria UG</u>       | -   |

Ref No- BCCL/KA/ED/2022/178

To  
The General Manager (Estate)  
Koyla Bhawan  
Sub-Submission of Monthly Report

Date-09/11/22

|                                                                                                      |                         |               |          |                  |                                         |                  |                    |                                 |                                                                                                             |                  |        |       |
|------------------------------------------------------------------------------------------------------|-------------------------|---------------|----------|------------------|-----------------------------------------|------------------|--------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------|------------------|--------|-------|
| Sub:- Submission of Monthly Report                                                                   |                         |               |          |                  |                                         |                  |                    |                                 |                                                                                                             |                  |        |       |
| Status of unauthorised Encroachment on Coal Bearing Area in Kusunda Area , BCCL AS ON 09.11.2022     |                         |               |          |                  |                                         |                  |                    |                                 |                                                                                                             |                  |        |       |
| Area                                                                                                 | NO. Of Encroachers      |               |          | No of Case Filed |                                         |                  | No of order Passed |                                 |                                                                                                             | Possession taken |        |       |
|                                                                                                      | Quarter                 | Land          | Total    | Quarter          | Land                                    | Total            | Quarter            | Land                            | Total                                                                                                       | Quarter          | Land   | Total |
| KUSUNDA                                                                                              | 892                     | 1290          | 2182     | 892              | 1290                                    | 2182             | 544                | 474                             | 1018                                                                                                        | 700              | 140    | 840   |
| Status of unauthorised Encroachment on Non Coal Bearing Area in Kusunda Area , BCCL AS ON 03.08.2022 |                         |               |          |                  |                                         |                  |                    |                                 |                                                                                                             |                  |        |       |
| Area                                                                                                 | NO. Of Encroachers      |               |          | No of Case Filed |                                         |                  | No of order Passed |                                 |                                                                                                             | Possession taken |        |       |
|                                                                                                      | Quarter                 | Land          | Total    | Quarter          | Land                                    | Total            | Quarter            | Land                            | Total                                                                                                       | Quarter          | Land   | Total |
| KUSUNDA                                                                                              | 327                     | 192           | 519      | 327              | 192                                     | 519              | 317                | 57                              | 374                                                                                                         | 107              | 0      | 107   |
| Status of transfer of Title of Agreemental Land as on 03.09.2022                                     |                         |               |          |                  |                                         |                  |                    |                                 |                                                                                                             |                  |        |       |
| Area                                                                                                 | No. of Employment given | Under CNT Act | CNT Free | Total            | Files Given to Advocate (for CNT Cases) | Case Filed (CNT) | Order Passed       | Schedule for Filling rest cases | Remarks                                                                                                     |                  | Status |       |
|                                                                                                      |                         |               |          |                  |                                         |                  |                    |                                 |                                                                                                             |                  |        |       |
| KUSUNDA                                                                                              | 10                      | 5             | 1        | 6                | 5                                       | 5                | 2 Under CNT        | Nil                             | Four No. of title submitted to HQ for approval, no decision has been taken by HQ as the land is Vested Land |                  |        |       |

Addl. General Manager  
Kusunda Area

Area Manager (Estate)  
Kusunda Area

C.C. to : The General Manager, Kusunda Area  
The AM (Personnel/ Admin), Kusunda Area



# COAL INDIA LIMITED



## CORPORATE ENVIRONMENT POLICY

2018

## ***Environmental Policy Statement:***

*Coal India Limited(CIL) is committed to promote sustainable development by protecting the environment through integrated project planning & design, prevention/mitigation of pollution, conservation of natural resources, restoration of ecology & biodiversity, recycling/ proper disposal of wastes, addressing climate change and inclusive growth. It also aims to bringing awareness amongst its stakeholders for continual improvement in environmental performances following best practices.*

## **OBJECTIVES:**

### **Coal India Limited shall endeavor to:**

- 1. Plan & design projects with due consideration to environmental concerns for Sustainable Development.*
- 2. Conduct mining and associated operation in an environmentally responsible manner to comply with applicable laws and other requirements related to environmental aspects.*
- 3. Prevent pollution of surrounding habitation by continuous monitoring and adopting suitable measures for environment protection.*
- 4. Implement Environment Management Plans in all our mines /projects effectively to mitigate pollution, conservation of natural resources and restoration of ecology & biodiversity.*
- 5. Ensure compliance of all applicable Environmental Clearance& Forestry Clearance conditions and other statutory conditions issued by regulatory agencies.*
- 6. Recycling of wastes on the principle of REDUCE, REUSE and RECYCLE.*
- 7. Put special thrusts on efficient energy utilization / renewable energy as a measure to reduce carbon foot-print.*
- 8. Strive for continual improvement in our environmental performances by setting targets, measuring progress and taking corrective action.*
- 9. Taking measures to render productive post mining land use.*
- 10.Implementation of activities applicable to CIL arising out of International Conventions.*
- 11.Create environmental awareness among the employees and the local communities through pro-active communication and training.*

## ***STRATEGIES FOR IMPLEMENTATION OF ENVIRONMENTAL POLICY:***

### **Back Ground:**

Coal India Limited subscribes to the view of Sustainable Development. Unless the environment can sustain all the developmental activities, any pursuit of development in isolation can cause irreparable damage to the ecosystem and associated environmental attributes. Keeping this view in mind, Coal India Limited attaches top priority towards sustainable development and approved its 'Corporate Environmental Policy' in December 1995, which was subsequently revised in 2012. However the present policy is the amendment of the 2012 Policy and is complimentary to the National Environmental Policy, 2006.

This modification in the present policy is the outcome of the experience gained since 2012 keeping in view the modifications / amendments made time to time in environmental policies and additional stipulation notified by MoEF&CC (Ministry of Environment, Forest& Climate Change) and other organisations concerning mine closure, reclamation of degraded land, environmental clearance etc. and also with the objective of revisiting the corporate policy.

This Policy has a vision of Green Mining and mission of 100% compliance of environmental statutes applicable to coal mining industry.

**Strategies:** Coal India adopts the strategies appended below for effective implementation:

### ***1. MINE/ PROJECT PLANNING & DESIGN FOR SUSTAINABLE DEVELOPMENT:***

- a) Coal being a non-renewal energy source, extraction shall be planned prudently to meet national requirement in a planned way. The projects shall be designed on the principle of Sustainable Development with due consideration to environment, mine closure, safety and aspirations of the stakeholders at the planning& design stage itself with due regard to mine closer plan.
- b) While preparing the Mining plan/project reports, the effort shall be to incorporate latest mining technologies and equipment's with optimal capacity, which are more environment friendly.

- c) All Mining Plan/ project reports will be provided with detailed provisions for ensuring environmental compliances.

## ***2. ENVIRONMENTAL IMPACT ASSESSMENT (EIA) & ENVIRONMENT MANAGEMENT PLAN (EMP)***

- a. All mine planning and design shall be environmentally acceptable and operation shall be carried out in such a way as to facilitate the compliance of stipulated environmental standards.
- b. EIA& EMP for all projects shall be formulated as per the approved ToR (Terms of Reference) and public consultations for obtaining Environmental Clearance (EC) from MoEF&CC. Similarly, in the existing projects needing enhancement of production capacities with or without increase in land, change of technology, renewal of lease and change in land use etc. fresh EC is required to be sought as per norms. The projects shall be operated after obtaining Consent to Establish (CTE)/Consent to Operate (CTO) from State Pollution Control Boards (SPCB).
- c. Detailed Mine Closure Plans shall be prepared for all existing and new mines as per the MoC (Ministry of Coal) guidelines.

## ***3. COMPLIANCE OF THE STATUTORY REQUIREMENTS:***

The implementation of EMP and fulfillment of all other statutory requirements like conditions of EC, FC and consents to establish & operate, including timely submission of returns to statutory bodies and various agencies, are to be ensured at all levels.

## ***4. MEASURES TO MITIGATE POLLUTION:***

### **a) Air Pollution:**

- i) Generation of dust is to be controlled at the source to the possible extent with necessary control measures during drilling, blasting, loading, unloading, CHP transfer points etc.
- ii) Deployment of eco-friendly mining technologies.
- iii) Dust generation is to be minimized along coal / waste transportation routes.
- iv) Mechanized transportation of coal to be encouraged.
- v) Green belt is to be created around the source of dust.

***b) Water pollution:***

- i) The mine water and other effluent shall be treated to ensure the discharge norms as per statute. The treated effluent shall be utilized to the extent possible with a view to achieve maximum water conservation.
- ii) Oil & grease from the effluent shall be removed by Oil & Grease Traps for proper disposal.

***c) Noise / ground vibration:***

- i) All measures to minimize noise pollution will be taken including maintenance of HEMM, equipment and provision of PPE where required.
- ii) Suitable controlled blasting techniques shall be followed to reduce ground vibration as well as noise pollution.

***d) Land reclamation:***

- i) Progressive and concurrent reclamation of mined out areas will be carried out as per approved EIA/EMP and Mine Closure Plan (MCP).
- ii) Slopes of external dumps are the important area to be suitably graded / terraced for effective reclamation and plantation.
- iii) Preservation of top soil is required for future use. Old as well as existing non-active dumps are to be technically and biologically reclaimed.
- iv) Monitoring of reclamation work of all opencast mines will be done through Satellite Surveillance. The outcome shall be put in the websites.

***e) Mine closure plans:***

Mine Closure Plan (MCP) shall be prepared for each mine. MCP are being delineated in two phases viz. progressive and final mine closure. Appropriate funds are set aside and deposited under a special Escrow fund every year as per MoC guidelines, to be utilized for proper and final mine closure.

For mines closed prior to issuance of MoC guidelines (i.e. 27<sup>th</sup> August, 2009) suitable action to be taken as per provisions of Mines Act 1952.

***f) Mine fire***

CIL shall endeavour to reduce occurrence of mine fire and subsidence due to mining activity. Monthly report shall be submitted to top management of the subsidiary and CIL and Quarterly to company board. Action Plan for mine fire control shall be implemented. Monitoring will be done through Satellite Surveillance/other suitable technology.

***g) Monitoring:***

- I. All receptors in and around the mining projects shall be monitored regularly to assess the efficacy of the pollution control / mitigation measures within stipulated standards.
- II. Effect of mining on the hydrology of the area will be monitored through measurement of water level and its quality of nearby wells and bore holes provided for this purpose. Conservation of water through rainwater harvesting shall be taken up.
- III. Area and Unit environmental cells shall have regular interaction with the people in and around the coal mines and other allied units on matters related to environment to take necessary and timely corrective actions.
- V. Environmental initiatives and monitoring through self and third party environment audit shall be conducted for generating useful data for taking corrective actions and mitigation measures as per guidelines.

***h) Other measures:***

- I. Special emphasis shall be given to undertake R&D related to various facets of coal mine environmental management in collaboration with Central Mine Planning and Design Institute (CMPDI) and other competent institutions.
- II. Besides ensuring statutory compliance, the CIL desires to set high standards and continual improvement.
- III. A number of mines and establishments of CIL are ISO 14001 certified and balance mines & establishments shall be ISO 14001 certified in phased manner.
- IV. CSR and R&R policies of CIL are to be incorporated for better planning and implementation of the socio-economic issues of coal mining areas.
- V. The coal mining environmental issues are complex and require multi-disciplinary approach to address the same. CIL will endeavor to enter into MoUs with expert agencies of repute to assist in environment issues and also help in capacity building of CIL executives.
- VI. CIL conduct periodical medical examination (PME) of its work force on routine basis in compliance of the requirement mining rules and regulation, additional test will be done as and when require.

