

HALF YEARLY
ENVIRONMENT CLEARANCE COMPLIANCE REPORT
OF
CLUSTER 11
J-11015/245/2011-IA.II(M)
FOR THE PERIOD OF
OCTOBER 2018 TO MARCH 2019



Eastern Coalfields Limited
(A subsidiary of Coal India Ltd.)

EASTERN COALFIELDS LIMITED
(A Subsidiary of Coal India Limited)
Office of the General Manager
Bankola Area



P.O. Ukhra
District : Paschim Burdwan
West Bengal-713363
Ph.: No. 0341-2665491/492/493/494
Fax No. 0341-2665366
Email: gmbankola@gmail.com

Ref. No.: *अस/क/एन५/१९/३७६*

Dated: *१३/५/१९*

UNDERTAKING

Information provided in Half yearly EC compliance report for the period of Oct'18- Mar'19 in respect of the Khandra Colliery of Cluster No.11 is true to the best of my knowledge.

[Signature]
13-4-19
Agent

Khandra Colliery

[Signature]
13/4/19
Manager

Khandra Colliery

EASTERN COALFIELDS LIMITED
(A Subsidiary of Coal India Limited)
Office of the General Manager
Bankola Area



P.O. Ukhra
District : Paschim Burdwan
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Ph.: No. 0341-2665491/492/493/494
Fax No. 0341-2665366
Email: gmbankola@gmail.com

Ref. No.: SKP/MGR/019/113

Dated: 18/04/19

UNDERTAKING

Information provided in Half yearly EC compliance report for the period of Oct'18- Mar'19 in respect of the Shankarpur Colliery of Cluster No.11 is true to the best of my knowledge.

Shy 16/4/19
Agent

Shankarpur Colliery

B
16/4/19
Manager

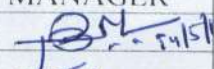

Shankarpur Colliery



EASTERN COAL FIELDS LIMITED
A subsidiary of Coal India Limited.
Office of the Agent
Lower Kenda & Bahula , Kenda Area.
P.O:- Bahula , Dist: - Burdwan.
Pin:-713322. West Bengal

UNDERTAKING

Information provided in Half yearly EC compliance report for the period Oct '18 to March'19 in respect of the following mines of Cluster no. 11 is true to the best of my knowledge:

SL NO.	MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1.	Lower Kenda (UG)	BISWARAJAN MANNA	 14/5/19
2.	Bahula (UG)	Satyakam Amond	 14/5/19


Agent
(Bahula & Lower Kenda Mines)



EASTERN COAL FIELDS LIMITED

A subsidiary of Coal India Limited.

Office of the Agent

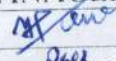

C L Jambad & Siduli , Kenda Area.

P.O:- Bahula , Dist: - ,Burdwan.

Pin:-713322. West Bengal

UNDERTAKING

Information provided in Half yearly EC compliance report for the period Oct '18 to March'19 in respect of the following mines of Cluster no. 11 is true to the best of my knowledge:

Sl. NO.	MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1.	CL Jambad (UG)	T. JANA	
2.	Siduli (UG + OC)	R. K. P. Singh	


10/5/19
Agent

(CL Jambad & Siduli Mines)



EASTERN COAL FIELDS LIMITED
A subsidiary of Coal India Limited.
Office of the Agent
New Kenda Group of Mines, Kenda Area.
P.O:- Kenda ; Dist: - Burdwan.
Pin:-713342. West Bengal

UNDERTAKING

Information provided in half yearly EC compliance report for the period Oct '18 to March'19 in respect of the following mines of Cluster no. 11 is true to the best of my knowledge:

SL NO.	MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1.	New Kenda (UG)		
2.	W kenda OC Patch/mine(49 Ha)		
3.	New Kenda OC mine		

Agent
(New Kenda Group of Mines) 06/5/19



EASTERN COAL FIELDS LIMITED
A subsidiary of Coal India Limited.
Office of the Agent
CBI/Shankarpur OC Patch/Bonbahal OC, Kenda Area.
P.O:- Bahula , Dist: - Burdwan.
Pin:-713322. West Bengal

UNDERTAKING

Information provided in Half yearly EC compliance report for the period Oct '18 to March '19 in respect of the following mines of Cluster no. 11 is true to the best of my knowledge:

SL NO.	MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1.	CBI(UG)	DINESH SHARMA	
2.	Bonbahal OC Patch(25 Ha)		
3.	Shankarpur/CL. Jambad OC Patch/mine(52 Ha)		

Agent

(CBI (UG)/ Bonbahal OC Patch/ Shankarpur OC Patch mines)



EASTERN COAL FIELDS LIMITED
A subsidiary of Coal India Limited.
Office of the Agent
Chora Haripur Group of Mines, Kenda Area.
P.O:- Haripur, Dist: - Burdwan.
Pin:-713378. West Bengal

UNDERTAKING

Information provided in Half yearly EC compliance report for the period Oct '18 to March '19 in respect of the following mines of Cluster no. 11 is true to the best of my knowledge:

SL NO.	MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1.	Krishnagar(UG)		
2.	Haripur group of Mines	S. N. Sankar	
i)	Haripur (UG + OC)		
ii)	Chora 10 pit	S. Acharjee	
iii)	Chora 7.9 pit	R. K. Rai	

Agent 11/5/19

(Krishnanagar/Haripur(UG+OC)/Chora 7.9 pit/Chora 10 pit)

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

Specific Conditions				
Condition no.(i)	The Maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.			
Compliance	Kenda - Complied			
	S.No	Name of Mines	Peak EC Capacity (MTPA)	Production from(Oct '18 to March '19) (MT)
	1	Krishnanagar (U/G)	0.05	Temporarily closed.
	2	Haripur Group of Mines	2.30	0.565458
	A	Haripur(U/G + OC)	0.75	Haripur UG is Temporarily closed & OCP Not yet started.
	B	CBI(U/G)	0.10	0.029889
	C	Chora 7,9 & 10 pit(U/G)	0.15	0.07793
	D	Bonbahal OC Patch(OCP)	0.5	0.102754
	E	Shankarpur/CL Jambad OC Patch/Mine(52 Ha)	0.8	0.354885
	3	New Kenda Group of Mines	2.00	0.119282
	A	New Kenda (UG)	0.05	0.015802
	B	West Kenda OC Patch/Mines	0.75	Not yet started.
	C	New Kenda OC mine(240 Ha)	1.2	0.10348
	4	Bahula Group of Mines	0.45	0.146471
	A	Lower Kenda(U/G)	0.15	0.035949
	B	Bahula (U/G)	0.25	0.085078
C	CL Jambad (U/G)	0.05	0.025444	
5	Siduli(U/G +OC)	1.2	0.054887, OCP not yet started.	

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	Bankola – Complied			
	Sl No.	Name of the Mine	Peak EC Capacity (MTY)	Production (MT) Oct'18 to Mar'19 FY 2018 to 2019
	1	Khandra U/G	0.39	0.054451 0.096057
	2	Shankarpur U/G	2.30	0.111055 0.189811
	Total		2.69	0.165506 0.285868
Condition(ii)	The validity of the EC is for the life of mine or as specified in the EIA Notification, 2006 whichever is earlier.			
Compliance	Agreed.			
Condition(iii)	The socio economic study conducted by PP needs to be authenticated by an institute of repute such as Indian institute of forest Management /XLRI, Jamshedpur.			
Compliance	<p>Kenda - This condition contained in EC letter No. J-11015/245/2011/-IA-II(M),dated 21st July 2015, with amendment dated 29th November 2016 of Cluster 11 has been deleted as per letter no. J-11015/245/2011/-IA-II(M),Dated 10th Sept. 2018 issued by MoEF.</p> <p>Bankola - Not applicable for Shankarpur UG and Khandra UG mines under Bankola Area.</p>			
Condition (iv)	All safety measures shall be taken as per CMR, 1957 & related circulars.			
compliance	<p>Kenda - All safety measures are being taken as per CMR- 1957 & related Circulars.</p> <p>Bankola - All safety measures are being taken as per CMR- 2007 & related Circulars.</p>			
Condition(v)	The production shall be within mining lease area.			
Compliance	The production is within the same Mining lease.			
Condition(vi)	The loading system from Continuous Miner to Mine Car needs to be improved to utilize the continuous miner efficiently.			
Compliance	<p>Kenda- There is no continuous miner in the Kenda area of cluster No.11.</p> <p>Bankola- Not applicable. There is no continuous miner in Khandra and Shankarpur Colliery under Bankola Area.</p>			
Condition(vii)	There shall be no external dump and mine voids at the end of mining. The land shall be brought back the surface level for agricultural use.			
compliance	Kenda - The backfilling is being done as per mine closure plan and after technical reclamation, biological reclamation is being done as per MCP.			

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	Bankola - Not applicable since there is no OC in Cluster 11 under Bankola Area.
Condition(viii)	Controlled blasting in all the mines to be resorted to.
compliance	Complied.
Condition(ix)	Till the OB dump is re-handled, it shall be covered with grass cover.
compliance	Kenda - Noted and Agreed. Bankola - Not applicable as there is no external OB dump due to underground mining.
Condition(x)	Suitable garland drains and settling tank be provided.
compliance	Garland drains have been provided wherever is required.
Condition(xi)	Socio-economic study to be carried out in order to establish the necessity of mining on New Kenda OC Patch. Presently, EC is recommended to the cluster without New Kenda OCP.
compliance	Kenda - This condition contained in EC letter No. J-11015/245/2011/-IA-II(M),dated 21st July 2015, with amendment dated 29th November 2016 of Cluster 11 has been deleted as per letter no. J-11015/245/2011/-IA-II(M),Dated 10th Sept. 2018 issued by MoEF. Bankola – Not applicable for Bankola area.
Condition(xii)	Coal transportation shall be: in pit underground mine-coal tubs at the faces are being hauled by Tugger Haulage; opencast mine-coal at surface is transported to the nearby coal depot by dumpers through tipplers, surface to siding by dumpers.
compliance	It is being complied.
Condition(xiii)	Independent network of railway sidings inside the cluster to be developed and should be constructed at the earliest till then proponent may use mechanically covered trucks for transportation of coal.
compliance	Kenda - Bahula railway siding is inside the cluster. Coal transportation to railway siding from coal depot is being done by tarpaulin covered truck. Bankola - There are currently active 2 railways sidings (Bankola I and Bankola II) serving to the mines under Bankola Area. Transportation of coal from mine to railway siding is being done by tarpaulin covered trucks.
Condition(xiv)	Three tier green plants shall be raised around the railway sidings and along the road side to prevent dust and noise pollution.
compliance	Kenda - Noted and Agreed. Depending upon the availability of land, three tier plantations would be done. Bankola - Both sides of connecting roadway are well vegetated naturally. Plantation along 5.5km roadways has been done along coal transportation

