

PROGRESSIVE COMPLIANCE OF EC CONDITIONS OF CLUSTER- XVII

EC order no- J-11015/373/2013-IA.II (M) Dated 01.02.2021

Up to September 2023

Sl. No.	Conditions	Compliance Status															
	Specific Conditions																
1.	i) EAC recommended for an amount of Rs 5375.00 lakhs towards Remediation plan and Natural and Community Resource Augmentation plan to be spent within a span of three years. The details are given below: <table><tr><th>Sl. No.</th><th>Head</th><th>Amount (in Rs. Lakhs)</th></tr><tr><td>1.</td><td>Remediation Plan</td><td>4425</td></tr><tr><td>2.</td><td>Natural Resource Augmentation Plan</td><td>100</td></tr><tr><td>3.</td><td>Community Resource Augmentation Plan</td><td>850</td></tr><tr><td colspan="2">Total</td><td>5375</td></tr></table>	Sl. No.	Head	Amount (in Rs. Lakhs)	1.	Remediation Plan	4425	2.	Natural Resource Augmentation Plan	100	3.	Community Resource Augmentation Plan	850	Total		5375	Mine operation is suspended from October 2021. However Progressive Action plan & Proposal for different activities is being prepared and Being implemented Annexure 1.
Sl. No.	Head	Amount (in Rs. Lakhs)															
1.	Remediation Plan	4425															
2.	Natural Resource Augmentation Plan	100															
3.	Community Resource Augmentation Plan	850															
Total		5375															
2.	ii) Total budgetary provision with respect to Remediation plan and Natural & Community Resource Augmentation plan is Rs. 5375.00 lakhs. Therefore, project proponent shall be required to submit a bank guarantee of an amount of Rs. 5375.00 lakhs towards Remediation plan and Natural and Community Resource Augmentation plan with the SPCB prior to the grant of EC.	Bank Guarantee has been submitted to WBPCB, HQ. Copy Enclosed as Annexure 2.															
3.	iii) Remediation plan shall be completed in 3 years whereas bank guarantee shall be for 5 years. The bank guarantee will be released after successful implementation of the remediation plan and Natural and Community Resource Augmentation Plan, and after the recommendation by regional office of the Ministry, Expert Appraisal Committee and approval of the Regulatory Authority.	Mine operation is suspended from October 2021. However Progressive Action plan & Proposal for different activities is being prepared and Being implemented.															
4.	iv) Fund allocation for Corporate Environment Responsibility (CER) of Rs. 1532 lakhs/- to be implemented as per the details submitted to the Ministry and to be spent in three years	Mining operation from Kalyaneshwari OCP is Suspended From October 2021. Fund has been allocated for CER and will be spent within Three years after starting of Kalyaneshwari OCP.															
5.	v) Approval/permission of the CGWA/SGWA shall be obtained before drawing ground water for the project activities. State Pollution Control Board (SPCB) concerned shall not issue Consent to Operate (CTO) till the project proponent obtains such permission.	Application for ground water withdrawal NOC to West Bengal State Ground Water Authority SWID has been already applied. Copy for the same is enclosed as Annexure 3.															
6.	vi) The Environmental Clearance will not be operational till such time the Project	Being followed.															

	Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors	
7.	vii) State Government concerned shall ensure that mining operation shall not commence till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict Compliance of judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors	Being followed.
8.	viii) Solid waste management as per SWM rules 2016 shall be complied within their colony.	Being complied in consultation with Kulti Municipal Corporation as well as Asansol Municipal Corporation.
9.	ix) Effective dust suppression system shall be adopted at the transportation site and in the other parts of the mining lease to arrest the fugitive dust emission.	The Operation from mine is suspended Since October 2021. Mobile tankers will be used for sprinkler purpose on transportation roads during the operation of mine..
10.	x) Project proponent shall take necessary other clearances/permissions under various Acts and Rules if any, from the respective authorities /department.	The Operation from mine is suspended Since October 2021. Mining will be done after taking permissions from various statutory authority like DGMS, CCO etc.
11.	xi) The mining lease holder 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 condition which is fit for growth of fodder, flora and fauna etc.	Final mine closure plan will be implemented after ceasing of mining operations. Final mine closure plan included the Grassing of mining area and other activities which will restore the Land to pre mining conditions upto maximum level.
12.	xii) Greenbelt development/Bio-diversity Conservation Plan shall be implemented to mitigate the impacts as predicted in the EIA/EMP.	Greenbelt and Bio-Diversity conservation plan is being progressively implemented.
	(A) Statutory Compliance.	
13.	i) The Project proponent shall obtain Forest Clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.	There is no Forest Land under the Lease hold of the project. So therefore no Forest Clearance is Required.
14.	ii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	No Wildlife Clearance is required from WII .
15.	iii) The project proponent shall prepare a Site-Specific Conservation Plan/ Wildlife Management Plan and approved by the chief Wildlife Warden. The recommendations of the approved Site-Specific conservation plan/Wildlife Management plan shall be	Not Required.

	implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).	
16.	iv) The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & control of Pollution) Act, 1974 from the concerned State Control of Pollution Board/Committee.	Consent to Establish (CTE) & Consent to Operate (CTO) from West Bengal Pollution Control Board (WBPCB) has been taken. Copy of The same is enclosed herewith as Annexure 4 & Annexure 5 respectively. However mine operation is suspended since October 2021.
17.	v) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.	Application for ground water withdrawal NOC to West Bengal State Ground Water Authority SWID has been already applied. Copy for the same is enclosed as Annexure 3 .
18.	vi) Solid /hazardous waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016 /Hazardous & other Waste Management Rules, 2016.	Solid/Hazardous waste generated in the mines is being handled as per Solid Waste Management Rules, 2016 /Hazardous & other Waste Management Rules, 2016.
	(B) Air quality monitoring and preservation.	
19.	i) Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone monitoring of pollutants, namely PM ₁₀ , PM _{2.5} , SO ₂ and NO _x . 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.	Ambient Air Quality monitoring is being done fortnightly by CMPDIL. Copy of Report for the Month May'2023 & September'2023 is Enclosed herewith as Annexure 7 . Proposal for CAAQMS and OAAQMS is being prepared. Monitoring of heavy metals is being done by CMPDIL once in six months.
20.	ii) The Ambient Air Quality monitoring in the core zone shall be carried out ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25 th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metal such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office to the CPCB/SPCB.	Ambient Air Quality monitoring is being done fortnightly by CMPDIL. Copy of Report for the Month May'2023 & September'2023 is Enclosed herewith as Annexure 7 .
21.	iii) 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 PM ₁₀ /PM _{2.5}) such as haul road, loading/unloading and transfer points.	Transportation of coal will be done by tarpaulin covered trucks once mine is operational. Further to arrest dust generation from Transportation road mobile tankers will be used for sprinkling on road. Proposals for installation of Fixed Sprinkler/Rain Gun at loading and Unloading sites are underway.

	Fugitive dust emission 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.	Efforts are being made to conform the Ambient Air Quality parameters with prescribe norms of SPCB/CPCB.
22.	iv) The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring 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.	Transportation of Coal will be carried out on the same route as envisaged in the Approved Mining Plan of Kalyaneshwari OCP. Transportation route doesn't pass through any village.
23.	v) 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.	It will be ensured to have valid PUC for the entire Vehicle involved in mining operation.
24.	vi) 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 conveyer gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.	Proposal for installation of Fixed Sprinkler/Rain Gun at all loading and Unloading Sites such as Coal Stockyard/Crusher/Feeder Breaker is being prepared. Drilling Machines used in Mining area fitted Dust Control System for minimizing fugitive emission from drilling process will be deployed in Mine.
25.	vii) Coal handling plant shall be operated with effective control measure w.r.t. Various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.	At present no CHP is working in the Kalyaneshwari OCP.
	(C) Water quality monitoring and preservation	
26.	i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time by the Central Pollution Control Board.	The effluent discharge from Mine is fortnightly monitored by CMPDIL. Report for the Month June'2023 is Enclosed as Annexure 8.
27.	ii) The Monitoring data shall be uploaded on the company's website and displayed at project site at a suitable location. The circular No. J-2001/1/2006-1A.11 (M) dated 25th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred on this regard for its compliance.	Monitoring Data as submitted by CMPDIL is being uploaded regularly on BCCL website of www.BCCLWEB.in .
28.	iii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by established a network of	Ground Water Level and Quality is being carried out by CMPDIL.

	existing wells and constructing new pezometers 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 MOEFCC/RO.	Proposal for installation of Peizometers are under process at BCCL HQ level.
29.	iv) 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.	Monitoring water quality of Barakar River at Upstream and Downstream points are being done by CMPDIL in every Quarter. Copy of the same is enclosed as Annexure 8 .
30.	v) 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.	Only Mine water will be used for Mining operations. Further old quarries are used as recharge pit for ground water. Proposal for Rainwater Harvesting arrangements are being prepared for Colonies as well Office buildings.
31.	vi) Catch and/ or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent runoff 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 de-silted particularly before onset of monsoon and maintained properly. Dump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the dump shall be utilized for suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at toe of the OB dumps within the mine to check run-off the 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.	Proposals for construction of Toe-Wall & Garland Drains around the OB dump & Coal Dump is being Prepared. OB dumps are suitably compacted to avoid any water logging on the top of them. Mine water is discharged into setting ponds for siltation then it is allowed to go to river through nalas.
32.	vii) Adequate groundwater recharge measure shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).	Adequate groundwater measures are being taken for augmentation of ground water such as pit recharging, Rainwater harvesting, Non-use of ground water for Mining Purpose etc. Pit water after adequate filtration is being provided to local villages.
33.	viii) Industrial waste water generated from CHP, work shop and other waste water , shall be	It is proposed to install Oil & Grease Trap at Workshop of Kalyaneshwari OCP once the workshop is

	properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there, and as amended from time to time. Adequate ETP/STP needs to be provided.	established. There is NO operation CHP as of now.
34.	ix) The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.	Only Mine water pumped out of mining pit is being used for mining Purposes. Drains are regularly cleaned for proper siltation of Mine Water.
35.	x) The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operation, 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 course 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 or any other authority as prescribed by the law.	Surface Drainage plan has been prepared by CMPDIL and will be Progressively complied.
36.	xi) The project proponent shall take all precautionary measure to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.	Will be prepared with consultation of statutory authority of State Government.
	(D) Noise and Vibration Monitoring & Prevention.	
37.	i) Adequate measure shall be taken for control of noise levels as per Noise pollution Rules, 2016 in the work environment. Worker engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with the personal protective equipment (PPE) like earplugs/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.	To control noise levels in the work environment vehicles are regularly maintained. All the workers engaged in noisy operations will be provided with the Ear plugs/muffs.
38.	ii) Controlled blasting techniques shall be	The noise and vibration during blasting operations will

	practiced in order to mitigate ground vibration, fly rocks, noise and air blast etc. as per the guidelines prescribed by DGMS.	be controlled by using Electronic Detonators.
39.	iii) The noise level survey shall be carried out as per the prescribed guideline to assess noise exposure of the work man at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/ RO on six-monthly basis.	Monitoring work is being done by CMPDIL which has a laboratory recognized under EPA rules 1986.
	(E) Mining Plan.	
40.	i) Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate to the Ministry/RO on six month basis.	It is being followed. Mining is being done as per the statute and DGMS guidelines. Six Monthly Compliance Report are being uploaded on PARIVESH portal of MoEF&CC.
41.	ii) Mining shall be carried out under the approved mining plan (including Mine Closure plan) abiding by mining laws related to coal mining and relevant circulars issued by Directorate General Mines Safety (DGMS).	It is being followed. Mining is being done as per the statute and DGMS guidelines.
42.	iii) No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.	No forest land is under mining lease of Cluster XVII.
43.	iv) Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use renewable energy.	Efforts are being made for reducing fuel consumption and maximum utilization of renewable energy.
	(F) Land Reclamation.	
44.	i) 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 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).	Work order has been given to CMPDIL for digital survey of Mining lease hold of Cluster XVII through Satellite Remote Sensing.
45.	ii) 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 substance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered useable for agricultural/forestry purposes and shall be delivered. Further action will be treated as specified in the guidelines for preparation of Mine Closure Plan issued by the Ministry of Coal dated 27 th August, 2009 and subsequent amendments,	Final mine closure plan will be implemented after ceasing of mining operations.
46.	iii) The entire excavated area, backfilling, external OB dumping (including top soil) and forestation plan shall be in conformity with the "during mining"/ "post mining" land use pattern, which is an integral part of approved Mining Plan and	Will be progressively implemented as per Approved Mining Plan.

	the EIA/EMP submitted to this Ministry. Progressive compliance status vis-à-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.	
47.	iv) Fly ash shall be used for external dump of overburden , backfilling or stowing of mine as per provisions contained in closure (i) and (ii) of subparagraph (8) of ash notification issued vide SO 2804 (E) dated 3 rd November , 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional office of MOEF&CC, CPCB AND SPCB.	There is no Fly Ash generation in Mines of Cluster XVII.
48.	v) Further, it may be ensure that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The top soil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized .The top soil shall be use for land reclamation and plantation purposes. Active OB dumps shall be stabilized with native grass species to prevent erosion and surface runoff. The other overburden dump shall be vegetated with native grass 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.	Progressive Mine closure activities are being done as per approved Mine Closure Plan of Kalyaneshwari OCP. Top Soil is being Kept separately on earmarked site. Top soil will be used for reclamation and Plantation purpose as when required. Active OB dumps are progressively stabilized with Grass carpeting of native grass seeds.
49.	vi) 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 proponents shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.	Will be progressively complied.
	(G) Green Belt.	
50.	i) The project proponents shall take all precautionary measures during mining operation for conservation and protection of endangered/ endemic flora/fauna, if any, spotted in the study area. The action plan in this regard, if any, shall be prepared and implemented in consolation with the state Forest and wildlife Determent.	No endangered/Endemic Flora/Fauna have been spotted while studying by CMPDIL for Preparation of EMI/EMP of Cluster XVII. However, if any endangered/Endemic Flora/Fauna will be spotted in future, the action plan for conservation of the same will be prepared with consultation of WII.
51.	ii) Greenbelt consisting of 3-tier plantation of	Survey is being done for covering the Mine Lease area

	width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major/ coal transportation roads.	with 3-tier plantation of width 7.5m.
	(H) Public Hearing and Human Health Issues.	
52.	i) 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.	Regular illumination survey is done by safety department of the mine in Consultation with DGMS.
53.	ii) The project proponents shall undertake occupational health survey for initial and periodical medical examination of the of the personal 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 personnel identified from workforce engaged in active mining operation shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.	Initial Medical Examination (IME) for outsourced personnel and Periodical Medical Examination (PME) of all the BCCL personnel are carried out as per the Statutes and Director General of Mines Safety (DGMS) guidelines. The PME is conducted for each personnel once in 3 years. Records of IME & PME are also being maintained.
54.	iii) Personal (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.	Dust is suppressed at source by water sprinkling. Dust masks are provided to persons working in dusty areas. Training on safety & health is imparted at regular intervals (compulsorily once in 3 years) at VTCs.
55.	iv) Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the task/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 company/ State Govt./Central Government, as applicable.	Issue raised in Public Hearing will be Progressively complied. Land Ousters are compensated as per approved R&R policy of CIL.
56.	v) The project proponent shall follow the mitigation measure provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29 th October, 2014, 'Impact 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 mine lease area'.	Being Progressively Complied in line with Ministry OM.
	(I)Corporate Environment Responsibility	
57.	i) The project proponent shall comply with the provisions contained in this Ministry's OM vide F.NO. 22-65/2017-IA.III dated 1 st May 2018, as	Detailed CER activities with Budget Provision has been laid down and included in EMP of Cluster XVII.

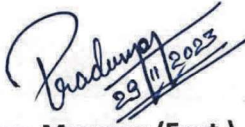
	applicable, regarding Corporate Environment Responsibility.	
58.	ii) The company shall have a well laid down environmental policy duly approved by the Board of directors. The Environment policy should prescribe for standard operating procedures' to have proper check and balances and to bring into focus any infringements /deviation violation of the Environmental /forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements of the environmental/ forest/wildlife norms/conditions and/or shareholders/stake holders.	A well-defined Corporate Environment Policy has already been laid down and approved by the Board of Directors. This is also posted on BCCL website. http://www.bcclweb.in/environment/CEP_04.11.2019.pdf
59.	iii) A separate Environmental Cell both at the project and company head quarter level, with qualified personal shall be set up under the control of senior Executive, who will directly to the head of organization.	Executives with formal training in Environment discipline have been deputed at mine/project and area level duly supported by a multidisciplinary team at HQ level. Separate multidisciplinary environmental management cell at Area Level has already been established.
60.	iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measure 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 the Ministry/Regional Office along with the Six Monthly Compliance Report.	A hierarchical system of the company to deal with environmental issues from corporate level to mine level already exists. The funds were earmarked as per EMP plan and kept in separate finance head for the expenditure to maintain environmental protection measures.
61.	v) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Internal Monitoring mechanism for compliance of EC/FC conditions has been approved by competent authority of BCCL.
	(J) Miscellaneous	
62.	i) The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguard at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language with seven days and in addition this shall also be displayed in the project proponents' website presently.	Project authorities advertised in two local newspapers widely circulated around the project, informing that the project has been accorded environmental clearance. Thus, this condition has been duly complied. Advertisement attached herewith as Annexure 6 .
63.	ii) The copies of environmental clearance shall be submitted by the project proponents to the head of the local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Govt. who in turns to display to the same for 30days from the date of receipt .	It has been complied. A copy of the environmental clearance letter was sent to concerned Panchayat/Zila Parishad, Municipal corporation or Urban local body.
64.	iii) The project proponent shall upload the status	The six monthly compliance reports along with

	of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	Monitoring data are being uploaded regularly on BCCL website www.bcclweb.in .
65.	iv) The project proponents shall monitor the criteria pollutants level namely; PM ₁₀ , SO ₂ , NO _x (ambient levels) or critical sectoral parameters, indicate for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	Being monitored by CMPDIL fortnightly.
66.	v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the Ministry of Environment, Forest and Climate Change at environment clearance portal.	Six-monthly compliance reports of EC conditions are being submitted online on PARIVESH portal of MoEF&CC.
67.	vi) The project proponent shall follow the mitigation measures provided in this ministry's OM No.Z-11013/5712014-IA.II (M) dated 29 th Oct.2014, titled 'Impact 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'.	Being Progressively Complied in line with Ministry OM.
68.	vii) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (protection) Rules, 1986, as amended subsequently and put on the website of the company.	Environmental Statement for Each Financial Year in Form –V will be submitted to WBPCB.
69.	viii) The project authority shall inform to the regional Office of the MOEFCC regarding commencement of mining operations.	Complied.
70.	ix) The project authority must strictly adhere to the stipulations made by State Pollution Control Board and the State Government.	Being followed as directed by WBPCB in their granted CTE & CTO of Kalyaneshwari OCP.
71.	x) The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Will be Progressively Complied.
72.	xi) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change.	Modification & Expansion of plant will be only done after taking the necessary approval from MoEF&CC and other statutory Body.
73.	xii) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (protection) Act, 1986.	Duly Noted.

74.	xiii) The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in time bound manner shall implement these conditions.	Will be duly complied.
75.	xiv) 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.	Full cooperation will be provided to the regional office authorities for monitoring of Environmental Clearance conditions compliances.
76.	xv) The above conditions shall 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, Hazardous and Other Wastes (Management and Trans- boundary Movement) Rules, 2016 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.	Duly Noted.


Project Officer
DOCP / KOCP
Project Officer
Damagoria Colliery
CV Area - XII : B.C.C.L


Manager
DOCP


Area Manager (Envt.)
CV Area


Addl. General Manager
CV Area


General Manager
CV Area
महाप्रबन्धक
General Manager
सी.वी. क्षेत्र / C.V. AREA
वी.सी.सी एल / B.C.C.L

Natural & Community Resource Augmentation plan (NCRAP) of Cluster XVII, CV Area.