***5. PRESERVATION OF BIO-DIVERSITY:***

- a) This will start from mine planning including technically and biologically reclamation of mined out areas in collaboration with State Forest Departments, Wild Life Divisions, NGOs etc. working in the fields of bio-diversity conservation.
- b) The selection of species for plantation shall be done in consultation with the local community to include the local species and their preferences, if any.

## **6. COAL BENEFICIATION / COAL WASHERIES:**

- a) For beneficiation of Runoff Mines (ROM) coal, washeries are being set up in a phased manner as per requirement and statutes.
- b) Slurry Management System (SMS) in all washeries shall be organized to ensure collection of fines, gainful utilization of rejects viz. power generation in Fluidized Bed Combustion (FBC) plants, selling to brick manufacturers or adopting other environmental friendly disposal options as feasible.
- c) The reject dumps and tailings shall be suitably handled to avoid any contamination.
- d) The effluent from washeries including tailings pond shall be suitably treated and reused to minimize water consumption with zero discharge concept.

## **7. CONSERVATION AND CLEAN TECHNOLOGY:**

- a) R&D projects shall be taken up to promote clean coal technology and improve the existing technologies.
- b) Energy saved is energy produced. Voluntary energy audit to be done for corrective action to reduce carbon footprint.
- c) Clean Development Mechanisms will be explored for reducing emission of Green House Gases by exploration, identification, preparation of projects reports for extraction of methane from Coal Bed, Coal Mine, Abandoned Mine, Ventilation Air, UG Coal Gasification, generation and utilization of renewable energy etc.

## **8. AWARENESS PROGRAMME:**

- a) Publicity to generate awareness through exchange & communication of information, newsletters and periodicals on environment, seminars, workshops, celebration of World Environment Day etc. at CIL / Subsidiary HQs, Areas & units to be undertaken. Regular training programs to be organized at various levels to inculcate awareness among employees.
- b) Courses on environmental and forestry laws and Environmental Protection Measures and the Corporate Policy to be organized for project executives for improving knowledge.
- c) CIL to give annual awards for achieving excellence in environment related issues and activities. These awards will be in recognition for implementation of EMP, land reclamation and compliance of statutes, proper maintenance of air & water quality and noise level.

## **9. WASTE MANAGEMENT:**

CIL will undertake appropriate action for safe handling, storage and disposal of solid waste and hazardous waste generated from its industrial set up and colonies as per relevant rules. The biomedical waste generated from hospitals and dispensaries will be collected and disposed in appropriate facilities created as per statutes. E-waste management and handling of various types of e-waste generated in its operations will be done as per rule.

## **10. CORPORATE ENVIRONMENT RESPONSIBILITY:**

Corporate Environment Responsibility (CER) is mandatory for issuing environmental clearance for all the Greenfield and Brownfield projects as per directives of MoEFCC with effect from 1st May, 2018 (O.M.No.22-65/2017- I/III dt. 19.06.2018). Budgetary provisions should be kept for implementation of provisions of CER for all the projects which will be submitted to MoEFCC for grant of environmental clearance.

## **11. INCORPORATION OF VIEWS OF STAKEHOLDERS:**

CIL will critically examine and incorporate the viewpoints of various stakeholders like PAPs/PAFs, Parliamentary Committees, Standing Sub-Committees, NGOs etc. CIL being a listed entity with stock exchange, it will also take into consideration the observations/viewpoints of international investors.

## **12. IMPLEMENTATION OF POLICY:**

- i) **Manpower:** CIL shall have environmental divisions at decision making & operational levels in its structure. The environment department shall be set up and strengthened at:
  - i) CIL Corporate HQ at Kolkata
  - ii) Subsidiary HQs
  - iii) Areas / Units / Collieries / Workshops /Washeries
  - iv) CMPDI (HQ) & CMPDI Regional Institutes
- ii) **Roles and Responsibilities:** The environmental department, set up at company HQs, Areas and Unit levels with appropriate manpower and resources, shall be responsible for implementation of policy, obtaining EC, FC, consent to establish & operate, statutes requirements and undertaking mitigation measures besides preparation of action plan every year and also to intimate the status of implementation to the management regularly.

**iii) Annual Environment Budget (Revenue & Capital):** The Annual Environment Budget (revenue & capital) shall be prepared based on the action plan including monitoring of various bench marks and the budget utilization. The year wise funds earmarked for environmental protection measures shall be kept in separate accounts with Environmental cost code.

### ***13. FLEXIBILITY TO THE SUBSIDIARY COMPANIES:***

CEP 2018 will be applicable for all subsidiaries of CIL. The subsidiary company Boards have been authorized to approve necessary modifications in CEP 2018 with reference to unique conditions prevailing at the concerned subsidiary.

### ***REVIEW OF ENVIRONMENTAL POLICY:***

In view of the present fast changing social, economic and environmental scenario, this Policy shall be reviewed every 5 years to incorporate the changes in the legal, technical, environmental, economic and social inputs prevailing at that time. Whenever, there is change in National Environmental Policy or other National / State relevant policies, Acts etc, this Corporate Environmental Policy would be reviewed and suitably revised.

\*\*\*\*\*



झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद्  
Jharkhand State Pollution Control Board  
HIG-1, Housing Colony, Dhanbad-826001

Ph: 0326-2204933

(7)

Letter No.....2650

Dated .....6/7/13.....

From,

Regional Officer,  
Dhanbad

To,

HOD (Env.),  
M/s. B.C.C.L.,  
Koyla Bhawan, Koyla Nagar,  
Dhanbad.Sub: **Fixing up monitoring station/Sampling location of Air, Water & Noise.**

Sir,

With reference to you letter no. GM(Env.)/F-JSPCB/2013/783, dt. 06.07.2013 We have approved Air, Water & Noise monitoring Station/Sampling location after verification and return a copy of the map.

Encl-A/a.

Your's faithfully,

6/7/13  
( Dinesh Prasad Singh )  
Regional Officer.

Memo.....

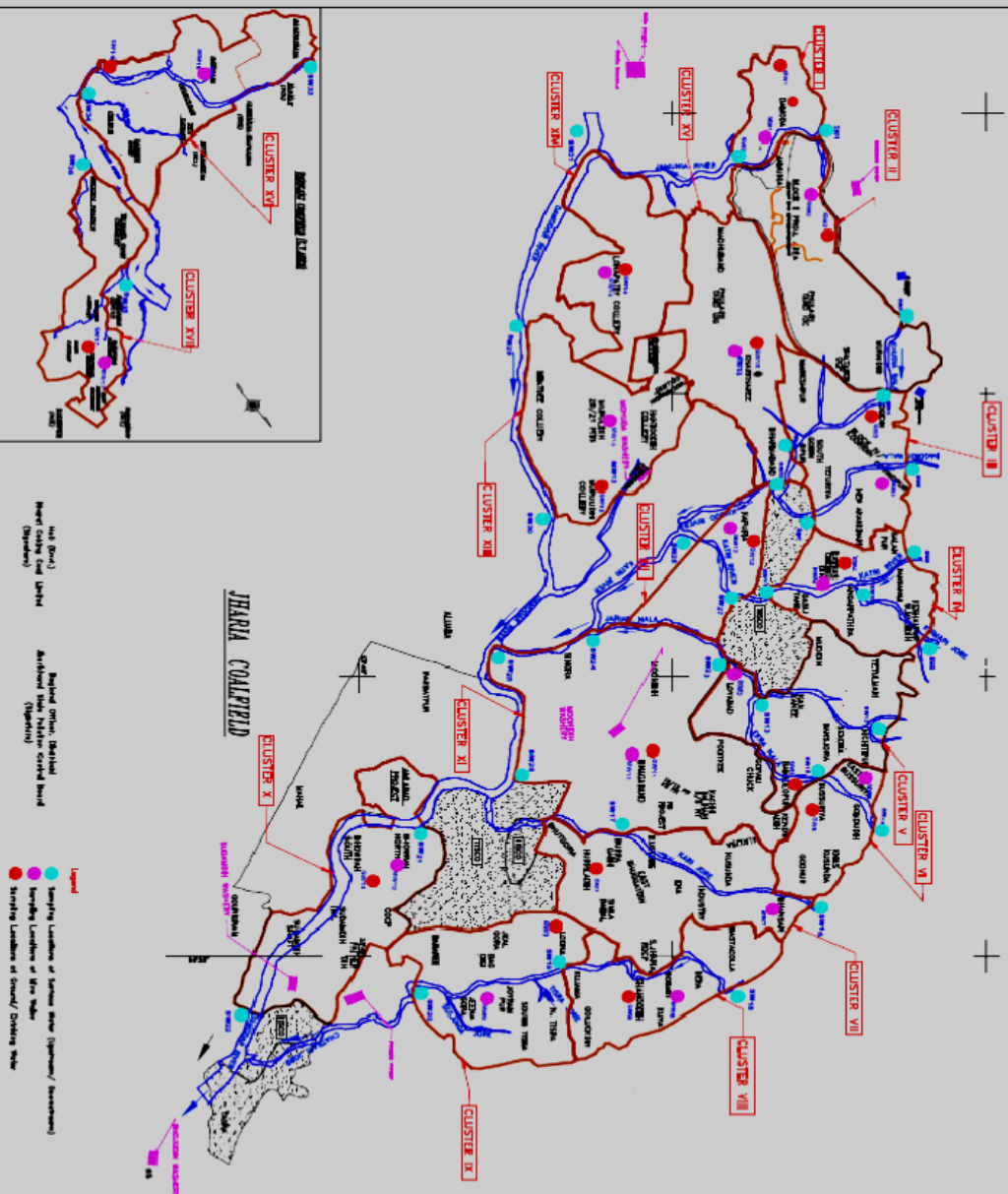
Dhanbad, dated.....

Copy to: The Member Secretary, Jharkhand State Pollution Control Board for information  
& enclose a copy of the map for necessary action.

Encl-A/a.

(Dinesh Pd. Singh)  
Regional Officer.

