



F. No. J-11015/01/2011-IA.II (M)

Government of India  
Ministry of Environment, Forest and Climate Change  
(Impact Assessment Division)

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Indira Paryavaran Bhawan  
Jorbagh Road, N Delhi - 3  
Dated: 30<sup>th</sup> September, 2020

To

**The General Manager**

M/s Bharat Coking Coal Limited,

Kusunda Area, Koyla Bhawan,

Koyla Nagar, Dhanbad - 5 (Jharkhand). E-mail: [gmenv.bccl@coalindia.in](mailto:gmenv.bccl@coalindia.in)

**Sub: Cluster V Coal Mining Project of production capacity of 6.311 MTPA in total mine lease area of 1957.08 ha of M/s Bharat Coking Coal Ltd located in Jharia Coalfields, District Dhanbad (Jharkhand) - Amendment in Environment Clearance - reg.**

This has reference to your online proposal no. IA/JH/CMIN/163820/2020 dated 16<sup>th</sup> July, 2020, submitted to this Ministry for grant of Amendment in Environmental Clearance (EC) in terms of the provisions of the Environment Impact Assessment (EIA) Notification, 2006 under the Environment (Protection) Act, 1986, to Cluster V Coal Mining project (Group of 7 opencast/underground mines lease holds) of combined production capacity of 6.311 MTPA (peak) in total mine lease area of 1957.08 ha of M/s Bharat Coking Coal Ltd located in Jharia Coalfields, District Dhanbad (Jharkhand) dated 11<sup>th</sup> February, 2013.

The project/activity is covered under category 'A' of item 1(a) 'Mining of Minerals' the Schedule to the EIA Notification, 2006

2. The amendment has been sought for the revised capacities of mine for Nichitpur Collieries, with the combined production capacity of 6.311 MTPA (peak) and the total mine lease area of 1957.08 ha remaining the same, with the details as under:-

Sl. No.	Name of the Mine	Lease hold Area (Ha)	EC Amendment dated 30.05.2018 (Existing)			Amendment sought			
			Production Capacity (N) (MTPA)	Production Capacity (P) (MTPA)	Mine Life (Yrs)	Proposed Amendment	Production Capacity (N) (MTPA)	Production Capacity (P) (MTPA)	Balance Mine Life (Yrs)
1	Nichitpur OC Mine	150	0.6	0.78	10	Increase in production	1.38	1.794	5

2	Tetumari (OCP & UG Section)	317	0.795	1.033	>30	No Change	0.795	1.033	>30
3	Mudidih (OCP & UG Section)	378.05	1.553	2.019	>30	No Change	1.553	2.019	>30
4	Sendra Bansjora OC Mine	249.63	1.8	2.34	16	No Change	1.8	2.34	14
5	Kankanee OC Mine	258.12	0.92	1.19	7	No Change	0.92	1.19	6
6	Bansdeopur (OCP & UG Section)	104.72	0.676	0.879	>30	No Change	0.676	0.879	>30
7	Loyabad UG Section (closed for coal production)	499.56	0	0	--	No Change	0	-	-
	<b>Cluster</b>	<b>1957.08</b>	<b>4.854</b>	<b>6.311*</b>			<b>4.854</b>	<b>6.311*</b>	

\* Peak production of the Cluster will remain same, as peak of individual mine will be achieved in different years to offset loss of production in other mines.

Mining Plan (Including Progressive Mine Closure Plan) for Nichitpur Colliery, for which the enhancement in peak capacity without changing the Cluster peak EC capacity has been approved by the Board of Bharat Coking Coal Limited on 29<sup>th</sup> May, 2020.05.2020

3. The proposal was considered by the Expert Appraisal Committee (EAC) in the Ministry for Thermal & Coal Mining Sector in its 1<sup>st</sup> meeting held on 17-18 August, 2020. The Committee has recommended the proposal for amendment in the environmental clearance dated 11<sup>th</sup> February, 2013, as proposed by the project proponent and mentioned in the table at para 3 above.