Implementation plan (NHAI) of Cluster XVII, CV Area.							
Sl. N o.		Activity	Location	Status of Implementation	Estimate Value (including GST)	Expense till Aug'2023 (Including GST)	Time line for completion
1	Air & Noise Environment	Installation of CAAQMS	Damagoria Siding & NLOCP Office	Work Order issued and 02 nos. of CAAQMS are delivered to respective locations.	Rs. 1,00,00,000.00	Rs. 1,07,12,000.00	Oct'2023
2		Avenue plantation along NH2.	From Kalyenshwari Check Post to Rampur MV check post.(6 KM)	NOC have been granted by NHAI. Basic estimate for plantation is provided by DFO, Durgapur. Final estimate as per no. of plant is awaited from PCCF, Kolkata.	NIL	NIL	Oct'2024
3		VGS and wind barrier at Damagoria Siding & NLOCP Siding	Vertical Greenery 800 Meter length at Damagoria Siding.	Proposal initiated under Environmental head & currently lying at GM(Civil), office for the technical vetting.	Rs. 1,72,58,988.10	NIL	Oct'2024
4		Construction of DB road.	Lalbazar to Rampur MV check post- 4 KM	Originally this was proposed in view of extension of quarry, Since last three years mines is not operational due to land issue. Hence it is not required to dismantle the current existing PCC road (which is in good condition) to divert the same into new route.	Not Required	Not Required	Not Required
5		Construction of Pucca road from Ramanagar Village to Nakajuria Basti.	Ramanagar Village to Nakajuria Basti Via Damagoria Office- 2 KM	Work awarded, Work is temporarily discontinued by contractors. Follow up action being taken	Rs. 2,85,76,269.53	Rs. 96,08,030.52	June'2024
6		Construction of transportation road from Kalyanchak to Rakhapara Basti along with bridge construction on Khudia River.	From Jamdahi Basti to Rakhapara Basti Via Panchmohani Basti- 3 KM	i. Road part has been awarded to the firm Man Mohan Grover, site is handed over on 29.05.2023.	Rs. 4,33,88,231.23	-	June'2024
	ii. Bridge work has been awarded to the firm NDC-MK(JV), work is to be started after appointment of 3 rd party Monitoring Agency.			Rs. 11,12,31,625.31	-	Dec'2024	

7	Water Environment	Cleaning of Nearby Pond /Jor/Nalah.	1.Jhilia Nalah	C-9 Drain has been cleaned The proposal for cleaning of Borira pond, Lal Bazar Pond, Jhilia Nala and Chungari Basti Nalah has already been prepared and will be put up before the competent authority for getting administrative approval. Haji Nagar pond is currently dried and encroached one as per the site visits. Locals has opposed for the cleaning of Baltoria Pond .	Rs. 93,241.98	Rs. 93,241.98	completed
			2.Haji Nagar Pond				
			3.Lal Bazar Pond				
			4.Borira Pond				
			5.Baltoria Pond				
			6.C-9 Nalah				
			7.Chungari Basti Nalah				Sep'2024
8	Energy Conservation	Distribution of solar powered submersible Pump to nearby Villages (05 Nos.)	To be made available to Kulti Block municipality for distribution to nearby village.	A proposal with ref No. BCCL/CV/XII/E&M/2023-24/20 dated 22.06.2023 has been moved for the approval from competent authority.	Rs. 1,47,84,220.00	NIL	Sep'2024
		Solar power generation	GM Office, CV Area Begunia	Solar panels had been installed at the terrace of Area office, CV Area to generate solar power and feed it to the grid. (copy of work order is attached)	Rs. 12,60,000.00	Rs. 12,60,000.00	Completed
9	Other misc. works	Rain water Harvesting in BCCL Colonies & Nearby Villages	1.Dahibari Colony BCCL	Proposal initiated for approval from competent authority vide Noting Sheet no. 889 dated 14.07.2023	Rs. 17,76,696.85	Nil	Sep'2024
			2.Lalbzar Village	Project not feasible technically. In this regard a Feasibility report has also been sent to GM(CSR) for his appraisal.	Not Required	Not Required	Not Required
			3.Sabanpur Village				
		Stone Pitching on banks of Khudia River along with construction of Ghat.	1.Khudia River between Pachet road Bridge & Kalyanchak road Bridge- 1 KM	Site is not clear and there is lot of vegetation and trees which require cutting after getting NOC from the concerned state authorities. Proposal is currently under reconnaissance stage.	-	-	Oct'2025

Construction of School in nearby village.	Primary school at Laikdih, Chirkunda	Proposal initiated dated 14.07.2023 and discussion with state authority for site selection is going on.	Rs. 49,41,365.34	Nil	Sept'2024
Construction of stadium and temple for nearby village people	1. Stadium at Beguina Football Ground	Construction of both Stadium and temple are awarded & Completed by the respective firm. Payment has also been made.	Rs. 27,17,569.79	Rs. 28,24,800.00	Completed
	2. Temple at Dahibari Village				

Note: Total Expense for NCRAP till Aug'2023 is Rs. 2,44,98,072.50 out of Rs. 23,60,28,208.13

Other work under Corporate Environment Responsibility

Sl. No.	Name of Work	Status of Work	Estimated Amount	Expense till Aug'2023	Timeline of Completion
1.	Construction of Community Toilet at Upper Dhowrah in Vistoria West Colliery of CV Area	The Work has been Completed in the FY of 2022-23.	Rs. 11,90,753.64	Rs. 11,90,753.64	Completed
2.	Arrangement of water Supply to palasia village for Domestic use	LOA issued on 15.03.2023, currently work in progress	Rs. 12,56,909.10	Rs. 12,56,909.10	Completed
3.	Arrangement of Water Supply to Jograd Basti	LOA issued on 15.03.2023, currently work in progress	Rs. 7,57,802.28	Rs. 7,57,802.28	Completed
4.	Annual health Checkups	Annual health Checkup for FY 2021-22	RS. 1,74,150.00	Rs. 1,74,150.00	Completed
		Annual Health Checkup for FY 2022-23	Rs. 4,70,911.00	Rs. 4,70,911.00	Completed

Note: Total Expense for CER till Aug'2023 is Rs. 38,50,526.02 out of Rs. 38,50,526.02


Area Manager (E&M)
CV Area


AMO
CV Area


Area Manager (Civil)
CV Area


Area Manager (Env't.)
CV Area

भारत कोकिंग कोल लिमिटेड

एक निराल कम्पनी
(कोल इंडिया लिमिटेड का एक अंग)

महाप्रबंधक का कार्यालय,
चॉंच विक्टोरिया क्षेत्र

पि ओ.- बराकर, जिला - पं. बर्धमान (पं. बंगाल)
पिन - 713324. दूरभाष - 0341-2520061/62.
पंजीकृत कार्यालय: कोयला भवन, कोयला नगर,
धनबाद- 826005. (झारखण्ड)
CIN: U10101JH1972GOI000918

**Bharat Coking Coal Limited****A MINI RATNA Co.**

(A Subsidiary of Coal India Ltd)

Office of the General Manager,
Chanch Victoria Area

P.O.-BARAKAR, DIST-PAS.BARDHAMAN (W.B.)

PIN- 713324, Tel. 0341-2520061/62

Regd. Off: Koyla Bhawan, Koyla Nagar, Dhanbad-826005.

CIN: U10101JH1972GOI000918.

Ref. No.: BCCL/CV/GM/ENV/2020/ 1405

Date: 05.11.2020

To,
The Member Secretary,
West Bengal Pollution Control Board (WBPCB),
Paribesh Bhavan, 10A, Block-L.A.,
Sector III, Salt Lake City, Calcutta - 700 106

KIND ATTENTION - EIM CELL WBPCB.

Subj:- Submission of Bank Guarantee of Rs. 5375.0 Lakhs for the work to be under taken towards Remediation Plan and Natural & Community resources Augmentation Plan (NCRAP) as advised by MoEF&CC, New Delhi in 35th EAC (Violation) meeting for obtaining Environment Clearance of Cluster XVII of CV Area, BCCL.

Dear Sir,

As per the minutes of 35th EAC (Violation) meeting held on 06th -07th August 2020 by MoEF&CC, New Delhi through video conference recommended the proposal for grant of Environment Clearance (EC) of Cluster XVII BCCL subject to the compliance of specific condition in addition to all standard condition. In point no. ii, the Project Proponent (PP) is required to submit a Bank Guarantee (BG) of an amount of Rs. 5375.00 Lakhs towards Remediation Plan and Natural & Community resources Augmentation Plan (NCRAP) with the SPCB prior to the grant of EC. The works relating to the budget of Rs. 5375.00 Lakhs is to be spent in the span of three years from the date of grant of EC. The detail is enclosed as minutes of 35th EAC (Violation) meeting in point no. 35.4.5.

Therefore we are submitting the Bank Guarantee no. 0006620BG0000024 Dt.03.11.2020 issued from SBI, Dhanbad of Rs. 5375.00 Lakhs for aforesaid mention purpose. The validity period of the BG is of 05 years from the date of issuance as recommended by MoEF&CC, New Delhi.

It the view of above it is requested for your kind acknowledgement and assist in issuance of EC for Cluster XVII, CV Area BCCL form MoEF&CC, Govt. of India.

Encl:-

- Minutes of 35th EAC (Violation) meeting held on 06th -07th August 2020 by MoEF&CC, New Delhi. (Annexure- A)
- The Bank Guarantee no. 0006620BG0000024 made from State bank of India, Dhanbad for Rs. 5370.00 Lakhs dated 03.11.2020 to Member Secretary, West Bengal Pollution Control Board (WBPCB), Kolkata. (Annexure -B)
- Notification of MoEF&CC, New Delhi regarding deposit of Bank Guarantee to State Pollution Control Board. (Annexure - C)

Yours Sincerely

5/11/2020

General Manager
Cluster XVII, CV Area

BCCL

General Manager
सी.वी. क्षेत्र / C.V AREA
बी.सी.सी एल / B.C.C.L

- CC:- 1. HoD (Env), BCCL HQ.
2. Nodal Officer (Env), CV Area.
3. Office Copy.





To,
The Member Secretary,
West Bengal Pollution Control Board (WBPCB),
Paribesh Bhavan, 10A, Block-L.A.,
Sector III, Salt Lake City, Calcutta - 700 106

PERFORMANCE OF BANK GUARANTEE

Bank Guarantee No. 0006620BG0000024

Amount---- Rs. 53,75,00,000.00

Date of issue:- 03.11.2020

Date of Expiry:- 02.11.2025

Date of Claim:-02.11.2026

1. We, SBI, DHANBAD Branch (term include its successor or assignee) with its head office in LHO, Patna hereby agree unequivocally to pay within 48 hours in demand in writing from Member Secretary , West Bengal Pollution Control Board, Kolkata (hereinafter referred as the board) which term includes his successor or assignee or any officer authorized by this Board on his behalf any amount up to and not exceeding **Rs. 53,75,00,000.00 (Rupees Fifty Three Crore Seventy Five Lakh only)** to board on behalf of Cluster XVII ,CV Area, Bharat Coking Coal Limited (BCCL), PO-Barakar, Paschim Bardhman, West Bengal- 713324 (name and address of Industry)(hereinafter called the industry, which term shall include its successor or assignee).
2. Whereas the industry namely Cluster XVII, CV Area, BCCL has been recommended for grant of Environment Clearance (EC) by EAC(Violation) committee of MoEF&CC, New Delhi subject to the compliance of specific condition in addition to all standard condition applicable to the industry. EAC (Violation) committee recommended for an amount of Rs. 53,75,00,000.00 (Rupees Fifty Three Crore Seventy Five Lakh only) towards Remediation Plan and Natural & Community resources Augmentation Plan (NCRAP) to be spent within a span of 03 years from the date of grant of EC. In case of failure of comply the same during stipulated period, the Bank Guarantee can be forfeited by West Bengal Pollution Control Board, Kolkata partly/fully. We, SBI, DHANBAD Branch (the guarantor bank) do hereby undertake to pay to the Board an amount of not exceeding **Rs. 53,75,00,000.00 (Rupees Fifty Three Crore Seventy Five Lakh only)** as and when demanded by the board within 02.11.2026.
3. We, SBI, DHANBAD Branch (guarantor Bank) hereby undertake to pay this guarantee without any demur merely on demand from the Board. However, our liability under the agreement shall be restricted to an amount not exceeding **Rs. 53,75,00,000.00 (Rupees Fifty Three Crore Seventy Five Lakh only)**.
4. We, SBI, DHANBAD Branch (name of the Bank) lastly undertakes not to revoke this guarantee during the currency except with the prior consent of the Board in writing.
5. notwithstanding anything contained herein-
 - A) Our liability under this guarantee shall not exceed **Rs. 53,75,00,000.00 (Rupees Fifty Three Crore Seventy Five Lakh only)**.



- b) This bank guarantee shall be valid up to date 02.11.2025.
c) We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if you serve upon us a written claim or demand on or before Dt. 02.11.2026.

On this 03rd Day of November in the year of 2020.
Place:- Dhanbad, Jharkhand.





GUARANTEE REGISTER

GUARANTEE NUMBER	: 0006620BG0000024
DATE OF ISSUE	: 03-11-2020
APPLICANT NAME	: Bharat Coking Coal Ltd.
APPLICANT ADDRESS	: Koyala Bhawan
	Dhanbad
APPLICANT ACCOUNT NUMBER	: 35160317947
GUARANTEE AMOUNT	: INR 537,500,000.00
TYPE OF GUARANTEE	: Performance Guarantee
NAME OF BENEFICIARY	: West Bengal Pollution Control Board (WBPCB), Kolkata
BENEFICIARY ADDRESS	: Bldg. No. - 10A, Block - LA, Sector - III, Salt Lake City Kolkata - 700098, West Bengal, INDIA.
MARGIN RECOVERED	: 0
COMMISSION RECOVERED	: INR 4,031,250.00
POSTAGE RECOVERED	: INR 295.00
STAMP A/C	: INR 100.00
GOODS & SERVICES TAX DETAILS	
GSTIN NUMBER	: 20AAACB7934MFZB
GOODS & SERVICES TAX (GST)	: INR 725,625.00
EXPIRY DATE	: 02-11-2025
CLAIM DATE	: 02-11-2026
PERIOD OF GUARANTEE	: 60
EXTENSION DETAILS	
ORIGINAL GTEE RECEIVED DATE	: 03-11-2020

Nov 3, 2020 6:35 PM





STATE BANK OF INDIA
DHANBAD MAIN BRANCH
BANK MORE
DHANBAD, BIHAR, INDIA

Tel No. :
Fax No. : 0326-2303119
SWIFT No. : SBININBB388
PIN Code : 826001

To,
West Bengal Pollution Control Board (WBPCB), Kolkata
Bldg. No. - 10A, Block - LA, Sector - III, Salt Lake City
Kolkata - 700098, West Bengal, INDIA.

03-11-2020

DEAR SIR(S),

Guarantee Number : 0006620BG0000024
Date of Issue : 03-11-2020
Guarantee Amount : INR 537,500,000.00
Date of Expiry : 02-11-2025
Date of Claim : 02-11-2026
Applicant Name : Bharat Coking Coal Ltd.

We confirm having Issued / Extended the captioned Bank Guarantee in your favour on behalf of our above named Constituent and the same signed by the officers of the Bank.

YOURS FAITHFULLY,

AUTHORISED SIGNATORY



*AUTHORISED SIGNATORY

(*2nd signatory required if BG is for Rs. 50000/- and above)



The beneficiaries are advised in their own interest to verify the genuineness of the Guarantee with the BG issuing Branch and also verify that Bank Guarantee for Rs.50000/- (Rupees Fifty Thousand Only) & above is signed by two authorized officials of the Bank.

PLEASE CONTACT BRANCH FOR eTradeSBI FACILITY-INTERNET ACCESS TO TRADE FINANCE

Nov 3, 2020 5:07 PM

Form - I
(See Rule 8)

Issued to Shri / Smt Kalyaneshwari OCP (Pump 1), Cluster XVII BCCL

Book No

Application Form SI No

0

APPLICATION FOR OBTAINING PERMIT FOR SINKING OF NEW WELL
(of West Bengal Ground Water Resources Management Council and Regulation Act 2005)

1 . Particulars about the applicant (user) :

(a) Name of the applicant Soumen Chatterjee
(Please attach proof of ownership of land)

(b) Date of Birth 16-01-1963

(c) Sex MALE

(d) Social Status GENERAL

(e) Nationality INDIAN

(e) Son / Daughter of Govinda Chatterjee

(f) Address of the applicant Office of the General Manager, CV Area , BCCL, Barakar,

(e) Category of farmer Others
(In case of application of permit for sinking irrigation well)

2 . Particulars of location of the proposed well :

(a) District Purba Bardhaman (b) Block/Municipality/corporation Kulti (M)

(c) Mouza Barira, Chaptoria, (d) JL No 9,6,4,5

(e) Plot No 1-1348, 1-225, 1-540, 1-205 (e) Borough No : Not Applicable

(e) Holding No

3 . Particulars of the proposed well :

(a) Type of the well Dug well

(b) Approx. depth of the well in mtr 270

(c) In case of Tube Well :

(i) Approx. Length (mtr.) & Diameter (mm) of the housing pipe (if any) 0 m X 0 mm

(ii) Approx. Length (mtr.) & Diameter (mm) of the Strainer 0 m X 0 mm

(iii) Material of the Housing Pipe & Blank Pipe

(iv) Material of the Strainer

(d) In case of Dug Well :

(i) Daimeter of the Dug Well 1700

(ii) Type of Structure of the Dug Well Kuchcha

4 . Distance of the proposed well from Nearby Wells (in Meters):

(a) From the nearest Shallow tube well fitter with centrifugal pump 0

(b) From the nearest Shallow tube well fitter with submersible pump 0

(c) From the nearest deep tube well 0

(d) From the nearest drinking water tube well 0

5 . Particulars of proposed pumping device :

- (a) Type of the pump to be used Centrifugal
- (b) Pump capacity (m³/hr.) 544 (Five Hundred and Forty Four)
- (c) H.P : 800 (Eight Hundred)
- (d) Operational Device : Electric Motor

6 . Particulars of usefulness of proposed well :

- (a)Purpose of proposed well : Industrial
- (b) Proposed command area in ha (Irrigation well) : 0
- (c) Owner’s share of land within the command area as above : 0
- (d) Area Proposed to be irrigated in different crop season under :
 - Kharif(in ha) : 0 Rabi(in ha) : 0
 - Boro(in ha) : 0 Perennial(in ha) : 0
- (e) Proposed annual running hours (Irrigation wall) : 0
- (f) Whether the proposed command area or any portion of it falls within the command area of any other Minor Irrigation scheme. If so, give details :
- (g) Proposed number of users of the well if used for domestic purpose : 0
- (h) Proposed daily running hours in case of domestic/other category of wells : 12
- (i) Whether the area receives supply through piped water supply scheme(s) of any Govt. organization/Local bodies : NO
- (j) If 'YES' Give Details :

7 . Particulars of Earlier Applications, If Any :

- (a) Whether the applicant applied for permit of sinking of well on any previous occasion : No
- (b) If 'Yes',furnish the references to the previous application and indicate about grant and refusal of permit. (Attach copies)

8 . Details of payment of application fee :

- (a) Amount of Application Fee paid - Rs : 2500.00
- (b) Voucher No. & Date : WB1905181241556660_1 & 5/18/2019 12:42:11 PM
- (c) Name of Treasury/Sub-treasury/PSU Bank where application fee has been paid : NA
- (d) Name of the bank branch (if payment has been made in a bank) : NA

9. Any other information which the applicant would like to

The permission is required for extraction of ground water from Open Cast Coal Mine of BCCL.

Place : 17-05-2019

Date : Barakar

Signature of the Applicant (User)

DECLARETION BY THE APPLICANT(USER)

I do hereby declare that the particulars furnished hereinabove are correct and true. I understand that in case any of the information and particulars is found to be incorrect at any stage of scrutiny and investigation or afterwards, my application / permit is liable to be rejected / cancelled .

Place : Barakar

Date : 17-05-2019

Signature of the Applicant (User)

WEST BENGAL POLLUTION CONTROL BOARD

Paribesh Bhawan
10A, Block - LA, Sector III, Bidhannagar.
Kolkata - 700 106

Memo No. 315-2N-24/2020(E)Dated 10/03/2021

From :
Member Secretary,
West Bengal Pollution Control Board

To: M/s. Bharat Coking Coal Limited,
Office of the Project Officer, Kalyaneshwari OCP, Damagoria Colliery,
Ramnagar Road, PO-Kalyaneshwari, PS-Kulti, Dist.-Paschim Bardhaman,
PIN - 713369, W.B.

Sub: Consent to Establish (NOC) from Environmental Point of ViewRef: Your letter No. BCCL/CV/ENVT/2021/14 received 18.02.2021
Dated

WEST BENGAL

Dear Sirs,

In response to the application for Consent to Establish (NOC) for proposed Unit of M/s. Bharat Coking Coal Limited (Cluster XVII incl. Kalyaneshwari Open Cast Coal Mining Project) for manufacturing/storage/installation of mining of Coal (Capacity 4 MTPA, Mining Lease Area 1397.18 Ha).

at P.O.- Kalyaneshwari, P.S.-Kulti, Dist.- Paschim Bardhaman, PIN-713369, W.B.

this is to inform you that this Board hereby grants the Consent to Establish (NOC) from the environmental point of the above subject to the following conditions and special conditions annexed.

1. The quality of sewage and trade effluent to be discharged from your factory shall satisfy the permissible limits as prescribed in IS : 2490 (Pt. I) of 1974, and/or its subsequent amendment and Environment (Protection) Rules 1986.
2. Suitable measures to treat your effluent shall be adopted by you in order to reduce the pollutional load so that the quality of the effluent satisfies the standards mentioned above.
3. You shall have to apply to this Board for its consent to operate and discharge of sewage and trade effluent according to the provisions of the water (Prevention & Control of Pollution) Act, 1974. No sewage or trade effluent shall be discharged by you without prior consent of this Board.
4. All emission from your factory shall conform to the standards as laid down by this Board.
5. No emission shall be permitted without prior approval of this Board and you shall apply to this Board for its consent to operate and atmospheric emission as per provision of the Air (Prevention & Control Pollution) act, 1981.
6. No industrial plant, furnace, flues, chimneys, control equipment, etc. shall be constructed/reconstructed/erected/re-erected without prior approval of this Board.

7. You shall comply with
- (i) Water (Prevention and Control of Pollution) Cess Act, 1977, if applicable.
 - (ii) Water (Prevention and Control of Pollution) Cess Act, 1978, if applicable.
 - (iii) Environment (Protection) Act, 1986
 - (iv) Environment (Protection) Rules, 1986
 - (v) Hazardous Wastes (Management and Handling) Rules, 1989 and Amended Rules, 2000
 - (vi) Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and Amended Rules, 2000
 - (vii) Manufacture, Use, Import and Storage and Hazardous Micro-Organisms, Genetically Engineered Organisms or Cell Rules, 1989
 - (viii) The Public Liability Insurance Act, 1991 and Amended Act, 1992
 - (ix) The Public Liability Insurance Rules, 1991 and Amended Rules 1993
 - (x) Biomedical Wastes (Management & Handling) Rules, 1998 and Amended Rules 2000 if applicable.
 - (xi) Recycled Plastics Manufacture and Usage Rules 1999, if applicable and
 - (xii) Ozone Depleting Substances (Regulation & Control) Rules, 2000, if applicable
8. You will have to abide by any other stipulations as may be prescribed by any authority/local bodies/Government Departments etc.

SPECIAL CONDITION:

Refer to Annexure.

N.B.: Capital Investment is Rs.1503.67 crores only.

Any violation of the aforesaid conditions shall entail cancellation of this Consent to Establish (NOC)

Yours faithfully,

DDmk
10/03/2021
Member Secretary, / SR. ENV. ENGR.
West Bengal Pollution Control Board (EIM. CELL)
Sr. Environmental Engineer

Dated: B. Pollution Control Board
Dept. of Environment, GoWB

Memo No. 315 - 2N-24/2020(E) *dd. 10.03.2021*

Copy forwarded for information to :

1. Chief Inspector of Factories, Government of West Bengal, N. S. Building, Kolkata-700 001
2. Director of Industries/Director of Cottage & Small Scale Industries, Government of West Bengal, N. S. Building. Kolkata-700 001
3. Guard file, West Bengal Pollution Control Board.
4. Environmental Engineer, I/II/Alipur R.O./Howrah R.O./Hooghly R.O./B.R.O./D.R.O./Haldia R.O./S.R.O./Asansol/ Sub-R.O./WBPC Board

Himalaya Bhawan
Delhi Road, Dankuni
Dist. Hooghly

Vill, Panpur
Kalyani Expressway
P.O. Narayanpur
Dist. 24 Pgs. (N)

Sahid Khudiram Sarani
City Centre, Durgapur-16
Dist. Burdwan
10, Camac Street
2nd Floor
Kolkata-700 017

Paribesh Bhawan
10A, LA-Block, Sector-III
Salt Lake City,
Kolkata - 700 098

Block-05 at 40
Flats Complex
Adjacent to Priyambada
Housing Estate
P.O. : Khanjanchak,
P.S. Durgachak
Haldia-721602
Dist. : Purba Medinipur

Paribahan Nagar
Matigara, Siliguri
Dist.-Darjeeling

Satya Chowdhury
Indoor Stadium
Balurchar Bandh Road
Malda-732101

Asansol Sub-Regional Office
ADDA Commercial Market (2nd Floor)
Opposite Asansol Fire Station
G.T. Road, Asansol-713 301

DDmk
10/03/2021
Member Secretary, / SR. ENV. ENGR.
West Bengal Pollution Control Board

Special Conditions issued to **M/s. Bharat Coking Coal Limited, Cluster XVII including Kalyaneshwari Open Cast Coal Mining Project (Capacity 4 MTPA, Mining Lease Area 1397.18 Ha), P.O. – Kalyaneshwari, P.S. – Kulti, Dist. – Paschim Bardhaman, West Bengal, PIN – 713369.**

A) Emission :-

- 1) Emission from the following operations - drilling, crushing, screening machinery, conveyors, loading and unloading areas, blasting, hauling, tips, stockpiles, dumps etc should meet the standards as prescribed by the Central Pollution Control Board (CPCB).
- 2) Transportation of materials to and from the project area must be done under covered condition to reduce emission of particulate matter.