# Water Sampling Locations in BCCL



Map Data:  
 River Catchment Limit  
 Background: Official National  
 Authority: High National Council Board  
 (Thematic)

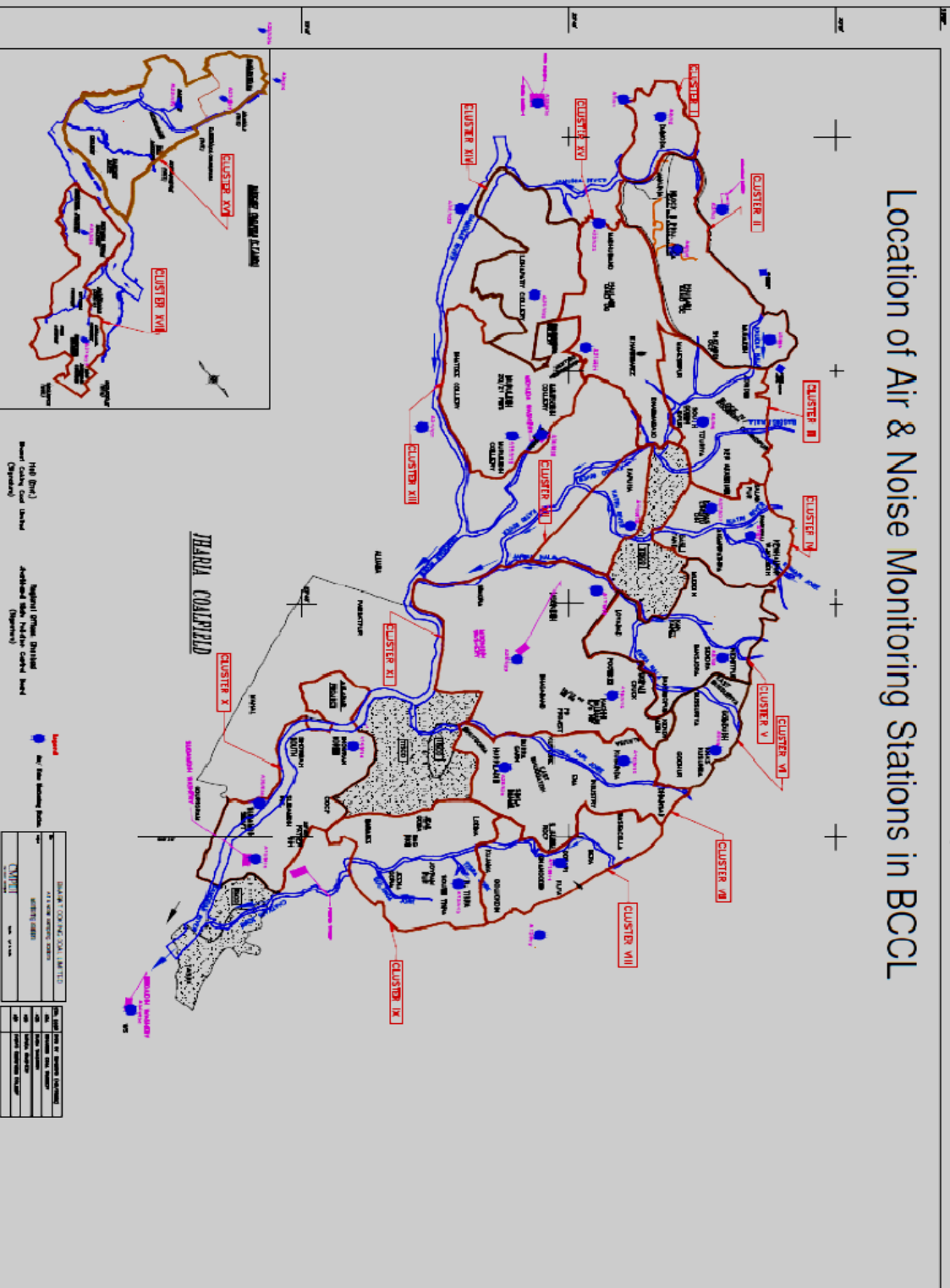
Legend:  
 Sampling Location of Surface Water (Spring/Reservoir)  
 Sampling Location of River Water  
 Sampling Location of Ground/Drinking Water

## INDEX

| Cluster | Location   | Coordinates          | Altitude (m) | Area (km <sup>2</sup> ) | Population | Water Quality | Notes  |
|---------|------------|----------------------|--------------|-------------------------|------------|---------------|--------|
| I       | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |
| II      | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |
| III     | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |
| IV      | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |
| V       | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |
| VI      | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |
| VII     | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |
| VIII    | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |
| IX      | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |
| X       | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |
| XI      | Headwaters | 32° 15' N, 35° 15' E | 1000         | 10                      | 1000       | Good          | Spring |

|       |           |
|-------|-----------|
| Scale | 1:100,000 |
| Map   | 1:100,000 |
| Scale | 1:100,000 |
| Map   | 1:100,000 |

# Location of Air & Noise Monitoring Stations in BCCL



## AMBIENT AIR QUALITY DATA

| Month & Year                                                                                                                                                                      |                   | Cluster                                                                                                                                                          |                                                | ULR No.            |                                                             | TC143212600002464F            |                                                                    |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------|-------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------|-------------|
| 03/2026                                                                                                                                                                           |                   | Cluster VII                                                                                                                                                      |                                                |                    |                                                             |                               |                                                                    |             |
| Customer                                                                                                                                                                          |                   | Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: <a href="mailto:gmenv.bccl@coalindia.in">gmenv.bccl@coalindia.in</a> ) |                                                |                    |                                                             | Date of Issue                 |                                                                    |             |
| Project                                                                                                                                                                           |                   | Kusunda OCP /dhanzar                                                                                                                                             |                                                |                    |                                                             | 04.05.2026                    |                                                                    |             |
| Sample Ref. No.                                                                                                                                                                   |                   | REM/BCCL/2026/03                                                                                                                                                 |                                                | Sampling Method    |                                                             | CMPDI/RI-II/LPM 11. (IS 5182) |                                                                    |             |
| Date of Sampling                                                                                                                                                                  |                   | 13.03.26                                                                                                                                                         |                                                | Period of Analysis |                                                             | 13.03.2026 to 25.04.26        |                                                                    |             |
| Zone of Station:                                                                                                                                                                  |                   | Core Zone                                                                                                                                                        |                                                |                    |                                                             |                               |                                                                    |             |
| Sl. No.                                                                                                                                                                           | Parameter         | Method of Analysis                                                                                                                                               | Observed Values (in $\mu\text{g}/\text{m}^3$ ) |                    | Range Of Testing                                            | LDL                           | MoEF Standards Notification dated 25th September, 2000 (GSR 742 E) | NAAQS, 2009 |
|                                                                                                                                                                                   |                   |                                                                                                                                                                  | A5480                                          | A5562              |                                                             |                               |                                                                    |             |
| S1                                                                                                                                                                                | PM <sub>10</sub>  | IS -5182(Part 23):2006, R-2017                                                                                                                                   | 96                                             | 131                | 10 $\mu\text{g}/\text{m}^3$ - 1000 $\mu\text{g}/\text{m}^3$ | 10 $\mu\text{g}/\text{m}^3$   | 300                                                                | 100         |
| 2                                                                                                                                                                                 | PM <sub>2.5</sub> | IS -5182(Part 24):2019                                                                                                                                           | 55                                             | 66                 | 10 $\mu\text{g}/\text{m}^3$ - 400 $\mu\text{g}/\text{m}^3$  | 10 $\mu\text{g}/\text{m}^3$   | Not Specified                                                      | 60          |
| 3                                                                                                                                                                                 | SO <sub>2</sub>   | IS-5182(Part-2): 2001, R-2017                                                                                                                                    | 11                                             | 13                 | 10 $\mu\text{g}/\text{m}^3$ - 1050 $\mu\text{g}/\text{m}^3$ | 10 $\mu\text{g}/\text{m}^3$   | 120                                                                | 80          |
| 4                                                                                                                                                                                 | NO <sub>2</sub>   | IS-5182 (Part-6): 2006, R-2017                                                                                                                                   | 25                                             | 26                 | 06 $\mu\text{g}/\text{m}^3$ - 420 $\mu\text{g}/\text{m}^3$  | 06 $\mu\text{g}/\text{m}^3$   | 120                                                                | 80          |
| **All units are in $\mu\text{g}/\text{m}^3$ , 24 hourly Average * LDL indicates Lower Detection Limit,                                                                            |                   |                                                                                                                                                                  |                                                |                    |                                                             |                               |                                                                    |             |
| ANALYSED BY                                                                                                                                                                       |                   |                                                                                                                                                                  | REVIEWED BY                                    |                    |                                                             | Authorised Signatory          |                                                                    |             |
| (Gaurav Kant)                                                                                                                                                                     |                   |                                                                                                                                                                  | (Kumar Vaibhav)                                |                    |                                                             |                               |                                                                    |             |
| Note: The results above relate to the samples tested as received. This report can not be reproduced in part or full without the written permission of the HOD(Env), CMPDI, RI-II. |                   |                                                                                                                                                                  |                                                |                    |                                                             |                               |                                                                    |             |
| ---- End of Report ----                                                                                                                                                           |                   |                                                                                                                                                                  |                                                |                    |                                                             |                               |                                                                    |             |

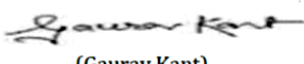
| Month & Year                                                                                                                                                                      |                   | Cluster                                                                                                                                                          |                                                | ULR No.            |                                                             | TC143212600002464F            |                                                                    |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------|-------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------|-------------|
| 03/2026                                                                                                                                                                           |                   | Cluster VII                                                                                                                                                      |                                                |                    |                                                             |                               |                                                                    |             |
| Customer                                                                                                                                                                          |                   | Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: <a href="mailto:gmenv.bccl@coalindia.in">gmenv.bccl@coalindia.in</a> ) |                                                |                    |                                                             | Date of Issue                 |                                                                    |             |
| Project                                                                                                                                                                           |                   | Huririladih UGP                                                                                                                                                  |                                                |                    |                                                             | 04.05.2026                    |                                                                    |             |
| Sample Ref. No.                                                                                                                                                                   |                   | REM/BCCL/2026/03                                                                                                                                                 |                                                | Sampling Method    |                                                             | CMPDI/RI-II/LPM 11. (IS 5182) |                                                                    |             |
| Date of Sampling                                                                                                                                                                  |                   | 19.03.26                                                                                                                                                         |                                                | Period of Analysis |                                                             | 05.03.2026 to 25.04.2026      |                                                                    |             |
| Zone of Station:                                                                                                                                                                  |                   | Core Zone                                                                                                                                                        |                                                |                    |                                                             |                               |                                                                    |             |
| Sl. No.                                                                                                                                                                           | Parameter         | Method of Analysis                                                                                                                                               | Observed Values (in $\mu\text{g}/\text{m}^3$ ) |                    | Range Of Testing                                            | LDL                           | MoEF Standards Notification dated 25th September, 2000 (GSR 742 E) | NAAQS, 2009 |
|                                                                                                                                                                                   |                   |                                                                                                                                                                  | A5424                                          | A5511              |                                                             |                               |                                                                    |             |
| 1                                                                                                                                                                                 | PM <sub>10</sub>  | IS -5182(Part 23):2006, R-2017                                                                                                                                   | 134                                            | 120                | 10 $\mu\text{g}/\text{m}^3$ - 1000 $\mu\text{g}/\text{m}^3$ | 10 $\mu\text{g}/\text{m}^3$   | 300                                                                | 100         |
| 2                                                                                                                                                                                 | PM <sub>2.5</sub> | IS -5182(Part 24):2019                                                                                                                                           | 74                                             | 68                 | 10 $\mu\text{g}/\text{m}^3$ - 400 $\mu\text{g}/\text{m}^3$  | 10 $\mu\text{g}/\text{m}^3$   | Not Specified                                                      | 60          |
| 3                                                                                                                                                                                 | SO <sub>2</sub>   | IS-5182(Part-2): 2001, R-2017                                                                                                                                    | <10                                            | <10                | 10 $\mu\text{g}/\text{m}^3$ - 1050 $\mu\text{g}/\text{m}^3$ | 10 $\mu\text{g}/\text{m}^3$   | 120                                                                | 80          |
| 4                                                                                                                                                                                 | NO <sub>2</sub>   | IS-5182 (Part-6): 2006, R-2017                                                                                                                                   | 26                                             | 24                 | 06 $\mu\text{g}/\text{m}^3$ - 420 $\mu\text{g}/\text{m}^3$  | 06 $\mu\text{g}/\text{m}^3$   | 120                                                                | 80          |
| * LDL indicates Lower Detection Limit, **All units are in $\mu\text{g}/\text{m}^3$ , 24 hourly Average,                                                                           |                   |                                                                                                                                                                  |                                                |                    |                                                             |                               |                                                                    |             |
| ANALYSED BY                                                                                                                                                                       |                   |                                                                                                                                                                  | REVIEWED BY                                    |                    |                                                             | Authorised Signatory          |                                                                    |             |
| (Gaurav Kant)                                                                                                                                                                     |                   |                                                                                                                                                                  | (Kumar Vaibhav)                                |                    |                                                             |                               |                                                                    |             |
| Note: The results above relate to the samples tested as received. This report can not be reproduced in part or full without the written permission of the HOD(Env), CMPDI, RI-II. |                   |                                                                                                                                                                  |                                                |                    |                                                             |                               |                                                                    |             |
| ---- End of Report ----                                                                                                                                                           |                   |                                                                                                                                                                  |                                                |                    |                                                             |                               |                                                                    |             |
| Page -1 of 1                                                                                                                                                                      |                   |                                                                                                                                                                  |                                                |                    |                                                             |                               |                                                                    |             |