4. Based on the proposal submitted by the project proponent and recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords approval for amendment in the environmental clearance dated 11<sup>th</sup> February, 2013 to **Cluster V Coal Mining project (Group of 7 opencast/underground mines lease holds)** of combined production capacity of 6.311 MTPA (peak) in total mine lease area of 1957.08 ha of M/s Bharat Coking Coal Ltd located in Jharia Coalfields, District Dhanbad (Jharkhand), as stated in the table at para 3 above. In addition, all the conditions of EC dated 11<sup>th</sup> February, 2013 shall remain also be applicable along with the following conditions mentioned below: -

- (i) Mitigating measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at loading and unloading points, etc.
- (ii) Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.
- (iii) Persons of nearby villages shall be given training on livelihood and skill development to make them employable.
- (iv) Thick green belt of adequate width at the final boundary in the down wind direction of the project site shall be developed to mitigate/check the dust pollution.
- (v) Efforts shall be made for utilizing alternate sources of surface water, abandoned mines or else whatsoever and thus minimizing the dependability on a single source.
- (vi) Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.
- (vii) A third party assessment of EC compliance shall be undertaken once in three years through reputed Government Institutes or any other expert agency identified by the Ministry.
- (viii) Active OB Dump should not be kept barren/open and should be covered by temporary grass to avoid air born of particles
- (ix) In-active OB dump shall not be kept barren/open. They should be immediately reclaimed and re-graded to improve the land form and covered by temporary grass etc. for better land use post mine closure
- (x) Project Proponent shall obtain blasting permission from DGMS for conducting mining operation near villages and also explore deployment of rock breakers of suitable capacity in the project to avoid blasting very near to villages. There shall be no damages caused to habitation/structures due to blasting activity.
- (xi) The Project Proponent shall comply 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. State Government shall ensure that the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department in strict compliance of 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.
- (xii) Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; The prevention measure for burns, malaria

and provision of antsnake venom including all other paramedical safeguards may be ensured before initiating the mining activities.

(xiii) Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".

(xiv) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.

(xv) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.

(xvi) Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional Office of the MoEFCC.

  
**(Lalit Bokolia)**  
**Director**

**Copy to:**

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
2. The Secretary, Department of Environment & Forests, Government of Jharkhand, Secretariat, Ranchi (Jharkhand)
3. The Chief Conservator of Forests, Regional office (ECZ), Ministry of Environment Forest and Climate Change, Bungalow No. A-2, Shyamali Colony, Ranchi (Jharkhand) - 834002
4. The Member Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
5. The Chairman, Jharkhand State Pollution Control Board, TA Building, HEC Complex, PO Dhurwa, Ranchi
6. The District Collector, Dhanbad, Government of Jharkhand
7. Guard File 8. Record File 9. PARIVESH

  
**(Lalit Bokolia)**  
**Director**

F.No.J-11015/01/2011-IA.II (M)  
Government of India  
Ministry of Environment, Forest and Climate Change  
IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,  
Jorbagh Road, N Delhi - 3  
Dated: 30<sup>th</sup> May, 2018

To,  
The General Manager (E&F)  
M/s Bharat Coking Coal Ltd,  
Koyala Bhawan,  
District **Dhanbad** (Jharkhand) Email: [envbccl@gmail.com](mailto:envbccl@gmail.com)

**Sub: Cluster V Coal Mining Project of production capacity of 6.311 MTPA in total mine lease area of 1957.08 ha of M/s Bharat Coking Coal Ltd located in Jharia Coalfields, District Dhanbad (Jharkhand) - Amendment in EC - reg.**

Sir,  
This has reference to your letter No.GM/SA/SPA/F-41/2017/127 dated 13<sup>th</sup> September, 2017, online proposal No.IA/JH/CMIN/6990/2011 dated 7<sup>th</sup> February, 2018 and letters dated 12.10.2017, 25.10.2017, 27.10.2017, 7.02.2018, 1.03.2018, 15.03.2018, 2.04.2018, 13.04.2018 & 17.04.2018 on the above mentioned subject.