B) Effluent:-

- 1) Process – Workshop & CHP effluent to be treated in ETP for reuse in the mine and the surplus to be discharged outside the lease area meeting the effluent discharge standards of CPCB.
- 2) Domestic – to be treated in STP.
- 3) Proper storm water management and flood protection measures are to be taken.

C) Solid Waste:-

- 1) Over Burden/Rock waste to be dumped at external earmarked dumpsites & to be backfilled in excavated voids subsequently.
- 2) Sand stones should be disposed of for land filling.
- 3) The management, handling, storage & transport of the solid wastes should be done as per the provisions of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and its subsequent amendments.
- 4) The hazardous explosives should be stored as per the provisions of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

D) General:-

- 1) Noise Control – Ambient noise level not to exceed the permissible limit as stipulated by CPCB. Every care to be taken for noise control. Ear-muffs are to be provided in noise generation areas.
- 2) No additional machineries / equipments can be installed without prior permission from this Board. No change in raw materials, products and production capacity should be made without prior permission from this Board.
- 3) The unit should not start operation of the project without obtaining 'Consent-to-Operate' from this Board after complete installation of pollution control devices.
- 4) All internal roads should be paved.
- 5) Proper maintenance of the Heavy Earth Moving Machineries is to be undertaken.
- 6) Mine OB dumpsite height is to be restricted to the appropriate height.
- 7) Drills should be wet operated only.
- 8) The Coal Handling Plant to be equipped with in-built or separate dust collection system.

Special Conditions issued to **M/s. Bharat Coking Coal Limited, Cluster XVII including Kalyaneshwari Open Cast Coal Mining Project (Capacity 4 MTPA, Mining Lease Area 1397.18 Ha), P.O. – Kalyaneshwari, P.S. – Kulti, Dist. – Paschim Bardhaman, West Bengal, PIN – 713369.**

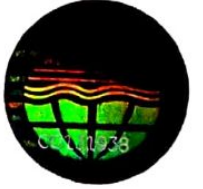
- 9) Dust Suppression shall be achieved during operation using atomizing nozzles to be located on all strategic locations of fugitive dust generation.
- 10) High efficiency bag filters / water sprinkling systems should be provided to resist the fugitive emissions from conveyor system, haulage roads, transfer points etc.
- 11) Garland drains are to be provided with settling tanks.
- 12) Industrial and firefighting water demand to be met from the recycling of mine discharged water.
- 13) Tree plantation schemes are to be taken up on an intensive basis for attenuation of environmental hazards.
- 14) The Haul roads should have a thick vegetation barrier on either side of the road.
- 15) Controlled blasting with use of delay detonators is permitted. Every care to be taken so as to minimize noise and vibration problems.
- 16) Proper measures for reclamation of land area to be taken so as to bring the land to some productive use.
- 17) Mine closure plan is to be properly implemented.
- 18) All precautionary measures during the investigation and survey for the protection and conservation of the environment, ecology and flora & fauna of the area are to be taken.
- 19) Forestation programmes shall be undertaken in consultation with local DFO / Agriculture Department as per the Environmental Clearance by MoEF&CC, GoI.
- 20) No additional machinery/equipments can be installed without prior permission from this Board.
- 21) The unit should strictly abide by the conditions specified in the Environmental Clearance conferred by the Ministry of Environment, Forest & Climate Change, Govt. of India, vide No. J-11015/373/2013-IA.II(M) dated 01.02.2021.
- 22) No mining operation is allowed on any plot of land without having legal possession of the said plot.
- 23) All other statutory clearance to be obtained from the competent authorities, as applicable.
- 24) This NOC is **valid up to 29.02.2028** for the proposed **Cluster XVII including Kalyaneshwari Open Cast Coal Mining Project (Capacity 4 MTPA, Mining Lease Area 1397.18 Ha) of M/s. Bharat Coking Coal Limited, P.O. – Kalyaneshwari, P.S. – Kulti, Dist. – Paschim Bardhaman, West Bengal, PIN – 713369.**


Sr. Env. Engineer (EIM Cell)
West Bengal Pollution Control Board

WEST BENGAL POLLUTION CONTROL BOARD

'Paribesh Bhawan'

Bldg. No. - 10A, Block - LA, Sector-III
Salt Lake City, Kolkata-700 098



Consent Letter Number : C0131938

Memo Number : 81-WPBA/Red(Bm)/Cont(927)/2021

Date : 27/04/2021

Consent to Operate

under

Section 25 & 26 of the Water (Prevention and Control of Pollution) Act, 1974 and
Section 21 of the Air (Prevention and Control of Pollution) Act, 1981

The West Bengal Pollution Control Board (hereinafter referred to as State Board) under the provisions of Section 25 & 26 of the Water (Prevention and Control of Pollution) Act, 1974, as amended and Section 21 of the Air (Prevention and Control of Pollution) Act, 1981, as amended and Rules and Orders made thereunder, hereby grants its consent to :

M/s. Bharat Coking Coal Limited, Kalyaneshwari O.C.P. Cluster XVII,
CV Area BCL.

(Address of Regd. office/Head/Office/City Office)

(hereinafter referred to as Applicant) for its unit located at P.O. - Kalyaneshwari, P.S. - Kult, Dist - Paschim Bardhaman, Pin - 713369

(Detailed address of the manufacturing unit)

for a period from Date of issue to 28/02/2026

to operate the industrial unit and to discharge liquid effluent and to emit gaseous effluent from the premises/land of the industrial unit, in accordance with the conditions as mentioned in the Annexure to this consent letter provided on any day at any instance the quantity and quality of liquid discharge and gaseous emission shall not exceed the permissible limit as specified in the Table I & II of this consent letter and in the Environmental (Protection) Act, 1986.

Breach of the conditions and / or failure to comply with the directions as set out in the Annexure shall render the applicant liable for prosecution under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981.

The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alter the conditions of this consent letter giving one month's notice to the applicant.



For and on behalf of the State Board

(Member Secretary/Chief Engr./Sr. Env. Engr. / Env. Engr. / Asst. Env. Engr.)

Environmental Engineer
W. B. Pollution Control Board
Operation & Execution Cell

ANNEXURE

Consent to M/s. Bharat Coking Coal Limited, Kalyaneshwari DCP, Cluster XVII,
CV Area BCCL
 for its unit at P.O. - Kalyaneshwari, P.S. - Kult, Dist - Paschim Bardhaman,
Pin - 713369

Conditions :

01. This Consent is valid for the manufacture ^{mining} of :-

Sl. No.	Name of major products and by-products	Quantity manufactured per month ^{Year}
01	Coal	40,00,000 MT/Year
02	(Mining Lease Area - 1397.18 Ha)	
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		

02. The Applicant shall remain responsible for quantity and quality of liquid effluent and air emissions.

03. Daily discharge of industrial liquid effluent shall not exceed 6.0 KL.

04. Daily discharge of domestic liquid effluent shall not exceed 6.5 KL.

05. Daily discharge of mixed (industrial & domestic) liquid effluent shall not exceed — KL.

06. The Applicant shall discharge liquid effluent to treated and reused at site and stored in pond (place of discharge)
 through 01 nos. outlets / outfalls.

07. To bring into any altered or new outlet/outfall or to change the place of discharge, the Applicant shall have to inform the Board and obtain prior permission of the Board in this effect.

08. The Applicant shall provide comprehensive facility for treatment of industrial liquid waste and domestic liquid waste (sewage, sullage and liquid effluent generated from canteen), and operate and maintain the same continuously so that the quality of final effluent conforms to the Standard as given in Table-I in page 03.

(Member Secretary / Chief Engr. / Sr. Env. Engr. / Env. Engr. / Asst. Env. Engr.)

Harshi
27/04/21
 Environmental Engineer
 W. B. Pollution Control Board
 Operation & Execution Cell

Consent to ⁽³⁾ M/s. Bharat Coking Coal Limited, Kalyaneshwari OCP, Cluster xvii,
for its unit at P.O. - Kalyaneshwari, P.S. - Kult, Dist - Paschim Bardhaman, ^{CV Area BCCL}
Pin - 713369.

Outlet No.	Nature of effluent	Parameters	Standard	Frequency of effluent sampling
01	Domestic / Mine Water	pH	Between : 5.5 to 9.0	Yearly
		Total Suspended Solids	Not to exceed : 100 mg/l.	
		Biochemical Oxygen Demand (3day at 27°C)	Not to exceed : 30 mg/l.	
		Chemical Oxygen Demand	Not to exceed : 250 mg/l.	
		Oil & Grease	Not to exceed : 10 mg/l.	
		(to be treated in Pressure Filter Plant & Water Treatment plant)		

10. **Daily water consumption** for the following purposes should not exceed :-

- The *Applicant* shall regularly submit to the Board the Returns of Water Consumption in the prescribed form and pay the Cess as specified under Section 3 of the said Act.

Environmental Engineer
W. B. Pollution Control Board continued.....
Operation & Maintenance Cell

(4)

Consent to M/s. Bharat Coking Coal Limited, Kalyaneshwari OCP, Cluster xvii,
 for its unit at P.O. - Kalyaneshwari, P.S. - Kulti, Dist - Paschim Bardhaman,
Pin - 713369.

11. The *Applicant* shall install suitable device for measuring the volume of water consumed for different purposes as mentioned above giving correct result to the satisfaction of the *State Board*.
12. All the stacks connected to various sources of emissions must be designated by numbers such as S-1, S-2, S-3, etc., and this must be painted/displayed to facilitate identification.
13. The *Applicant* shall install comprehensive control system consisting of pollution control equipment as is warranted with reference to generation of air emissions and operate and maintain the same continuously so as to achieve the level of pollutants of the *Standard* as given in Table-II below :

Table-II

Stack No.	Stack height from G.L. (in mts.)	Stack attached to (sources and control system. if any):	Volume Nm ³ /hr.	Velocity of gas emission m/sec	Concentrations of parameters not to exceed					Frequency of emission sampling
					SPM (mg/Nm ³)	CO (%v/v)				
S-I		See Annexure.								
S-2										
S-3										
S-4										
S-5										
S-6										
S-7										
S-8										
S-9										
S-10										

(Member Secretary/Chief Engr./Sr. Env. Engr. / Env. Engr. / Asst. Env. Engr.)

Environmental Engineer
W. B. Pollution Control Board
 Operation & Maintenance Cell

C0131938

Consent to ⁽⁵⁾ M/s. Bharat Coking Coal Limited, Kalyaneshwari OCP, Cluster XVII, CV Area BCCL.
 for its unit at P.O. - Kalyaneshwari, P.S. - Kulti, Dist - Paschim Bardhaman,
 Pin - 713369.

14. The Applicant shall provide ports in the stack(s) and other necessary permanent facilities such as ladder, platform, etc. for monitoring/sampling the air emissions and the same shall be made available for inspection and use by the State Board's staff as well as State Board's authorised agencies.
15. The Applicant shall observe the following fuel consumption pattern :-

Sl. No	Type of fuel	Quantity consumed per day	Fuel burning operation where the fuel is used
01	HSD	150 KL/month	Heavy earth moving, drilling,
02			crushing etc machineries.
03			
04			
05			

16. The Applicant shall maintain the generation and treatment/disposal of non-hazardous solid waste as specified below :-

Type of waste	Quantity	Treatment	Disposal
Overburden (Silica & earth materials)	920000	—	Landfilling and road construction

17. The Applicant shall take adequate measures for control of noise levels from its own sources within the premises within the limit given below :-

Time	Limit in dB(A) L_{eq}
Day Time (06 a.m. to 10 ¹⁰ p.m.)	75
Night Time (10 ¹⁰ p.m. to 06 a.m.)	70

18. The Applicant shall at all times maintain good house-keeping, proper working order, and operate efficiently for control of pollution from all sources so as not to cause nuisance to surrounding areas/inhabitants and to achieve compliance with the terms and conditions of the consent.
19. The Applicant shall bring about at least 33% of the available open land under the green coverage / plantation.
20. The Applicant shall provide for an alternate electric power source sufficient to operate all pollution control facilities installed by the Applicant to maintain compliance with the terms and conditions of the consent. In absence of such an alternate electric power source, the Applicant shall stop, reduce or otherwise control production to abide by the terms and conditions of the Consent regarding pollution level.
21. The Applicant shall install a separate energy meter showing the consumption of energy for operation of pollution control devices.
22. The Applicant shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises.
23. The Applicant shall provide drainage system for conveying industrial and domestic liquid waste. Storm-water drain shall be kept separate from the drainage system meant for industrial and domestic liquid waste

(Member Secretary/Chief Engr./ Sr. Env. Engr. / Env. Engr. / Asst. Env. Engr.)

Environmental Engineer
 W. B. Pollution Control Board continued.....
 Operation & Execution Cell

Consent to M/s. Bharat Coking Coal Limited, Kalyaneshwari OCP, Cluster XVII,
 for its unit at P.O. - Kalyaneshwari, P.S. - Kulhi, Dist. Paschim Bardhaman,
Pin - 713369.

24. The *Applicant* shall maintain a separate register showing consumption of chemicals used in pollution control systems.
25. The *Applicant* shall get the samples of hazardous wastes/leachates analysed at least once in from the laboratory recognised of the West Bengal Pollution Control Board and ensure that they conform to the limits stipulated. Test reports shall be sent to the Board.
26. The *Applicant* shall provide adequate and safe facility for collection of air, waste water and solid waste samples by the *State Board's* staff as well as *State Board's* authorised agencies.
27. The *Applicant* shall submit to the *State Board* by the 30th September of every year the Environmental Statement Report for the financial year ending 31st March of the current year in the prescribed form (Form -V) as required under the provisions of rule 14 of the Environment (Protection) [Second Amendment] rules, 1992.
28. The *Applicant* shall allow the Officers of the *State Board* to enter into the applicant's premises at any reasonable time to inspect the pollution control systems as well as monitoring and measuring devices in connection with prevention & control of pollution.
29. The *Applicant* shall maintain an Inspection Book in the factory premises which shall be made available to Officers & employees of the *State Board* for inspection, review and to write down any direction or observation as is deemed necessary during the inspection from time to time.
30. The *Application* shall furnish to the *State Board* all information in respect of quality, quantity, rate of discharge, place of discharge of liquid effluent and air emissions.
31. The *Applicant* shall maintain adequate number of qualified and trained personnel among his staff for proper maintenance and operation of the effluent treatment and / or emission control devices and for overall environment management of the industry.
32. The *Applicant* shall have to make registration for the use of groundwater if any, with Central Ground Water Authority.
33. The *Applicant* shall intimate to the *State Board* immediately of any occurrence or apprehension of occurrence of discharge of any poisonous, noxious or pollutants in excess of quality as well as quality as mentioned earlier to any receiving water body/receiving system or to atmosphere owing to accident or other unforeseen incident/event including natural disaster. The *Applicant* Shall (i) take all steps adequate to prevent such accident discharge/release of poisonous, noxious or pollutants and to limit their consequences to persons and the environment, (ii) provide to the persons working on the site with the information, training and equipment including antidotes necessary to ensure their safety and mitigate the accidental release of poisonous noxious or pollutants to the environment.
34. The *Applicant* shall make an application to the *State Board* in the prescribed form for renewal of the consent at least 60 (sixty) days before the date of expiry of this Consent.
35. The *Applicant* shall not make any alternation/modification/expansion in the existing manufacturing process and equipment as well as the pollution control system without prior approval of the Board.
36. The *Applicant* shall comply with the conditions as laid down in the Manufacture, Storage and Import of hazardous Chemicals Rules, 1989 and Hazardous Wastes (Management & Handling) Rules, 1989.

Additional Conditions See Annexure.

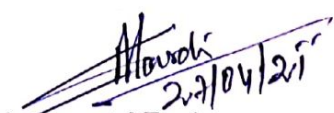
(Member Secretary/Chief Engr./Sr. Env. Engr./ Env. Engr./ Asst. Env. Engr.)

Handwritten signature
 27/04/25
 Environmental Engineer
 W. B. Pollution Control Board
 Operation & Execution Cell

Annexure to Consent Letter Number – CO131938

Additional Conditions issued to M/s. Bharat Coking Coal Limited, Kalyaneswari OCP, Cluster XVII including Open Cast Coal Mining Project (Capacity 4 MTPA, Mining Lease Area 1397.18 Ha) , P.O-Kalyaneswari, P.S-Kulti, Dist –Paschim Bardhaman, Pin-713369

1. The unit shall abide by all other condition as mentioned in Environmental Clearance (EC) issued vide no. F.No.J-11015/373/2013-IA.II(M) dated 01.02.2021 and NOC(NO164541) issued vide memo no.315-2N-24/2020 (E) dated 10.03.2021 in favour of the OCP mining of coal project.
2. The unit shall maintain the emission norms for the following operations- drilling, loading and unloading areas, blasting, hauling, tips, stockpiles, dumps etc.to meet the standards as prescribed by the Central Pollution Control Board (CPCB).
3. The unit should obtain all the statutory licenses as applicable from other concerned Govt. Department.
4. This consent may be revoked at any time on violation of environmental norms.
5. The unit shall submit a status of compliance of the conditions stipulated in EC.
6. The mine discharge water to be treated pressure filter plant and water treatment plant and collected in pond for supply to nearby villages/colony for domestic use.
7. The top soil shall temporarily store and use for land reclamation and plantation purposes.
8. The unit shall implement mine closure plan as per DGMS (Directorate General of Mines Safety) mine closure plan.
9. The unit shall take proper measures for reclamation of land area to be mined so as to bring the land to some productive use agricultural/forestry purposes.
10. The unit shall develop greenbelt consisting of 3-tier plantation of width not less than 7.5 m along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall develop along the major/coal transportation roads.
11. This consent to Operate is for production capacity of coal-4.0 MTPA i.e Kalyaneshwari OCP with mining lease area- 1397.18 Ha.


Environmental Engineer
West Bengal Pollution Control Board
Environmental Engineer
W. B. Pollution Control Board
Operation & Execution Cell

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FOR COMPANY USE ONLY RESTRICTED

The information given in this report is not to be communicated either directly or indirectly to the press or to any person not holding an official position in the CIL /GOVERNMENT.

**ENVIRONMENTAL MONITORING REPORT
OF
BHARAT COKING COAL LIMITED,
CLUSTER – XVII**

(FOR THE MONTH SEPT, 2023)

E. C. no. J-11015/373/2013-IA.II (M) dated 01.02.2021



CMPDI

ISO 9001 Company
Regional Institute-II
Dhanbad, Jharkhand

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EXECUTIVE SUMMARY

1.0 Introduction

The purpose of environmental monitoring is to assess the quality of various attributes that affects the fauna and flora. In accordance with the quality of these attributes appropriate strategy is to be developed to control the pollution level within the permissible limits. The three major attributes are air, water and noise level.

Bharat Coking Coal Limited (BCCL), a Subsidiary company of Coal India Limited is operating Underground and Opencast Mines in Jharia Coalfield (JCF) is a part of Gondwana Coalfields located in Dhanbad district of Jharkhand, the JCF is bounded by 23°37' N to 23°52' N latitudes and 86°09' E to 86°30' E longitude occupying an area of 450 Sq.km. BCCL has awarded Environmental monitoring work of Jharia Coalfield (JCF) to Central Mine Planning & Design Institute Limited (CMPDIL). The environmental monitoring has been carried out as per the conditions laid down by the MoEF&CC while granting environmental clearance of project, consent letter issued by the respective SPCB, and other statutory requirements.

2.0 Sampling location and rationale

2.1 Ambient air sampling locations

The ambient air quality monitoring stations were selected to represent core, buffer zone area. The rationale has been based on the guidelines stipulated by MoEF&CC, consent letter of SPCB, as well as other statutory requirements.

2.2 Water sampling stations

The Water sampling stations were selected for mine sump water.

Noise levels vary depending on the various activities in mining areas. The monitoring of noise level in different locations will be helpful to take appropriate mitigating measures. The noise levels were recorded in mining area, washery and in residential areas.

3.0 Methodology of sampling and analysis

3.1 Ambient air quality

Parameters chosen for assessment of ambient air quality were Particulate Matter (PM₁₀), Fine Particulate Matter (PM_{2.5}), Sulphur Di-oxide (SO₂) and Nitrogen Oxides (NO_x). Respirable Dust Samplers (RDS) and Fine Dust Sampler (PM_{2.5} sampler) were used for sampling of PM₁₀, SO₂, & NO_x and Fine Dust Sampler (PM_{2.5} sampler) were used for sampling of PM_{2.5} at 24 hours

interval once in a fortnight and the same for the gaseous pollutants. The samples were analyzed in Environmental Laboratory of CMPDI RI-II, Dhanbad.

3.2 Water quality

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

3.3 Noise level monitoring

Noise level measurements in form of 'L_{EQ}' were taken using Integrated Data Logging Sound Level Meter. Noise levels were measured in Decibels, 'A' weighted average, i.e. dB(A).

4.0 Results and interpretations

4.1 Air quality

It has been seen from the analysis results that the 24 hours average concentration parameters like PM₁₀, PM_{2.5}, SO₂ and NO_x are mostly within the permissible limits in all sampling locations as per MoEF&CC Gazette Notification No. GSR 742(E) dt 25.09.2000 Standards for Coal Mines and National Ambient Air Quality Standard -2009. Sometimes the concentration of PM₁₀& PM_{2.5} exceeds the limits due to heavy public traffic, poor road condition, coke oven plants, burning of coal by surrounding habitants, brick making, municipal waste dumps and industries like Steel Plant, thermal Plants including their fly ash etc.