| <div style="display: flex; justify-content: space-between; align-items: center;"> <div> <div style="text-align: center;"> <p><b>central mine planning and design institute limited</b><br/>Environment Laboratory, Regional Institute-II<br/>Ambient Air Quality Test Report</p> </div> </div> <div style="text-align: right;"> <p>CMPDI, RI-II<br/>KOYLA BHAWAN COMPLEX<br/>DHANBAD - 826005<br/>Phone: 0326-223-850<br/>email: rdi2cmidi@coalindia.in</p> </div> </div> |                                                                                                                   |                                |                            |                    |                          |                                                                    |                               |                    |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------|--------------------|--------------------------|--------------------------------------------------------------------|-------------------------------|--------------------|--|
| Test Report for Ambient Air Samples                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                   |                                |                            |                    |                          |                                                                    |                               |                    |  |
| Month & Year                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 03/2026                                                                                                           |                                | Cluster                    | Cluster VII        |                          |                                                                    | ULR No.                       | TC143212600002464F |  |
| Customer                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bcl@coalindia.in) |                                |                            |                    |                          |                                                                    | Date of Issue                 | 04.05.2026         |  |
| Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Dobari UGP                                                                                                        |                                | Sample Ref. No.            | REM/BCCL/2026/03   |                          | Sampling Method                                                    | CMPDI/RI-II/LPM 11, (IS 5182) |                    |  |
| Date of Sampling                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 02.03.26                                                                                                          |                                | 27.03.26                   | Period of Analysis | 02.03.2026 to 25.04.2026 |                                                                    | Zone of Station:              | Buffer Zone        |  |
| Sl. No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Parameter                                                                                                         | Method of Analysis             | Observed Values (in µg/m³) |                    | Range Of Testing         | MoEF Standards Notification dated 25th September, 2000 (GSR 742 E) | NAAQS, 2009                   |                    |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                   |                                | A5417                      | A5557              |                          |                                                                    |                               |                    |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PM <sub>10</sub>                                                                                                  | IS -5182(Part 23):2006, R-2017 | 134                        | 116                | 10 µg/m³ - 1000 µg/m³    | 10 µg/m³                                                           | 300                           | 100                |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PM <sub>2.5</sub>                                                                                                 | IS -5182(Part 24):2019         | 68                         | 62                 | 10 µg/m³ - 400 µg/m³     | 10 µg/m³                                                           | Not Specified                 | 60                 |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SO <sub>2</sub>                                                                                                   | IS-5182(Part-2): 2001, R-2017  | <10                        | <10                | 10 µg/m³ - 1050 µg/m³    | 10 µg/m³                                                           | 120                           | 80                 |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NO <sub>2</sub>                                                                                                   | IS-5182 (Part-6): 2006, R-2017 | 25                         | 25                 | 06 µg/m³ - 420 µg/m³     | 06 µg/m³                                                           | 120                           | 80                 |  |
| <div style="display: flex; justify-content: space-between; align-items: center;"> <div> <br/> <b>ANALYSED BY</b><br/>           (Gaurav Kant)         </div> <div> <br/> <b>REVIEWED BY</b><br/>           (Kumar Vaibhav)<br/> <b>Authorised Signatory</b> </div> </div>                                                                                                                                                                                                 |                                                                                                                   |                                |                            |                    |                          |                                                                    |                               |                    |  |
| <p><i>Note: The results above relate to the samples tested as received. This report can not be reproduced in part or full without the written permission of the HOD(Env), CMPDI, RI-II.</i></p> <p style="text-align: center;">--- End of Report ---<br/>Page -1 of 1</p>                                                                                                                                                                                                 |                                                                                                                   |                                |                            |                    |                          |                                                                    |                               |                    |  |

JOB NO. 200316028

Cluster – VII, BCCL Environmental Monitoring Report

| <div style="display: flex; justify-content: space-between; align-items: center;"> <div> <div style="text-align: center;"> <p><b>central mine planning and design institute limited</b><br/>Environment Laboratory, Regional Institute-II<br/>Ambient Air Quality Test Report</p> </div> </div> <div style="text-align: right;"> <p>CMPDI, RI-II<br/>KOYLA BHAWAN COMPLEX<br/>DHANBAD - 826005<br/>Phone: 0326-223-850<br/>email: rdi2cmidi@coalindia.in</p> </div> </div> |                                                                                                                   |                                |                            |                    |                          |                 |                                                                    |                    |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------|--------------------|--------------------------|-----------------|--------------------------------------------------------------------|--------------------|--|
| Test Report for Ambient Air Samples                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                   |                                |                            |                    |                          |                 |                                                                    |                    |  |
| Month & Year                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 03/2026                                                                                                           |                                | Cluster                    | Cluster VII        |                          |                 | ULR No.                                                            | TC143212600002464F |  |
| Customer                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bcl@coalindia.in) |                                |                            |                    |                          |                 | Date of Issue                                                      | 04.05.2026         |  |
| Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Moonidih Washery                                                                                                  |                                | Sample Ref. No.            | REM/BCCL/2026/03   |                          | Sampling Method | CMPDI/RI-II/LPM 11, (IS 5182)                                      |                    |  |
| Date of Sampling                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 13.03.26                                                                                                          |                                | 20.03.26                   | Period of Analysis | 13.03.2026 to 25.04.2026 |                 | Zone of Station:                                                   | Buffer Zone        |  |
| Sl. No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Parameter                                                                                                         | Method of Analysis             | Observed Values (in µg/m³) |                    | Range Of Testing         | LDL             | MoEF Standards Notification dated 25th September, 2000 (GSR 742 E) | NAAQS, 2009        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                   |                                | A5479                      | A5518              |                          |                 |                                                                    |                    |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PM <sub>10</sub>                                                                                                  | IS -5182(Part 23):2006, R-2017 | 128                        | 118                | 10 µg/m³ - 1000 µg/m³    | 10 µg/m³        | 300                                                                | 100                |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PM <sub>2.5</sub>                                                                                                 | IS -5182(Part 24):2019         | 67                         | 62                 | 10 µg/m³ - 400 µg/m³     | 10 µg/m³        | Not Specified                                                      | 60                 |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SO <sub>2</sub>                                                                                                   | IS-5182(Part-2): 2001, R-2017  | <10                        | <10                | 10 µg/m³ - 1050 µg/m³    | 10 µg/m³        | 120                                                                | 80                 |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NO <sub>2</sub>                                                                                                   | IS-5182 (Part-6): 2006, R-2017 | 24                         | 16                 | 06 µg/m³ - 420 µg/m³     | 06 µg/m³        | 120                                                                | 80                 |  |
| <p style="text-align: right;">**All units are in µg/m³, 24 hourly Average, * LDL indicates Lower Detection Limit,</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div> <br/> <b>ANALYSED BY</b><br/>           (Gaurav Kant)         </div> <div> <br/> <b>REVIEWED BY</b><br/>           (Kumar Vaibhav)<br/> <b>Authorised Signatory</b> </div> </div>                                                                           |                                                                                                                   |                                |                            |                    |                          |                 |                                                                    |                    |  |
| <p><i>Note: The results above relate to the samples tested as received. This report can not be reproduced in part or full without the written permission of the HOD(Env), CMPDI, RI-II.</i></p> <p style="text-align: center;">--- End of Report ---<br/>Page -1 of 1</p>                                                                                                                                                                                                 |                                                                                                                   |                                |                            |                    |                          |                 |                                                                    |                    |  |