2. The Ministry of Environment, Forest and Climate Change has considered the proposal for amendment in environmental clearance dated 11<sup>th</sup> February, 2013 to Cluster V Coal Mining project (Group of 7 opencast/underground mines lease holds) of combined production capacity of 6.311 MTPA (peak) in total mine lease area of 1957.08 ha of M/s Bharat Coking Coal Ltd located in Jharia Coalfields, District Dhanbad (Jharkhand).

3. The amendment has been sought for the revised capacities of mines namely, Sendra Bansjora and Kankanee Collieries, with the combined production capacity of 6.311 MTPA (peak) and the total mine lease area of 1957.08 ha remaining the same, with the details as under:-

S. No.	As per Existing EC					Amendment Sought				
	Name of the Mine		Peak Production Capacity (MTY)	Leasehold Area (ha)	Mine Life (Years)	Name of the Mine		Peak Production Capacity (MTY)	Leasehold Area (ha)	Mine Life (Years)
1	Nichitpur	OCP	0.78	150.00	10	Nichitpur	OCP	0.78	150.00	10
2	Tetulmari	UG Section	1.033	317.00	>30	Tetulmari	UG Section	1.033	317.00	>30
		OCP Section					OCP Section			
3	Mudidih	OCP	2.019	378.00	>30	Mudidih	OCP	2.019	378.00	>30
		UG Section					UG Section			
4	Sendra Bansjora	OCP	0.975	249.63	23	Sendra Bansjora	OCP	2.34	249.63	16
		UG Section								
5	Kankanee	OCP Section	0.624	258.12	>30	Kankanee	OCP	1.19	258.12	7

*SK*

		UG Section								
6	Bansdeopur	OCP	0.879	104.72	>30	Bansdeopur	OCP	0.879	104.72	>30
		UG Section					UG Section			
7	Loyabad	UG Section	0	499.56	--	Loyabad	UG Section	0	499.56	-
Total			6.311	1957.08				6.311*	1957.08	

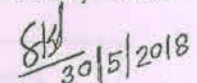
\* Peak production of the Cluster will remain same, as peak of individual mine will be achieved in different years to offset loss of production in other mines.

Revised Mining Plan for the changed capacities of individual mines namely, Kankanee collieries and Sendra Bansjora was approved by the Board of M/s BCCL on 23<sup>rd</sup> November, 2017 & 29<sup>th</sup> January, 2018 respectively.

4. The proposal was considered by the Expert Appraisal Committee (EAC) in the Ministry for Thermal & Coal Mining Sector in its 21<sup>st</sup> meeting held on 27<sup>th</sup> October, 2017 and 28<sup>th</sup> meeting held on 17-18 April, 2018. The Committee has recommended the proposal for amendment in the environmental clearance dated 11<sup>th</sup> February, 2013, as proposed by the project proponent and mentioned in the table at para 3 above.

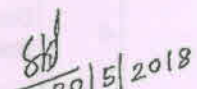
5. Based on the proposal submitted by the project proponent and recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords approval for amendment in the environmental clearance dated 11<sup>th</sup> February, 2013 to **Cluster V Coal Mining project (Group of 7 opencast/underground mines lease holds)** of combined production capacity of 6.311 MTPA (peak) in total mine lease area of 1957.08 ha of M/s Bharat Coking Coal Ltd located in Jharia Coalfields, District Dhanbad (Jharkhand), as stated in the table at para 3 above.