The following preventive and suppressive mitigative measures can be undertaken to contain the pollution level within prescribed level:-

- Wet drilling and controlled blasting should be practice.
- Explosive used should be optimized to restrict the dust generation.
- Transportation roads should be permanently asphalted free of ruts, potholes etc.
- Water should be sprayed on coal transportation road, service road more frequently and at regular interval.
- Dust from roads should be removed physically or mechanically.
- Greenbelts around industrial sites, service building area besides Avenue plantation along roads should be created.
- Coal dust should be suppressed by using fixed sprinklers.
- Regular maintenance of plant and machinery should be undertaken.

4.2 Water quality

The test results indicate that the major parameters compared with MoEF&CC Gazette Notification No. GSR 742(E) dt 25.09.2000 Standards for Coal Mines, are within permissible limits.

4.3 Noise Level

During the noise level survey it has been observed that the noise level in the sampling locations is within the permissible limits prescribed as per MoEF&CC Gazette Notification No. GSR 742(E) dt 25.09.2000 Standards for Coal Mines for Industrial Area and Noise pollution (Regulation and Control) Rules, 2000.

INTRODUCTION

- 1.0 Any industry and development activities including coal mining is bound to affect environmental attributes. There are positive as well as negative impacts of such operations. For controlling the adverse impacts a regular monitoring is essential. The environmental monitoring is being done as per the guide-lines stipulated by Ministry of Environment, Forest and Climate Change (MoEF&CC), Govt. of India.

The very purpose of environmental monitoring is to assess the quality of various attributes which affects the environment. As per quality of these attributes appropriate strategy is to be developed to control the pollution level within the permissible limits. The three major attributes are air, water and noise level.

Bharat Coking Coal has awarded Environmental Monitoring work of all Projects, Cluster wise, to Central Mine Planning & Design Institute Limited (CMPDIL). The environmental monitoring has been carried out as per conditions laid down by MoEF&CC while granting environmental clearance to different projects. CMPDI has trained manpower and well equipped laboratory to carry out monitoring, analysis and R&D work in the field of environment.

- 1.1 The Cluster XVII is in the Western part of the Raniganj coalfield. It includes Damagoria and Begunia Mines. The cluster – XVII is situated about 50 - 55 kms from Dhanbad Railway Station. The mines of this cluster - XVII are operating since pre nationalization period (prior to 1972-73). It is connected by both Railway and Road. The drainage of the area is governed by Barakar River.

The Environmental Monitoring has been carried out & report prepared for submission to MoEF&CC& JSPCB and other statutory authorities

AMBIENT AIR QUALITY MONITORING

2.1 Location of sampling station and their rationale:

(As per G.S.R. 742 (E) dt. 25th December, 2000)

2.1.1 Ambient Air Quality Sampling Locations

I. CORE ZONE Monitoring Location

i) Begunia Project (A26): Industrial Area

The location of the sampling station is 23° 43' 50.00"N 86° 48' 42.00" E. The sampler was placed at a height of 1.5m from above ground level of Substation Office.

II) Damagoria (A27): Industrial Area

The location of the sampling station is 23° 45' 39.00"N 86° 50' 27.00" E. The sampler was placed at Roof of Project Office.

II. BUFFER ZONE Monitoring Location

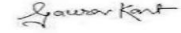
i) Dahibari OCP (A22): Industrial Area

The location of the sampling station is 23° 43' 43.11"N 86° 45' 5.00" E. The sampler was placed at a height of 1.5m from above ground level of Substation Office.

ii) Basantimata UGP (A23): Industrial Area

The location of the sampling station is 23° 44' 0.24"N 86° 44' 54.71" E. The sampler was placed at Roof of Project Office.

AMBIENT AIR QUALITY DATA

  		CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED Environment Laboratory, Regional Institute-II Ambient Air Quality Test Report				CMPDIL, RI-II KOYLA BHAWAN COMPLEX DHANBAD. -826005 Phone:0326-223-850 email: rdri2cmpdi@coalindia.in		
Test Report for Ambient Air Samples								
Month & Year	09/2023	Cluster	Cluster XVII			ULR No.	TC1012223000000176F	
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	18.11.2023	
Project	Begunia Project	Sample Ref. No.	REM/BCCL/2023/09		Sampling Method	CMPDI/RI-II/LPM 11, (IS 5182)		
Date of Sampling	11.09.23	25.09.23	Period of Analysis	11.09.2023	30.10.23	Zone of Station:	Core Zone	
Sl. No.	Parameter	Method Analysis of	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
			1st FN	2nd FN				
1	PM ₁₀	IS -5182(Part 23):2006, R-2017	103	79	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 _{2.5}	IS -5182(Part 24):2019	53	43	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 ₂	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 ₂	IS-5182 (Part-6): 2006, R-2017	24	25	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		 (Gaurav Kant) CHECKED BY			 (Amit Raj Mishra) 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.								
---- End of Report ---- Page -1 of 1								



cmpdi
A Mini Ratna Company

CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED
Environment Laboratory, Regional Institute-II
Ambient Air Quality Test Report

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

Test Report for Ambient Air Samples

Month & Year		09/2023	Cluster	Cluster XVII			ULR No.	TC1012223000000176F	
Customer		Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	18.11.2023	
Project		Damagoria		Sample Ref. No.	REM/BCCL/2023/09	Sampling Method	CMPDI/RI-II/LPM 11 , (IS 5182)		
Date of Sampling		11.09.23		25.09.23	Period of Analysis	07.08.2023	30.08.2023	Zone of Station:	Core Zone
Sl. No.	Parameter	Method Analysis	of	Observed Values (in µg/m³)		Range Of Testing	LDL	MoEF Standards Notification dated 25th September,2000 (GSR 742 E)	NAAQS, 2009
				1st FN	2nd FN				
1	PM ₁₀	IS -5182(Part 23):2006, R-2017		78	96	10 µg/m³ - 1000 µg/m³	10 µg/m³	300	100
2	PM _{2.5}	IS -5182(Part 24):2019		42	52	10 µg/m³ - 400 µg/m³	10 µg/m³	Not Specified	60
3	SO ₂	IS-5182(Part-2): 2001 , R-2017		<10	<10	10 µg/m³ - 1050 µg/m³	10 µg/m³	120	80
4	NO ₂	IS-5182 (Part-6): 2006 , R-2017		27	26	06 µg/m³ - 420 µg/m³	06 µg/m³	120	80

* LDL indicates Lower Detection Limit,

**All units are in $\mu\text{g}/\text{m}^3$, 24 hourly Average,

[Signature]
ANALYSED BY

[Signature]
(Gaurav Kant)
CHECKED BY

[Signature]
(Amit Raj Mishra)
Authorised Signatory

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Environment Laboratory, Regional Institute-II
Ambient Air Quality Test Report

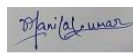
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Phone:0326-223-850
email: rdri2cmpdi@coalindia.in

Test Report for Ambient Air Samples

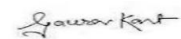
Month & Year		09/2023	Cluster	Cluster XVII			ULR No.	TC1012223000000176F	
Customer		Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	18.11.2023	
Project		Dahibari OCP		Sample Ref. No.	REM/BCCL/2023/09	Sampling Method	CMPDI/RI-II/LPM 11 , (IS 5182)		
Date of Sampling		12.09.23		26.09.23	Period of Analysis	12.09.2023	30.10.2023	Zone of Station:	Buffer Zone
Sl. No.	Parameter	Method Analysis	of	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
				1st FN	2nd FN				
1	PM ₁₀	IS -5182(Part 23):2006, R-2017		70	77	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 _{2.5}	IS -5182(Part 24):2019		35	41	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 ₂	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 ₂	IS-5182 (Part-6): 2006 , R-2017		26	25	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



(Gaurav Kant)
CHECKED BY



(Amit Raj Mishra)
Authorised Signatory

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Ambient Air Quality Test Report

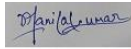
CMPDIL, RI-II
KOYLA BHAWAN COMPLEX
DHANBAD. -826005
Phone:0326-223-850
email: rdri2cmpdi@coalindia.in

Test Report for Ambient Air Samples

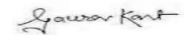
Month & Year		09/2023	Cluster	Cluster XVII			ULR No.	TC1012223000000176F	
Customer		Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	18.11.2023	
Project		Basantimata UGP		Sample Ref. No.	REM/BCCL/2023/09	Sampling Method	CMPDI/RI-II/LPM 11 , (IS 5182)		
Date of Sampling		13.09.23		27.09.23	Period of Analysis	13.09.2023	30.10.2023	Zone of Station:	Buffer Zone
Sl. No.	Parameter	Method Analysis	of	Observed Values (in µg/m³)		Range Of Testing	LDL	MoEF Standards Notification dated 25th September,2000 (GSR 742 E)	NAAQS2 2009
				1st FN	2nd FN				
1	PM ₁₀	IS -5182(Part 23):2006, R-2017		68	77	10 µg/m³ - 1000 µg/m³	10 µg/m³	300	100
2	PM _{2.5}	IS -5182(Part 24):2019		32	36	10 µg/m³ - 400 µg/m³	10 µg/m³	Not Specified	60
3	SO ₂	IS-5182(Part-2): 2001 , R-2017		11	13	10 µg/m³ - 1050 µg/m³	10 µg/m³	120	80
4	NO ₂	IS-5182 (Part-6): 2006 , R-2017		22	21	06 µg/m³ - 420 µg/m³	06 µg/m³	120	80

* LDL indicates Lower Detection Limit,

**All units are in $\mu\text{g}/\text{m}^3$, 24 hourly Average,




ANALYSED BY



(Gaurav Kant)
CHECKED BY



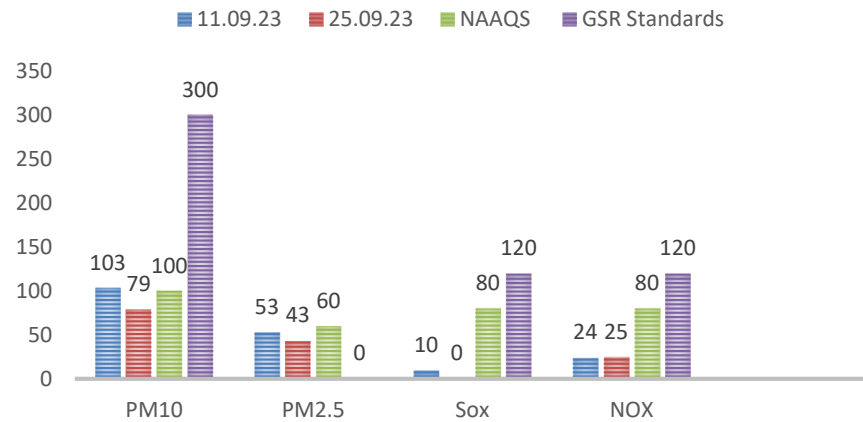
(Amit Raj Mishra)
Authorised Signatory

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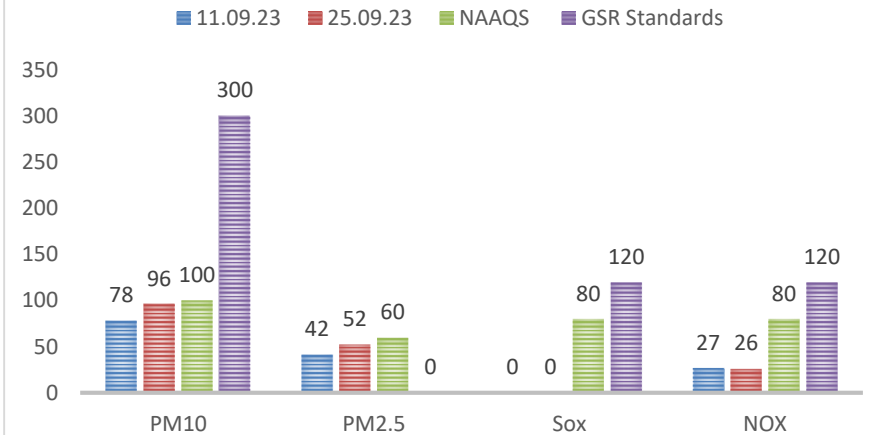
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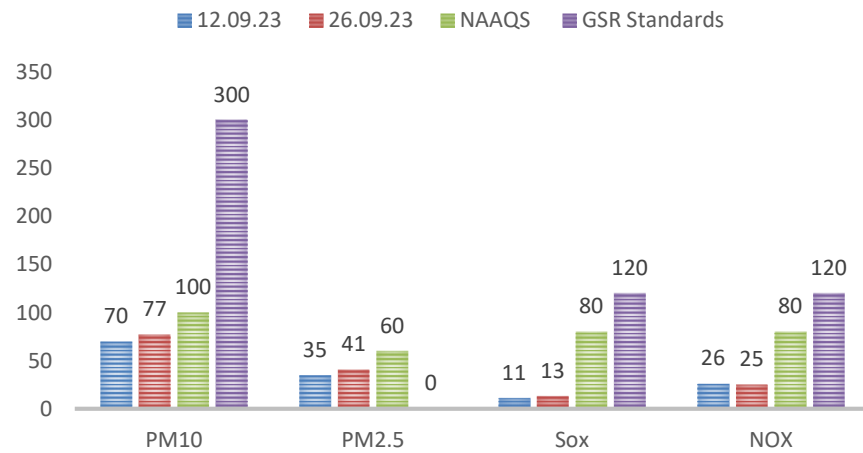
AMBIENT AIR QUALITY AT BEGUNIA PROJECT



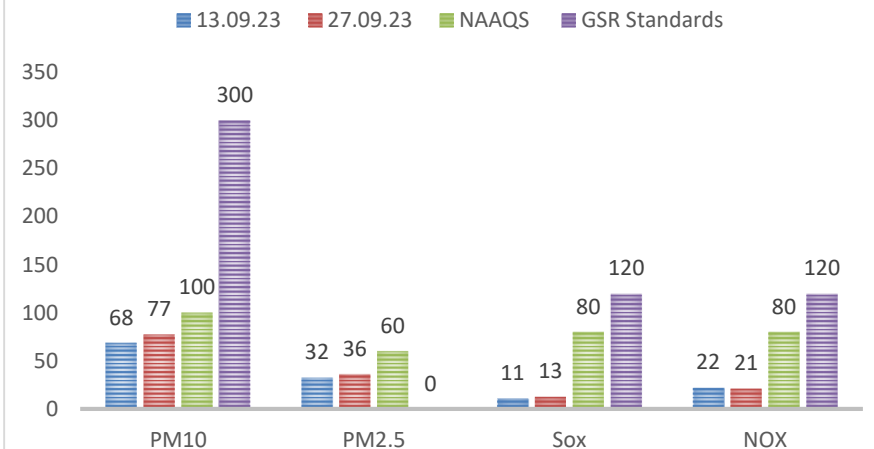
AMBIENT AIR QUALITY AT DAMAGORIA



AMBIENT AIR QUALITY AT DAHIBARI OCP



AMBIENT AIR QUALITY AT BASANTIMATA UGP



WATER QUALITY MONITORING

3.1 Location of sampling sites

(Refer **Plate No. – II**)

i) Mine Discharge of Damagooria OCP (MW17)

A sampling point is fixed to assess the effluent quality of Mine discharge.

3.2 Methodology of sampling and analysis

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

3.3 Results & Interpretations

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



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Environment Laboratory, Regional Institute-II
MINE EFFLUENT TEST REPORT

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Test Report for Mine Effluent samples

Month & Year	09/2023	Cluster	Cluster XVII		ULR No.		TC1012223000000193F	
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	18.11.2023	
Project		Sampling Ref. No.	REM/BCCL/2023/09		Sampling Method	IS 3025 (Part-1) CMPDI/RI-II/LPM 13		
Sampling Stations	(i)	Damagoria OCP	Sample Collected in 2.5 Ltr Jerricane , Color as observed is transparent					
			Date of Sampling		11.09.2023	25.09.2023	Period of analysis 04.09.2023 TO 29.09.2023	
Sl. No.	Parameter	Method of Analysis	Observed Values		STANDARDS FOR COAL MINES (Stipulated by Ministry of Environment and Forests (MoEF), Vide Notification No. GSR 742(E), Dt: 25.09.2000)		LDL	
			First Fortnight	Second Fortnight				
1	Total Suspended Solids	IS 3025/17:1984, R :2017, Gravimetric	37	33	100 (Max)		10	
2	pH	IS-3025/11:1983, R-2017, Electrometric	8.05	7.99	5.5 - 9.0		0.2	
3	Oil & Grease	IS 3025/39:1991, R : 2019, Partition Gravimetric	<2.0	<2.0	10 (Max)		2	
4	COD	APHA 23rd Edition 5220 C Titrimetric Method	24	32	250 (Max)		4	

*LDL indicates Lower Detection Limit & BDL indicates Below Detection Limit,

**All units in mg/L unless specified otherwise. **Grab sampling carried out for water samples.

ANALYSED BY

(Kumar Vaibhav)

CHECKED BY

(Amit Raj Mishra)

Authorised Signatory

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NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

- i) **Begunia Project (N26)**
- ii) **Damagoria (N27)**
- iii) **Dahibari OCP (N22)**
- iv) **Basantimata UGP (N23)**

4.2 Noise level measurements in form of ' L_{EQ} ' were taken using Integrated Data Logging Sound Level Meter during day time & night time. Noise levels were measured for the complete day & night time, the Intergration time taken was one hour or 3600 seconds. Noise levels were measured in Decibels, 'A' weighted average, i.e. dB (A).

4.3 Results & Interpretations

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



CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED
Environment Laboratory, Regional Institute-II
Ambient Noise Level Test Report

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 Phone:0326-223-850
 email: rdri2cmpdi@coalindia.in

Month & Year	09/2023	Cluster	Cluster XVII					ULR No.	TC1012223000000210F
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)							Date of Issue	18.11.2023
Project			Sample Ref. No.	REM/BCCL/2023/09			Sampling Method	CMPDI/RI-II/LPM 22	
Sampling Stations	i	Begunia Project		Date of Sampling		11.09.23	25.09.23	Zone Category of Station:	Core Zone
Sl. No.	Parameter	Hour / Time of day	Observed Values (in Leq dB(A))	Observed Values (in Leq dB(A))	Method of Analysis	Range Of Testing	LDL	NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 Standards	
			First Fortnight	Second Fortnight				Zones	Limits in dB
1	Noise Level dB(A)Leq - Day	06:00 - 07:00	44.8	45.4	CPCB, Protocol for Ambient Level Noise Monitoring -2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	75 65 55 50
2		07:00 - 08:00	49	48.9					
3		08:00 - 09:00	48.2	47.4					
4		09:00 - 10:00	44.6	43.9					
5		10:00 - 11:00	46.2	46.3					
6		11:00 - 12:00	52.1	53.6					
7		12:00 - 13:00	47.9	49.9					
8		13:00 - 14:00	53.9	55.2					
9		14:00 - 15:00	59.2	60					
10		15:00 - 16:00	51.3	49.9					
11		16:00 - 17:00	50.2	49.1					
12		17:00 - 18:00	44.3	43.2					
13		18:00 - 19:00	38.2	39					
14		19:00 - 20:00	44.9	43.5					
15		20:00 - 21:00	43.5	40.8					
16		21:00 - 22:00	39.7	39.5					
		Leq Day	50.7	51.3					
1	Noise Level dB(A)Leq -Night	22:00-23:00	39.7	39.1	CPCB, Protocol for Ambient Level Noise Monitoring -2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	70 55 45 50
2		23:00- 00:00	38.1	39.1					
3		00:00- 01:00	38.5	38.7					
4		01.00-02.00	36	35.8					
5		02.00-03.00	35.7	35.6					
6		03.00-04.00	35.6	36.5					
7		04.00-05.00	36.7	37.1					
8		05:00-06:00	36.8	36.9					
		Leq Night	37.4	37.6					

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

Sampling Assistants

ANALYSED BY

(Gaurav Kant)
 CHECKED BY

(Amit Raj Mishra)
 Authorised Signatory

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Environment Laboratory, Regional Institute-II
Ambient Noise Level Test Report

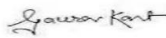
CMPDIL, RI-II
KOYLA BHAWAN COMPLEX
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Phone:0326-223-850

Month & Year	09/2023	Cluster	Cluster XVII					ULR No.	TC1012223000000210F
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)							Date of Issue	18.11.2023
Project			Sample Ref. No.	REM/BCCL/2023/09		Sampling Method		CMPDI/RI-II/LPM 22	
Sampling Stations	i	Damagoria		Date of Sampling	11.09.23	25.09.23	Zone Category of Station:	Core Zone	
Sl. No.	Parameter	Hour / Time of day	Observed Values (in Leq dB(A))	Observed Values (in Leq dB(A))	Method of Analysis	Range Of Testing	LDL	NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 Standards	
			First Fortnight	Second Fortnight				Zones	Limits in dB
1	Noise Level dB(A)Leq - Day	06:00 - 07:00	47.1	47	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	75 65 55 50
2		07:00 - 08:00	48.4	48.6					
3		08:00 - 09:00	49.6	50.7					
4		09:00 - 10:00	50.7	50.1					
5		10:00 - 11:00	52.1	51.8					
6		11:00 - 12:00	52.2	52.2					
7		12:00 - 13:00	52.4	52.6					
8		13:00 - 14:00	53	52.8					
9		14:00 - 15:00	55.1	53.3					
10		15:00 - 16:00	56.8	55.5					
11		16:00 - 17:00	51	51.8					
12		17:00 - 18:00	50.4	49.6					
13		18:00 - 19:00	49.7	49.5					
14		19:00 - 20:00	49.5	48.3					
15		20:00 - 21:00	45.1	46.6					
16		21:00 - 22:00	44.7	46.5					
	Noise Level dB(A)Leq -Night	Leq Day	51.6	51.2	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	70 55 45 50
1		22:00-23:00	39.2	38.9					
2		23:00- 00:00	39	38.5					
3		00:00- 01:00	38.5	38.2					
4		01.00-02.00	38.2	38					
5		02.00-03.00	38	38.4					
6		03.00-04.00	38.5	38.9					
7		04.00-05.00	38.7	39.1					
8	05:00-06:00	39.1	39.5						
		Leq Night	38.7	38.7					

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

Sampling Assistants

ANALYSED BY


(Gaurav Kant)
CHECKED BY


(Amit Raj Mishra)
Authorised Signatory

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Environment Laboratory, Regional Institute-II
Ambient Noise Level Test Report