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	<p>road and siding.</p> <p>The species planted are as follows-</p> <ul style="list-style-type: none"> • Tagar nana • Duranta goldiana • Ixora nana • Hibiscus • Mosanda • Almunda • Phutus • Palm • Spathodia • Lagerstroema • Cassia delonix • Ashok • Polyalthia • Callistemon
Condition(xv)	Stowing and depillaring shall be as per the recommendations of the DGMS.
compliance	Stowing and depillaring is being done as per recommendations of the DGMS.
Condition(xvi)	The proponent must comply with the Raniganj Action Plan .The unstable area within the cluster will be brought under the plantation after the population residing over these areas is rehabilitated under the Master Plan for Raniganj Coalfields to be implemented by ADDA.
compliance	Job is being implemented by ADDA.
Condition(xvii)	Trees with deep rooted system should be planted so as to prevent soil erosion.
compliance	<p>Kenda - Noted and Agreed.</p> <p>Bankola - Deep rooted tree species planted are as follows- Neem, Seemul, Karanch, Shisham, Arjun, Babool & Sirish.</p>
Condition(xviii)	Proponent should plant additional 10 Ha/year over the next 10 years at various locations in the cluster.
compliance	<p>Kenda - In 2015-16, 10 Ha plantation ,In 2016-17, 16 Ha of plantation & In 2018-19, 3 Ha of plantation with density 2500 species /Ha have been planted in kenda area under cluster 11. The details of plantation is as follows:-</p> <ol style="list-style-type: none"> 1. OB Dump Area-----14 Ha (10 Ha in FY 2015-16 & 4 Ha in FY 2016-17). 2. Backfilled Area-----3 Ha(in FY 2016-17). 3. Others-----9 Ha (in FY 2016-17). 4. Backfilled Area----3 Ha (in FY 2018-19). <p>Proposed Plantation in FY 2019-20 is 9 Ha.</p> <p>Bankola- 12 ha plantaion and 5.5 km roadside plantation has been completed in</p>

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	Bankola Area in 2016-17. 3 Ha orchard plantations is being done at Bankola colony for orchard plantation.								
Condition(xix)	Rivers/nallahs shall be desilted and restored back to functional state.								
Compliance	<p>Kenda- There is no siltation from the mine into Rivers/Nallahs. However cleaning of nallahs is an annual pre monsoon activity in each mine of the cluster.</p> <p>Bankola- At present 2 nos. UG mines are working under Bankola Area in Cluster-11.No activity is carried out in the UG mines which may cause siltation in any river/nallah in vicinity. However, river/nallah shall be desilted and restored back to functional state when required.</p>								
Condition(xx)	Wildlife conservation plan be prepared and submitted to MOEFCC with the approval of the state Govt.								
compliance	Conservator of Forest (Wildlife), Govt. of West Bengal has been requested to prepared Wildlife Conservation plan of entire Raniganj Coalfield and sent it for approval.								
Condition(xxi)	Proponent shall use high resolution image of all clusters for evaluating land use, plantation etc.								
compliance	Land use pattern and plantation is being monitored by satellite surveillance based on satellite imagery.								
Condition(xxii)	Separate drainage pattern be provided with the approval of competent authority.								
compliance	Noted and Agreed. Separate drainage pattern be provided wherever required.								
Condition(xxiii)	Sand stowing must be used as recommended by CMPDI.								
compliance	Sand stowing is being used as recommended by CMPDIL.								
Condition(xxiv)	Action plan for prevention and mitigation of subsidence be prepared and implemented.								
compliance	<p>Kenda- Agreed.</p> <p>Bankola - No underground mining is carried out below within 45m of the Major Roads, Railway line and nallah flowing through the cluster. Coal pillars are left intact vertically below and within the angle of draw of villages and other surface features. Depillaring is done with sand stowing in Khandra UG. The mining method adopted in consultation with DGMS and their approval.</p>								
Condition(xxv)	The OC Patch to be operated will be completely filled-up after exhaustion of reserves and reclaimed with plantation.								
Compliance	<p>Kenda- The OC Patch to be operated is being filled up as per approved mine closure plan and at the end of technical reclamation, Biological reclamation will be done as per Approved mine closure plan. The following details is given below:-</p> <table border="1" data-bbox="483 1928 1442 2040"> <thead> <tr> <th>S. No.</th> <th>Name of the Mines</th> <th>Achievement for backfilling mined out de-</th> <th>Achievement for biological reclamation</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	S. No.	Name of the Mines	Achievement for backfilling mined out de-	Achievement for biological reclamation				
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Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

			coaled from 01.04.2018 to 31.3.2019 in Ha.	from 01.04.2018 to 31.3.2019 in Ha.
	1.	New Kenda OCP	Nil	Nil
	2.	Shankarpur/C L Jambad/ OC Patch/Mine	2.83 Ha	3 Ha
	3.	Bonbahal OCP	1.23 Ha	Nil
	Bankola - Not applicable since there is no OC in Cluster 11 under Bankola Area.			
Condition(xxvi)	After completion of mining activities, the subsided areas shall be graded and planted upon.			
compliance	Noted and Agreed.			
Condition(xxvii)	Coal Extraction shall also be optimized in areas where agricultural is continuing. Some pillars shall be left below the agricultural land. No depillaring & coal extraction should be carried out below habitation, H.T lines & beneath road, water bodies.			
compliance	Coal Extraction is being carried out as per DGMS permissions and guidelines.			
Condition(xxviii)	Water discharged from the mine should be as good as surface drinking water.			
compliance	<p>Kenda - The Mine water is fortnightly tested for parameters namely pH, TSS, TDS, Oil and Grease and COD and conforms to MoEF Schedule-VI standards. (Monitoring report attached herewith). At Present, in Kenda area, Water treatment plant (having pressure filter and chlorination unit) at Bahula Colliery, Siduli colliery, New Kenda Colliery, Lower Kenda , C L Jambad, Chora 7,9 Pit have been installed. One R.O plant had been installed at Kenda Area Complex. under CSR, One water treatment filter plant had been installed at New Kenda Colony.</p> <p>Bankola - Mine discharge water is being treated in</p> <p>i) Pressure filter – 1 unit each at Kumardihi ‘B’, Bankola, Shankarpur, Kumardihi ‘A’, and Tilaboni colliery. 2 units at SSP colliery.</p> <p>ii) Slow Sand Filter – 1 unit each at Moira Colliery and Area Complex. 2 units each at Khandra colliery and SSP colliery.</p> <p>iii) Rapid Gravity Filter – 1 unit at Bankola Colliery.</p> <p>iv) Reverse Osmosis Plant – 1 unit at Bankola Colliery.</p> <p>The water is fortnightly tested for parameters namely pH, TSS, TDS, Oil & Grease and COD and conforms to the MoEF Schedule-VI Standards. The water is then used for domestic and mining uses.</p>			

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

Condition(xxix)	Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, surroundings, shall be continued till movement ceases completely. In case of observation of high rate of subsidence movement, appropriate effective corrective measure shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with blast and clayey soil/suitable material.															
compliance	<p>Kenda- Regular inspection is being done by the pit safety committee headed by Safety Officer on the surface over and around the working area for any sign of subsidence. The subsidence details is given below:-</p> <table border="1"><thead><tr><th>S.No.</th><th>FY</th><th>Name of the Colliery</th><th>No. of instances of threat of subsidence noticed</th><th>Action taken by the Management</th></tr></thead><tbody><tr><td>1.</td><td>2018-19</td><td>CBI (UG & OCP)/Shankarpur OCP</td><td>1 (on 20.04.2018)</td><td>Subsided area filled up.</td></tr><tr><td>2.</td><td>Year 2018</td><td>New Kenda group of Mines (UG & OCP)</td><td>01</td><td>Fencing done & filled by OB at few places.</td></tr></tbody></table> <p>No subsidence is reported during FY 2018-19 at Siduli (UG), Bahula Colliery, Chora 7,9 & 10 pits, C L Jambad Colliery, Lower Kenda Colliery under Kenda Area (ECL).</p> <p>Bankola- Regular inspection is being carried out by the pit safety committee headed by Safety Officer on the surface over and around the working area for any sign of subsidence. It is pertinent to point out that underground mining is being carried out in conjunction with hydraulic sand stowing as per DGMS stipulations. Crack filling is also carried out wherever required.</p>	S.No.	FY	Name of the Colliery	No. of instances of threat of subsidence noticed	Action taken by the Management	1.	2018-19	CBI (UG & OCP)/Shankarpur OCP	1 (on 20.04.2018)	Subsided area filled up.	2.	Year 2018	New Kenda group of Mines (UG & OCP)	01	Fencing done & filled by OB at few places.
S.No.	FY	Name of the Colliery	No. of instances of threat of subsidence noticed	Action taken by the Management												
1.	2018-19	CBI (UG & OCP)/Shankarpur OCP	1 (on 20.04.2018)	Subsided area filled up.												
2.	Year 2018	New Kenda group of Mines (UG & OCP)	01	Fencing done & filled by OB at few places.												
Condition(xxx)	If subsidence is found exceeding the permitted limits, then the landowner shall be adequately compensated with mutual agreement of the landowners.															
compliance	Surface land is already acquired under CBA Act and Compensation as per Company's R&R Policy is given to the land owners prior to subsidence.															
Condition(xxxi.)	Water sprinkler system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points etc. Major approach roads shall be black topped and properly maintained.															
compliance	Kenda- The coal transportation roads from colliery to Railway Siding are black topped and Water Sprinkling is being done on the approach road with Mobile Water tankers. 21 Nos. of fixed type sprinkler has been installed along Bahula railway sidings under Kenda Area (ECL). Also, water spraying arrangement have been provided at each coal depot.															