6. All other terms and conditions stipulated in the EC dated 11<sup>th</sup> February, 2013, shall remain unchanged.

  
 (S. K. Srivastava)  
 Scientist E

**Copy to:**

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
2. The Secretary, Department of Environment & Forests, Government of Jharkhand, Secretariat, Ranchi (Jharkhand)
3. The Chief Conservator of Forests, Regional office (ECZ), Ministry of Environment Forest and Climate Change, Bungalow No. A-2, Shyamali Colony, Ranchi (Jharkhand) - 834002
4. The Member-Secretary, Jharkhand State Pollution Control Board, TA Building, HEC Complex, PO Dhurwa, Ranchi
5. The Member Secretary, CPCB, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
6. The Member Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
7. The Advisor, Coal India Limited, SCOPE Minar, Core-I, 4<sup>th</sup> Floor, Vikas Marg, Laxmi Nagar, New Delhi
8. The District Collector, Dhanbad, Government of Jharkhand
9. Monitoring File 10. Guard File 11. Record File 12. Notice Board

  
 (S. K. Srivastava)  
 Scientist E

No. J-11015/01/2011-IA.II (M)  
Government of India  
Ministry of Environment & Forests



Paryavaran Bhawan,  
CGO Complex,  
New Delhi-110510.

To

Dated: 11 February, 2013

General Manager (E&F)  
M/s Bharat Coking Coal Ltd.,  
Koyala Bhawan,  
Dhanbad-826005  
Jharkhand

**Sub. : Cluster V (7 mines of a 4.854 (Normative) and 6.311 (Peak) production of MTPA in a combined ML area of 1957.08 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand (EC based on TOR granted on 16.03.2011) - Environment Clearance –reg.**

Sir:

This is with reference to letter no.43011/48/2010-CPAM dated 03.01.2011 along with the application for Terms of Reference (TOR) and this Ministry's letter Dated 16.03.2011 granting TOR. Your letter No. BCCL/GM (Env.)/EMP F-2012/526 dated 03.07.2012 and 28/29.12.2012 for environmental clearance on the above-mentioned subject.

2. The Ministry of Environment & Forests has considered your application. It is noted that the proposal is for grant of Environmental Clearance for new Cluster V, a group of 7 Mines (viz. Nichitpur, OCP, Mudidih colliery (Mixed), Tetulmari colliery (Mixed), Sendra Bansjora Colliery (Mixed), Kankanee colliery (Mixed), Bansdeopur colliery (Mixed), are operating and Loyabad colliery is non-producing/closed temporarily since April 2009 on account of lease renewal. The proponet has informed that:

- i. The proposal does not involve increase in lease hold area, change in technology or change in product mix in the mines.
- ii. The area has undulating topography with 7 mines of which 1 is UG mine(closed for production), 5 are mixed (OC and UG) and 1 OC mine of a combined ML area of 1957.08 ha and production capacity of 4.854 MTPA (normative) and 6.311 MTPA (peak). The details are as given below:
- iii. At present, out of the seven mines of Cluster-V, Nichitpur, OCP, Mudidih colliery (Mixed), Tetulmari colliery (Mixed), Sendra Bansjora Colliery (Mixed), Kankanee colliery (Mixed), Bansdeopur colliery (UG), are operating and Loyabad colliery is non-producing/closed temporarily since April 2009. The details of the cluster are given as under:

MINES IN CLUSTER V							
S.no	Name of Mine		Status	Prod. capacity (MTPA)		ML (ha)	Life of Mine (years)
				Normative	Peak		
1	Tetulmari	UG Section	Operating	0.795	1.033	317.00	>30
		OCP Section	Operating				

EC\_Cluster\_V\_BCCL

Depth of the mine	75-116 m	167-185 m	55-128 m	115-300 m	100-120 m	137-190 m
Cost of production (Rs/ton)	775.67	4160.43	997.75	4575.43	3538.36	4745.95