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

Month & Year	09/2023	Cluster	Cluster XVII					ULR No.	TC1012223000000210F
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)							Date of Issue	18.11.2023
Project			Sample Ref. No.	REM/BCCL/2023/09		Sampling Method		CMPDI/RI-II/LPM 22	
Sampling Stations	i	Dahibari OCP		Date of Sampling	12.09.23	26.09.23	Zone Category of Station:		Buffer Zone
Sl. No.	Parameter	Hour / Time of day	Observed Values (in Leq dB(A))	Observed Values (in Leq dB(A))	Method of Analysis	Range Of Testing	LDL	NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 Standards	
			First Fortnight	Second Fortnight				Zones	Limits in dB
1	Noise Level dB(A)Leq - Day	06:00 - 07:00	44.1	43.8	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	75 65 55 50
2		07:00 - 08:00	46.4	46.1					
3		08:00 - 09:00	48.7	48.4					
4		09:00 – 10:00	52.5	52.5					
5		10:00 - 11:00	57.7	56.6					
6		11:00 - 12:00	53.6	52.5					
7		12:00 - 13:00	56.2	55.4					
8		13:00 - 14:00	55	54.7					
9		14:00 - 15:00	55.1	55.3					
10		15:00 - 16:00	54.9	54.2					
11		16:00 - 17:00	54.9	54.8					
12		17:00 - 18:00	55.2	54.7					
13		18:00 - 19:00	54.9	55					
14		19:00 - 20:00	54.6	54.5					
15		20:00 - 21:00	54.1	54					
16		21:00 - 22:00	52.4	51.8					
		Leq Day	54.2	53.7					
1	Noise Level dB(A)Leq -Night	22:00-23:00	50.5	50.6	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	70 55 45 50
2		23:00- 00:00	49.4	48.9					
3		00:00- 01:00	48.2	48.7					
4		01.00-02.00	49.2	49.5					
5		02.00-03.00	48.8	49.2					
6		03.00-04.00	48.2	49.1					
7		04.00-05.00	49.9	49.8					
8		05:00-06:00	50.2	50.5					
		Leq Night	49.4	49.6					

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

Sampling Assistants

ANALYSED BY

(Gaurav Kant)

CHECKED BY

(Amit Raj Mishra)

Authorised Signatory

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  		CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED Environment Laboratory, Regional Institute-II Ambient Noise Level Test Report					CMPDIL, RI-II KOYLA BHAWAN COMPLEX DHANBAD. -826005 Phone:0326-223-850 email: rdri2cmpdi@coalindia.in		
Month & Year	09/2023	Cluster	Cluster XVII					ULR No.	TC1012223000000210F
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)							Date of Issue	18.11.2023
Project		Sample Ref. No.	REM/BCCL/2023/09			Sampling Method		CMPDI/RI-II/LPM 22	
Sampling Stations	i	Basantimata UGP		Date of Sampling		13.09.23	27.09.23	Zone Category of Station:	Buffer Zone
Sl. No.	Parameter	Hour / Time of day	Observed Values (in Leq dB(A)) First Fortnight	Observed Values (in Leq dB(A)) 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	45.3	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	75 65 55 50
2		07:00 - 08:00	48.6	47.3					
3		08:00 - 09:00	49.6	49.3					
4		09:00 - 10:00	50.5	51.5					
5		10:00 - 11:00	50.8	51.1					
6		11:00 - 12:00	50.9	51.1					
7		12:00 - 13:00	51.1	50.9					
8		13:00 - 14:00	51.4	51.5					
9		14:00 - 15:00	52	51.9					
10		15:00 - 16:00	55	55.5					
11		16:00 - 17:00	53.9	54.5					
12		17:00 - 18:00	50.4	52.1					
13		18:00 - 19:00	50.6	50.9					
14		19:00 - 20:00	49.9	50.7					
15		20:00 - 21:00	49.8	50.4					
16		21:00 - 22:00	49.5	49.9					
		Leq Day	51.1	51.5					
1	Noise Level dB(A)Leq -Night	22:00-23:00	49.4	49.2	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	70 55 45 50
2		23:00- 00:00	47.2	48.1					
3		00:00- 01:00	48.7	48.2					
4		01:00-02:00	49	48.9					
5		02:00-03:00	47.8	47.9					
6		03:00-04:00	47	47					
7		04:00-05:00	46.7	46.5					
8		05:00-06:00	52.4	50.1					
		Leq Night	48.9	48.4					
*All noise measurements are integrated for a 01 hour period, All units in dB(A) *LDL indicates Lower Detection Limit									
Sampling Assistants		 (Gaurav Kant) CHECKED BY			 (Amit Raj Mishra) Authorised Signatory				
Note: The results above relate to the samples tested as received. This report cannot be reproduced in part or full without the written permission of the HOD(Env) , CMPDI, RI-II.									
---- End of Report ----									
Page -1 of 1									

Ambient Air Quality Standards for Jharia Coal Field
As per the Environment (Protection) Amendment Rules, 2000 notified vide notification G.S.R.
742(E), dated 25.9.2000.

Category	Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4	5
III Coal mines located in the coal fields of • Jharia • Raniganj • Bokaro	Suspended Particulate Matter (SPM)	Annual Average * 24 hours **	500 µg/m ³ 700 µg/m ³	- High Volume Sampling (Average flow rate not less than 1.1
	Respirable Particulate Matter (size less than 10 µm) (RPM)	Annual Average * 24 hours **	250 µg/m ³ 300 µg/m ³	Respirable Particulate Matter sampling and analysis
	Sulphur Dioxide (SO ₂)	Annual Average * 24 hours **	80 µg/m ³ 120 µg/m ³	1.Improvedwest and Gaeke method 2.Ultraviolet fluorescene
	Oxide of Nitrogen as NO ₂	Annual Average * 24 hours **	80 µg/m ³ 120 µg/m ³	1. Jacob & Hochheiser Modified (Na-Arsenic) Method 2. Gas phase Chemilumine-scence

Note:

* Annual Arithmetic mean for the measurements taken in a year, following the guidelines for frequency of sampling laid down in clause 2.

** 24 hourly/8 hourly values shall be met 92% of the time in a year. However, 8% of the time it may exceed but not on two consecutive days.

NATIONAL AMBIENT AIR QUALITY STANDARDS

New Delhi the 18th November 2009

In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No. 14 of 1981), and in supersession of the notification No(s).S.O.384(E), dated 11th April 1994 and S.O.935(E), dated 14th NOVEMBER 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect.

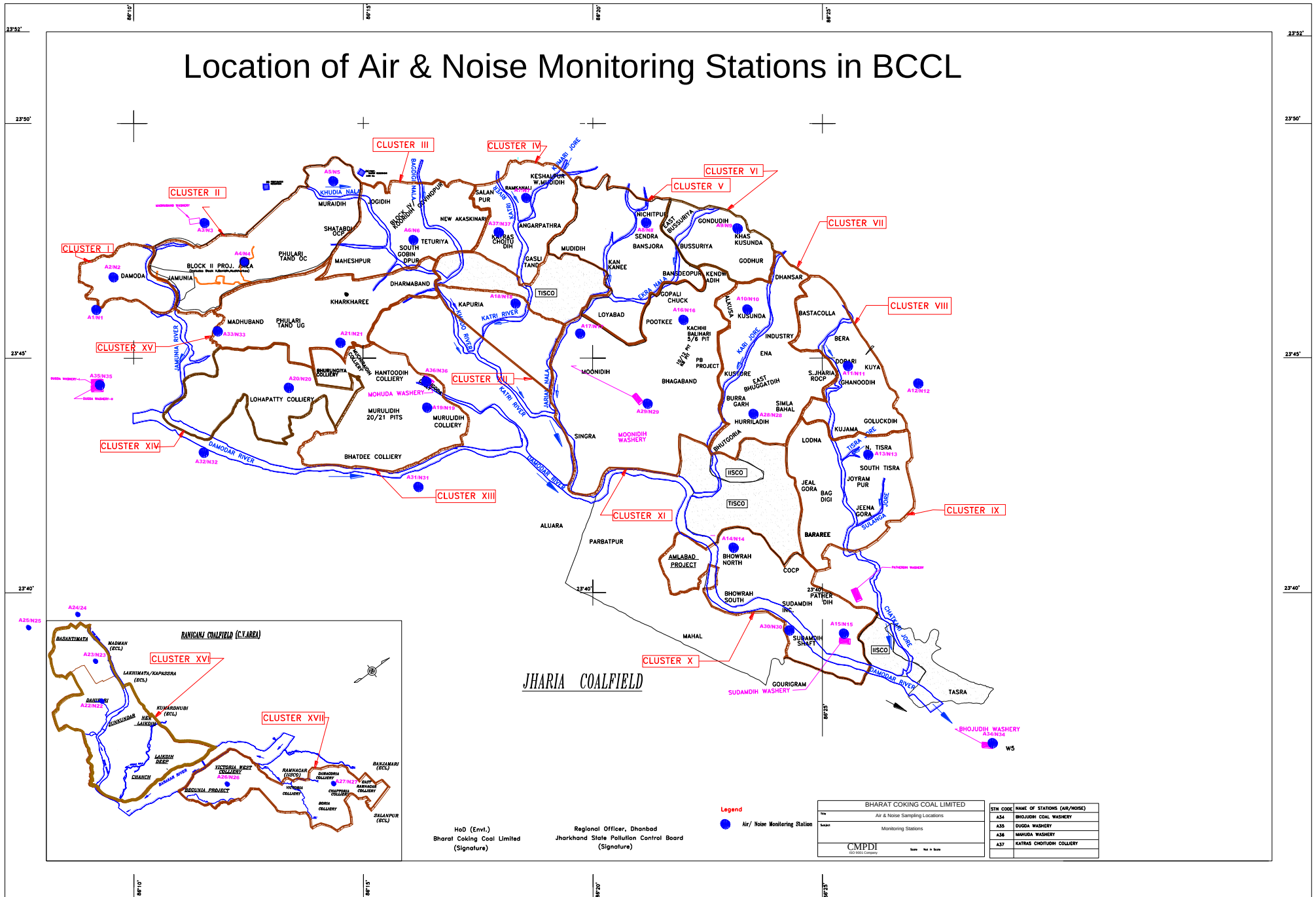
Pollutant	Time Weighted Average	Concentration in Ambient Air		Methods of Measurement
		Industrial, Residential, Rural and other Areas	Ecologically Sensitive Area (Notified by Central Government)	
Sulphur Dioxide (SO₂), µg/m³	Annual * 24 Hours **	50 80	20 80	-Improved West and Gaeke Method -Ultraviolet Fluorescence
Nitrogen dioxide (NO₂), µg/m³	Annual * 24 Hours **	40 80	30 80	-Jacob & Hochheiser modified (NaOH-NaAsO ₂) Method -Gas Phase Chemiluminescence
Particulate Matter (Size less than 10µm) or PM₁₀, µg/m³	Annual * 24 Hours **	60 100	60 100	-Gravimetric -TEOM -Beta attenuation
Particulate Matter (Size less than 2.5µm) or PM_{2.5}, µg/m³	Annual * 24 Hours **	40 60	40 60	-Gravimetric -TEOM -Beta attenuation
Ozone (O₃), µg/m³	8 Hours * 1 Hour **	100 180	100 180	-UV Photometric -Chemiluminescence -Chemical Method
Lead (Pb), µg/m³	Annual * 24 Hours **	0.50 1.0	0.50 1.0	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper -ED-XRF using Teflon filter
Carbon Monoxide (CO), mg/m³	8 Hours ** 1 Hour **	02 04	02 04	-Non dispersive Infrared (NDIR) Spectroscopy
Ammonia (NH₃), µg/m³	Annual * 24 Hours **	100 400	100 400	-Chemiluminescence -Indophenol blue method
Benzene (C₆H₆), µg/m³	Annual *	05	05	-Gas Chromatography (GC) based continuous analyzer -Adsorption and desorption followed by GC analysis
Benzo(a)Pyrene (BaP) Particulate phase only, ng/m³	Annual *	01	01	-Solvent extraction followed by HPLC/GC analysis
Arsenic (As), ng/m³	Annual *	06	06	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper
Nickel (Ni), ng/m³	Annual *	20	20	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper

* Annual Arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

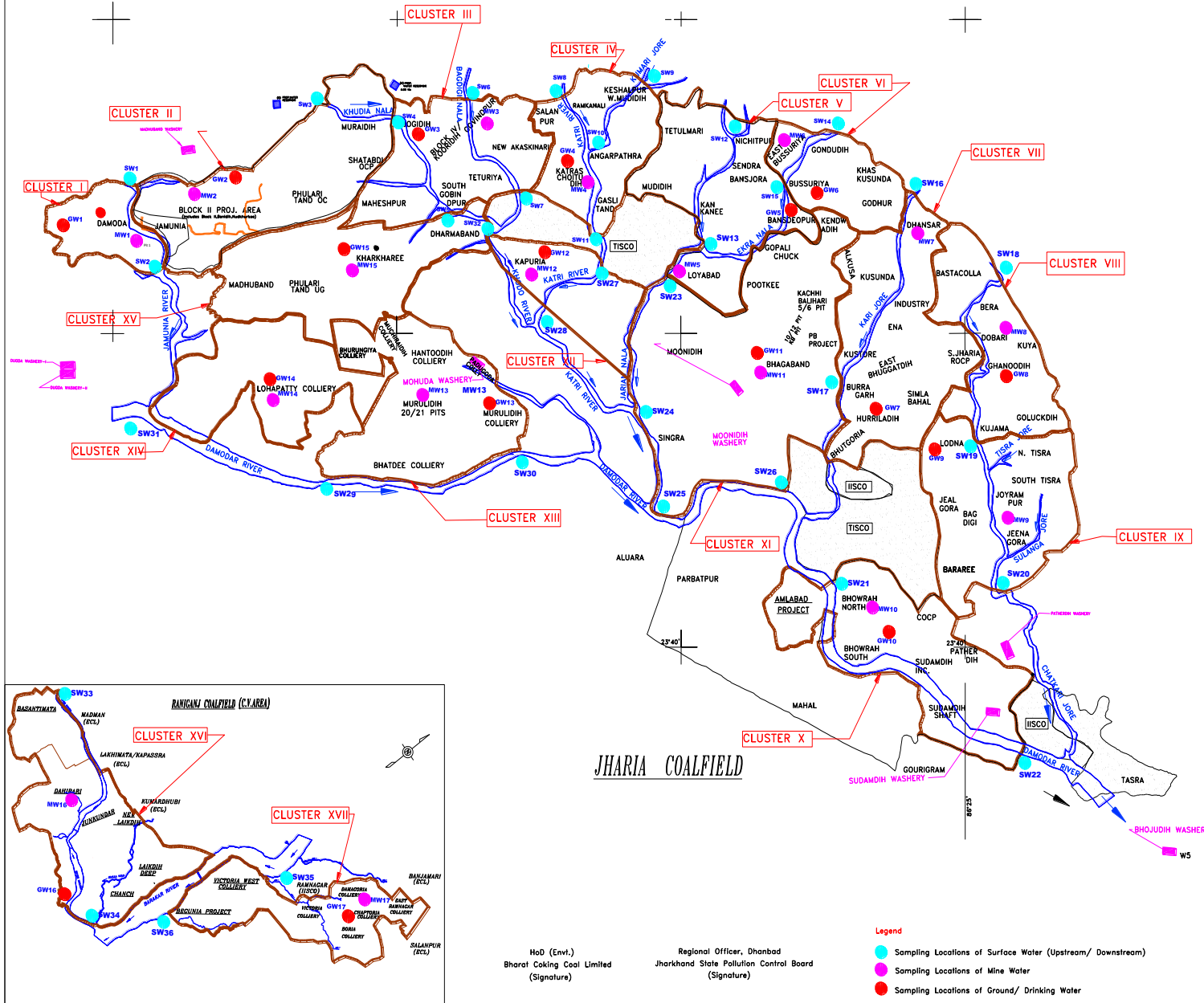
** 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

NOTE: Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, the area shall be treated as non-attainment area.

Location of Air & Noise Monitoring Stations in BCCL



Water Sampling Locations in BCCL



INDEX

Cluster	Surface Water (U/S, D/S)	Name of River/Nala/Jore	Minel Effluent Water	Sampling Location	Ground Water	Sampling Location
I	SW1, SW2	Jamunia River	MW1	Damoda Area	GW1	Chutway Village
II	SW3, SW4	Khudra Nala	MW2	Block II OCP	GW2	Joyrampur Village
III	SW4, SW5, SW6, SW7	Khudra Nala, Bagdigi Nala	MW3	Govindpur Colliery	GW3	Jogdih Village
IV	SW8, SW11, SW9, SW10	Kan River, Kuman Jore	MW4	Chotudih	GW4	Kankanees Village
V	SW12, SW13, SW15	Jarian Nala, Ekra Nala	MW5	Mudidih	GW5	Nichitpur
VI	SW14, SW15	Ekra Nala	MW6	East Bassuria UGP	GW6	Bansara Borewell
VII	SW16, SW17	Kan Jore	MW7	Doban UGP	GW7	Humridih
VIII	SW18, SW19	Kan Jore	MW8	Doban UGP	GW8	Gharudih
IX	SW19, SW20	Kan Jore	MW9	Jemagora	GW9	Lodna
X	SW21, SW22	Damodar River	MW10	Bhowrah North	GW10	Bhowrah South
XI	SW23, SW24, SW25, SW26	Jarian Nala, Damodar River	MW11	Bhagaband UGP	GW11	Bhagaband
XII	SW27, SW28	Kan River	MW12	Kapuria	GW12	Kapuria
XIII	SW29, SW30	Damodar River	MW13	Murudih (20/21)	GW13	Murudih
XIV	SW31, SW32	Damodar River	MW14	Lohapatti	GW14	Lohapatti
XV	SW5, SW32	Kharkharee UGP	MW15	Kharkharee	GW15	Kharkharee
XVI	SW33, SW34	Khudra River	MW16	Bahabari OCP	GW16	Pallabani Village
XVII	SW35, SW36	Barakar River	MW17	Damagoria Colliery	GW17	Chaptoria

Legend

- Sampling Locations of Surface Water (Upstream/ Downstream)
- Sampling Locations of Mine Water
- Sampling Locations of Ground/ Drinking Water

HoD (Env.)
Bharat Coking Coal Limited
(Signature)

Regional Officer, Dhanbad
Jharkhand State Pollution Control Board
(Signature)

Company	BHARAT COKING COAL LIMITED
Title	WATER SAMPLING LOCATIONS
Subject	MONITORING STATIONS
CMPDI	Scale: Not to Scale

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**ENVIRONMENTAL MONITORING REPORT
OF
BHARAT COKING COAL LIMITED,
CLUSTER – XVII**

(FOR THE MONTH MAY, 2023)

E. C. no. J-11015/373/2013-IA.II (M) dated 01.02.2021



CMPDI

ISO 9001 Company
Regional Institute-II
Dhanbad, Jharkhand

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3.	CHAPTER-III	RESULTS	7-19
4.	CHAPTER-IV	STANDARDS AND PLANS	20-21

EXECUTIVE SUMMARY

1.0 Introduction

The purpose of environmental monitoring is to assess the quality of various attributes that affects the fauna and flora. In accordance with the quality of these attributes appropriate strategy is to be developed to control the pollution level within the permissible limits. The three major attributes are air, water and noise level.

Bharat Coking Coal Limited (BCCL), a Subsidiary company of Coal India Limited is operating Underground and Opencast Mines in Jharia Coalfield (JCF) is a part of Gondwana Coalfields located in Dhanbad district of Jharkhand, the JCF is bounded by 23°37' N to 23°52' N latitudes and 86°09' E to 86°30' E longitude occupying an area of 450 Sq.km. BCCL has awarded Environmental monitoring work of Jharia Coalfield (JCF) to Central Mine Planning & Design Institute Limited (CMPDIL). The environmental monitoring has been carried out as per the conditions laid down by the MoEF&CC while granting environmental clearance of project, consent letter issued by the respective SPCB, and other statutory requirements.

2.0 Sampling location and rationale

2.1 Ambient air sampling locations

The ambient air quality monitoring stations were selected to represent core, buffer zone area. The rationale has been based on the guidelines stipulated by MoEF&CC, consent letter of SPCB, as well as other statutory requirements.

2.2 Water sampling stations

The Water sampling stations were selected for mine sump water.

Noise levels vary depending on the various activities in mining areas. The monitoring of noise level in different locations will be helpful to take appropriate mitigating measures. The noise levels were recorded in mining area, washery and in residential areas.

3.0 Methodology of sampling and analysis

3.1 Ambient air quality

Parameters chosen for assessment of ambient air quality were Particulate Matter (PM₁₀), Fine Particulate Matter (PM_{2.5}), Sulphur Di-oxide (SO₂) and Nitrogen Oxides (NO_x). Respirable Dust Samplers (RDS) and Fine Dust Sampler (PM_{2.5} sampler) were used for sampling of PM₁₀, SO₂, & NO_x and Fine Dust Sampler (PM_{2.5} sampler) were used for sampling of PM_{2.5} at 24 hours interval

once in a fortnight and the same for the gaseous pollutants. The samples were analyzed in Environmental Laboratory of CMPDI RI-II, Dhanbad.

3.2 Water quality

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

3.3 Noise level monitoring

Noise level measurements in form of 'LEQ' were taken using Integrated Data Logging Sound Level Meter. Noise levels were measured in Decibels, 'A' weighted average, i.e. dB(A).

4.0 Results and interpretations

4.1 Air quality

It has been seen from the analysis results that the 24 hours average concentration parameters like PM₁₀, PM_{2.5}, SO₂ and NO_x are mostly within the permissible limits in all sampling locations as per MoEF&CC Gazette Notification No. GSR 742(E) dt 25.09.2000 Standards for Coal Mines and National Ambient Air Quality Standard -2009. Sometimes the concentration of PM₁₀& PM_{2.5} exceeds the limits due to heavy public traffic, poor road condition, coke oven plants, burning of coal by surrounding habitants, brick making, municipal waste dumps and industries like Steel Plant, thermal Plants including their fly ash etc.

The following preventive and suppressive mitigative measures can be undertaken to contain the pollution level within prescribed level:-

- Wet drilling and controlled blasting should be practice.
- Explosive used should be optimized to restrict the dust generation.
- Transportation roads should be permanently asphalted free of ruts, potholes etc.
- Water should be sprayed on coal transportation road, service road more frequently and at regular interval.
- Dust from roads should be removed physically or mechanically.
- Greenbelts around industrial sites, service building area besides Avenue plantation along roads should be created.
- Coal dust should be suppressed by using fixed sprinklers.
- Regular maintenance of plant and machinery should be undertaken.