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	<p>Bankola- the coal transportation road from colliery to railway siding has been black topped in order to prevent fugitive dust emission. Water sprinkling is being done on the approach road with Mobile water tankers. Regular sprinkling of water is carried out over the surface through fixed and mobile sprinklers to check fugitive emission at railway siding, Fixed water sprinklers are installed at Bankola I and Bankola II Railway siding under Bankola area.</p>																																								
Condition(xxxii)	The CSR cost should be Rs 5 per tonnes of coal produced which should be adjusted as per the annual inflation.																																								
compliance	<p>As per the revised CSR policy of CIL, 2% of the avg. net profit of preceding three years is the norm for CSR activities in the entire ECL command area. The following CSR activity which is in progress in Kenda Area (ECL) is mentioned below:- The list of completed and under process CSR projects of Kenda Area for the F.Y 2018-19 is given below:-</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="5" style="text-align: center;">The CSR project that is completed</th> </tr> <tr> <th style="text-align: center;">S.No.</th> <th style="text-align: center;">Project Name</th> <th style="text-align: center;">Location</th> <th style="text-align: center;">Expenditure in FY 2018-19 in Rs. Lakh</th> <th style="text-align: center;">Current status</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>Renovation of Four Damaged classrooms of Ukhra Nehru Vidyapeeth (HS) School</td> <td style="text-align: center;">Chora</td> <td style="text-align: center;">14.01657</td> <td style="text-align: center;">Completed</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>Water supply arrangement for Kenda village under Kenda Area</td> <td style="text-align: center;">New Kenda</td> <td style="text-align: center;">66.81292 19</td> <td style="text-align: center;">Completed</td> </tr> <tr> <td style="text-align: center;">3.</td> <td>Medical camp at ukhra Nehru vidyapith and Haripur High school</td> <td style="text-align: center;">Haripur and chora</td> <td style="text-align: center;">0.18153</td> <td style="text-align: center;">completed</td> </tr> <tr> <th colspan="5" style="text-align: center;">The CSR Project that is ongoing</th> </tr> <tr> <td style="text-align: center;">1.</td> <td>Installation of 268 Nos. Solar LED Street light at Chora, Chataddanga and Kamardanga Village under Chora Gram Panchayet, Kenda Area under ECL-CSR</td> <td style="text-align: center;">Chora</td> <td style="text-align: center;">68.94</td> <td style="text-align: center;">Under Process.</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>Installation of 32 Nos. Solar LED Street light at Banbahal Village under Chora Gram Panchayet,</td> <td style="text-align: center;">Banbahal</td> <td style="text-align: center;">8.32</td> <td style="text-align: center;">Under Process.</td> </tr> </tbody> </table>	The CSR project that is completed					S.No.	Project Name	Location	Expenditure in FY 2018-19 in Rs. Lakh	Current status	1.	Renovation of Four Damaged classrooms of Ukhra Nehru Vidyapeeth (HS) School	Chora	14.01657	Completed	2.	Water supply arrangement for Kenda village under Kenda Area	New Kenda	66.81292 19	Completed	3.	Medical camp at ukhra Nehru vidyapith and Haripur High school	Haripur and chora	0.18153	completed	The CSR Project that is ongoing					1.	Installation of 268 Nos. Solar LED Street light at Chora, Chataddanga and Kamardanga Village under Chora Gram Panchayet, Kenda Area under ECL-CSR	Chora	68.94	Under Process.	2.	Installation of 32 Nos. Solar LED Street light at Banbahal Village under Chora Gram Panchayet,	Banbahal	8.32	Under Process.
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Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

		Kenda Area under ECL-CSR			
	3.	Installation of 142 Nos. Solar LED Street light under Kenda Gram Panchayet, Kenda Area under ECL-CSR	New Kenda	36.52	Under Process.
	4.	Supplying of Water through tankers in five villages under Kenda Gram Panchayet, Kenda Area under ECL-CSR.	New Kenda	14.15	Approved. Under Tendering Process
	<p>Bankola- As per the revised CSR policy of CIL 2% of the average profit of preceding 3 years is the norms for CSR expenditure in the entire ECL command areas. CSR expenditures incurred in FY 2018-19 are mentioned in Annexure-D.</p>				
Condition(xxxiii)	The mining in the existing mines should be phased out after expiry of the current mining lease and after reclamation of the mines over area. The operating mine may be analyzed and monitored for compliance of conditions, bearing with movement of wildlife and until such time they are closed /phased out.				
compliance	Noted and Agreed, shall be complied as per Progressive and Final Mine Closure plan (MCP).				
Condition(xxxiv)	Everybody in the core area should be provided with mask for protection against fugitive dust emissions.				
compliance	In order to provide protection against fugitive dust emission, dust masks are being provided to people working in the core area.				
Condition(xxxv)	Dust mask to be provided to everyone working in the mining area.				
compliance	Dust mask have been provided to everyone working in the mining area.				
Condition(xxxvi)	The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area.				
compliance	Supervisory staff ensures compulsory wearing of the dust masks in the core area.				
Condition(xxxvii)	People working in the core area should be periodically tested for the lung diseases and the burden of cost on account of working in the coal mine area.				
compliance	20 % of the work force is covered under periodic medical examination each year including lung diseases the cost of which is borne by the company. Total no. of person which has gone through PME in the FY 2018-19 till Sept'2018 is given below:-				
		Name of the Area	Month	PME achievement	

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	Kenda Area	for the Month (Nos. of Person)													
		ECL Employees	Contractual worker												
	Oct'2018	37	1												
	Nov'2018	68	1												
	Dec'2018	61	3												
	Jan'2019	58	35												
	Feb'2019	59	7												
	March'2019	80	5												
	Total	363	52												
	<p>Bankola - 20% of the work force is covered under periodic medical examination each year including lung diseases the cost of which is borne by the company. Periodic Medical Examination (PME) of 779 employees has been done within Oct'18-Mar'19 in FY 2018-19.</p>														
Condition(xxxviii)	The mining area should be surrounded by green belt having thick closed thick canopy of the tree cover.														
compliance	<p>Kenda- Noted and Agreed.</p> <p>Bankola- UG mines cause very low pollution load which is concentrated in mine working faces and transfer points. The collieries are surrounded by densely populated village and private agricultural lands. Natural vegetation exist around mines. Plantation is being carried out wherever land is available. However, at Bankola Area, 12 ha plantation along with 5.5 km roadside plantation and 5 Ha orchard plantation is created on 2016-17.</p>														
Condition(xxxix)	Besides carrying out periodic health check up of their worker,10 % of the worker identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialized agency /institution within the District/State and the results reported to this ministry and to DGMS.														
compliance	<p>Kenda- Noted and agreed.</p> <p>PME is being carried out for all employees once in every 5 years (@ 20% employees/year). Special cases diagnosed during such PME are monitored at shorter intervals as directed by the PME Board of Doctors. All serious diseases and impairments are reported to DGMS at regular intervals. Total no. of person which has gone through PME in the FY 2018-19 from Oct'2018 to March 2019 is given below:-</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Name of the Area</th> <th style="width: 30%;">Month</th> <th colspan="2">PME achievement for the Month (Nos. of Person)</th> </tr> <tr> <td></td> <td></td> <th>ECL</th> <th>Contract</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Kenda Area</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Name of the Area	Month	PME achievement for the Month (Nos. of Person)				ECL	Contract	Kenda Area			
Name of the Area	Month	PME achievement for the Month (Nos. of Person)													
		ECL	Contract												
Kenda Area															

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

		Employees	ual worker
	Oct'2018	37	1
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	Feb'2019	59	7
	March'2019	80	5
	Total	363	52
	<p>Bankola- We are carrying out Periodical Medical Examination (PME) for all employees once in every 5 years (@ 20% employees/year). This PME is mandatory for all employees. Special cases diagnosed during such PMEs are monitored at shorter intervals as directed by the PME Board of Doctors. All serious diseases and impairments are reported to DGMS at regular intervals. The details are given in Annexure B.</p>		
Condition(xl)	The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilized with plantation so as to withstand the peak water flow and prevent mine inundation.		
compliance	<p>Kenda- Not applicable as there is no river within the mine leased area of the colliery.</p> <p>Bankola- Not applicable as there is no river within the mine lease area of the collieries under Bankola Area in cluster 11.</p>		
Condition(xli)	There shall be no overflow of OB into the river and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project.		
compliance	<p>Kenda- There is no river in the vicinity of the cluster.11</p> <p>Bankola- Not applicable for UG mines and as there is no river in the vicinity of the cluster11. However, plantation shall be carried out at suitable places where land is available.</p>		
Condition(xlii)	Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly. Garland drains (size, gradient, length) and sump capacity shall be designed keeping 50 % safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.		

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

Compliance	<p>Kenda- Catch drains and siltation ponds have been provided at the toe of the dumps wherever required.</p> <p>Bankola - Permanent masonry drains of size range 200 to 600 m, 0.90 m to 2 m and 0.6 m to 2 m depth and 1 in 30 gradients, depending on the catchment have been constructed for evacuation of rain water. The size of the drain is large enough to take care of heavy downpours. The drain is cleared of debris before start of the monsoon season as part of our annual monsoon preparation program.</p>
Condition(xliii)	Garland drains (size, gradient, and length) around the safety areas such as mine shaft and low lying areas and sump capacity shall be designed keeping 50 % safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.
compliance	<p>Kenda- Noted and Agreed.</p> <p>Bankola - Garland drain is present at Sarpi sub-station, Sarpi pumping station, ESP pit, transformer room, incline mouth and CHP. Total length of garland length is about 5 km. Width of garland drains are usually kept at 0.90 m while depth of the drain varies from 0.6 m to 1.5 m depending on the catchment and gradient of the drain.</p> <p>Garland drain wherever required are maintained and required sump capacity is also maintained in the mine.</p>
Condition(xliv)	Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check runoff and siltation shall be based on the rainfall data.
compliance	<p>Kenda- To check runoff and siltation, proper benching in dump is being done while maintaining slope stability. Regular Plantation on OB dumps is being done to stabilize the dumps.</p> <p>Bankola- Not applicable as there are no OC mines under Bankola Area within the cluster.</p>
Condition(xlv)	Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkler system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points etc.
compliance	<p>Kenda - The crusher at Bahula siding inside the cluster is equipped with water sprinkler to arrest fugitive emissions from crushing operations. Apart from that, fixed type sprinkler has been installed along bahula railway sidings under Kenda Area (ECL).</p>