TECHNICAL PARAMETERS OF CLUSTER -V						
Name of Mines	Bansdeopur OC	Bansdeopur UG	Loyab ad UG (Close d)	Kankanee OC	Kankanee UG	Nichitpur OC
Lease Area (Ha)	104.72		499.56	258.12		150.00
Life (in years)	3	>30	-	11	>30	10
Method of Mining	Shovel Dumper Combination	Bord & Pillar	-	Shovel Dumper Combination	Bord & Pillar	Shovel Dumper Combination
Max depth(m)	125 m	112-186 m	-	75-155 m	160-280 m	58-150 m
Grade of Coal	ST-II, W-II, W-III	W-IV, W-III	St-II, W-II	W-IV	W-IV & D	W-IV & D
Mineable Reserve MT	1.67	5.16	-	4.15	21	6.40
Seams to be worked	XIV, XIII, XII, XI, X and IX	VIII and X	-	XI, XII, XIII, XIV	X, VIII C, VIIIA, VIII	VIII/VIII A to V/VI, IV, III, II
Manpower	473	713	-	212	610	728
Production in 1993-94 (MT)	0	0.136	-	0	0.212	0.273
Production in 2009-10(MTPA)	0	0.095	-	0.813	0	0.643



Depth of the mine	75-116 m	167-185 m	55-128 m	115-300 m	100-120 m	137-190 m
Cost of production (Rs/ton)	775.67	4160.43	997.75	4575.43	3538.36	4745.95

TECHNICAL PARAMETERS OF CLUSTER -V						
Name of Mines	Bansdeopur OC	Bansdeopur UG	Loyab ad UG (Close d)	Kankanee OC	Kankanee UG	Nichitpur OC
Lease Area (Ha)	104.72		499.56	258.12		150.00
Life (in years)	3	>30	-	11	>30	10
Method of Mining	Shovel Dumper Combination	Bord & Pillar	-	Shovel Dumper Combination	Bord & Pillar	Shovel Dumper Combination
Max depth(m)	125 m	112-186 m	-	75-155 m	160-280 m	58-150 m
Grade of Coal	ST-II, W-II, W-III	W-IV, W-III	St-II, W-II	W-IV	W-IV & D	W-IV & D
Mineable Reserve MT	1.67	5.16	-	4.15	21	6.40
Seams to be worked	XIV, XIII, XII, XI, X and IX	VIII and X	-	XI, XII, XIII, XIV	X, VIII C, VIIIA, VIII	VIII/VIII A to V/VI, IV, III, II
Manpower	473	713	-	212	610	728
Production in 1993-94 (MT)	0	0.136	-	0	0.212	0.273
Production in 2009-10 (MTPA)	0	0.095	-	0.813	0	0.643

Proposed peak Production (MTPA)	0.723	0.156	-	0.468	0.156	0.78
Coos production (Rs/T)	453.60	2768.37	--	482.43	9824.71	1138.18

The details of post-mining land use of Cluster-V :

Sl. No.	Type of land use	Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	112.13
		Not Backfilled	123.47
2	Abandoned Quarry	Backfilled	82.53
		Not Backfilled	48.98
3	External OB dump	73.07	0.00
4	Service building/ mine Infrastructure	13.87	0.0
5	Coal dump	12.15	0.0
6	Road and rail	124.03	113.22
7	Homestead Land	272.93	248.00
8	Agricultural Land	14.00	14.00
9	Forest Land	0.00	0.00
10	Plantation	150.45	1089.64
11	Water Body	29.19	95.95
12	Barren Land	900.28	396.28
	<b>Total</b>	<b>1957.08</b>	<b>1957.08</b>

Details of Rehabilitation in Cluster- V	
Total Voids	25.87Mm <sup>3</sup>
Total External OB	21.92Mm <sup>3</sup>
Total Unstable Sites	77no.
Total Affected Area	1383420 m <sup>2</sup>
No. of Houses to be rehabilitated	5835 no. as per JAP
Land for Resettlement	BCCL
	Non BCCL
Total Cost of fire dealing	Rs.16465 lakhs
Total Cost of resettlement	Rs. 104024.9 lakhs