4.2 Water quality

The test results indicate that the major parameters compared with MoEF&CC Gazette Notification No. GSR 742(E) dt 25.09.2000 Standards for Coal Mines, are within permissible limits.

4.3 Noise Level

During the noise level survey it has been observed that the noise level in the sampling locations is within the permissible limits prescribed as per MoEF&CC Gazette Notification No. GSR 742(E) dt 25.09.2000 Standards for Coal Mines for Industrial Area and Noise pollution (Regulation and Control) Rules, 2000.

INTRODUCTION

- 1.0 Any industry and development activities including coal mining is bound to affect environmental attributes. There are positive as well as negative impacts of such operations. For controlling the adverse impacts a regular monitoring is essential. The environmental monitoring is being done as per the guide-lines stipulated by Ministry of Environment, Forest and Climate Change (MoEF&CC), Govt. of India.

The very purpose of environmental monitoring is to assess the quality of various attributes which affects the environment. As per quality of these attributes appropriate strategy is to be developed to control the pollution level within the permissible limits. The three major attributes are air, water and noise level.

Bharat Coking Coal has awarded Environmental Monitoring work of all Projects, Cluster wise, to Central Mine Planning & Design Institute Limited (CMPDIL). The environmental monitoring has been carried out as per conditions laid down by MoEF&CC while granting environmental clearance to different projects. CMPDI has trained manpower and well equipped laboratory to carry out monitoring, analysis and R&D work in the field of environment.

- 1.1 The Cluster XVII is in the Western part of the Raniganj coalfield. It includes Damagoria and Begunia Mines. The cluster – XVII is situated about 50 - 55 kms from Dhanbad Railway Station. The mines of this cluster - XVII are operating since pre nationalization period (prior to 1972-73). It is connected by both Railway and Road. The drainage of the area is governed by Barakar River.

The Environmental Monitoring has been carried out & report prepared for submission to MoEF&CC& JSPCB and other statutory authorities

AMBIENT AIR QUALITY MONITORING

2.1 Location of sampling station and their rationale:

(As per G.S.R. 742 (E) dt. 25th December, 2000)

2.1.1 Ambient Air Quality Sampling Locations

I. CORE ZONE Monitoring Location

i) Begunia Project (A26): Industrial Area

The location of the sampling station is 23° 43' 50.00"N 86° 48' 42.00" E. The sampler was placed at a height of 1.5m from above ground level of Substation Office.

II) Damagoria (A27): Industrial Area

The location of the sampling station is 23° 45' 39.00"N 86° 50' 27.00" E. The sampler was placed at Roof of Project Office.

II. BUFFER ZONE Monitoring Location

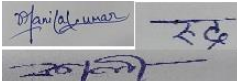
i) Dahibari OCP (A22): Industrial Area

The location of the sampling station is 23° 43' 43.11"N 86° 45' 5.00" E. The sampler was placed at a height of 1.5m from above ground level of Substation Office.

ii) Basantimata UGP (A23): Industrial Area

The location of the sampling station is 23° 44' 0.24"N 86° 44' 54.71" E. The sampler was placed at Roof of Project Office.

AMBIENT AIR QUALITY DATA

  		CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED Environment Laboratory, Regional Institute-II Ambient Air Quality Test Report				CMPDIL, RI-II KOYLA BHAWAN COMPLEX DHANBAD. -826005 Phone:0326-223-850 email: rdri2cmpdi@coalindia.in		
Test Report for Ambient Air Samples								
Month & Year	02/2023	Cluster	Cluster XVII			Report No.	RI-II/AIR/2023-24/02	
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	20.07.2023	
Project	Begunia Project	Sample Ref. No.	REM/BCCL/2023/02	Sampling Method		CMPDI/RI-II/LPM 13 , (IS 5182)		
Date of Sampling	08.05.23		22.05.23	Period of Analysis	01.05.2023	10.07.2023	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
			1st FN	2nd FN				
1	PM ₁₀	IS -5182(Part 23):2006, R-2017	94	109	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 _{2.5}	IS -5182(Part 24):2019	54	62	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 ₂	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 ₂	IS-5182 (Part-6): 2006 , R-2017	35	39	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		 (Gaurav Kant) CHECKED BY			 (Amit Raj Mishra) Authorised Signatory			
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Environment Laboratory, Regional Institute-II
Ambient Air Quality Test Report

CMPDIL, RI-II
KOYLA BHAWAN COMPLEX
DHANBAD. -826005
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Test Report for Ambient Air Samples

Month & Year		02/2023	Cluster	Cluster XVII			Report No.	RI-II/AIR/2023-24/02	
Customer		Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	20.07.2023	
Project		Damagoria		Sample Ref. No.	REM/BCCL/2023/02	Sampling Method	CMPDI/RI-II/LPM 13 , (IS 5182)		
Date of Sampling		08.05.23		22.05.23	Period of Analysis	01.05.2023	10.07.2023	Zone of Station:	Core Zone
Sl. No.	Parameter	Method Analysis	of	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
				1st FN	2nd FN				
1	PM ₁₀	IS -5182(Part 23):2006, R-2017		95	83	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 _{2.5}	IS -5182(Part 24):2019		43	43	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 ₂	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 ₂	IS-5182 (Part-6): 2006 , R-2017		36	31	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,

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ANALYSED BY

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(Gaurav Kant)
CHECKED BY

[Signature]
(Amit Raj Mishra)
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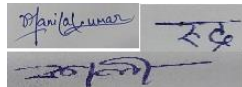
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email: rdri2cmpdi@coalindia.in

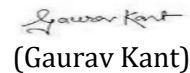
Test Report for Ambient Air Samples

Month & Year		02/2023	Cluster	Cluster XVII			Report No.	RI-II/AIR/2023-24/02	
Customer		Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	20.07.2023	
Project		Dahibari OCP		Sample Ref. No.	REM/BCCL/2023/02	Sampling Method	CMPDI/RI-II/LPM 13 , (IS 5182)		
Date of Sampling		09.05.23		23.05.23	Period of Analysis	01.05.2023	10.07.2023	Zone of Station:	Buffer Zone
Sl. No.	Parameter	Method Analysis	of	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
				1st FN	2nd FN				
1	PM ₁₀	IS -5182(Part 23):2006, R-2017		137	97	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 _{2.5}	IS -5182(Part 24):2019		63	57	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 ₂	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 ₂	IS-5182 (Part-6): 2006 , R-2017		29	28	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


(Gaurav Kant)
CHECKED BY


(Amit Raj Mishra)
Authorised Signatory

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Environment Laboratory, Regional Institute-II
Ambient Air Quality Test Report

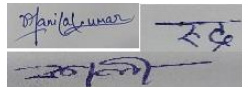
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Phone:0326-223-850
email: rdri2cmpdi@coalindia.in

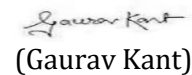
Test Report for Ambient Air Samples

Month & Year		02/2023	Cluster	Cluster XVII			Report No.	RI-II/AIR/2023-24/02	
Customer		Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	20.07.2023	
Project		Basantimata UGP		Sample Ref. No.	REM/BCCL/2023/02	Sampling Method	CMPDI/RI-II/LPM 13 , (IS 5182)		
Date of Sampling		09.05.23		23.05.23	Period of Analysis	01.05.2023	10.07.2023	Zone of Station:	Buffer Zone
Sl. No.	Parameter	Method Analysis	of	Observed Values (in µg/m³)		Range Of Testing	LDL	MoEF Standards Notification dated 25th September,2000 (GSR 742 E)	NAAQS, 2009
				1st FN	2nd FN				
1	PM ₁₀	IS -5182(Part 23):2006, R-2017		118	90	10 µg/m³ - 1000 µg/m³	10 µg/m³	300	100
2	PM _{2.5}	IS -5182(Part 24):2019		65	49	10 µg/m³ - 400 µg/m³	10 µg/m³	Not Specified	60
3	SO ₂	IS-5182(Part-2): 2001 , R-2017		11	<10	10 µg/m³ - 1050 µg/m³	10 µg/m³	120	80
4	NO ₂	IS-5182 (Part-6): 2006 , R-2017		27	20	06 µg/m³ - 420 µg/m³	06 µg/m³	120	80

* LDL indicates Lower Detection Limit,

**All units are in $\mu\text{g}/\text{m}^3$, 24 hourly Average,


ANALYSED BY


(Gaurav Kant)
CHECKED BY

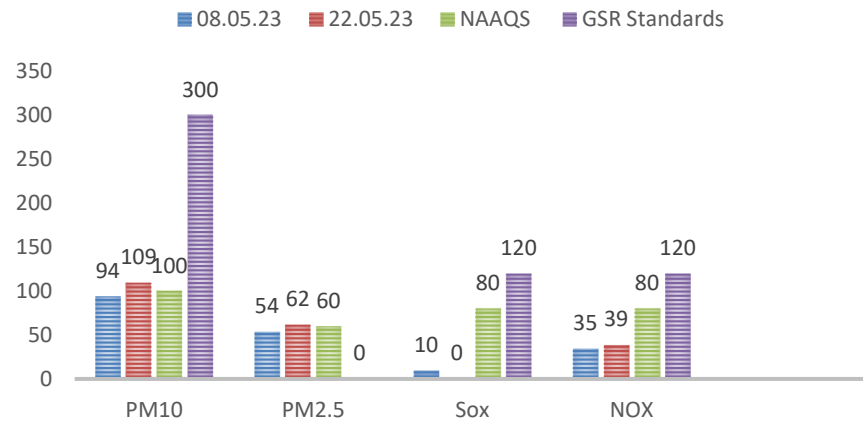

(Amit Raj Mishra)
Authorised Signatory

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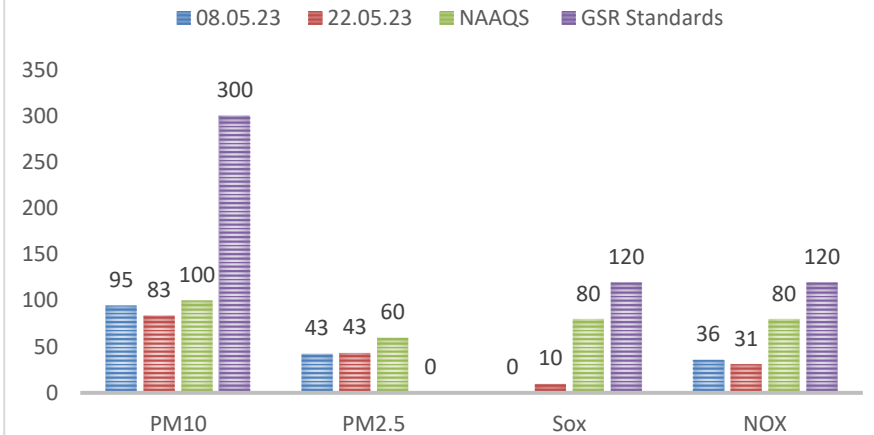
---- End of Report ----

Page -1 of 1

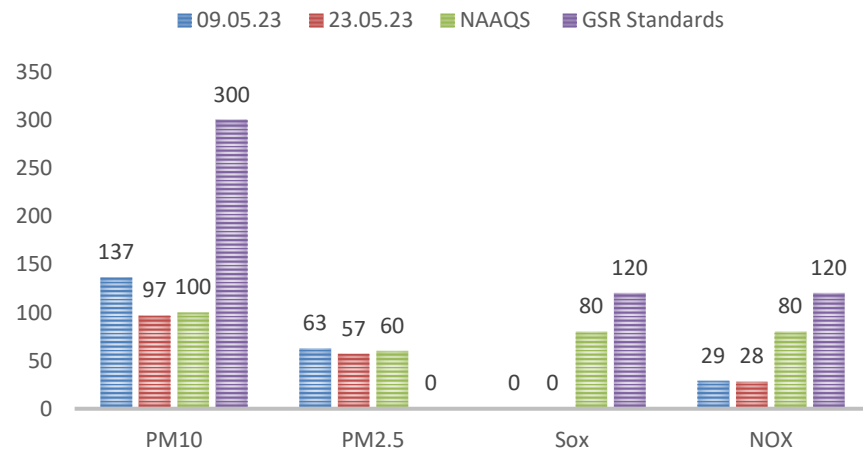
AMBIENT AIR QUALITY AT BEGUNIA PROJECT



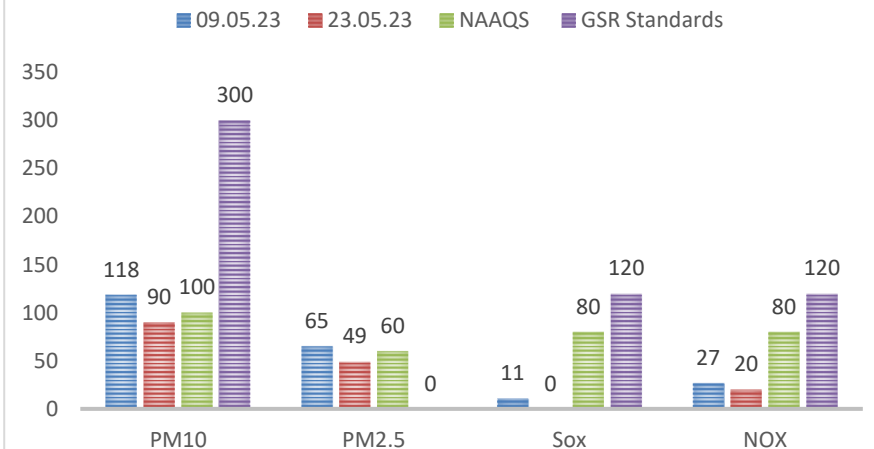
AMBIENT AIR QUALITY AT DAMAGORIA



AMBIENT AIR QUALITY AT DAHIBARI OCP



AMBIENT AIR QUALITY AT BASANTIMATA UGP



WATER QUALITY MONITORING

3.1 Location of sampling sites

(Refer **Plate No. – II**)

i) Mine Discharge of Damagooria OCP (MW17)

A sampling point is fixed to assess the effluent quality of Mine discharge.

3.2 Methodology of sampling and analysis

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

3.3 Results & Interpretations

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



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CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED
Environment Laboratory, Regional Institute-II
MINE EFFLUENT TEST REPORT

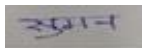
CMPDIL, RI-II
KOYLA BHAWAN COMPLEX
DHANBAD. -826005
Phone: 0326-223-850
email: rdri2cmpdi@coalindia.in

Test Report for Mine Effluent samples

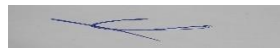
Month & Year	02/2023	Cluster	Cluster XVII		Report No.		RI-II/WATER/2023-24/02	
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)						Date of Issue	20.07.2023
Project		Sampling Ref. No.	REM/BCCL/2023/02		Sampling Method	IS 3025 (Part-1) CMPDI/RI-II/LPM 13		
Sampling Stations	(i)	Damagooria OCP	Sample Collected in 2.5 Ltr Jerricane , Color as observed is transparent					
			Date of Sampling		08.05.2023	22.05.2023	Period of analysis 08.05.2023 to 31.05.2023	
Sl. No.	Parameter	Method of Analysis	Observed Values		STANDARDS FOR COAL MINES (Stipulated by Ministry of Environment and Forests (MoEF), Vide Notification No. GSR 742(E), Dt: 25.09.2000)		LDL	
			First Fortnight	Second Fortnight				
1	Total Suspended Solids	IS 3025/17:1984, R :2017, Gravimetric	37	33	100 (Max)		10	
2	pH	IS-3025/11:1983, R-2017, Electrometric	8.05	7.99	5.5 - 9.0		0.2	
3	Oil & Grease	IS 3025/39:1991, R : 2019, Partition Gravimetric	<2.0	<2.0	10 (Max)		2	
4	COD	APHA 23rd Edition 5220 C Titrimetric Method	24	32	250 (Max)		4	

**LDL indicates Lower Detection Limit & BDL indicates Below Detection Limit,*

***All units in mg/L unless specified otherwise. **Grab sampling carried out for water samples.*



ANALYSED BY



(Kumar Vaibhav)

CHECKED BY



(Amit Raj Mishra)

Authorised Signatory

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---- End of Report ----

NOISE LEVEL QUALITY MONITORING

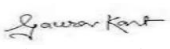
4.1 Location of sampling sites

- i) **Begunia Project (N26)**
- ii) **Damagoria (N27)**
- iii) **Dahibari OCP (N22)**
- iv) **Basantimata UGP (N23)**

4.2 Noise level measurements in form of ' L_{EQ} ' were taken using Integrated Data Logging Sound Level Meter during day time & night time. Noise levels were measured for the complete day & night time, the Intergration time taken was one hour or 3600 seconds. Noise levels were measured in Decibels, 'A' weighted average, i.e. dB (A).

4.3 Results & Interpretations

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

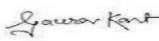
  		CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED Environment Laboratory, Regional Institute-II Ambient Noise Level Test Report					CMPDIL, RI-II KOYLA BHAWAN COMPLEX DHANBAD. -826005 Phone:0326-223-850		
Month & Year	02/2023	Cluster	Cluster XVII				Report No.	RI-II/NOISE/2023-24/02	
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)						Date of Issue	20.07.2023	
Project		Sample Ref. No.	REM/BCCL/2023/02			Sampling Method	CMPDI/RI-II/LPM 13		
Sampling Stations	i	Begunia Project	Date of Sampling	08.05.23	22.05.23	Zone Category of Station:	Core Zone		
Sl. No.	Parameter	Hour / Time of day	Observed Values (in Leq dB(A)) First Fortnight	Observed Values (in Leq dB(A)) 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	44.3	44.9	CPCB, Protocol for Ambient Level Noise Monitoring -2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	75 65 55 50
2		07:00 - 08:00	48.4	48.3					
3		08:00 - 09:00	47.6	46.8					
4		09:00 - 10:00	44.1	43.4					
5		10:00 - 11:00	45.6	45.7					
6		11:00 - 12:00	51.4	53					
7		12:00 - 13:00	47.3	49.3					
8		13:00 - 14:00	53.3	54.5					
9		14:00 - 15:00	58.5	59.2					
10		15:00 - 16:00	50.6	49.3					
11		16:00 - 17:00	49.6	48.5					
12		17:00 - 18:00	43.8	42.7					
13		18:00 - 19:00	37.7	38.5					
14		19:00 - 20:00	44.4	43					
15		20:00 - 21:00	43	40.3					
16		21:00 - 22:00	39.2	39					
		Leq Day	50.1	50.6					
1	Noise Level dB(A)Leq -Night	22:00-23:00	38.9	38.3	CPCB, Protocol for Ambient Level Noise Monitoring -2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	70 55 45 50
2		23:00-00:00	37.3	38.3					
3		00:00-01:00	37.7	37.9					
4		01:00-02:00	35.3	35.1					
5		02:00-03:00	35	34.9					
6		03:00-04:00	34.9	35.8					
7		04:00-05:00	35.9	36.3					
8		05:00-06:00	36	36.1					
		Leq Night	36.6	36.8					
**All noise measurements are integrated for a 01 hour period, All units in dB(A) *LDL indicates Lower Detection Limit									
Sampling Assistants ANALYSED BY			 (Gaurav Kant) CHECKED BY			 (Amit Raj Mishra) Authorised Signatory			
Note: The results above relate to the samples tested as received. This report cannot be reproduced in part or full without the written permission of the HOD(Env) , CMPDI, RI-II.									
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Page -1 of 1									

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Month & Year	02/2023	Cluster	Cluster XVII					Report No.	RI-II/NOISE/2023-24/02
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)							Date of Issue	20.07.2023
Project		Sample Ref. No.	REM/BCCL/2023/02			Sampling Method	CMPDI/RI-II/LPM 13		
Sampling Stations	i	Damagoria	Date of Sampling		08.05.23	22.05.23	Zone Category of Station:	Core Zone	
Sl. No.	Parameter	Hour / Time of day	Observed Values (in Leq dB(A)) First Fortnight	Observed Values (in Leq dB(A)) 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	46.5	46.4	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	75 65 55 50
2		07:00 - 08:00	47.8	48					
3		08:00 - 09:00	49	50					
4		09:00 - 10:00	50	49.5					
5		10:00 - 11:00	51.4	51.1					
6		11:00 - 12:00	51.5	51.5					
7		12:00 - 13:00	51.7	51.9					
8		13:00 - 14:00	52.4	52.2					
9		14:00 - 15:00	54.4	52.7					
10		15:00 - 16:00	56.1	54.8					
11		16:00 - 17:00	50.3	51.1					
12		17:00 - 18:00	49.8	49					
13		18:00 - 19:00	49.1	48.9					
14		19:00 - 20:00	48.9	47.7					
15		20:00 - 21:00	44.6	46					
16		21:00 - 22:00	44.2	45.9					
		Leq Day	50.9	50.5					
1	Noise Level dB(A)Leq -Night	22:00-23:00	38.4	38.1	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	70 55 45 50
2		23:00- 00:00	38.2	37.7					
3		00:00- 01:00	37.7	37.4					
4		01:00-02:00	37.4	37.2					
5		02:00-03:00	37.2	37.6					
6		03:00-04:00	37.7	38.1					
7		04:00-05:00	37.9	38.3					
8		05:00-06:00	38.3	38.7					
		Leq Night	37.9	37.9					

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

Sampling Assistants

ANALYSED BY


 (Gaurav Kant)
CHECKED BY


 (Amit Raj Mishra)
Authorised Signatory

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---- End of Report ----

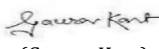
Page -1 of 1

  cmpdi <i>A Mini Ratna Company</i> CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED Environment Laboratory, Regional Institute-II Ambient Noise Level Test Report CMPDIL, RI-II KOYLA BHAWAN COMPLEX DHANBAD. -826005 Phone:0326-223-850									
Month & Year	02/2023	Cluster	Cluster XVII					Report No.	RI-II/NOISE/2023-24/02
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)							Date of Issue	20.07.2023
Project		Sample Ref. No.	REM/BCCL/2023/02			Sampling Method	CMPDI/RI-II/LPM 13		
Sampling Stations	i	Dahibari OCP		Date of Sampling	09.05.23	23.05.23	Zone Category of Station:	Buffer Zone	
Sl. No.	Parameter	Hour / Time of day	Observed Values (in Leq dB(A)) First Fortnight	Observed Values (in Leq dB(A)) 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	43.6	43.3	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	75 65 55 50
2		07:00 - 08:00	45.8	45.5					
3		08:00 - 09:00	48.1	47.8					
4		09:00 - 10:00	51.8	51.8					
5		10:00 - 11:00	57	55.9					
6		11:00 - 12:00	53	51.8					
7		12:00 - 13:00	55.5	54.7					
8		13:00 - 14:00	54.3	54.1					
9		14:00 - 15:00	54.4	54.6					
10		15:00 - 16:00	54.2	53.6					
11		16:00 - 17:00	54.2	54.2					
12		17:00 - 18:00	54.5	54.1					
13		18:00 - 19:00	54.2	54.3					
14		19:00 - 20:00	54	53.9					
15		20:00 - 21:00	53.5	53.4					
16		21:00 - 22:00	51.7	51.1					
		Leq Day	53.5	53.1					
1	Noise Level dB(A)Leq -Night	22:00-23:00	49.4	49.5	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	70 55 45 50
2		23:00- 00:00	48.3	47.9					
3		00:00- 01:00	47.2	47.7					
4		01:00-02:00	48.2	48.4					
5		02:00-03:00	47.8	48.2					
6		03:00-04:00	47.2	48.1					
7		04:00-05:00	48.8	48.7					
8		05:00-06:00	49.1	49.4					
		Leq Night	48.3	48.5					