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	Bankola- Not applicable as there are no CHP under Bankola Area within the cluster 11																		
Condition(xlvi)	Mine discharge water outside the ML shall be monitored, particularly for TDS, and treated to conform to prescribed levels before discharge into natural environment.																		
compliance	<p>Complied.</p> <p>Kenda- Mine water discharge quality complies with prescribed standards. Regular monitoring is done by CMPDIL. The quality of mine water is within permissible limits.</p> <p>Bankola- Mine water discharge quality complies with prescribed standards. Regular monitoring is done by CMPDIL. The quality of mine water is within permissible limits.</p> <p>Reports are enclosed</p>																		
Condition(xlvii)	Drills shall be wet operated.																		
compliance	<p>Kenda- Noted and Agreed.</p> <p>Bankola- Water spraying is done for dust suppression before drilling in. underground and OC mines</p>																		
Condition(xlviii)	The project authority shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green plants comprising of a mix of native species shall be developed all along the major approach roads.																		
compliance	<p>Kenda- As per requirement, Regular repairing and tarring of roads are being taken on priority basis.</p> <p>Bankola- As per requirement, Regular repairing and tarring of roads are being taken on priority basis. Both sides of approach roadway are well vegetated naturally. Plantation Done:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Year</th> <th>Name of Species</th> <th>Area in Ha</th> <th>No. of saplings</th> <th>Density</th> <th>Survival rate</th> </tr> </thead> <tbody> <tr> <td>2016-17</td> <td>Kamini, Rangan, Krishnachura, Jaba, Karabi, Bougenvelia, Pathodia, Jamun, Radhachura etc.</td> <td>5.5 Km (Road side)</td> <td>-</td> <td>-</td> <td>35%</td> </tr> <tr> <td>2016-17</td> <td>Chatim, Krishnachura, Radhachura, Karanch, Aamla</td> <td>12 Ha</td> <td>22500</td> <td>2500/Ha</td> <td>75%</td> </tr> </tbody> </table>	Year	Name of Species	Area in Ha	No. of saplings	Density	Survival rate	2016-17	Kamini, Rangan, Krishnachura, Jaba, Karabi, Bougenvelia, Pathodia, Jamun, Radhachura etc.	5.5 Km (Road side)	-	-	35%	2016-17	Chatim, Krishnachura, Radhachura, Karanch, Aamla	12 Ha	22500	2500/Ha	75%
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Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	etc.																				
	2014-15 Chatim, Krishnachura, Radhachura, Karanch, Aamla etc.	3 Ha	1200	400/Ha	95%																
Condition(xlix)	Controlled blasting shall be practiced with use of delay detonators and only during day time. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.																				
compliance	Complied. Controlled blasting is being done as per DGMS permission and conditions.																				
Condition(l.)	A progressive afforestation plan shall be implemented covering an area of 845.59 ha at the end of mining, which includes reclaimed eternal OB dump area (142.34 Ha);internal OB dump area(408 ha);green belt(295.25 ha) in township located outside the lease by planting native species in consultation with the local DFO/Agricultural Department .the density of the trees shall be around 2500 plants per Ha .Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.																				
compliance	<p>Kenda- In FY 2015-16 , 2016-17, & 2018-19, Total 29 Ha plantation have been done through Forest department, Durgapur & Waste Bengal Waste land Development Corporation Ltd. under the supervision of DFO, Durgapur. Density of the trees is maintained at 2500 Plants per Ha. Details of plantation done at Different location inside the cluster under Kenda Area, ECL is given below:-</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Name of Species</th> <th>Area in Ha</th> <th>No. of Saplings</th> <th>Density</th> </tr> </thead> <tbody> <tr> <td>2015-16</td> <td>Kadam,P epal,Sona juri,Jamu n,Amla etc.</td> <td>10 Ha</td> <td>25000</td> <td>2500/ha</td> </tr> <tr> <td>2016-17</td> <td>Neem,Ka ranj,Sisoo ,Chatim etc.</td> <td>16 Ha</td> <td>40000</td> <td>2500/ha</td> </tr> </tbody> </table>						Year	Name of Species	Area in Ha	No. of Saplings	Density	2015-16	Kadam,P epal,Sona juri,Jamu n,Amla etc.	10 Ha	25000	2500/ha	2016-17	Neem,Ka ranj,Sisoo ,Chatim etc.	16 Ha	40000	2500/ha
Year	Name of Species	Area in Ha	No. of Saplings	Density																	
2015-16	Kadam,P epal,Sona juri,Jamu n,Amla etc.	10 Ha	25000	2500/ha																	
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Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	2018-19	Neem, Karanj, Sisoo, Chatim etc.	3 Ha	7500	2500/ha
	2019-20		9 Ha (targeted for plantation)	22,500	2500/Ha
	<p>Bankola- It is proposed to plant 10 Ha per year within the cluster at the density of 2500 plants/Ha.</p>				
Condition(ii)	The proponent should prepare restoration and reclamation plan for the degraded area. The land to be used in a productive and sustainable manner.				
compliance	Mine closure Plan has already been prepared for the purpose. Restoration and reclamation shall be done accordingly.				
Condition (lii.)	Compensatory Ecological and restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out.				
compliance	<p>Kenda- Mine closure Plan has already been prepared for the purpose. Compensatory ecological and restoration of wasteland shall be done accordingly. The details of plantation at different location in Kenda Area inside the cluster is given below:-</p> <ol style="list-style-type: none"> 1. OB Dump Area-----14 Ha (10 Ha in FY 2015-16 & 4 Ha in FY 2016-17). 2. Backfilled Area-----3 Ha(in FY 2016-17). 3. Others-----9 Ha (in FY 2016-17). 4. Backfilled Area-----3 Ha (in FY 2018-19). <p>In FY 2019-20, 9 Ha plantation have been targeted to complete.</p> <p>Bankola- Mine closure Plan has already been prepared for the purpose. Compensatory ecological and restoration of wasteland shall be done accordingly.</p>				
Condition(liii)	No ground water shall be used for mining operations.				
compliance	No ground water is being used for mining operations.				
Condition(liv)	An estimated total 258.26Mm ³ of OB will be generated during the entire life of the mine. OB will be dumped in four internal dumps covering an area of 408 Ha of land. The OB dump height is up to 60m.the minimum				

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump site shall continue till the vegetation becomes self-sustaining and compliance status submitted to MOEF & CC and its regional office on yearly basis.				
compliance	Kenda- Agreed.				
	S.No.	Name of the Mines	Quantity of OB Generated(in Lakh cum) in FY 2018-19	Quantity of OB Backfilled (in Lakh cum) in FY 2018-19	
	1.	Shankarpur/C L Jambad OC Patch/mine	22.74	18.45	
	2.	Bonbahal OC Patch	6.45	6.45	
	3.	New Kenda OCP	3.5489	Nil	
	Bankola- Not applicable as there is no OC in Bankola area.				
Condition(iv.)	Of the total quarry area 408 Ha the backfilled quarry area of (408 Ha) shall be reclaimed with plantation by planting native plant species in consultation with the local DFO /Agricultural department The density of the trees shall be around 2500 Plants per Ha.				
compliance	Agreed. In FY 2015-16, 2016-17 & 2018-19, Total 29 Ha plantation has been done at different location in kenda area with the help of Forest Department. The details of Plantation is given below:-				
	Year	Name of Species	Area in Ha	No. of Saplings	Density
	2015-16	Kadam, P epal, Sona juri, Jamun, Amla etc.	10 Ha	25000	2500/ha
	2016-17	Neem, Karanj, Sisoo, Chatim etc.	16 Ha	40000	2500/ha
	2018-19	Neem, Ka	3 Ha	7500	2500/ha

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

		ranj,Sisoo ,Chatim etc.				
Condition(lvi.)	Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers.the monitoring for quality shall be done four times a year in pre-monsoon(May),Monsoon(August),post monsoon(November) and winter(January) seasons and for quality in May. Data thus collected shall be submitted to Ministry of Environment, Forests and climate change and to central pollution control board quarterly within one month of monitoring.					
compliance	Kenda- One piezometer at New Kenda Colliery have been installed. At present, Ground water level monitoring is done through a network of existing wells. Bankola- Ground water level monitoring is done through a network of existing wells and construction of new piezometer is under process.					
Condition(lvii)	The company shall put up artificial groundwater recharge measures for augmentation of ground water resource in case monitoring indicates a decline in water table. The project authority shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.					
compliance	Kenda- Work order has been awarded for construction of Rainwater harvesting at Chora Hospital and Kenda Area office & its work is in progress. The mine discharge is effectively being utilized to meet the domestic demands of the community thus reducing the strain on ground water resources. Bankola- In underground mines, recharging of water at surface will further add to the quantum of water percolating into the underground workings. Also, no declining trend has been noticed in the mine leasehold. Mine discharged water is supplied by tanker or pipeline to Ukhra village, Shankarpur Village, Kumardihi village, Lal Bangla, Shyamsundarpur village and other locations.					
Condition(lviii)	Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP waste water.					
compliance	Kenda- Work order has been awarded to install the washing platform along with ETP at Shankarpur OCP. For STP(Sewage Treatment Plant),It is under tendering process for construction of STP at New Kenda Colony & work order will be awarded soon.					

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	Bankola- Quantity of effluent generated from mining activities (viz. workshops) are very less, about 10 lit/day for which ETP is not required. Most of the sewage generated from residential colony goes to Septic Tank. Feasibility study for STP by IIT-ISM is under Process.			
Condition(lviv)	Land oustees shall be compensated as per the norms laid out R & R policy of CIL or the National R& R policy or R & R policy of the state government whichever is higher.			
compliance	If required, Land oustees shall be compensated as per the norms laid out in R & R Policy of CIL.			
Condition(lvv)	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1:5000) of the core zone and buffer zone, from the start of the project until the end of mine life shall be prepared once in 3 years (for any one particular season which is consistent with time series),and the report submitted to MOEF&CC and its concerned regional office.			
compliance	Land use pattern and plantation is being monitored by satellite surveillance based on satellite imagery.			
Condition(lvvi)	A detailed final mine closure plan along with details of corpus fund shall be submitted to the Ministry of Environment, Forest & Climate Change within 6 months of grant of EC.			
compliance	Mine closure plan have been prepared for the mine as per the guidelines of MOC and the same has been placed before the board for approval.			
Condition(lvvii)	The project authority shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance of the mine.			
compliance	As per the revised CSR policy of CIL, 2% of the avg. net profit of preceding three years is the norm for CSR activities in the entire ECL command area. The following CSR activity which is in progress in Kenda Area (ECL) is mentioned below:- The list of completed and under process CSR projects of Kenda Area for the F.Y 2018-19 is given below:-			
The CSR project that is completed				
S.No.	Project Name	Location	Expendi ture done in FY 2018-19	Current status

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

			in Rs. Lakh	
1.	Renovation of Four Damaged classrooms of Ukhra Nehru Vidyapeeth (HS) School	Chora	14.01657	Completed
2.	Water supply arrangement for Kenda village under Kenda Area	New Kenda	66.81292 19	Completed
3.	Medical camp at ukhra Nehru vidyapith and Haripur High school	Haripur and chora	0.18153	completed
The CSR Project that is ongoing				
1.	Installation of 268 Nos. Solar LED Street light at Chora, Chataddanga and Kamardanga Village under Chora Gram Panchayet, Kenda Area under ECL-CSR	Chora	68.94	Under Process.
2.	Installation of 32 Nos. Solar LED Street light at Banbahal Village under Chora Gram Panchayet, Kenda Area under ECL-CSR	Banbahal	8.32	Under Process.
3.	Installation of 142 Nos. Solar LED Street light under Kenda Gram Panchayet, Kenda Area under ECL-CSR	New Kenda	36.52	Under Process.
4.	Supplying of Water through tankers in five villages under Kenda Gram Panchayet, Kenda Area under ECL-CSR.	New Kenda	14.15	Approved. Under Tendering Process
Condition(Ivii)	<p>Corporate Environment Responsibility:</p> <p>a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.</p> <p>b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/ deviation /violation of the environmental or forest norms/conditions.</p> <p>c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.</p> <p>d) To have proper checks and balances, the company shall have a well</p>			