|                                                                                                                                                                                           |                                                                                                                    |                                                                                                                                                               |                   |                                                                        |                                                                                                                  |                         |                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------|
|                         |                                                                                                                    | <b>CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED</b><br><b>Environment Laboratory, Regional Institute-II</b><br><b>GROUND WATER ANALYSIS TEST REPORT</b> |                   |                                                                        | CMPDI, RI-II<br>KOYLA BHAWAN COMPLEX<br>DHANBAD. -826005<br>Phone:0326-223-850<br>email: rdri2cmpdi@coalindia.in |                         |                                                            |
| Month & Year                                                                                                                                                                              | QUARTER ENDING<br>DECEMBER 2025                                                                                    | Name of Cluster                                                                                                                                               | CLUSTER VII       |                                                                        | ULR No.                                                                                                          | TC1432126000002<br>418P |                                                            |
| Customer                                                                                                                                                                                  | Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in) |                                                                                                                                                               |                   |                                                                        | Date of Issue                                                                                                    | 17.03.2026              |                                                            |
| Project                                                                                                                                                                                   | Hurrladih                                                                                                          | Sample Ref. No.                                                                                                                                               | REM/BCCL/25-26/GW | Sampling Method                                                        | CMPDI/RI-II/LPM 13,(IS 3025:Part -1)                                                                             |                         |                                                            |
| Sampling Stations                                                                                                                                                                         | Hurrladih                                                                                                          | Date of Sampling                                                                                                                                              | 03.11.2025        | Sample Collected in 5 Ltr Jerricane , Color as observed is transparent |                                                                                                                  |                         |                                                            |
|                                                                                                                                                                                           |                                                                                                                    | Period of Analysis                                                                                                                                            |                   | 03.11.2025                                                             | TO                                                                                                               | 04.02.2026              |                                                            |
| SL. No.                                                                                                                                                                                   | Parameter                                                                                                          | Method of Analysis                                                                                                                                            | Observed Values   |                                                                        |                                                                                                                  | IS 10500: 2012          |                                                            |
|                                                                                                                                                                                           |                                                                                                                    |                                                                                                                                                               | GW7 G0205         | Range Of Testing                                                       | LDL                                                                                                              | Acceptable Limit (Max)* | Permissible Limit in the Absence of Alternate Source (Max) |
| 1                                                                                                                                                                                         | Colour, Hazen unit                                                                                                 | APHA, 24th edition ,2120-c-Spectrophotometric Single Wavelength Method,2023                                                                                   | 2                 | 1-500.0                                                                | 1                                                                                                                | 5                       | 15                                                         |
| 2                                                                                                                                                                                         | Calcium, mg/l                                                                                                      | IS 3025, (Part 40): 1991 R:2019,AAS-Flame Method & EDTA Method                                                                                                | 100               | 2.0-800.0                                                              | 2                                                                                                                | 75                      | 200                                                        |
| 3                                                                                                                                                                                         | Chlorides, mg/l                                                                                                    | IS-3025(Part 32):1988, R-2019 , Argentometric Method                                                                                                          | 67                | 2.0-1500.0                                                             | 5                                                                                                                | 250                     | 1000                                                       |
| 4                                                                                                                                                                                         | Fluoride, mg/l                                                                                                     | APHA, 24th Edition, SPADNS Method                                                                                                                             | 0.57              | 0.2-2.00                                                               | 0.2                                                                                                              | 1                       | 1.5                                                        |
| 5                                                                                                                                                                                         | Iron, mg/l                                                                                                         | IS 3025 (Part 53) : 2003, R: 2019 , AAS-Flame Method                                                                                                          | <0.2              | 0.2-10                                                                 | 0.2                                                                                                              | 1                       | No relaxation                                              |
| 6                                                                                                                                                                                         | Magnesium                                                                                                          | APHA 24th edition, 3500-Mg B: Calculation Method                                                                                                              | 67                | 6.0-700                                                                | 6                                                                                                                | 30                      | 100                                                        |
| 7                                                                                                                                                                                         | Nitrate , mg/l                                                                                                     | APHA, 24th edition, UV-Spectrophotometric Method                                                                                                              | 7.74              | 0.5-45.0                                                               | 0.5                                                                                                              | 45                      | No relaxation                                              |
| 8                                                                                                                                                                                         | Odour                                                                                                              | APHA 24th Edition, , 2150-C                                                                                                                                   | Agreeable         | Qualitative                                                            | Qualitative                                                                                                      | Agreeable               | Agreeable                                                  |
| 9                                                                                                                                                                                         | pH value                                                                                                           | IS 3025, Part 11 : 1983 R 2023 Electrometric( pH Meter) Method                                                                                                | 7.97              | 1-14                                                                   | 0.1                                                                                                              | 6.5-8.5                 | No relaxation                                              |
| 10                                                                                                                                                                                        | Sulphate, mg/l                                                                                                     | APHA -24th edition, 4500 S , Turbidity Method                                                                                                                 | 124               | 10.0-400.0                                                             | 10                                                                                                               | 200                     | 400                                                        |
| 11                                                                                                                                                                                        | Taste                                                                                                              | APHA,24th edition, 2160-C                                                                                                                                     | Acceptable        | Qualitative                                                            | Qualitative                                                                                                      | Acceptable              | Agreeable                                                  |
| 12                                                                                                                                                                                        | Total Alkalinity (CaCO <sub>3</sub> ), mg/l. Max                                                                   | IS 3025, Part 23: 1986 R 2019 Titration Method                                                                                                                | 245               | 4.0-2000.0                                                             | 4                                                                                                                | 200                     | 600                                                        |
| 13                                                                                                                                                                                        | Total Dissolved Solids, mg/l                                                                                       | IS 3025, Part 16: 1984 R 2023 Gravimetric method                                                                                                              | 755               | 25.0-5000.0                                                            | 25                                                                                                               | 500                     | 2000                                                       |
| 14                                                                                                                                                                                        | Total Hardness, mg/l                                                                                               | IS 3025, (Part 21): 2019 EDTA Method                                                                                                                          | 525               | 4.0-2000.0                                                             | 4                                                                                                                | 200                     | 600                                                        |
| 15                                                                                                                                                                                        | Turbidity, NTU                                                                                                     | IS 3025, (Part 10):1984, R-2023 Nephelometric/Turbidimetric Method                                                                                            | 2.1               | 1-800                                                                  | 0.1                                                                                                              | 1                       | 5                                                          |
| 16                                                                                                                                                                                        | Zinc, mg/l                                                                                                         | IS 3025(Part 49) : 1994,R:2019, AAS-Flame Method                                                                                                              | <0.1              | 0.10 - 10.0                                                            | 0.1                                                                                                              | 5                       | 15                                                         |
| ***All units in mg/L unless specified otherwise,<br>**Grab sampling carried out for water samples. *LDL indicates Lower Detection Limit & BDL indicates Below Detection Limit,            |                                                                                                                    |                                                                                                                                                               |                   |                                                                        |                                                                                                                  |                         |                                                            |
| <br>(Gaurav Kant)<br><b>ANALYSED BY</b>                                                                |                                                                                                                    | <br>(Gaurav Kant)<br><b>REVIEWED BY</b>                                   |                   |                                                                        |                                                                                                                  |                         |                                                            |
| <br>(Kumar Vaibhav)<br><b>Authorised Signatory</b>                                                   |                                                                                                                    |                                                                                                                                                               |                   |                                                                        |                                                                                                                  |                         |                                                            |
| <b>Note:</b> The results above relate to the samples tested as received. This report can not be reproduced in part or full without the written permission of the HOD(Env) , CMPDI, RI-II. |                                                                                                                    |                                                                                                                                                               |                   |                                                                        |                                                                                                                  |                         |                                                            |
| Page -1 of 2<br>---- End of Report ----                                                                                                                                                   |                                                                                                                    |                                                                                                                                                               |                   |                                                                        |                                                                                                                  |                         |                                                            |



**CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED**  
**Environment Laboratory, Regional Institute-II**  
**GROUND WATER ANALYSIS TEST REPORT**

CMPDI, RI-II  
KOYLA BHAWAN COMPLEX  
DHANBAD. -826005  
Phone:0326-223-850  
email: rdri2cmpdi@coalindia.in

|                   |                                                                                                                   |                                                                        |                   |                                                                        |                                      |                         |                                                            |
|-------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------|--------------------------------------|-------------------------|------------------------------------------------------------|
| Month & Year      | QUARTER ENDING<br>DECEMBER 2025                                                                                   | Name of Cluster                                                        | CLUSTER VII       |                                                                        |                                      |                         |                                                            |
| Customer          | Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bcl@coalindia.in) |                                                                        |                   |                                                                        |                                      | Date of Issue           | 17.03.2026                                                 |
| Project           | Hurriladih                                                                                                        | Sample Ref. No.                                                        | REM/BCCL/25-26/GW | Sampling Method                                                        | CMPDI/RI-II/LPM 13,(IS 3025:Part -1) |                         |                                                            |
| Sampling Stations | Hurriladih                                                                                                        | Date of Sampling                                                       | 03.11.2025        | Sample Collected in 5 Ltr Jerrycane , Color as observed is transparent |                                      |                         |                                                            |
|                   |                                                                                                                   | Period of Analysis                                                     | 03.11.2025        | TO                                                                     | 04.02.2026                           |                         |                                                            |
| Sl. No.           | Parameter                                                                                                         | Method of Analysis                                                     | Observed Values   |                                                                        |                                      | IS 10500: 2012          |                                                            |
|                   |                                                                                                                   |                                                                        | GW7               | Range Of Testing                                                       | LDL                                  | Acceptable Limit (Max)* | Permissible Limit in the Absence of Alternate Source (Max) |
| 1                 | Boron (as B), mg/L Max                                                                                            | APHA, 24th edition ,Carminc                                            | <0.2              | 0.2-10                                                                 | 0.2                                  | 0.5                     | 1                                                          |
| 2                 | Copper (as Cu), mg/L Max                                                                                          | IS 3025 Part 42 : 1992 R : 2019, AAS-Flame APHA, 24th edition, AAS-GTA | <0.01             | 0.01-10.0                                                              | 0.01                                 | 0.05                    | 1.5                                                        |
| 3                 | Free Residual Chlorine, mg/L Min                                                                                  | APHA, 24 <sup>th</sup> Edition, 4500-Cl- B. (Iodometric Method-I)      | <0.04             | 0.04-5                                                                 | 0.04                                 | 0.2                     | 1                                                          |
| 4                 | Lead (as Pb), mg/L Max                                                                                            | IS:3025(Part 47):1994 (Reaffirmed 2019) APHA, 24th edition, AAS-GTA    | <0.005            | 0.005-10                                                               | 0.005                                | 0.01                    | No relaxation                                              |
| 5                 | Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/L Max                                                | APHA, 24th Edition, 4-Amino Antipyrine                                 | <0.001            | 0.001-10                                                               | 0.001                                | 0.002                   | 0.002                                                      |
| 6                 | Selenium, mg/L Max                                                                                                | APHA 24th edition IS-3025,part 56:2003, R-2019/, AAS-VGA               | <0.007            | 0.007-10                                                               | 0.007                                | 0.01                    | No relaxation                                              |
| 7                 | Total Arsenic (as As), mg/L Max                                                                                   | IS-3025,part 37:1988, R-2019/ APHA 24th edition AAS-VGA                | <0.006            | 0.006-10                                                               | 0.006                                | 0.01                    | 0.05                                                       |
| 8                 | Total Chromium (as Cr), mg/L Max                                                                                  | IS-3025 Part 52:2003, R:2019,AAS-Flame APHA, 24th edition, AAS-GTA     | <0.01             | 0.01-10.0                                                              | 0.01                                 | 0.05                    | No relaxation                                              |
| 9                 | Nickel as Ni, mg/L Max                                                                                            | IS 3025 Part 54 : 2003,R : 2019, AAS-Flame APHA, 24th edition, AAS-GTA | <0.005            | 0.005-10                                                               | 0.005                                | 0.02                    | No relaxation                                              |
| 10                | Manganese as Mn, mg/L Max                                                                                         | APHA, 24 <sup>th</sup> Edition:2023 AAS-GTA Method                     | <0.02             | 0.02-10.0                                                              | 0.02                                 | 0.1                     | 0.3                                                        |

\*\*\*All units in mg/L unless specified otherwise,

\*\*Grab sampling carried out for water samples. \*LDL indicates Lower Detection Limit & BDL indicates Below Detection Limit,

(Gaurav Kant)  
**REVIEWED BY**

(Kumar Vaibhav)  
**Authorised Signatory**

**ANALYSED BY**

**Authorised Signatory**

**Note:** The results above relate to the samples tested as received. This report can not be reproduced in part or full without the written permission of the HOD(Env) , CMPDI, RI-II.