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

Sampling Assistants

ANALYSED BY


 (Gaurav Kant)
CHECKED BY


 (Amit Raj Mishra)
Authorised Signatory

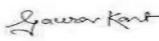
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Month & Year	02/2023	Cluster	Cluster XVII					Report No.	RI-II/NOISE/2023-24/02
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)							Date of Issue	20.07.2023
Project		Sample Ref. No.	REM/BCCL/2023/02		Sampling Method	CMPDI/RI-II/LPM 13			
Sampling Stations	i	Basantimata UGP		Date of Sampling	09.05.23	23.05.23	Zone Category of Station:	Buffer Zone	
Sl. No.	Parameter	Hour / Time of day	Observed Values (in Leq dB(A)) First Fortnight	Observed Values (in Leq dB(A)) 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	45.5	44.8	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	75 65 55 50
2		07:00 - 08:00	48	46.7					
3		08:00 - 09:00	49	48.7					
4		09:00 - 10:00	49.8	50.8					
5		10:00 - 11:00	50.1	50.4					
6		11:00 - 12:00	50.2	50.4					
7		12:00 - 13:00	50.4	50.2					
8		13:00 - 14:00	50.7	50.8					
9		14:00 - 15:00	51.3	51.2					
10		15:00 - 16:00	54.3	54.8					
11		16:00 - 17:00	53.3	53.9					
12		17:00 - 18:00	49.8	51.4					
13		18:00 - 19:00	49.9	50.2					
14		19:00 - 20:00	49.3	50					
15		20:00 - 21:00	49.2	49.8					
16		21:00 - 22:00	48.9	49.3					
		Leq Day	50.4	50.8					
1	Noise Level dB(A)Leq -Night	22:00-23:00	48.3	48.2	CPCB, Protocol for Ambient Level Noise Monitoring - 2015	35 dB-135 dB	35 dB(A)	Industrial Commercial Residential Silence	70 55 45 50
2		23:00- 00:00	46.2	47.1					
3		00:00- 01:00	47.7	47.2					
4		01:00-02:00	48	47.9					
5		02:00-03:00	46.8	46.9					
6		03:00-04:00	46	46					
7		04:00-05:00	45.7	45.5					
8		05:00-06:00	51.3	49					
		Leq Night	47.9	47.4					

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

Sampling Assistants ANALYSED BY	 (Gaurav Kant) CHECKED BY	 (Amit Raj Mishra) Authorised Signatory
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Page -1 of 1

Ambient Air Quality Standards for Jharia Coal Field
As per the Environment (Protection) Amendment Rules, 2000 notified vide notification G.S.R. 742(E), dated 25.9.2000.

Category	Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4	5
III Coal mines located in the coal fields of • Jharia • Raniganj • Bokaro	Suspended Particulate Matter (SPM)	Annual Average * 24 hours **	500 $\mu\text{g}/\text{m}^3$ 700 $\mu\text{g}/\text{m}^3$	- High Volume Sampling (Average flow rate not less than 1.1)
	Respirable Particulate Matter (size less than 10 μm) (RPM)	Annual Average * 24 hours **	250 $\mu\text{g}/\text{m}^3$ 300 $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter sampling and analysis
	Sulphur Dioxide (SO_2)	Annual Average * 24 hours **	80 $\mu\text{g}/\text{m}^3$ 120 $\mu\text{g}/\text{m}^3$	1.Improvedwest and Gaeke method 2.Ultraviolet fluorescene
	Oxide of Nitrogen as NO_2	Annual Average * 24 hours **	80 $\mu\text{g}/\text{m}^3$ 120 $\mu\text{g}/\text{m}^3$	1. Jacob & Hochheiser Modified (Na-Arsenic) Method 2. Gas phase Chemilumine-scence

Note:

* Annual Arithmetic mean for the measurements taken in a year, following the guidelines for frequency of sampling laid down in clause 2.

** 24 hourly/8 hourly values shall be met 92% of the time in a year. However, 8% of the time it may exceed but not on two consecutive days.

NATIONAL AMBIENT AIR QUALITY STANDARDS

New Delhi the 18th November 2009

In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No. 14 of 1981), and in supersession of the notification No(s).S.O.384(E), dated 11th April 1994 and S.O.935(E), dated 14th NOVEMBER 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect.

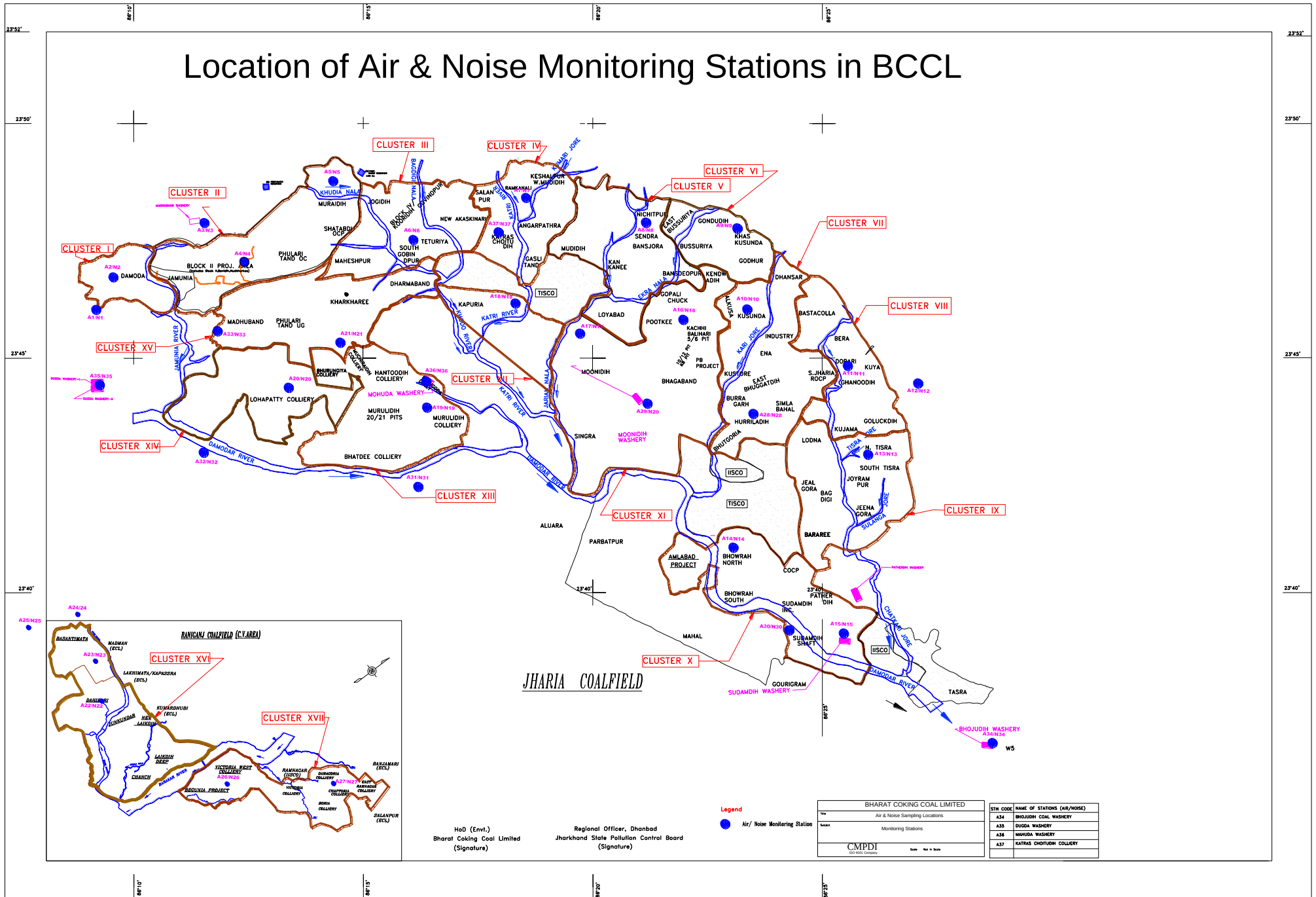
Pollutant	Time Weighted Average	Concentration in Ambient Air		Methods of Measurement
		Industrial, Residential, Rural and other Areas	Ecologically Sensitive Area (Notified by Central Government)	
Sulphur Dioxide (SO₂), µg/m³	Annual * 24 Hours **	50 80	20 80	-Improved West and Gaeke Method -Ultraviolet Fluorescence
Nitrogendioxide (NO₂), µg/m³	Annual * 24 Hours **	40 80	30 80	-Jacob &Hochheiser modified (NaOH-NaAsO ₂) Method -Gas Phase Chemiluminescence
Particulate Matter (Size less than 10µm) or PM₁₀, µg/m³	Annual * 24 Hours **	60 100	60 100	-Gravimetric -TEOM -Beta attenuation
Particulate Matter (Size less than 2.5µm) or PM_{2.5}, µg/m³	Annual * 24 Hours **	40 60	40 60	-Gravimetric -TEOM -Beta attenuation
Ozone (O₃) , µg/m³	8 Hours * 1 Hour **	100 180	100 180	-UV Photometric -Chemiluminescence -Chemical Method
Lead (Pb) , µg/m³	Annual * 24 Hours **	0.50 1.0	0.50 1.0	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper -ED-XRF using Teflon filter
Carbon Monoxide (CO), mg/m³	8 Hours ** 1 Hour **	02 04	02 04	-Non dispersive Infrared (NDIR) Spectroscopy
Ammonia (NH₃), µg/m³	Annual * 24 Hours **	100 400	100 400	-Chemiluminescence -Indophenol blue method
Benzene (C₆H₆), µg/m³	Annual *	05	05	-Gas Chromatography (GC) based continuous analyzer -Adsorption and desorption followed by GC analysis
Benzo(a)Pyrene (BaP) Particulate phase only, ng/m³	Annual *	01	01	-Solvent extraction followed byHPLC/GC analysis
Arsenic (As), ng/m³	Annual *	06	06	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper
Nickel (Ni), ng/m³	Annual *	20	20	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper

* Annual Arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

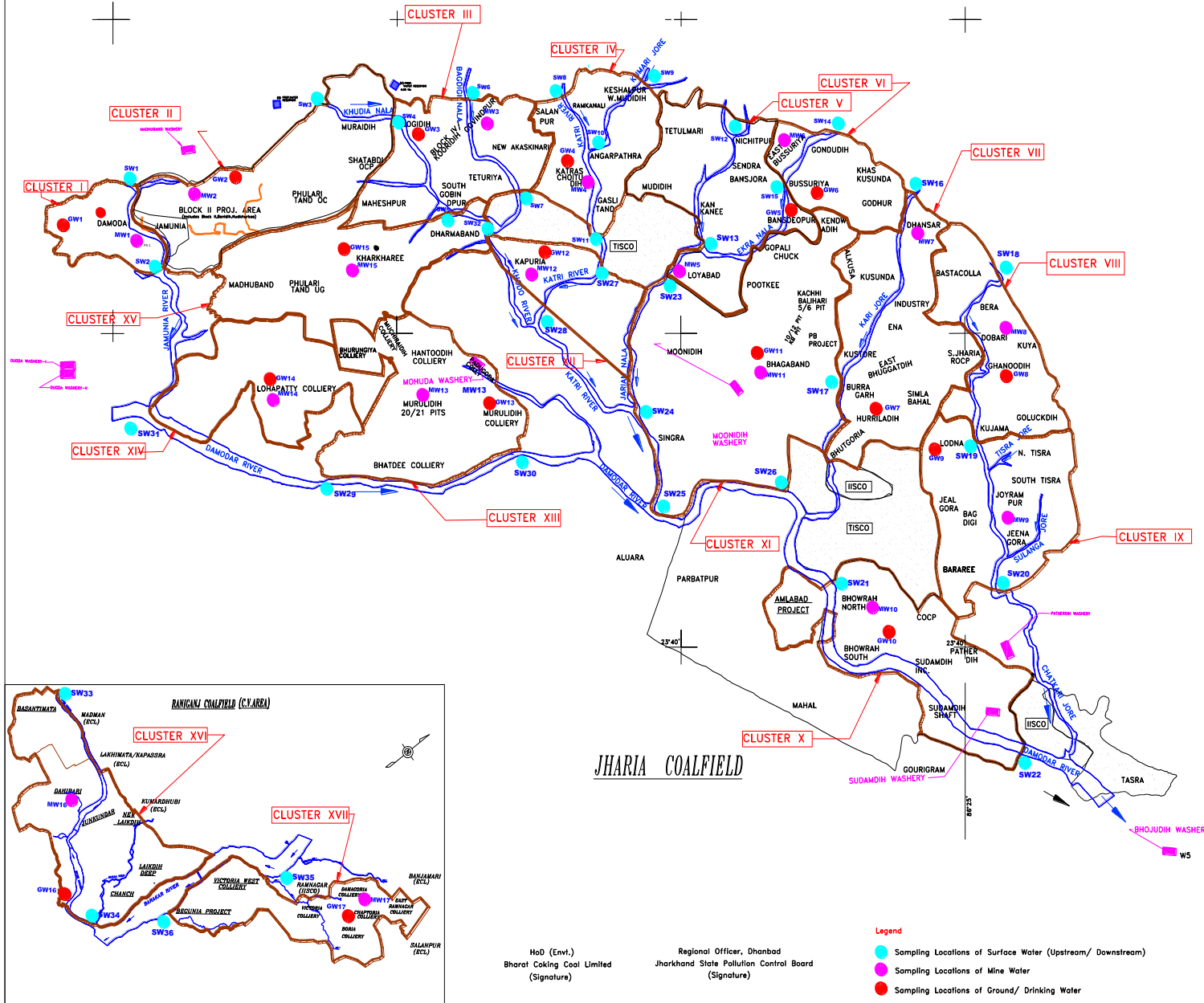
** 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they JUNE exceed the limits but not on two consecutive days of monitoring.

NOTE:Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigations.

Location of Air & Noise Monitoring Stations in BCCL



Water Sampling Locations in BCCL



INDEX

Cluster	Surface Water (U/S, D/S)	Name of River/ Nala/ Jore	Minel Effluent Water	Sampling Location	Ground Water	Sampling Location
I	SW1, SW2	Barhunda River	MW1	Damoda Area	GW1	Chitway Village
II	SW3, SW4	Khudra Nala	MW2	Block II OCP	GW2	Joyrampur Village
III	SW4, SW5, SW6, SW7	Khudra Nala, Bagdigi Nala	MW3	Gondpur Colliery	GW3	Jogdih Village
IV	SW8, SW11, SW9, SW10	Kain River, Kurnai Jore	MW4	Chotudih	GW4	Kankaneer Village
V	SW12, SW13, SW15	Jarian Nala, Ekra Nala	MW5	Mudidih	GW5	Nichitpur
VI	SW14, SW15	Ekra Nala	MW6	East Bassuria UGP	GW6	Bangora Borewell
VII	SW16, SW17	Kain Jore	MW7	Dobari UGP	GW7	Hurridih
VIII	SW18, SW19	Kain Jore	MW8	Dobari UGP	GW8	Ghanudih
IX	SW19, SW20	Kain Jore	MW9	Jeamagrah	GW9	Lodna
X	SW21, SW22	Damodar River	MW10	Bhowrah North	GW10	Bhowrah South
XI	SW23, SW24, SW25, SW26	Kain River, Damodar River	MW11	Bhagaband UGP	GW11	Bhagaband
XII	SW27, SW28	Kain River	MW12	Kapura	GW12	Kapura
XIII	SW29, SW30	Damodar River	MW13	Muridih (20/21)	GW13	Muridih
XIV	SW31, SW32	Damodar River	MW14	Lohapatti	GW14	Lohapatti
XV	SW33, SW34	Khudra Nala	MW15	Kharkharer UGP	GW15	Kharkharer
XVI	SW35, SW36	Barakar River	MW16	Dahibani OCP	GW16	Palabani Village
XVII			MW17	Damagoria Colliery	GW17	Chaptoria

HoD (Env.)
Bharat Coking Coal Limited
(Signature)

Regional Officer, Dhanbad
Jharkhand State Pollution Control Board
(Signature)

Legend

- Sampling Locations of Surface Water (Upstream/ Downstream)
- Sampling Locations of Mine Water
- Sampling Locations of Ground/ Drinking Water

Company	BHARAT COKING COAL LIMITED
Title	WATER SAMPLING LOCATIONS
Subject	MONITORING STATIONS
Scale	1:50,000
Drawn by	...
Checked by	...
Approved by	...

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**WATER QUALITY REPORT
OF
BHARAT COKING COAL LIMITED,
CLUSTER – XVII**

(FOR THE Q.E. JUNE 2023)

E. C. no. J-11015/373/2013-IA.II (M) dated 01.02.2021



CMPDI

ISO 9001 Company
Regional Institute-II
Dhanbad, Jharkhand

CLUSTER - XVII
(FOR THE Q.E. JUNE 2022)

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4.	Plate: Plate No. - I	SURFACE PLAN SHOWING WATER MONITORING LOCATIONS

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**WATER QUALITY REPORT
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Regional Institute-II
Dhanbad, Jharkhand

EXECUTIVE SUMMARY

1.0 Introduction

The purpose of environmental monitoring is to assess the quality of various attributes that affects the environment around us. In accordance with the quality of these attributes appropriate strategy is to be developed to control the pollution level within the permissible limits. One of these major attributes is water.

Bharat Coking Coal Limited (BCCL), a Subsidiary company of Coal India Limited is operating Underground and Opencast Mines in Raniganj Coalfield (RCF) is a part of Gondwana Coalfields located in Burdwan district of West Bengal, the RCF is bounded by 23°43' N to 23°75' N latitudes and 86°43' E to 86°76' E longitude occupying an area of 450 Sq.km. BCCL has awarded Environmental monitoring work of Raniganj Coalfield (RCF) to Central Mine Planning & Design Institute Limited (CMPDIL). The environmental monitoring has been carried out as per the conditions laid down by the MoEF&CC while granting environmental clearance of project, consent letter issued by the respective SPCB, and other statutory requirements.

2.0 Sampling location and rationale

2.1 Water sampling stations

The Water sampling stations were selected for Ground water supply, well/ Hand pump water also surface water samples.

3.0 Methodology of sampling and analysis

3.1 Water quality

Water samples were collected as per standard practice. Effluent samples were analyzed for 25 parameters on quarterly basis & for 27 parameters on half yearly basis. The Ground and Surface water samples were collected and analyzed for 25 and 17 parameters respectively, on quarterly basis. Thereafter the samples were preserved and analyzed at the Environmental Laboratory at CMPDI RI-II, Dhanbad.

4.0 Results and interpretations

4.1 Water quality

The test results indicate that the major parameters compared with MoEF&CC Gazette Notification No. GSR 742(E) dt 25.09.2000 Standards for Coal Mines, IS.10500/2012 (Ground water) and IS: 2296 (Surface water), are within permissible limits.

CHAPTER - I

INTRODUCTION

- 1.0 Any industry and development activities including coal mining is bound to affect environmental attributes. There are positive as well as negative impacts of such operations. For controlling the adverse impacts a regular monitoring is essential. The environmental monitoring is being done as per the guide-lines stipulated by Ministry of Environment, Forest and Climate Change (MoEF&CC), Govt. of India.

Bharat Coking Coal Limited (BCCL), a subsidiary company of Coal India Limited (CIL) is operating UG Mines and Opencast Mines in Raniganj Coalfield (RCF).

Bharat Coking Coal has awarded Environmental Monitoring work of all Projects, Cluster wise, to Central Mine Planning & Design Institute Limited (CMPDIL). The environmental monitoring has been carried out as per conditions laid down by MoEF&CC while granting environmental clearance to different projects. CMPDI has trained manpower and well equipped laboratory to carry out monitoring, analysis and R&D work in the field of environment.

- 1.1 The Cluster XVII is in the Western part of the Raniganj coalfield. It includes Damagoria and Begunia Mines. The cluster – XVII is situated about 50 - 55 kms from Dhanbad Railway Station. The mines of this cluster - XVII are operating since pre nationalization period (prior to 1972-73). It is connected by both Railway and Road. The drainage of the area is governed by Barakar River.

In compliance of the various statutory conditions the Environmental Monitoring has been carried out & report prepared for submission to MoEF&CC & respective SPCB and other statutory authorities.

CHAPTER – II

WATER QUALITY MONITORING

2.1 Location of sampling sites (Refer **Plate No. - I**)

- i) Ground water quality at **Chaptoria (GW17)**
- ii) Surface water quality at **U/S of Barakar River (SW35)**
- iii) Surface water quality at **D/S of Barakar River (SW36)**
- iv) Mine Water Quality at Damagoria Colliery (**MW17**)

2.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. Effluent samples were analyzed for 25 parameters on quarterly basis & for 27 parameters on half yearly basis. The Ground and Surface water samples were collected and analyzed for 25 and 17 parameters respectively, on quarterly basis. Thereafter the samples were preserved and analyzed at the Environmental Laboratory at CMPDI RI-II, Dhanbad.

2.3 Results & Interpretations

The results are given in tabular form along with the applicable standards. Results are compared with Schedule - VI, effluent prescribed by MoEF&CC, IS: 10500::2012, IS 2296. Results show that most of the parameters are within the permissible limits.