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	<p>laid down system of reporting of non-compliances /violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.</p>
compliance	<p>Complied.</p> <p>“Corporate Environmental Policy 2012” of Coal India Limited has already been formulated.</p> <p>“Corporate Environmental Policy 2012” of Coal India Limited has prescribed standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/condition.</p> <p>The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions has been furnished in “Corporate Environmental Policy 2012” of Coal India Limited.</p> <p>The company is having a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company.</p>

General Conditions	
Condition(i)	<p>No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forests & Climate Change.</p>
Compliance	<p>Complied.</p> <p>Change in mining technology and scope of working, if any, is being made with prior approval of the Ministry of Environment, Forests & Climate Change.</p>
Condition(ii)	<p>No change in the calendar plan of production for quantum of mineral coal shall be made.</p>

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

Compliance	Noted and agreed.
Condition(iii)	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM 10, PM 2.5, SO ₂ ,NO monitoring. Locations of the stations shall be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with state pollution control board. Monitoring of heavy metals such as Hg,As, Ni,Cd, Cr etc carried out atleast once in six months.
Compliance	Kenda- Air quality monitoring is carried out by CMPDIL on every fortnight and all desired parameters are well within the prescribed limits. Bankola- Air quality monitoring is carried out by CMPDIL on fortnightly basis and all desired parameters are well within the prescribed limits. Ambient air quality report is enclosed.
Condition(iv)	Data on ambient air quality (PM ₁₀ ,PM _{2.5} ,SO ₂ ,and NO) and heavy metals such as Hg,As,Ni,Cd,Cr and other monitoring data shall be regularly submitted to the ministry including its concerned Regional office and to the state pollution control board and the central pollution control board once in six months .Random verification of sample through analysis from independent laboratories recognized under EPA rules,1986 shall be furnished as part of compliance report.
Compliance	Air quality monitoring is carried out by CMPDIL on every fortnight and all desired parameters are well within the prescribed limits. Ambient air quality report are enclosed.
Condition(v)	Adequate measure shall be taken for control of noise level below 85 (dBA) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
Compliance	Noise level monitoring is carried out by CMPDIL on fortnightly basis. Noise data are enclosed.
Condition(vi)	Industrial wastewater (waste water and workshop from the mine) shall be properly collected, treated so as to conform to the standards conform to the standards prescribed under GSR 422(E) dated 19 th May 1993 and 31 st December 1993 or as amended from time to time before discharge.oil and grease trap shall be installed before

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	discharge of workshop effluents.
Compliance	Water discharged from the mine are tested in laboratory at CMPDI on fortnightly basis and found conforming to the MoEF schedule VI standards for discharge of effluents. The mine water quality enclosed.
Condition(vii.)	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the minerals shall be covered with the tarpaulins and optimally loaded.
Compliance	Vehicular emissions are kept under control and regularly monitored. Coal transportation from the mine to railway siding is being done by tarpaulin covered trucks. The loaded trucks are made wet at first and then covered with tarpaulins for transportation.
Condition(viii.)	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with state pollution control board and data got analysed through a laboratory recognized under EPA Rules, 1986 .
Compliance	Monitoring of environmental parameters is carried out on regular basis by CMPDI. Laboratory at CMPDIL, Asansol is having all necessary facilities.
Condition (ix.)	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training on information on safety and health aspects.
Compliance	All protective devices have been provided to workmen and are replaced periodically. Adequate training to all personnel has also been provided. New recruits are trained at the VTC before their deployment. PME's are carried out on all employees once in 5 years.
Condition(x.)	Occupational health surveillance programme of workers Shall be undertaken periodically to observe any contractions due to exposure due to dust and to take corrective measure, if needed and records thereof .the quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
Compliance	Kenda- Complied. Every year, 20% of the workforce is covered under occupational health surveillance programme in form of Periodical Medical Examinations. Total no. of person which have gone through the

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

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	PME in FY 2018-19 from Oct'2018 to March'2019 is given below:-			
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	Total		363	
			52	
	<p>Bankola- Complied.</p> <p>Every year, 20% of the employees, workers are covered under occupational health surveillance programme in the form of Periodical Medical Examinations for any contractions due to exposure to dust and for other health related issues.</p> <p>This PME is mandatory for all employees. Special cases diagnosed during such PMEs are monitored at shorter intervals as directed by the PME Board of Doctors. All serious diseases and impairments are reported to DGMS at regular intervals. PME of 1541 workers has been conducted in Bankola Area in the year 2018-19 along with 69 Spirometry and 64 Audiometry tests. Details can be found in Annexure B.</p>			
Condition(xi.)	A separate environmental management cell with suitable qualified personnel shall be setup under the control of a senior executive, who will report directly to the head of the company.			
Compliance	Complied. A separate environmental management cell with qualified personnel has been established for Kenda Area under Cluster 11. The cell reports to the respective Area GM and GM, Environment and Forest; ECL.			
Condition(xii.)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to this ministry and its concerned Regional office.			
Compliance	Kenda- Funds for environmental protection as kept in budget each year is not diverted for other purposes. The amount spent for environmental activity is as follows.			

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	FY(2018-19)	Name of Work	Expenditure in EMP head in FY 2018-19 (In Rs. Lakh)
		1. Socio economic study of New Kenda OCP .	14.07136
		2. Installation of fixed type sprinkler along with pump house at bahula Railway Sidings under Kenda Area (ECL).	20.17
		3.Plantation and its maintenance.	17.589
	Total		51.83036 Lakh
	Bankola- Funds for environmental protection as kept in budget each year is not diverted for other purposes.		
Condition(xiii.)	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the Ministry of Environment, Forests & Climate Change at http://envfor.nic.in .		
Compliance	Complied.		
Condition(xiv.)	A copy of the environmental clearance letter shall be marked to concern Panchayat /Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.		
Compliance	A copy of the environmental clearance letter for cluster 11 has been marked to concerned Panchayat / Zila Parishad, Municipal		

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

	<p>Corporation or Urban local body.</p> <p>The EC letter is uploaded on the company's website. The link is given : www.easterncoal.gov.in</p>
Condition (xv.)	<p>A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.</p>
Compliance	<p>To be complied by State Pollution Control Board.</p>
Condition(xvi.)	<p>The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.</p>
Compliance	<p>The monitoring data of environmental quality parameter (air, water and noise) and critical pollutant such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient) and critical sectoral parameters are being displayed on Company's website. Monitoring Report for Cluster is enclosed.</p> <p>The clearance letter is uploaded on the company's website. The link is given : www.easterncoal.gov.in.</p>
Condition (xvii.)	<p>The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Offices of CPCB and the SPCB.</p>
Compliance	<p>Complied. The six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions is regularly being submitted (both in haed copy and in Email) to MoEF & CC RO Bhubaneswar & WBPCB..in</p>
Condition (xviii.)	<p>The Regional Office of the Ministry located in the Region shall monitor compliances of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.</p>

Half Yearly EC Compliance report in respect of mines

Area (Cluster 11), ECL

Period:- October 2018 to March 2019

Compliance	Agreed.
Condition(xix)	The Environmental statement for each financial year ending 31 March in For -V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF CC by e-mail.
Compliance	Complied.

Additional Condition	
Condition	The soil contamination through oil spillage/leakage should either be bio-remediated using specific technology available in the market, or sent to secured land fill facility authorized by the SPCB.
Compliance	Noted and Agreed.

STRICTLY RESTRICTED
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.

**ENVIRONMENT MONITORING REPORT
OF
CLUSTER NO. 11**

(FOR THE MONTH OF MARCH, 2019)

(KENDA & BANKOLA AREA)

Eastern Coalfields Limited



cmpdi
A Mini Ratna Company

**Regional Institute-1
Asansol (WB)**

ENVIRONMENT MONITORING REPORT FOR CLUSTERNO. 11

(For the Month of March, 2019)

CONTENTS

SL. NO.	CHAPTER	PARTICULARS	PAGE NO.
1.	CHAPTER- I	INTRODUCTION	1
2.	CHAPTER-II	AMBIENT AIR SAMPLING & ANALYSIS	2 - 6
3.	CHAPTER-III	WATER SAMPLING & ANALYSIS	7 - 18

CHAPTER - I
INTRODUCTION

1.0 The environmental monitoring has been carried out as per conditions laid down by MoEF&CC while granting environmental clearance to different projects. CMPDIL has trained manpower and well equipped laboratory to carry out monitoring, analysis and R&D work in the field of environment.

Reports have been prepared for submission to MoEF&CC & SPCB and other statutory authorities.



CHAPTER-II**AMBIENT AIR QUALITY MONITORING****2.1 Location of sampling station and their rationale:****2.1.1 Ambient Air Quality Sampling Locations****I. Industrial Area Monitoring Location****i) Haripur village (11A1): Industrial Area**

The sampler was placed at 10No. Pit office of Haripur Colliery. This station was selected to assess the ambient air quality of Industrial area in the core zone where mining activities are in progress.

ii) Belbaid village near Railway siding (11A3): Industrial Area.

The sampler was placed at Kali mandir of Belbaid Colony. This site was selected to assess the present ambient air quality status in Industrial area of core zone of Belbaid Incline of Kunustoria Area.

iii) Jambad village near Railway siding (11A4): Industrial Area.

The sampler was placed at Nabakajora Railway Siding. This site was selected to assess the present ambient air quality status in Industrial area of core zone of Jambad OCP of Kajora Area. It also impact of coal transporting.

II. Residential Area Monitoring Location**i) Shankarpur village near Railway siding (11A2) : Residential Area**

The sampler was placed at GM Office of Bankola Area. This site was selected to assess the present ambient air quality status in Residential area of Buffer Zone of Sankarpur OCP of Kenda Area.

III. Damariband village (11A5): Residential Area

The Air sampler was placed at Magazine of Jambad UG. This site was selected to assess the present ambient air quality status in Residential area of Buffer zone of Jambad OCP.

2.2 Methodology of sampling and analysis

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 Sampler (RDS) & Fine Dust Sampler (FDS) were used for sampling of PM₁₀ & gaseous pollutants and PM_{2.5} respectively. The samples were analysed in Environmental Laboratory of CMPDI, RI-I, Asansol.

2.3 Results & Interpretations

The results of Ambient Air Quality are presented in tabular form along with for each monitoring station. Sampling stations have been chosen keeping in view predominant wind direction and have been classified as Permanent, Pre monsoon (April – September) & Post monsoon (October – March) air sampling stations. The interpretations of different parameters are given below:

2.3.1 Ambient air quality

Particulate Matter (PM₁₀)

In Industrial area varies from 85.7 to 90.7 $\mu\text{g}/\text{m}^3$ & in Residential area from 85.0 to 91.6 $\mu\text{g}/\text{m}^3$.