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---- End of Report ----

|                                                                                                                                                                                                                                                     | <b>भारत कोकिंग कोल लिमिटेड</b><br>'एक मिनीरल कम्पनी'<br>(कोल इण्डिया लिमिटेड का एक अंग)                                                                                                                                                                                                                                                                                                    |                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>पर्यावरण विभाग, कोयला भवन</b>                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                |
| <p>सभी संबंधित व्यक्तियों को सूचित किया जाता है कि भारत कोकिंग कोल लिमिटेड के क्लस्टर VII कोयला खनन परियोजना को पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय के द्वारा पर्यावरणीय स्वीकृति में संशोधन दिया गया है जो इस प्रकार है :-</p>                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                |
| क्रम संख्या                                                                                                                                                                                                                                                                                                                          | परियोजना का नाम                                                                                                                                                                                                                                                                                                                                                                            | स्वीकृति पत्र संख्या एवं दिनांक                                                |
| 1.                                                                                                                                                                                                                                                                                                                                   | <p>धनबाद जिला, झारखण्ड में स्थित भारत कोकिंग कोल लिमिटेड के क्लस्टर VII कोयला खनन परियोजना की पर्यावरण स्वीकृति जिसका कुल क्षेत्र 2127.70 हेक्टेयर है एवं उत्पादन क्षमता 11.42 मिलियन टन प्रति वर्ष है को संशोधित किया गया है जिसमें राजापुर/द-झरिया ओसीपी परियोजना की पीक उत्पादन क्षमता 2.56 एमटीपीए की गयी है पर क्लस्टर VII की उत्पादन क्षमता 11.42 मिलियन टन प्रति वर्ष यथावत है।</p> | <p><b>J-11015/238/<br/>2010-IA-II (M) Pt.<br/>दिनांक 20<br/>अगस्त 2020</b></p> |
| <p>पर्यावरणीय स्वीकृति प्रतिलिपि झारखण्ड राज्य प्रदूषण नियंत्रण बोर्ड के पास उपलब्ध है तथा इसे पर्यावरण एवं वन मंत्रालय की आधिकारिक वेबसाइट <a href="http://envfor.nic.in">http://envfor.nic.in</a> और भारत कोकिंग कोल लिमिटेड के आधिकारिक वेबसाइट <a href="http://www.bcciweb.in">http://www.bcciweb.in</a> पर देखा जा सकता है।</p> |                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                |
| <p style="text-align: right;">हो/-<br/>विभागाध्यक्ष (पर्यावरण), कोयला भवन</p>                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                |

IIT (ISM) Progress Report of Health Study Attached

# **Report on Occupational Health Survey to assess fire-affected work environment and its effect on health of work persons and nearby villagers in and around mines under Cluster VII group of Mines, BCCL**

## **1. Purpose of the Report**

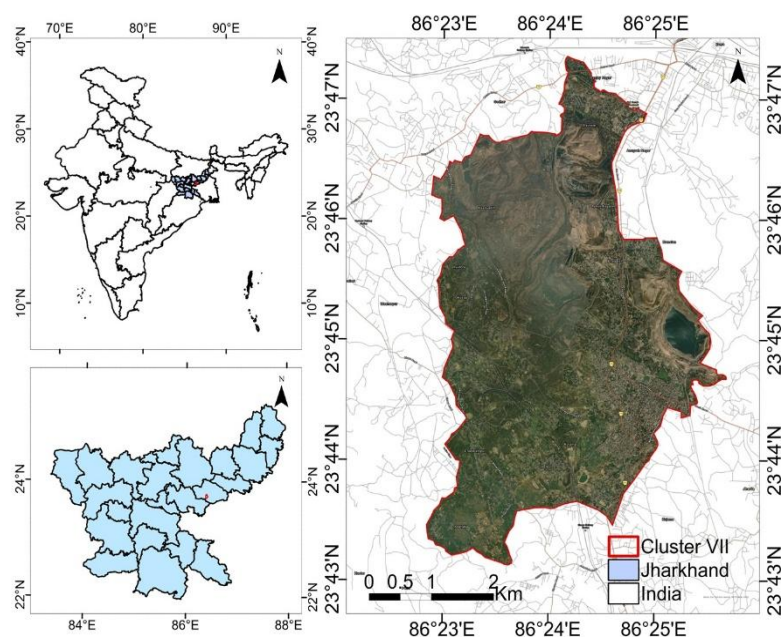
This Occupational Health Survey Report assesses the potential health impacts of mine fires in coal mining areas on workers and the surrounding community. It focuses on evaluating occupational health risks associated with exposure to mine fire conditions, including air pollution, Noise pollution and other hazardous factors present in the mining environment. The report also examines the environmental effects of mine fires, particularly on air, water, and soil quality, and how these factors influence human health.

The study incorporates key occupational health effects on local people and Environmental indicators such as air pollution, water pollution, soil pollution and Noise pollution on local environment. Special attention is given to the prevalence of occupational diseases and health hazards among coal mine workers, including respiratory illnesses, skin disorders, and other fire-related health risks.

The aim of this report is to provide a comprehensive understanding of the occupational health challenges posed by mine fires, while identifying effective measures to reduce risks, improve workplace safety, and promote worker well-being. It also highlights the need for balancing industrial activities with health and environmental protection.

## **2. Study Area**

The study area incorporates boundary of Cluster VII as given in Figure 1. The area lies between 23°43'07.3"N and 23°47'21.7"N latitudes and between 86°22'50.7"E and 86°25'41.0"E longitudes. The study area comprises total area of 2122.31 ha. The open cast coal mines are situated in the northern and eastern region of the map. The southern and western region comprises of scattered settlements and bare lands. The southeastern region includes densely populated Jharia settlements. The northern and eastern mines are affected with coal fires.



**Figure 1. Map of Cluster VII**

### 3. Methodology

#### 3.1 Water Sampling

Groundwater and surface water quality was assessed by collecting groundwater samples from tube wells as from pounds at 20 tube wells and 31 pounds in cluster vii mining area in Jharia Dhanbad. Pre-washed polyethylene bottles were used for collection of samples. For cation analysis, samples were filtered through Millipore (0.45  $\mu\text{m}$ ) filter and then acidified to pH 2 using 2M  $\text{HNO}_3$ . Groundwater samples were analysed for water quality parameters like pH, hardness, calcium, magnesium, chloride, TDS etc, as per the APHA Standard procedure (APHA, 2023). pH, EC and TDS were analysed using Hanna-Multi-parameter Water Quality portable meter (HI 991300). The concentration of chloride ( $\text{Cl}^-$ ) was measured using the silver nitrate ( $\text{AgNO}_3$ ) titration technique. The titration method was used to estimate alkalinity, hardness, calcium ( $\text{Ca}^{2+}$ ), and magnesium ( $\text{Mg}^{2+}$ ).  $\text{SO}_4^{2-}$ ,  $\text{NO}_3^-$  and  $\text{F}^-$  were analysed using UV Spectrophotometry (Shimadzu UV-1900). Preserved samples were analysed using ICP-OES (iCAP 7400 Duo, Thermo Fisher Scientific, USA). The details of the water sampling locations are presented in Table 1 and Figure 2.

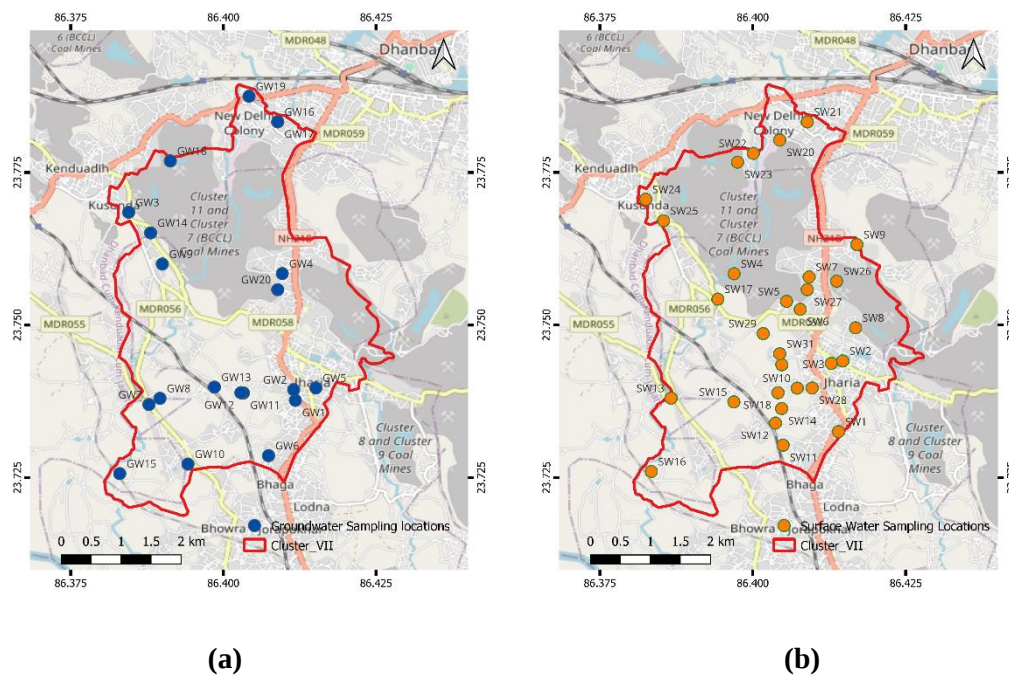
PAHs analysis was done using HPLC (Dionex UHPLC Ultimate 3000) equipped with tuneable absorbance UV detector (254 nm) and Hypersil Green PAH column (Dim. 150 mm  $\times$  3 mm, particle size 6  $\mu\text{m}$ , Thermo Scientific). For this analysis, standard mixture containing 16 PAHs (16 compounds specified in EPA method 610) was procured. All solvents (toluene, n-hexane, acetonitrile, etc.) used for sample processing and analysis, were of HPLC grade. Milli-Q water was used for analytical purposes. Silica gel (particle size 0.063–0.200 mm, 100–200 mesh ASTM) was purchased from Merck.

**Table 1. Details of the ground water sampling location.**

| S. No. | CODE | Latitude     | Longitude    |
|--------|------|--------------|--------------|
| 1      | GW1  | 23°44'15.6"N | 86°24'42.4"E |
| 2      | GW2  | 23°44'21.9"N | 86°24'41.4"E |
| 3      | GW3  | 23°46'06.6"N | 86°23'04.2"E |
| 4      | GW4  | 23°45'30.4"N | 86°24'34.7"E |
| 5      | GW5  | 23°44'22.9"N | 86°24'54.5"E |
| 6      | GW6  | 23°43'43.0"N | 86°24'26.6"E |
| 7      | GW7  | 23°44'13.1"N | 86°23'16.1"E |
| 8      | GW8  | 23°44'16.8"N | 86°23'22.6"E |
| 9      | GW9  | 23°45'36.0"N | 86°23'24.0"E |
| 10     | GW10 | 23°43'38.0"N | 86°23'39.1"E |
| 11     | GW11 | 23°44'20.0"N | 86°24'11.8"E |
| 12     | GW12 | 23°44'20.1"N | 86°24'10.3"E |
| 13     | GW13 | 23°44'23.4"N | 86°23'54.7"E |
| 14     | GW14 | 23°45'54.4"N | 86°23'17.1"E |
| 15     | GW15 | 23°43'32.4"N | 86°22'58.9"E |
| 16     | GW16 | 23°46'59.9"N | 86°24'32.0"E |
| 17     | GW17 | 23°46'59.9"N | 86°24'32.0"E |
| 18     | GW18 | 23°46'40.1"N | 86°23'31.9"E |
| 19     | GW19 | 23°47'15.0"N | 86°24'15.1"E |
| 20     | GW20 | 23°45'20.9"N | 86°24'32.0"E |