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

CMPDIL, RI-II
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Month & Year	QUARTER ENDING June 2023		Cluster	CLUSTERXVII			Report No.	RI-2/GW/23-24/QE/01
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)						Date of Issue	23.08.23
Project	Chaptoria			Sample Ref. No.	REM/BCCL/23-24/GW/	Sampling Method	CMPDI/RI-II/LPM 13,(IS 3025:Part -1)	
Sampling Stations	GW17		Date of Sampling	08.05.2023	Sample Collected in 5 Ltr Jerricane , Color as observed is transparent			
				Period of Analysis		08.05.23	to	14.08.23
Sl. No.	Parameter	Method of Analysis	Observed Values				IS 10500: 2012	
			GW17	Range Of Testing	LDL	Acceptable Limit (Max)*	Permissible Limit in the Absence of Alternate Source (Max)	
1	Colour, Hazen unit	APHA, 23 rd Edition ,2120-c-Spectrophotometric Single Wavelength Method,2017	4	1-500.0	1	5	15	
2	Calcium, mg/l	IS 3025, (Part 40): 1991 R:2019,AAS-Flame Method & EDTA Method	53	2.0-800.0	2	75	200	
4	Chlorides, mg/l	IS-3025(Part 32):1988, R-2019 , Argentometric Method	73	2.0-1500.0	5	250	1000	
5	Fluoride, mg/l	APHA, 23 rd Edition, SPADNS Method	0.71	0.2-2.00	0.2	1	1.5	
6	Iron, mg/l	IS 3025 (Part 53) : 2003, R : 2019 , AAS-Flame Method	6.13	0.2-10	0.2	1	No relaxation	
7	Magnesium	APHA 23 rd Edition, 3500-Mg B: Calculation Method	36	6.0-700	6	30	100	
8	Nitrate , mg/l	APHA, 23 rd Edition, UV-Spectrophotometric Method	41.04	0.5-45.0	0.5	45	No relaxation	
9	Odour	APHA, 23 rd Edition, , 2150-C	Agreeable	Qualitative	Qualitativ e	Agreeable	Agreeable	
10	pH value	IS 3025, Part 11 : 1983 R 2017 Electrometric(pH Meter) Method	7.55	1-14	0.1	6.5-8.5	No relaxation	
11	Sulphate, mg/l	APHA -23 rd Edition, 4500 S , Turbidity Method	96	10.0-400.0	10	200	400	
12	Taste	APHA,23 rd Edition, 2160-C	Acceptable	Qualitative	Qualitativ e	Acceptable	Agreeable	
13	Total Alkalinity (CaCO ₃), mg/l, Max	IS 3025, Part 23: 1986 R 2019 Titration Method	244	4.0-2000.0	4	200	600	
14	Total Dissolved Solids, mg/l	IS 3025, Part 16: 1984 R 2017 Gravimetric method	606	25.0-5000.0	25	500	2000	
15	Total Hardness, mg/l	IS 3025, (Part 21): 2019 EDTA Method	280	4.0-2000.0	4	200	600	
16	Turbidity, NTU	IS 3025, (Part 10):1984, R-2017 Nephelometric/Turbiditimetric Method	1.5	1-800	0.1	1	5	
17	Zinc, mg/l	IS 3025(Part 49) : 1994,R:2019, AAS-Flame Method	0.50	0.1 - 2.0	0.1	5	15	

***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,

(Signature)

(Kumar Vaibhav)
REVIEWED BY

(Signature)
(Amit Raj Mishra)
AUTHORISED SIGNATORY

ANALYSED BY

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

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Month & Year		QUARTER ENDING June 2023		Cluster		CLUSTER XVII			Report No.	RI-2/GW/23-24/QE/01		
Customer		Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)							Date of Issue	23.08.23		
Project		Chaptoria			Sample Ref. No.		REM/BCCL/2023-24/GW		Sampling Method	CMPDI/RI-II/LPM 13,(IS 3025:Part -1)		
Sampling Stations		GW17		Date of Sampling		08.05.2023		Sample Collected in 5 Ltr Jerricane , Color as observed is transparent				
					Period of Analysis		08.05.23		to	14.08.23		
Sl. No.	Parameter	Method of Analysis			Observed Values						IS 10500: 2012	
					GW17		Range Of Testing	LDL		Acceptable Limit (Max)*	Permissible Limit in the Absence of Alternate Source (Max)	
1	Boron (as B), mg/l, Max	APHA, 23rd Edition ,Carmin			<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, 23rd Edition, AAS-GTA			<0.01		0.01-10	0.01		0.05	1.5	
3	Free Residual Chlorine, mg/l, Min	APHA, 23rd 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, 23rd Edition, AAS-GTA			<0.005		0.005-10	0.005		0.01	No relaxation	
5	Phenolic compounds (as C6H5OH), mg/l, Max	APHA, 22nd Edition,4-Amino Autipyrine			<0.001		0.001-10	0.001		0.002	0.002	
6	Selenium, mg/l, Max	APHA 23rd 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 23rd 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, 23rd Edition, AAS-GTA			<0.01		0.01-10	0.01		0.05	No relaxation	
9	Nickel as Ni, mg/l Max	IS 3025 Part 54 : 2003,R : 2019, AAS-Flame APHA, 23rd Edition, AAS-GTA			<0.005		0.005-10	0.005		0.02	No relaxation	
10	Manganese as Mn, mg/l, Max	IS 3025(Part 59) : 2006,R:2019, AAS-Flame Method			0.17		0.02-10	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,

(Kumar Vaibhav)		(Amit Raj Mishra)
ANALYSED BY	REVIEWED BY	AUTHORISED SIGNATORY

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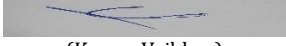
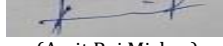
CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED
Environment Laboratory, Regional Institute-II
SURFACE WATER ANALYSIS TEST REPORT

CMPDIL, RI-II
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Month & Year		QUARTE ENDI NG June 2023		Cluster	XVII		Report No.	RI-2/SW/23- 24/QE/01
Customer		Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	23.08.23
Project		Sample Ref. No.			REM/BCCL/2023-24/SW /		Sampling Method	(IS 3025 , Part-1) CMPDI/RI- II/LPM 13
Sampling Stations		(i)	Upstream in Barakar River(SW35)		Date of Sampling		20.06.2023	Period of Analysis
		(ii)	Downstream in Barakar River(SW36)		Date of Sampling		20.06.2023	20.06.23 to 14.08.23
Sl. No.	Parameter	Method of Analysis	Observed Values		IS : 2296 INLAND SURFACE WATER [1982] Class 'C	Range of Testing	LDL	
			(i)	(ii)				
1	BOD (3 days 27°C), mg/l	IS 3025 (Part 44) : 1993, R-2019 , 3 day incubation at 27°C	2.6	2.5	3	2.00-10.00	2	
2	Colour,Hazen Units	APHA 23rd Edition , 2120-B-:2017	3	3	10	1-100.0	1	
3	Chlorides, mg/l	IS-3025(Part 32):1988, R-2019 Argentometric Method	31	28	600	5.0-1500.0	5	
4	Copper, mg/l	IS 3025 (Part 42) : 1992 R : 2019, AAS-Flame Method	<0.2	<0.2	1.5	0.2-10.0	0.2	
5	Dissolved Oxygen, mg/L	IS 3025 (Part 38) : 1989, R:2003 Winkler Azide Method	6.2	6.0	4	0.1-10.0	0.1	
6	Fluoride, mg/l	APHA, 23rd Edition, SPADNS Method	0.11	0.61	1.5	0.2-2.00	0.2	
7	Hexavalent Chromium, mg/l	APHA 23rd Edition, 1,5- Diphenylcarbohydrazide Method IS 3025 (Part 52) : 2003,R-2019	<0.01	<0.01	0.05	0.01-1.4	0.01	
8	Iron, mg/l	IS 3025 (Part 53):2003,R:2019, AAS-Flame Method	<0.2	<0.2	50	0.2-10	0.2	
9	Nitrate , mg/l	APHA, 23rd Edition, UV- Spectrophotometric Method	9.00	9.69	50	0.5-45.0	0.5	
10	pH value	IS 3025, (Part 11) : 1983 R-2017 Electrometric (Ph Meter) method	7.64	7.82	6.5-8.5	2.0-12.0	2	
11	Sulphate, mg/l	APHA -23rd Edition,4500- S, Turbidity Method	31	34	400	10.0-400.0	10	
12	Total Dissolved Solids, mg/l	IS 3025, (Part 16): 1984 R-2017 Gravimetric method	354	374	1500	25.0-5000.0	25	
13	Zinc, mg/l	IS 3025(Part 49) : 1994, R : 2019, AAS-Flame Method	<0.1	0.11	15	0.1 - 3.0	0.1	

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

*****All units in mg/L unless specified otherwise Sample Collected in 5 Ltr Jerricane , Color as observed is transparent**

	 (Kumar Vaibhav)	 (Amit Raj Mishra)
Analysed by	REVIEWED BY	AUTHORISED SIGNATORY

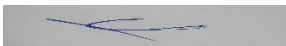
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Month & Year		QUARTE ENDI NG June 2023		Cluster	XVII		Report No.	RI-2/SW/23- 24/QE/01
Customer		Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)					Date of Issue	23.08.23
Project		Sample Ref. No.			REM/BCCL/23-24/SW /	Sampling Method	(IS 3025 , Part-1) CMPDI/RI- II/LPM 13	
Sampling Stations		(i)	Upstream in Barakar River(SW35)		Date of Sampling	20.06.2023	Period of Analysis	
		(ii)	Downstream in Barakar River(SW36)		Date of Sampling	20.06.2023	20.06.23 to 14.08.23	
Sl. No.	Parameter	Method of Analysis	Observed Values		IS : 2296 INLAND SURFACE WATER [1982] Class 'C	Range of Testing	LDL	
			(i)	(ii)				
1	Arsenic (as As), mg/l, Max	IS-3025,Part 37:1988, R-2019/ APHA 23rd Edition AAS-VGA	<0.006	<0.006	0.2	0.006-10	0.006	
2	Lead (as Pb), mg/l, Max	APHA, 23rd Edition, AAS-GTA	<0.005	<0.005	0.1	0.005-10	0.005	
3	Phenolic compounds (as C6H5OH), mg/l, Max	APHA, 22nd Edition 4-Amino Antipyrine	<0.002	<0.002	0.005	0.002-10	0.002	
4	Selenium, mg/l, Max	IS-3025 ,Part 56:2003, R-2019/ APHA 23rd Edition, AAS-VGA	<0.007	<0.007	0.05	0.007-10	0.007	

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

*****All units in mg/L unless specified otherwise Sample Collected in 5 Ltr Jerricane , Color as observed is transparent**

 Analysed by	 REVIEWED BY (Kumar Vaibhav)	 AUTHORISED SIGNATORY (Amit Raj Mishra)
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CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED
Environment Laboratory, Regional Institute-II
MINE EFFLUENT ANALYSIS TEST REPORT

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Month & Year	QUARTER ENDING June 2023	Cluster VI		CLUSTER XVII			Report No.	RI-2/MW/2023-24/QE/01
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)						Date of Issue	23.08.23
Project	Damagoria Colliery		Sample Ref. No.		REM/BCCL/23-24/MW/	Sampling Method	CMPDI/RI-II/LPM 13,(IS 3025:Part -1)	
Sampling Stations	MW17	Date of Sampling	19.06.2023	Sample Collected in 5 Ltr Jerricane , Color as observed is transparent				
				Period of Analysis		19.06.23	to	14.08.23
Sl. No.	Parameter	Method of Analysis						
			MW17	Range Of Testing	LDL	MOEF -SCH-VI STANDARDS Class ‘A’		
1	B.O.D (3 days 27°C), mg/l, Max	IS 3025 /44:1993,R:20033 day incubation at 27°C	<2.0	2-1000.0	2	30		
2	Colour	APHA,23 RD Edition ,2120-B-:2017	1	1.0-500.0	1	-		
3	COD, mg/l, Max	APHA 23rd Edition 5220 C Titrimetric Method	32	4.0-800.0	4	250		
4	Copper (as Cu), mg/l, Max	IS 3025(Part42): 1992 R : 2019, AAS-Flame	<0.2	0.2-10.0	0.2	3		
5	Dissolved Phosphate (as P), mg/l, Max	IS 3025/ 31, 1988 R 2019	<0.1	0.1-5	0.1	5		
6	Fluoride (as F) mg/l, Max	APHA, 23RD Edition, Page 4-90 to , 4500 –F- D (SPADNS Method)	0.80	0.2-2	0.2	2		
7	Hexavalent Chromium, mg/l, Max	IS 3025 (Part 52) : 2003,Reaffirmed 2019	<0.01	0.01-1.4	0.01	0.1		
8	Iron (as Fe), mg/l, Max	IS 3025 (Part 53) : 2003, R : 2019 , AAS-Flame	<0.2	0.2-10	0.2	3		
9	Manganese(as Mn), mg/l, Max	APHA, 23 rd Edition, AAS-GTA	<0.1	0.1-10	0.005	0.1		
10	Nickel (as Ni), mg/l, Max	IS-3025(Part 54):2003, R:2019 AAS-Flame	<0.1	0.1-10.0	0.1	3		
11	Nitrate Nitrogen, mg/l, Max	APHA, 23 rd Edition,UV-Spectrphotometric	1.11	0.5-45	0.5	10		
12	Oil & Grease, mg/l, Max	IS 3025/39:1991, R : 2019, Partition Gravimetric	<2.0	2.0-1000	2	10		
13	pH value	IS-3025/11:1983, R-2017, Electrometric	7.69	1 -14	0.1	5.5 to 9.0		
14	Temperature (°C)	IS-3025/09:1984, Thermometric	32.5	1-100		Shall not exceed 5° C above the receiving temp		
15	Total Chromium (as Cr), mg/l, Max	IS-3025(Part 52):2003, R:2019 AAS-Flame	<0.1	0.1-8	0.1	2		
16	Total Suspended Solids, mg/l, Max	IS 3025/17:1984, R :2017, Gravimetric	30	10-5000	10	100		
17	Zinc (as Zn), mg/l, Max	IS 3025 /49 : 1994, R : 2019, AAS-Flame	0.1	0.1-2.0	0.1	5		
18	Odour	APHA, 23rd Edition, , 2150-C	Agreeable	Qualitative	Qualitative	Qualitative		

***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,

ANALYSED BY

(Kumar Vaibhav)

REVIEWED BY

(Amit Raj Mishra)

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

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email: rdri2cmpdi@coalindia.in

Month & Year	QUARTER ENDING June 2023	Cluster		CLUSTER XVII			Report No.	RI-2/MW/2023-24/QE/01
Customer	Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)						Date of Issue	23.08.23
Project	Damagoria Colliery		Sample Ref. No.		REM/BCCL/23-24/MW/	Sampling Method	CMPDI/RI-II/LPM 13,(IS 3025:Part -1)	
Sampling Stations	MW17	Date of Sampling	19.06.2023	Sample Collected in 5 Ltr Jerricane , Color as observed is transparent				
				Period of Analysis		19.06.23	to	14.08.23
Sl. No.	Parameter	Method of Analysis						
			MW17	Range Of Testing	LDL	MOEF -SCH-VI STANDARDS Class 'A'		
1	Ammonical Nitrogen, mg/l, Max	IS 3025/34:1988,R : 2009, Nessler's	<0.02	0.02-100	0.02	50		
2	Arsenic (as As), mg/l, Max	IS-3025,part 37:1988, R-2019/ APHA 23 rd Edition AAS-VGA	<0.006	0.006-5	0.006	0.2		
3	Free Ammonia, mg/l, Max	IS:3025/34:1988, Nessler's	<0.01	0.01-10	0.01	5		
4	Lead (as Pb), mg/l, Max	IS-3025(Part 59):2006, R 2017 AAS-Flame /APHA, 23 rd Edition, 3111B, AAS-Flame	<0.005	0.2-10	0.005	2		
5	Phenolic compounds	APHA, 23rd Edition4-Amino Antipyrine	<0.002	0.002-5	0.002	1		
6	Selenium, mg/l, Max	IS-3025,part 56:2003, R-2019/ APHA 23 rd Edition, AAS-VGA	<0.007	0.007-5	0.007	0.05		
7	Sulphide (as S ²⁻) mg/l Max.	APHA 23 rd Edition Methylene Blue Method	<0.005	0.005-5	0.005	2		
8	Total Kjeldahl Nitrogen, mg/l, Max	IS:3025/34:1988, Nessler's	<1	1-200	1	100		
9	Total Residual Chlorine, mg/l, Max	APHA, 23rd Edition, , 4500-Cl B. (Iodometric Method-I)	<0.04		0.04	1		

***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,

ANALYSED BY

(Kumar Vaibhav)
REVIEWED BY

(Amit Raj Mishra)

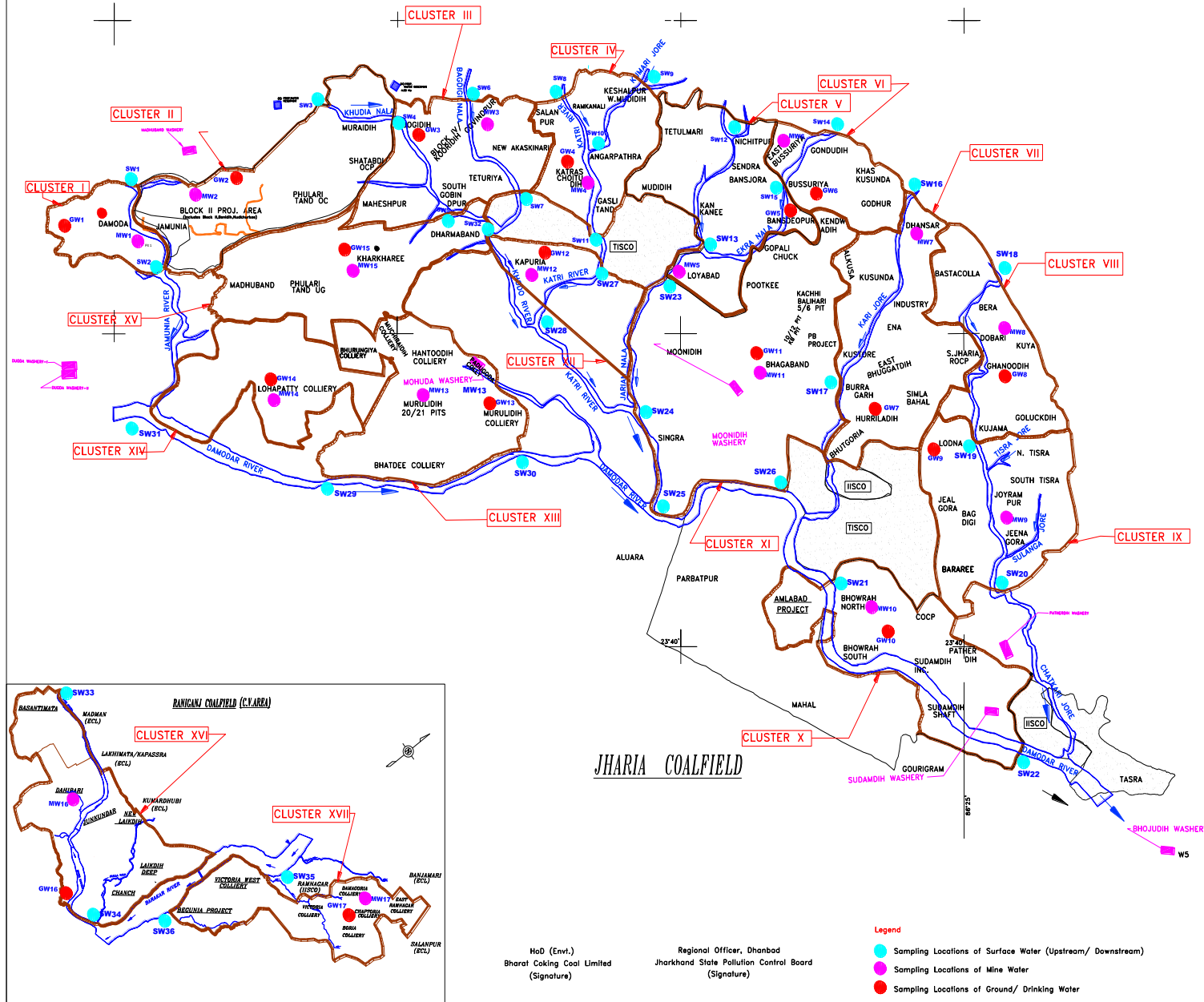
AUTHORISED SIGNATORY

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.

---- End of Report ----

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Water Sampling Locations in BCCL



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Cluster	Surface Water (JUS, D/S)	Name of River/ Nala/ Jore	Mineral Effluent Water	Sampling Location	Ground Water	Sampling Location
I	SW1, SW2	Jamunia River	MW1	Damodar Area	GW1	Chudway Village
II	SW3, SW4	Khudia Nala	MW2	Block II OCP	GW2	Joyrampur Village
III	SW4, SW5, SW6, SW7	Khudia Nala, Bagdigi Nala	MW3	Govindpur Colliery	GW3	Jogdih Village
IV	SW8, SW11, SW9, SW10	Kanti River, Kunti Jore	MW4	Chotudih	GW4	Kankanee Village
V	SW12, SW13, SW15	Jamunia Nala, Ekra Nala	MW5	Mudidih	GW5	Nichitpur
VI	SW14, SW15	Ekra Nala	MW6	East Basturua UGP	GW6	Bansgora Borewell
VII	SW16, SW17	Kanti Jore	MW7	Dhanbar UGP	GW7	Huriladih
VIII	SW18, SW19	Kanti Jore	MW8	Dobari North	GW8	Gharudih
IX	SW20, SW21	Kanti Jore	MW9	Jeenagora	GW9	Lodna
X	SW21, SW22	Damodar River	MW10	Bhowrah North	GW10	Bhowrah South
XI	SW23, SW24, SW25, SW26	Damodar River	MW11	Bhagaband UGP	GW11	Bhagabandh
XII	SW27, SW28	Kanti River	MW12	Kapuria	GW12	Kapuria
XIII	SW29, SW30	Damodar River	MW13	Murudih (20/21)	GW13	Murudih
XIV	SW31, SW29	Damodar River	MW14	Lohapatti	GW14	Lohapatti
XV	SW5, SW32	Khudia Nala	MW15	Dhanbar UGP	GW15	Kharkharee
XVI	SW33, SW34	Khudia Nala	MW16	Dahibani OCP	GW16	Patlabani Village
XVII	SW35, SW36	Barakar River	MW17	Damagora Colliery	GW17	Chaptoria

Legend

- Sampling Locations of Surface Water (Upstream/ Downstream)
- Sampling Locations of Mine Water
- Sampling Locations of Ground/ Drinking Water

Company	BHARAT COKING COAL LIMITED
Title	WATER SAMPLING LOCATIONS
Scale	MONITORING STATIONS
CMPDI	Scale: Not to Scale