Fine Particulate Matter (PM_{2.5})

In Industrial area from 52.5 to 56.6 $\mu\text{g}/\text{m}^3$ & in Residential area from 41.8 to 45.2 $\mu\text{g}/\text{m}^3$

Sulphur Dioxide (SO₂):

In Industrial area below 10 $\mu\text{g}/\text{m}^3$ & in Residential area below 10 $\mu\text{g}/\text{m}^3$.

Oxides of Nitrogen (NO_x):

In Industrial area varies from 21.8 to 24.5 $\mu\text{g}/\text{m}^3$ & in Residential area from 17.5 to 19.8 $\mu\text{g}/\text{m}^3$.

AMBIENT AIR QUALITY DATAName of the Company: **Eastern Coalfield Limited**Year : **2019**Name of the Project : **Mines of Cluster No. 11**Month. : **March****Industrial Area****1st fortnight**

Station Code	Station Name	Date of Sampling	Parameters			
			PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)
11A1	Haripur Colliery	4-Mar-19	90.3	54.7	<10.0	24.5
11A3	Belbaid Colliery	4-Mar-19	85.7	54.1	<10.0	23.8
11A4	Nabakajora Rly siding	4-Mar-19	86.2	56.6	<10.0	24.2

2nd fortnight

Station Code	Station Name	Date of Sampling	Parameters			
			PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)
11A1	Haripur Colliery	18-Mar-19	90.7	56.3	<10.0	22.8
11A3	Belbaid Colliery	18-Mar-19	86.2	54.2	<10.0	21.8
11A4	Nabakajora Rly siding	18-Mar-19	86.8	52.5	<10.0	23.8

Residential Area**1st fortnight**

Station Code	Station Name	Date of Sampling	Parameters			
			PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)
11A2	Shankarpur village	4-Mar-19	91.0	43.9	<10.0	17.5
11A5	Damariband village	11-Mar-19	85.0	43.4	<10.0	19.3

2nd fortnight

Station Code	Station Name	Date of Sampling	Parameters			
			PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)
11A2	Shankarpur village	18-Mar-19	91.6	45.2	<10.0	19.8
11A5	Damariband village	21-Mar-19	85.4	41.8	<10.0	18.7

Environmental Standards for Ambient Air Quality (AAQ) :

Station Category	<i>Environmental standard for Raniganj Coalfield vide MOEF, Govt. of India, Gazette Notification No. GSR 742 (E) dated 25.09.2000 for 24 hourly samples at 500 meters from dust generating point</i>		<i>National Ambient Air Quality Standards (NAAQS), 2009 for industrial, residential and rural areas for 24 hours samples</i>	
	Pollutant Concentration ($\mu\text{g}/\text{m}^3$)			
	PM₁₀	SO₂	NOx	PM_{2.5}
Industrial	300.0	120.0	120.0	60.0
Residential	100.00	80.0	80.0	

Cluster No. 11

CMPDIL

AMBIENT AIR METAL ANALYSIS REPORT

Name of the Company: **Eastern Coalfield Limited**

Year : **2019**

Name of the Project : **Mines of Cluster No. 11**

Month : **March.**

Station No.	Station Name	Date of Sampling	Arsenic (ng/m ³)	Cadmium (µg/m ³)	Chromium (µg/m ³)	Mercury (µg/m ³)	Nickel (ng/m ³)	Lead (µg/m ³)
Method of Detection			Atomic Absorption Spectrophotometric (AAS)					
Detection Limit			1.0	0.001	0.01	0.001	0.10	0.005
11A1	Haripur Colliery	4-Mar-19	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
11A2	Shankarpur village	4-Mar-19	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
11A3	Belbaid Colliery	4-Mar-19	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
11A4	Nabakajora Rly siding	4-Mar-19	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
11A5	Damariband village	11-Mar-19	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005

Environmental standards:

National Ambient Air Quality Standards (NAAQS) for residential, industrial and rural areas for 24 hourly/yearly samples:

Heavy Metal	Arsenic (ng/m ³)	Cadmium (µg/m ³)	Chromium (µg/m ³)	Mercury (µg/m ³)	Nickel (ng/m ³)	Lead (µg/m ³)
Concentration	6	Not specified	Not specified	Not specified	20	0.5

CHAPTER – III

WATER QUALITY MONITORING

3.1 Location of sampling sites and their rationale

- ii) **Lower Kenda (11MW4)**
This location has been selected to monitor the discharge quality of Mine effluent supply to colony quarters after sedimentation tank.
- iii) **Chora Block Incline (11MW5)**
This location has been selected to monitor the discharge quality of Mine effluent used for sparkling at mine area and road.
- iv) **Chora 7, 9 & 10 Pits (11MW6)**
This location has been selected to monitor the discharge quality of Mine effluent to natural surface streams
- v) **Bahula UG (11MW7)**
This location has been selected to monitor the discharge quality of Mine effluent sparkling to Bhula Railway siding and remaining water discharge to natural surface streams after sedimentation tank.
- vi) **C L Jambad UG (11MW8)**
This location has been selected to monitor the discharge quality of Mine effluent to natural surface streams after sedimentation tank.
- vii) **Siduli UG (11MW9)**
This location has been selected to monitor the discharge quality of Mine effluent to natural surface streams after sedimentation tank.
- viii) **Khandra UG (11MW10)**
This location has been selected to monitor the discharge quality of Mine effluent to natural surface streams after sedimentation tank.
- ix) **Shankarpur UG (11MW11)**
This location has been selected to monitor the discharge quality of Mine effluent to natural surface streams after sedimentation tank.

3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analysed for five parameters on fortnightly basis and all parameters on Half-yearly basis. The Ground water samples were collected and analysed for all parameters on annual basis. Parameters like pH and Free Residual Chlorine were analysed on-site while collecting the samples. Thereafter the samples were preserved and analysed at the field laboratory located at RI-I Office campus.

3.3 Results & Interpretations

The results are given in tabular form along with the applicable standards. Results are compared with General Standards for Discharge of Effluent (Schedule VI) in case of effluent/mine water sample and compared with IS.10500: 2012 in case of drinking water sample. Results show that most of the parameters are within the permissible limits.

Cluster No. 11

CMPDIL

WATER QUALITY DATA (Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Year : **2019.**

Name of the Project : **Mines of Cluster No. 11**

Month: **March.**

Name of the Stations : **1. 11MW4- Lower Kenda 2. 11MW5- Chora Block Incline 3. 11MW6- Chora 7, 9 & 10 Pits**

Stations & Code : **4. 11MW7- Bahula UG**

First Fortnight data

Sl. No.	Parameters	Analytical Results				General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit				
	Station Code	11MW4	11MW5	11MW6	11MW7							
	Date of sampling	All parameters result is given separately for the month of March'19										
1	pH									5.5 - 9.0	Electrometric	0.01
2	TSS									100 (Max)	Gravimetric Method	10.0
3	TDS									Not specified	Gravimetric Method	25.0
4	Oil & Grease									10 (Max)	Partition Gravimetric	2.0
5	COD									250 (Max)	Closed Reflux	4.0

Second Fortnight data

Sl. No.	Parameters	Analytical Results				General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Station Code	11MW4	11MW5	11MW6	11MW7			
	Date of sampling	27-Mar-19	27-Mar-19	27-Mar-19	27-Mar-19			
1	pH	8.42	7.54	8.54	8.26	5.5 - 9.0	Electrometric	0.01
2	TSS	26	36	30	22	100 (Max)	Gravimetric Method	10.0
3	TDS	590	430	716	570	Not specified	Gravimetric Method	25.0
4	Oil & Grease	<2.0	<2.0	<2.0	<2.0	10 (Max)	Partition Gravimetric	2.0
5	COD	16	28	8	16	250 (Max)	Closed Reflux	4.0

All values are expressed in mg/L unless specified.

Cluster No. 11

CMPDIL

WATER QUALITY DATA (Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Year : **2019.**

Name of the Project : **Mines of Cluster No. 11**

Month: **March.**

Name of the **5. 11MW8- C L Jambad UG**

6. 11MW9- Siduli UG

7. 11MW10- Khandra UG

Stations & Code : **8. 11MW11- Shankarpur UG**

First Fortnight data

Sl. No.	Parameters	Analytical Results				General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit				
	Station Code	11MW8	11MW9	11MW10	11MW11							
	Date of sampling	All parameters result is given separately for the month of March'19										
1	pH									5.5 - 9.0	Electrometric	0.01
2	TSS									100 (Max)	Gravimetric Method	10.0
3	TDS									Not specified	Gravimetric Method	25.0
4	Oil & Grease									10 (Max)	Partition Gravimetric	2.0
5	COD									250 (Max)	Closed Reflux	4.0

Second Fortnight data

Sl. No.	Parameters	Analytical Results				General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Station Code	11MW8	11MW9	11MW10	11MW11			
	Date of sampling	27-Mar-19	27-Mar-19	27-Mar-19	27-Mar-19			
1	pH	8.24	7.31	8.46	8.38	5.5 - 9.0	Electrometric	0.01
2	TSS	32	26	32	34	100 (Max)	Gravimetric Method	10.0
3	TDS	664	634	576	420	Not specified	Gravimetric Method	25.0
4	Oil & Grease	<2.0	<2.0	<2.0	<2.0	10 (Max)	Partition Gravimetric	2.0
5	COD	24	32	20	24	250 (Max)	Closed Reflux	4.0

All values are expressed in mg/L unless specified.