**Table 2. Details of the surface water sampling location**

| S. No. | CODE | Latitude     | Longitude    |
|--------|------|--------------|--------------|
| 1      | SW1  | 23°43'49.4"N | 86°24'53.0"E |
| 2      | SW2  | 23°44'38.8"N | 86°24'52.9"E |
| 3      | SW3  | 23°44'37.4"N | 86°24'46.1"E |
| 4      | SW4  | 23°45'30.0"N | 86°23'49.7"E |
| 5      | SW5  | 23°45'14.0"N | 86°24'19.8"E |
| 6      | SW6  | 23°45'09.3"N | 86°24'27.9"E |
| 7      | SW7  | 23°45'28.4"N | 86°24'33.1"E |
| 8      | SW8  | 23°44'58.4"N | 86°25'00.4"E |
| 9      | SW9  | 23°45'47.5"N | 86°25'01.2"E |
| 10     | SW10 | 23°44'22.8"N | 86°24'26.1"E |
| 11     | SW11 | 23°43'49.2"N | 86°24'17.8"E |
| 12     | SW12 | 23°44'02.2"N | 86°24'13.3"E |
| 13     | SW13 | 23°44'16.9"N | 86°23'11.9"E |
| 14     | SW14 | 23°44'10.8"N | 86°24'16.9"E |
| 15     | SW15 | 23°44'14.7"N | 86°23'48.8"E |
| 16     | SW16 | 23°43'32.4"N | 86°22'58.9"E |
| 17     | SW17 | 23°45'15.3"N | 86°23'39.4"E |
| 18     | SW18 | 23°44'20.1"N | 86°24'14.8"E |
| 19     | SW19 | 23°46'49.1"N | 86°24'15.8"E |
| 20     | SW20 | 23°46'49.1"N | 86°24'15.8"E |
| 21     | SW21 | 23°46'59.9"N | 86°24'32.0"E |
| 22     | SW22 | 23°46'50.2"N | 86°22'41.2"E |
| 23     | SW23 | 23°46'36.1"N | 86°23'51.0"E |
| 24     | SW24 | 23°46'14.2"N | 86°22'57.0"E |
| 25     | SW25 | 23°46'02.2"N | 86°23'07.2"E |
| 26     | SW26 | 23°45'25.9"N | 86°24'49.3"E |
| 27     | SW27 | 23°45'20.9"N | 86°24'32.0"E |
| 28     | SW28 | 23°44'22.9"N | 86°24'34.9"E |
| 29     | SW29 | 23°44'55.0"N | 86°24'06.1"E |
| 30     | SW30 | 23°44'35.9"N | 86°24'15.8"E |
| 31     | SW31 | 23°44'43.1"N | 86°24'15.8"E |



**Figure 2. Sampling locations of (a) groundwater and (b) surface water.**

### 3.2. Soil Sampling

Soil quality was assessed by collecting soil samples (0-15cm topsoil) at 31 locations in cluster vii mining area in Jharia Dhanbad. The sampling sites were divided into 4 categories: mining, agriculture, barren land soil, and roadside soil using a random sampling approach. Collected soil/sediment samples were stored in the labelled polyethylene zip-lock bags for further transportation. In the laboratory, samples were air-dried for 48 h, sieved through (< 2 mm), and finally stored for further analysis. pH and electrical conductivity of the soil were measured using a water suspension method (1:2.5 W/V) with a digital pH meter (Hanna HI 991300, USA), calibrated with standard buffer solutions. Organic carbon was determined using the rapid dichromate oxidation method.

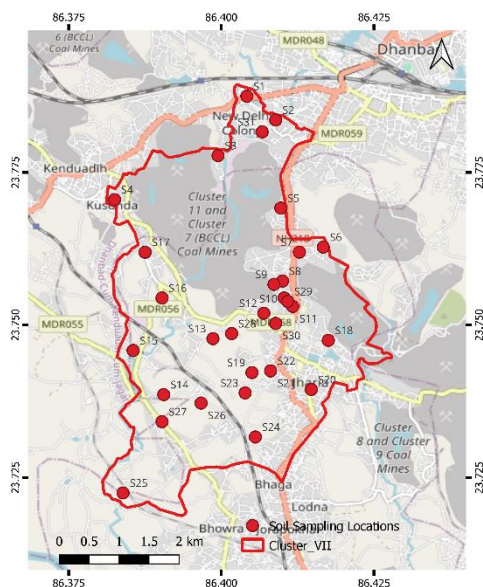
For the quantification of toxic heavy metals in soil, 0.1 g of oven-dried samples were digested with concentrated acid mixture (HCl: HNO<sub>3</sub>) (EPA Method 3051A). The final filtered solution was analysed using inductively coupled plasma-optical emission spectroscopy (ICP-OES) (iCAP 7400 Duo-Thermo Fisher Scientific, USA) for the metal like Fe, Cr, Ni, Mn, Cu, Co, Zn, and Cd.

PAHs analysis was done using HPLC (Dionex UHPLC Ultimate 3000) equipped with tuneable absorbance UV detector (254 nm) and Hypersil Green PAH column (Dim. 150 mm × 3 mm, particle size 6 µm, Thermo Scientific). For this analysis, standard mixture containing 16 PAHs (16 compounds specified in EPA method 610) was procured. All solvents (toluene, n-hexane, acetonitrile, etc.) used for sample processing and analysis, were of HPLC grade. Milli-Q water was used for analytical purposes. Silica gel (particle size 0.063–0.200 mm, 100–200 mesh ASTM) was purchased from Merck. The details of the soil sampling locations are presented in Table 3 and Figure 3.

**Table 3. Details of the soil sampling location.**

| S. No. | Code | Latitude   | Longitude  | Soil Type        |
|--------|------|------------|------------|------------------|
| 1      | S1   | 23°47'15"N | 86°24'15"E | Agriculture Soil |
| 2      | S2   | 23°47'01"N | 86°24'32"E | Barren Land Soil |
| 3      | S3   | 23°46'40"N | 86°23'58"E | Barren Land Soil |
| 4      | S4   | 23°46'14"N | 86°22'57"E | Agriculture Soil |

|    |     |            |            |                  |
|----|-----|------------|------------|------------------|
| 5  | S5  | 23°46'09"N | 86°24'35"E | Barren Land Soil |
| 6  | S6  | 23°45'46"N | 86°25'00"E | Agriculture Soil |
| 7  | S7  | 23°45'43"N | 86°24'46"E | Forest Soil      |
| 8  | S8  | 23°45'26"N | 86°24'36"E | Barren Land Soil |
| 9  | S9  | 23°45'24"N | 86°24'31"E | Barren Land Soil |
| 10 | S10 | 23°45'16"N | 86°24'37"E | Barren Land Soil |
| 11 | S11 | 23°45'11"N | 86°24'42"E | Agriculture Soil |
| 12 | S12 | 23°45'07"N | 86°24'25"E | Barren Land Soil |
| 13 | S13 | 23°44'52"N | 86°23'55"E | Agriculture Soil |
| 14 | S14 | 23°44'19"N | 86°23'26"E | Agriculture Soil |
| 15 | S15 | 23°44'45"N | 86°23'08"E | Barren Land Soil |
| 16 | S16 | 23°45'16"N | 86°23'25"E | Roadside Soil    |
| 17 | S17 | 23°45'43"N | 86°23'15"E | Barren Land Soil |
| 18 | S18 | 23°44'51"N | 86°25'03"E | Agriculture Soil |
| 19 | S19 | 23°44'32"N | 86°24'18"E | Barren Land Soil |
| 20 | S20 | 23°44'22"N | 86°24'53"E | Barren Land Soil |
| 21 | S21 | 23°44'33"N | 86°24'29"E | Agriculture Soil |
| 22 | S22 | 23°44'33"N | 86°24'29"E | Barren Land Soil |
| 23 | S23 | 23°44'20"N | 86°24'14"E | Barren Land Soil |
| 24 | S24 | 23°43'54"N | 86°24'20"E | Barren Land Soil |
| 25 | S25 | 23°43'21"N | 86°23'02"E | Agriculture Soil |
| 26 | S26 | 23°44'14"N | 86°23'48"E | Barren Land Soil |
| 27 | S27 | 23°44'03"N | 86°23'25"E | Agriculture Soil |
| 28 | S28 | 23°44'55"N | 86°24'06"E | Agriculture Soil |
| 29 | S29 | 23°45'14"N | 86°24'39"E | Agriculture Soil |
| 30 | S30 | 23°45'01"N | 86°24'32"E | Agriculture Soil |
| 31 | S31 | 23°46'54"N | 86°24'24"E | Barren Land Soil |



**Fig 3. Sampling locations of soil.**

### 3.3. Air Sampling

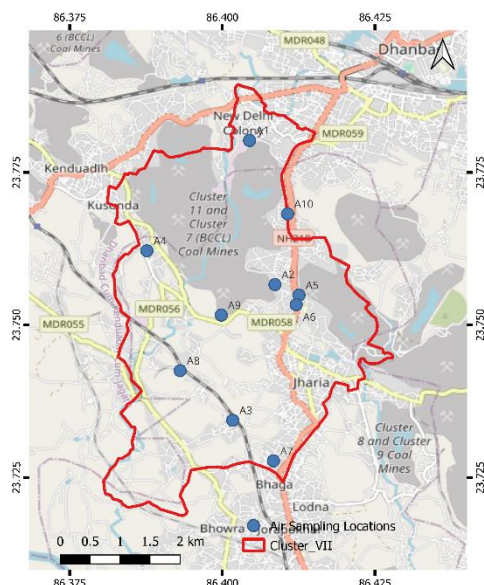
The air quality was assessed by measuring the PM<sub>10</sub> and PM<sub>2.5</sub> dust using Respirable Dust Sampler (RDS) and Fine Particulate Sampler (FPS) respectively. The gaseous samples that were analysed during the monitoring include NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub> and Benzo(a)Pyrene (BaP). Apart from these, heavy metal analysis was conducted by analysing the deposited PM<sub>10</sub> dust. The details of the sampling techniques, methods and other details of air sampling area presented in Table 4. The details of the air sampling locations are presented in Table 5 and Figure 4.