Environmental issues: Mitigation and benefits		
S.N.	Major Env. Issues	Mitigation measures and Benefit
1.	Voids(172.45 ha) (123.47 operating quarry+ 48.98 abandoned quarry)	105.69 ha backfilling and 66.76 ha water body
2.	Ext.OB Dumps (73.07 ha)	Use for backfilling and plantation.
3.	Fire /Unstable area 77 site with 1383420 sqare m consisting of 5835 PAF	Dig out fire at the cost of Rs.164.65 crores and rehabilitate affected families at the cost of Rs 1040.25 crores
4.	Reclamation /Mine closure	Additional plantation in 939.19 ha land at the cost of Rs 8745.12 lakhs. (Funds allocated for mine closure as per MOC guidelines and adopted by BCCL @Rs 1 lakhs /ha in case of U/G mine and Rs 6 lakhs/ha in case of OCP mines)
5.	CSR	Rs 243 Lakhs per year@ Rs 5/T of coal

Details of Rehabilitation in Cluster- V		
Total Voids		25.87Mm <sup>3</sup>
Total External OB		21.92Mm <sup>3</sup>
Total Unstable Sites		77no.
Total Affected Area		1383420 m2
No. of Houses to be rehabilitated		5835 no. as per JAP
Land for Resettlement	BCCL	39.76 Ha
	Non BCCL	72.53 Ha
Total Cost of fire dealing		Rs.16465 lakhs
Total Cost of resettlement		Rs. 104024.9 lakhs

PROPOSED PRODUCTION IN OPEN CAST CLUSTER -V								
Sl No.	Year	Nicitpur OC	Tetulmari OC	SendraB ansjore OC	Bansdeo pur OC	Mudidi h OC	Kankan ee OC	Total
1	2012-13	1.75	1.20	1.30	2.50	7.00	2.50	16.25
2	2013-14	1.70	1.10	1.40	2.50	7.10	2.50	16.3
3	2014-15	1.70	1.00	1.20	2.35	6.80	2.30	15.35
4	2015-16	1.65	1.00	1.10	2.55	7.20	2.40	15.9
5	2016-17	1.60	1.00	1.10	2.50	6.90	2.50	15.6

6	2017-18	1.75	1.20	1.20	2.35	6.80	2.30	15.6
7	2018-19	1.75	1.20	1.20	2.40	7.00	2.40	15.95
8	2019-20	1.80	1.20	1.20	2.50	7.00	2.40	16.1
9	2020-21	1.85	1.10	1.40	2.50	7.15	2.40	16.4
10	2021-22	1.85	1.20	1.20	2.35	7.20	2.35	16.15
11	2022-23	1.80	1.10	1.50	2.55	7.00	2.55	16.5
12	2023-24	1.80	1.10	1.50	2.50	7.10	2.50	16.5
		21	13.4	15.3	29.55	84.25	29.1	192.6

LIST OF FIRE IN CLUSTER -V		
Sl. No.	Name of the fire	Fire Status
1	Kankanee XIII & XIV seam fire	Active
2	Jogta XV, XIV, XIII, XII, XI seam fire	Active
3	Loyabad XV, XIV, XIII seam fire	Active
4	SendraBansjora XIV, XIII, XII, XI seam fire	Active
5	Bansdeopur XIV, XII seam fire	Active
6	Tetulmari IV seam fire	Active
7	Tetulmari VI/VII seam fire	Active
8	Mudidih fire	Dormant
9	West Mudidih IX/X seam fire	Extinguished
10	SendraBansjora X seam	Active

GROUPING OF FIRES INTO PROJECTS		
SL. No.	CODE NAME OF FIRE PROJECTS	ORIGINAL FIRE NAME
1	JCF-F/SIJUA/SENDRA BANSJORA/I/21 (Part-I)	Sendra X seam
2	JCF-F/SIJUA/MUDIDIH/9	Mudidih Fire
3	JCF-F/SIJUA/TETULMARI(W)/II/15	Tetulmari V/VI seam
4	JCF-F/SIJUA/TETULMARI(E)/II/16	Tetulmari IV seam
5	JCF-F/SIJUA/SENDRA BANSJORA/I/21	Ekra XI,XII seam
6	JCF-F/SIJUA/JOGTA/II/27	Jogta XV, XIV, XIII, XII,XI seam
7	JCF-F/SIJUA/BANSDEOPUR(E)/II/29	Bansdeopur XIII,XIV seam
8	JCF-F/SIJUA/BANSDEOPUR(W)/II/30	Bansedopur XIII,XIV seam