Cluster No. 11

CMPDIL

WATER QUALITY DATA

(Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Year : **2019.**

Name of the Project : **Mines of Cluster No. 11**

Month: **March.**

Name of the Stations & Code : **1. 11MW4- Lower Kenda**

Sl. No.	Parameters	Analytical Results	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Date of Sampling	5-Mar-19			
1	Colour	4	Unobjectionable	Platinum Cobalt	1.0
2	Odour	Unobjectionable	Unobjectionable	Physical	-
3	TSS	24	100	Gravimetric	10
4	pH	8.23	5.5-9.0	Electrometric	0.01
5	Temperature (°C)	29.7	Shall not exceed 5 °C above the receiving water temperature	Thermometric	0.1
6	Oil & Grease	<2.0	10	Partition Gravimetric	2.0
7	Total Residual Chlorine	<0.02	1.0	Colorimetric	0.02
8	Ammonical Nitrogen	0.52	50	Nesslerization	0.01
9	Total Kjeldahi Nitrogen	1.62	100	Macro Kjeldahl	1.0
10	Free Ammonia	<0.02	5.0	Spectrophotometric	0.02
11	BOD	4	30	Bioassy	2.0
12	COD	20	250	Closed Reflux	4.0
13	Arsenic	<0.002	0.2	AAS-VGA	0.002
14	Lead	<0.005	0.1	AAS-GTA	0.005
15	Hexavalent Chromium	0.04	0.1	Colorimetric	0.01
16	Total Chromium	0.08	2.0	AAS-Flame	0.04
17	Copper	0.04	3.0	AAS-Flame	0.03
18	Zinc	0.04	5.0	AAS-Flame	0.01
19	Selenium	<0.002	0.05	AAS-GTA	0.002
20	Nickel	<0.01	3.0	AAS-Flame	0.01
21	Fluoride	0.54	2.0	SPADNS	0.02
22	Dissolved Phosphate	1.38	5.0	Molybdovanadate	0.30
23	Sulphide	0.007	2.0	Methylene Blue	0.005
24	Phenolics	<0.001	1.0	Chloroform Extraction	0.001
25	Manganese	0.34	2.0	AAS-Flame	0.02
26	Iron	0.14	3.0	AAS-Flame	0.06
27	Nitrate Nitrogen	3.8	10	Spectrophotometric	0.5
28	Cadmium	<0.0005	2.0	AAS-GTA	0.0005
29	Total Dissolved Solids	560	Not Specified	Gravimetric	25.0

All values are expressed in mg/L unless specified.

Cluster No. 11

CMPDIL

WATER QUALITY DATA

(Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Year : **2019.**

Name of the Project : **Mines of Cluster No. 11**

Month: **March.**

Name of the Stations & Code : **2. 11MW5- Chora Block Incline**

Sl. No.	Parameters	Analytical Results	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Date of Sampling	5-Mar-19			
1	Colour	3	Unobjectionable	Platinum Cobalt	1.0
2	Odour	Unobjectionable	Unobjectionable	Physical	-
3	TSS	26	100	Gravimetric	10
4	pH	8.39	5.5-9.0	Electrometric	0.01
5	Temperature (°C)	30.8	Shall not exceed 5 °C above the receiving water temperature	Thermometric	0.1
6	Oil & Grease	<2.0	10	Partition Gravimetric	2.0
7	Total Residual Chlorine	<0.02	1.0	Colorimetric	0.02
8	Ammonical Nitrogen	0.54	50	Nesslerization	0.01
9	Total Kjeldahi Nitrogen	1.78	100	Macro Kjeldahl	1.0
10	Free Ammonia	<0.02	5.0	Spectrophotometric	0.02
11	BOD	6	30	Bioassy	2.0
12	COD	32	250	Closed Reflux	4.0
13	Arsenic	<0.002	0.2	AAS-VGA	0.002
14	Lead	<0.005	0.1	AAS-GTA	0.005
15	Hexavalent Chromium	0.03	0.1	Colorimetric	0.01
16	Total Chromium	0.08	2.0	AAS-Flame	0.04
17	Copper	0.03	3.0	AAS-Flame	0.03
18	Zinc	0.03	5.0	AAS-Flame	0.01
19	Selenium	<0.002	0.05	AAS-GTA	0.002
20	Nickel	<0.01	3.0	AAS-Flame	0.01
21	Fluoride	0.36	2.0	SPADNS	0.02
22	Dissolved Phosphate	1.48	5.0	Molybdovanadate	0.30
23	Sulphide	0.016	2.0	Methylene Blue	0.005
24	Phenolics	<0.001	1.0	Chloroform Extraction	0.001
25	Manganese	0.30	2.0	AAS-Flame	0.02
26	Iron	0.14	3.0	AAS-Flame	0.06
27	Nitrate Nitrogen	2.9	10	Spectrophotometric	0.5
28	Cadmium	<0.0005	2.0	AAS-GTA	0.0005
29	Total Dissolved Solids	410	Not Specified	Gravimetric	25.0

All values are expressed in mg/L unless specified.

Cluster No. 11

CMPDIL

WATER QUALITY DATA

(Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Year : **2019.**

Name of the Project : **Mines of Cluster No. 11**

Month: **March.**

Name of the Stations & Code : **3. 11MW6- Chora 7, 9 & 10 Pits**

Sl. No.	Parameters	Analytical Results	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Date of Sampling	5-Mar-19			
1	Colour	5	Unobjectionable	Platinum Cobalt	1.0
2	Odour	Unobjectionable	Unobjectionable	Physical	-
3	TSS	28	100	Gravimetric	10
4	pH	7.64	5.5-9.0	Electrometric	0.01
5	Temperature (°C)	30.5	Shall not exceed 5 °C above the receiving water temperature	Thermometric	0.1
6	Oil & Grease	<2.0	10	Partition Gravimetric	2.0
7	Total Residual Chlorine	<0.02	1.0	Colorimetric	0.02
8	Ammonical Nitrogen	0.62	50	Nesslerization	0.01
9	Total Kjeldahi Nitrogen	1.64	100	Macro Kjeldahl	1.0
10	Free Ammonia	<0.02	5.0	Spectrophotometric	0.02
11	BOD	2	30	Bioassy	2.0
12	COD	16	250	Closed Reflux	4.0
13	Arsenic	<0.002	0.2	AAS-VGA	0.002
14	Lead	<0.005	0.1	AAS-GTA	0.005
15	Hexavalent Chromium	0.04	0.1	Colorimetric	0.01
16	Total Chromium	0.07	2.0	AAS-Flame	0.04
17	Copper	0.03	3.0	AAS-Flame	0.03
18	Zinc	0.04	5.0	AAS-Flame	0.01
19	Selenium	<0.002	0.05	AAS-GTA	0.002
20	Nickel	<0.01	3.0	AAS-Flame	0.01
21	Fluoride	0.60	2.0	SPADNS	0.02
22	Dissolved Phosphate	1.54	5.0	Molybdovanadate	0.30
23	Sulphide	0.014	2.0	Methylene Blue	0.005
24	Phenolics	<0.001	1.0	Chloroform Extraction	0.001
25	Manganese	0.32	2.0	AAS-Flame	0.02
26	Iron	0.14	3.0	AAS-Flame	0.06
27	Nitrate Nitrogen	2.5	10	Spectrophotometric	0.5
28	Cadmium	<0.0005	2.0	AAS-GTA	0.0005
29	Total Dissolved Solids	694	Not Specified	Gravimetric	25.0

All values are expressed in mg/L unless specified.

Cluster No. 11

CMPDIL

WATER QUALITY DATA

(Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Year : **2019.**

Name of the Project : **Mines of Cluster No. 11**

Month: **March.**

Name of the Stations & Code : **4. 11MW7- Bahula UG**

Sl. No.	Parameters	Analytical Results	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Date of Sampling	5-Mar-19			
1	Colour	5	Unobjectionable	Platinum Cobalt	1.0
2	Odour	Unobjectionable	Unobjectionable	Physical	-
3	TSS	30	100	Gravimetric	10
4	pH	8.37	5.5-9.0	Electrometric	0.01
5	Temperature (°C)	29.8	Shall not exceed 5 °C above the receiving water temperature	Thermometric	0.1
6	Oil & Grease	<2.0	10	Partition Gravimetric	2.0
7	Total Residual Chlorine	<0.02	1.0	Colorimetric	0.02
8	Ammonical Nitrogen	0.58	50	Nesslerization	0.01
9	Total Kjeldahi Nitrogen	1.78	100	Macro Kjeldahl	1.0
10	Free Ammonia	<0.02	5.0	Spectrophotometric	0.02
11	BOD	2	30	Bioassy	2.0
12	COD	24	250	Closed Reflux	4.0
13	Arsenic	<0.002	0.2	AAS-VGA	0.002
14	Lead	<0.005	0.1	AAS-GTA	0.005
15	Hexavalent Chromium	0.04	0.1	Colorimetric	0.01
16	Total Chromium	0.07	2.0	AAS-Flame	0.04
17	Copper	0.03	3.0	AAS-Flame	0.03
18	Zinc	0.03	5.0	AAS-Flame	0.01
19	Selenium	<0.002	0.05	AAS-GTA	0.002
20	Nickel	<0.01	3.0	AAS-Flame	0.01
21	Fluoride	0.40	2.0	SPADNS	0.02
22	Dissolved Phosphate	1.44	5.0	Molybdovanadate	0.30
23	Sulphide	0.012	2.0	Methylene Blue	0.005
24	Phenolics	<0.001	1.0	Chloroform Extraction	0.001
25	Manganese	0.34	2.0	AAS-Flame	0.02
26	Iron	0.16	3.0	AAS-Flame	0.06
27	Nitrate Nitrogen	4.6	10	Spectrophotometric	0.5
28	Cadmium	<0.0005	2.0	AAS-GTA	0.0005
29	Total Dissolved Solids	558	Not Specified	Gravimetric	25.0

All values are expressed in mg/L unless specified.

Cluster No. 11

CMPDIL

WATER QUALITY DATA

(Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Year : **2019.**

Name of the Project : **Mines of Cluster No. 11**

Month: **March.**

Name of the Stations & Code : **5. 11MW8- C L Jambad UG**

Sl. No.	Parameters	Analytical Results	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Date of Sampling	4-Mar-19			
1	Colour	5	Unobjectionable	Platinum Cobalt	1.0
2	Odour	Unobjectionable	Unobjectionable	Physical	-
3	TSS	34	100	Gravimetric	10
4	pH	8.55	5.5-9.0	Electrometric	0.01
5	Temperature (°C)	31.3	Shall not exceed 5 °C above the receiving water temperature	Thermometric	0.1
6	Oil & Grease	<2.0	10	Partition Gravimetric	2.0
7	Total Residual Chlorine	<0.02	1.0	Colorimetric	0.02
8	Ammonical Nitrogen	0.54	50	Nesslerization	0.01
9	Total Kjeldahi Nitrogen	1.72	100	Macro Kjeldahl	1.0
10	Free Ammonia	<0.02	5.0	Spectrophotometric	0.02
11	BOD	4	30	Bioassy	2.0
12	COD	36	250	Closed Reflux	4.0
13	Arsenic	<0.002	0.2	AAS-VGA	0.002
14	Lead	<0.005	0.1	AAS-GTA	0.005
15	Hexavalent Chromium	0.03	0.1	Colorimetric	0.01
16	Total Chromium	0.07	2.0	AAS-Flame	0.04
17	Copper	0.04	3.0	AAS-Flame	0.03
18	Zinc	0.04	5.0	AAS-Flame	0.01
19	Selenium	<0.002	0.05	AAS-GTA	0.002
20	Nickel	<0.01	3.0	AAS-Flame	0.01
21	Fluoride	0.38	2.0	SPADNS	0.02
22	Dissolved Phosphate	1.54	5.0	Molybdovanadate	0.30
23	Sulphide	0.009	2.0	Methylene Blue	0.005
24	Phenolics	<0.001	1.0	Chloroform Extraction	0.001
25	Manganese	0.26	2.0	AAS-Flame	0.02
26	Iron	0.14	3.0	AAS-Flame	0.06
27	Nitrate Nitrogen	3.7	10	Spectrophotometric	0.5
28	Cadmium	<0.0005	2.0	AAS-GTA	0.0005
29	Total Dissolved Solids	638	Not Specified	Gravimetric	25.0

All values are expressed in mg/L unless specified.