**Table 4. Sampling details of the air pollutants**

| S. No. | Pollutant Name       | Analysis Method                      | Reference                                                            | Instrument Name                              |
|--------|----------------------|--------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| 1.     | PM <sub>10</sub>     | Gravimetric                          | CPCB                                                                 | Envirotech APM 460L                          |
| 2.     | PM <sub>2.5</sub>    | Gravimetric                          | CPCB                                                                 | Envirotech APM 550MFC                        |
| 3.     | SO <sub>2</sub>      | Improved West and Gaeke Method       | CPCB, IS 5182 Part 2                                                 | Shimadzu UV-1900                             |
| 4.     | NO <sub>2</sub>      | Modified Jacob and Hochheiser method | CPCB, IS 5182 Part 6                                                 | Shimadzu UV-1900                             |
| 5.     | O <sub>3</sub>       | Chemical Method                      | CPCB, Method 411, Air Sampling and Analysis, 3 <sup>rd</sup> Edition | Shimadzu UV-1900                             |
| 6.     | Benzo(a)Pyrene (BaP) | HPLC Analysis                        | CPCB                                                                 | Dionex UHPLC Ultimate 3000                   |
| 7.     | Heavy Metal          | ICP-OES                              | CPCB                                                                 | iCAP 7400 Duo, Thermo Fisher Scientific, USA |

**Table 5. Details of the air sampling location.**

| S. No. | Location Code | Latitude     | Longitude    |
|--------|---------------|--------------|--------------|
| 1      | A1            | 23°46'48.9"N | 86°24'16.0"E |
| 2      | A2            | 23°45'23.9"N | 86°24'31.0"E |
| 3      | A3            | 23°44'03.8"N | 86°24'06.1"E |
| 4      | A4            | 23°45'43.8"N | 86°23'15.5"E |
| 5      | A5            | 23°45'17.7"N | 86°24'45.1"E |
| 6      | A6            | 23°45'12.0"N | 86°24'43.5"E |
| 7      | A7            | 23°43'39.9"N | 86°24'30.1"E |
| 8      | A8            | 23°44'33.1"N | 86°23'35.1"E |
| 9      | A9            | 23°45'05.9"N | 86°23'59.3"E |
| 10     | A10           | 23°46'05.6"N | 86°24'38.4"E |



**Figure 4. Air monitoring locations**

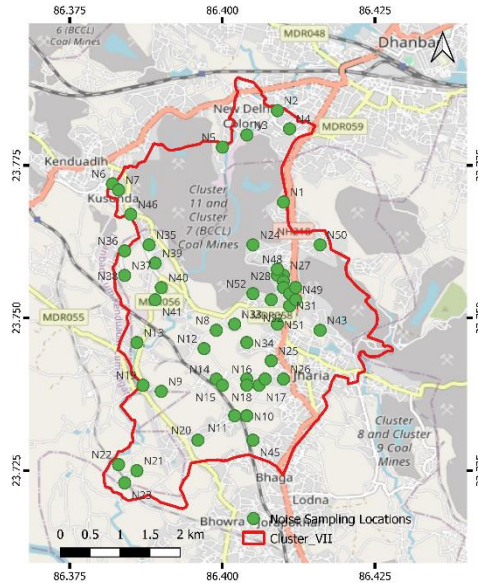
### 3.4. Noise Monitoring

The noise pollution in the study area was measure as per the CPCB's Protocol for Ambient Level Noise Monitoring. The Casella CEL-620C2 was used for the noise level monitoring at 1.5m height. The sampling for daytime was conducted in the study area. The location details of the sampling are presented in Table 6 and Figure 5.

**Table 6. Details of the ambient noise monitoring locations**

| S. No | Code | Latitude   | Longitude  |
|-------|------|------------|------------|
| 1     | N1   | 23°46'0"N  | 86°24'0"E  |
| 2     | N2   | 23°47'8"N  | 86°24'36"E |
| 3     | N3   | 23°46'2"N  | 86°24'32"E |
| 4     | N4   | 23°46'48"N | 86°24'14"E |
| 5     | N5   | 23°46'52"N | 86°24'40"E |
| 6     | N6   | 23°46'41"N | 86°22'0"E  |
| 7     | N7   | 23°46'19"N | 86°22'55"E |
| 8     | N8   | 23°44'16"N | 86°23'59"E |
| 9     | N9   | 23°44'53"N | 86°23'56"E |
| 10    | N10  | 23°44'17"N | 86°24'24"E |
| 11    | N11  | 23°44'2"N  | 86°24'14"E |
| 12    | N12  | 23°44'2"N  | 86°23'7"E  |
| 13    | N13  | 23°44'42"N | 86°23'49"E |
| 14    | N14  | 23°44'46"N | 86°23'10"E |
| 15    | N15  | 23°44'24"N | 86°24'56"E |
| 16    | N16  | 23°44'20"N | 86°24'0"E  |
| 17    | N17  | 23°44'24"N | 86°24'14"E |
| 18    | N18  | 23°44'20"N | 86°24'22"E |

|    |     |            |            |
|----|-----|------------|------------|
| 19 | N19 | 23°44'20"N | 86°23'14"E |
| 20 | N20 | 23°43'20"N | 86°23'13"E |
| 21 | N21 | 23°43'48"N | 86°23'46"E |
| 22 | N22 | 23°43'30"N | 86°22'10"E |
| 23 | N23 | 23°43'34"N | 86°23'59"E |
| 24 | N24 | 23°45'23"N | 86°24'2"E  |
| 25 | N25 | 23°44'43"N | 86°24'18"E |
| 26 | N26 | 23°44'35"N | 86°24'29"E |
| 27 | N27 | 23°45'24"N | 86°24'36"E |
| 28 | N28 | 23°45'25"N | 86°24'36"E |
| 29 | N29 | 23°45'25"N | 86°24'32"E |
| 30 | N30 | 23°45'22"N | 86°24'36"E |
| 31 | N31 | 23°45'18"N | 86°24'36"E |
| 32 | N32 | 23°45'14"N | 86°24'40"E |
| 33 | N33 | 23°44'7"N  | 86°24'40"E |
| 34 | N34 | 23°44'56"N | 86°24'7"E  |
| 35 | N35 | 23°45'46"N | 86°23'14"E |
| 36 | N36 | 23°45'43"N | 86°23'17"E |
| 37 | N37 | 23°45'40"N | 86°23'2"E  |
| 38 | N38 | 23°45'32"N | 86°23'2"E  |
| 39 | N39 | 23°45'25"N | 86°23'2"E  |
| 40 | N40 | 23°45'32"N | 86°23'20"E |
| 41 | N41 | 23°45'18"N | 86°23'24"E |
| 42 | N42 | 23°45'11"N | 86°24'20"E |
| 43 | N43 | 23°44'18"N | 86°24'43"E |
| 44 | N44 | 23°44'53"N | 86°24'58"E |
| 45 | N45 | 23°43'24"N | 86°24'25"E |
| 46 | N46 | 23°46'48"N | 86°23'18"E |
| 47 | N47 | 23°45'1"N  | 86°24'6"E  |
| 48 | N48 | 23°45'11"N | 86°24'29"E |
| 49 | N49 | 23°45'29"N | 86°24'32"E |
| 50 | N50 | 23°45'11"N | 86°24'43"E |
| 51 | N51 | 23°44'43"N | 86°24'58"E |
| 52 | N52 | 23°45'56"N | 86°24'32"E |



**Figure 5. Sampling locations for ambient noise monitoring.**

#### **4. Progress**

Work has started according to the plan with reference to work order and payment release as advance on September 13, 2025. The details of the work that have been completed till date are as follows:

- Environmental sampling completed with respect to air, water, soil and noise in the study area.
- Analysis work of the collected samples is going on.
- Health risk analysis is also going on based on obtained results.
- MoU has been signed with Avishkar Diagnostic, Dhanbad for health checkup of representative affected population.
- Waiting for the date of the health camp from BCCL to start the health checkup and medical survey.

#### **5. Work to be completed**

The remaining work that has yet to be started are:

- Medical survey and Health Checkup of the affected areas.
- Spatial data analysis from the results obtained from pollution level and health data.
- Recommendations based on findings from the field analysis.

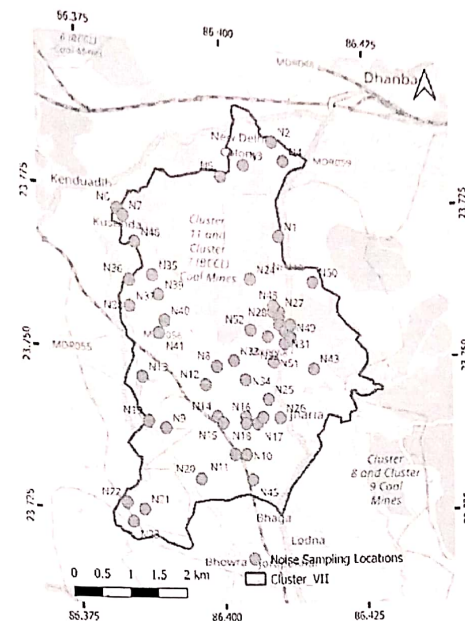


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**Professor**  
Department of Environmental Science & Engineering  
Indian Institute of Technology  
(Indian School of Mines) Dhanbad  
Jharkhand-826004, India

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Department of Environmental Science & Engineering  
Indian Institute of Technology  
(Indian School of Mines) Dhanbad  
Jharkhand-826004, India

**Professor**  
Department of Environmental Science & Engineering  
Indian Institute of Technology  
(Indian School of Mines) Dhanbad  
Jharkhand-826004, India

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Department of Environmental Science & Engineering  
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(Indian School of Mines) Dhanbad  
Jharkhand-826004, India



**Picture 1 – Covered Transportation**



**Picture 2 – Road Cleaning (Mechanical Sweeper and Manual Sweeping)**



**Picture 3 – Water Sprinkling on Transportation Road**



**Picture 4 – Coal Fire Fighting**



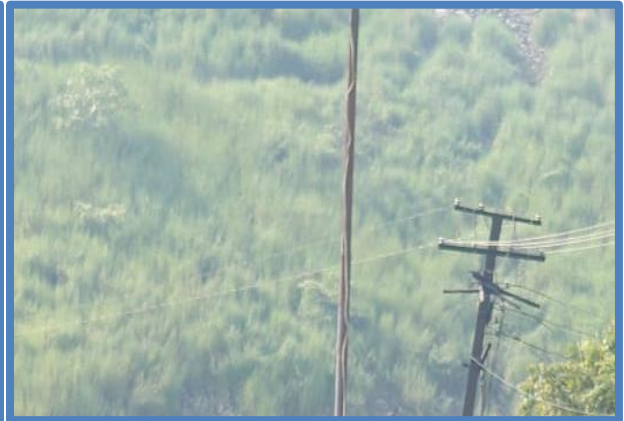
**Picture 5 – Embankment**



**Picture 6 – Spreading Seed Ball on OB Dumps**



**Picture 7 – Top Soil Stack**



**Picture 8 – Grassing on active OB Dumps**



**Picture 9 – Green Belt Development along Railway Siding**

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Vehicle search

Vehicle Number

JH10BQ3096

Owner Name

T\*\*\*\*R T\*\*\*\*S L\*\*\*\*\*S

Registering Authority

DHANBAD, Jharkhand

Vehicle Class

Goods Carrier(HGV)

Fuel Type

DIESEL

Emission Norm

BHARAT STAGE IV

Vehicle Age

7 Years & 7 months

Hypothecated

No

Vehicle Status

ACTIVE

Tap to Check the impound/seizure document status

Registration Date

30-Oct-2018

Fitness Valid UpTo

10-Dec-2026

Tax Valid UpTo

24-Jul-2026

Insurance Valid UpTo

21-Oct-2026

PUCC Valid Upto

28-Apr-2027

Permit Valid UpTo

18-Dec-2028

Create Virtual RC

View Challan

<

Vehicle search

Vehicle Number

JH10BQ2497

Owner Name

T\*\*\*\*R T\*\*\*\*S L\*\*\*\*\*S

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Create Virtual RC

View Challan

Picture 10 – PUC



**Picture 11 – Oil & Grease Trap**



**Picture 12 – Rain Water Harvesting ADIC.**



**Picture 13 – Piezometer well**



Picture 14 – Skill training to PAPs



**Picture 15 – Densification of existing Plantation**



**Picture 16 – Plantation Drive Ek Ped Maa K Naam**



**Picture 17 – Plantation Drive Vrikshropan Abhiyaan ‘Ek Ped Maa K Naam’**