Cluster No. 11

CMPDIL

WATER QUALITY DATA

(Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Year : **2019.**

Name of the Project : **Mines of Cluster No. 11**

Month: **March.**

Name of the Stations & Code : **6. 11MW9- Siduli UG**

Sl. No.	Parameters	Analytical Results	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Date of Sampling	4-Mar-19			
1	Colour	3	Unobjectionable	Platinum Cobalt	1.0
2	Odour	Unobjectionable	Unobjectionable	Physical	-
3	TSS	32	100	Gravimetric	10
4	pH	7.80	5.5-9.0	Electrometric	0.01
5	Temperature (°C)	29.7	Shall not exceed 5 °C above the receiving water temperature	Thermometric	0.1
6	Oil & Grease	<2.0	10	Partition Gravimetric	2.0
7	Total Residual Chlorine	<0.02	1.0	Colorimetric	0.02
8	Ammonical Nitrogen	0.62	50	Nesslerization	0.01
9	Total Kjeldahi Nitrogen	1.78	100	Macro Kjeldahl	1.0
10	Free Ammonia	<0.02	5.0	Spectrophotometric	0.02
11	BOD	2	30	Bioassy	2.0
12	COD	40	250	Closed Reflux	4.0
13	Arsenic	<0.002	0.2	AAS-VGA	0.002
14	Lead	<0.005	0.1	AAS-GTA	0.005
15	Hexavalent Chromium	0.03	0.1	Colorimetric	0.01
16	Total Chromium	0.08	2.0	AAS-Flame	0.04
17	Copper	0.03	3.0	AAS-Flame	0.03
18	Zinc	0.04	5.0	AAS-Flame	0.01
19	Selenium	<0.002	0.05	AAS-GTA	0.002
20	Nickel	<0.01	3.0	AAS-Flame	0.01
21	Fluoride	0.30	2.0	SPADNS	0.02
22	Dissolved Phosphate	1.70	5.0	Molybdovanadate	0.30
23	Sulphide	0.007	2.0	Methylene Blue	0.005
24	Phenolics	<0.001	1.0	Chloroform Extraction	0.001
25	Manganese	0.32	2.0	AAS-Flame	0.02
26	Iron	0.16	3.0	AAS-Flame	0.06
27	Nitrate Nitrogen	3.4	10	Spectrophotometric	0.5
28	Cadmium	<0.0005	2.0	AAS-GTA	0.0005
29	Total Dissolved Solids	600	Not Specified	Gravimetric	25.0

All values are expressed in mg/L unless specified.

Cluster No. 11

CMPDIL

WATER QUALITY DATA

(Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Year : **2019.**

Name of the Project : **Mines of Cluster No. 11**

Month: **March.**

Name of the Stations & Code : **7. 11MW10- Khandra UG**

Sl. No.	Parameters	Analytical Results	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Date of Sampling	6-Mar-19			
1	Colour	5	Unobjectionable	Platinum Cobalt	1.0
2	Odour	Unobjectionable	Unobjectionable	Physical	-
3	TSS	34	100	Gravimetric	10
4	pH	8.51	5.5-9.0	Electrometric	0.01
5	Temperature (°C)	30.8	Shall not exceed 5 °C above the receiving water temperature	Thermometric	0.1
6	Oil & Grease	<2.0	10	Partition Gravimetric	2.0
7	Total Residual Chlorine	<0.02	1.0	Colorimetric	0.02
8	Ammonical Nitrogen	0.48	50	Nesslerization	0.01
9	Total Kjeldahi Nitrogen	1.52	100	Macro Kjeldahl	1.0
10	Free Ammonia	<0.02	5.0	Spectrophotometric	0.02
11	BOD	4	30	Bioassy	2.0
12	COD	28	250	Closed Reflux	4.0
13	Arsenic	<0.002	0.2	AAS-VGA	0.002
14	Lead	<0.005	0.1	AAS-GTA	0.005
15	Hexavalent Chromium	0.03	0.1	Colorimetric	0.01
16	Total Chromium	0.08	2.0	AAS-Flame	0.04
17	Copper	0.04	3.0	AAS-Flame	0.03
18	Zinc	0.04	5.0	AAS-Flame	0.01
19	Selenium	<0.002	0.05	AAS-GTA	0.002
20	Nickel	<0.01	3.0	AAS-Flame	0.01
21	Fluoride	0.62	2.0	SPADNS	0.02
22	Dissolved Phosphate	1.76	5.0	Molybdovanadate	0.30
23	Sulphide	0.016	2.0	Methylene Blue	0.005
24	Phenolics	<0.001	1.0	Chloroform Extraction	0.001
25	Manganese	0.34	2.0	AAS-Flame	0.02
26	Iron	0.14	3.0	AAS-Flame	0.06
27	Nitrate Nitrogen	4.5	10	Spectrophotometric	0.5
28	Cadmium	<0.0005	2.0	AAS-GTA	0.0005
29	Total Dissolved Solids	556	Not Specified	Gravimetric	25.0

All values are expressed in mg/L unless specified.

Cluster No. 11

CMPDIL

WATER QUALITY DATA

(Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Year : **2019.**

Name of the Project : **Mines of Cluster No. 11**

Month: **March.**

Name of the Stations & Code : **8. 11MW11- Shankarpur UG**

Sl. No.	Parameters	Analytical Results	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Date of Sampling	6-Mar-19			
1	Colour	4	Unobjectionable	Platinum Cobalt	1.0
2	Odour	Unobjectionable	Unobjectionable	Physical	-
3	TSS	30	100	Gravimetric	10
4	pH	7.71	5.5-9.0	Electrometric	0.01
5	Temperature (°C)	31.4	Shall not exceed 5 °C above the receiving water temperature	Thermometric	0.1
6	Oil & Grease	<2.0	10	Partition Gravimetric	2.0
7	Total Residual Chlorine	<0.02	1.0	Colorimetric	0.02
8	Ammonical Nitrogen	0.64	50	Nesslerization	0.01
9	Total Kjeldahi Nitrogen	1.48	100	Macro Kjeldahl	1.0
10	Free Ammonia	<0.02	5.0	Spectrophotometric	0.02
11	BOD	4	30	Bioassy	2.0
12	COD	28	250	Closed Reflux	4.0
13	Arsenic	<0.002	0.2	AAS-VGA	0.002
14	Lead	<0.005	0.1	AAS-GTA	0.005
15	Hexavalent Chromium	0.04	0.1	Colorimetric	0.01
16	Total Chromium	0.08	2.0	AAS-Flame	0.04
17	Copper	0.04	3.0	AAS-Flame	0.03
18	Zinc	0.03	5.0	AAS-Flame	0.01
19	Selenium	<0.002	0.05	AAS-GTA	0.002
20	Nickel	<0.01	3.0	AAS-Flame	0.01
21	Fluoride	0.60	2.0	SPADNS	0.02
22	Dissolved Phosphate	1.55	5.0	Molybdovanadate	0.30
23	Sulphide	0.009	2.0	Methylene Blue	0.005
24	Phenolics	<0.001	1.0	Chloroform Extraction	0.001
25	Manganese	0.24	2.0	AAS-Flame	0.02
26	Iron	0.14	3.0	AAS-Flame	0.06
27	Nitrate Nitrogen	4.4	10	Spectrophotometric	0.5
28	Cadmium	<0.0005	2.0	AAS-GTA	0.0005
29	Total Dissolved Solids	408	Not Specified	Gravimetric	25.0

All values are expressed in mg/L unless specified.

ANNEXURE – B:

Periodic Medical Examination Report (2018-2019)

		PME IN 2018-2019														
SI No	Name of Colliery	Man Power	Target /Month	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Total
1	Bankola Colliery	1343		28	33	10	28	45	21	29	23	30	25	24	22	318
2	S.S. Pur Colliery	1199		29	11	42	36	31	33	9	0	12	28	66	69	366
3	Khandra Colliery	811		15	11	12	14	16	14	6	25	17	11	3	4	148
4	Kumardih A Colliery	726		5	12	9	8	19	3	14	7	17	9	3	40	146
5	Kumardih B Colliery	525		6	3	9	1	14	15	1	9	19	8	5	10	100
6	Moiria Colliery	335		0	0	0	0	0	0	0	0	0	0	0	0	0
7	Tilaboni Colliery	906		19	14	10	6	17	25	16	9	5	31	17	8	177
8	Sankarpur Colliery	873		8	16	15	21	35	11	3	12	21	14	9	10	175
9	Nakraonda Colliery	330		0	8	4	6	14	4	8	2	0	0	0	0	46
10	GM Office & Hospital	264		0	0	0	0	0	0	0	0	57	3	0	0	60
	Ukhra RW			16	11	4	0	0	0	0	0	4	0	0	0	35
	Total	7312	1462	126	119	115	120	191	126	86	88	182	129	127	167	1576
1	Pathology			126	119	115	120	191	126	81	62	182	129	125	167	1543
2	Xray			126	119	115	120	191	126	74	88	169	101	118	145	1492
3	ECG			10	13	15	15	19	22	16	15	15	15	15	13	183
4	Spirometry			5	6	5	5	6	7	7	6	8	5	5	4	69
5	Audiometry			5	6	5	5	6	7	7	3	7	5	5	3	64
A.	Contractual Worker			31	18	0	0	0	0	0	1	0	0	1	0	51
B.	Female Worker			3	0	1	1	8	6	3	5	24	7	4	6	68
C.	Above-45yrs			93	75	79	100	157	99	62	58	143	87	89	125	1167
D.	Below 45yrs			33	44	36	20	34	27	24	30	39	42	38	42	409

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ANNEXURE – D:

CSR Activities (2018-19)

Liability and Expenditure Report for the Year 2018-19					
Sl No	Name of the Work	BC amount for the year 2017-18	BC amount for the year 2018-19	Revalidation amount for the year 2018-19	Expenditure in the year 2018-19
1	Unnati- A Microenterprise of Handicrafts run by women	Rs 2490677	0	1267200	1244355
2	Diet for Football Academy students	0	Rs 128700	0	128700

M. Mondal

ANNEXURE – E:

Images



Figure 1 Wet Road after Mobile Water Sprinkling



Figure 2 Natural Vegetation along Roadside