- iv. The cluster is bound in the East by Cluster-VI mines of BCCL, in the west by Cluster-IV mines of BCCL, in the north by non-coal bearing area of metamorphic and in the south by Cluster-XI mines of BCCL.
- v. The project area is mainly drained by Nagri Jore, renamed Sendra Jore in latter part, which is flowing north to south through mid of the cluster.
- vi. Isothermal mapping using thermal imaging has been got done by NRSA. Measures would be taken to prevent ingress of air (ventilation) in such areas, which may re-start fresh fires.

- vii. There would be no external OB dumps. At the end of the mining there would be no void and the entire mined out area re-vegetated. A minimum safety distance of 60m would be maintained between opencast and underground operations.
- viii. A total area of 939.19 ha would be reclaimed and afforested. Eco-restoration for all clusters of BCCL mines is to be implemented in two phases over a period of 10 years, of which, Phase-I is from 2011-16 and Phase-II from 2016-2021. During Phase-I, development of a model restoration plantation is being carried out and thereafter 90 ha area of the area would be restored by BCCL in their 3 mining areas. During Phase-II (2016-2021), replication/expansion of proposed restoration models in the 126 ha area spread over 13 mines area of BCCL would be taken up as per road map prepared by Forest Research Institute, Dehradun.
- ix. Total 21.92 Million m<sup>3</sup> of OB will be generated from one opencast mine and five mixed mines (Nichitpur, OCP, Mudidih colliery (Mixed), Tetulmari colliery (Mixed), Sendra Bansjora Colliery (Mixed), Kankanee colliery (Mixed), Bansdeopur colliery (Mixed) during their whole life. This 21.92 Million m<sup>3</sup> of OB will be as external OB dump initially and shall be dumped internally over the de-coaled area progressively. 73.07 Ha of external OB dump has been biologically reclaimed. And 172.45 Ha of abandoned quarry will be backfilled, levelled and plantation developed over them. The height of the OB dump will be maximum 60 m. At the end of the project, the void of the OC mines will be filled up keeping the maximum depth of 30 m for artificial recharge.
- x. The project area is mainly drained by Sendra and Ekra nalas which are flowing through the cluster. Damodar River is the master drainage of the area. Total water discharge from the mine of the cluster is 11025 cum/day. Total water requirement of cluster-V is 9537 m<sup>3</sup>/day, of which 3,477 m<sup>3</sup>/day is for mining operations and 6060 m<sup>3</sup>/day is for domestic use. Ground water level is in the range from 1.60-6.8 m bgl during pre-monsoon and 0.80-4.85 m bgl during post-monsoon in the core zone. The existing water body is 29.19 ha. But in the post- mining stage, void will be left in an area of 95.95 ha with water at 15-20mt depth for community use/Pisciculture.
- xi. Fires and rehabilitation of affected families from fire and subsidence affected areas within Cluster-V would be carried out in phased manner.
- xii. OB dump fires would be dealt with by cooling, quenching and removal, excavation of fire material and filling with cohesive soil and surface sealing.
- xiii. Reclamation work on two OB dumps of about 8 ha will be carried out.
- xiv. The mines in the cluster have been severely affected by fire and subsidence mainly due to unscientific mining prior to nationalization. No mining would be undertaken in fire affected areas.
- xv. Opencast mining is proposed before start of underground mining.
- xvi. The cluster of mines will be dovetailed with the approved Jharia Action Plan for dealing with fire, subsidence and rehabilitation of people. Master Plan for dealing with fire, subsidence and rehabilitation within the leasehold area of BCCL has already been approved by Government of Jharkhand & Government of India.

- xvii. For Cluster-V, 39.76 Ha of land is required for rehabilitation of 2485 families. Encroachers will be provided with a house constructed on about 27 sq. m land in triple storied building in the resettlement site. However, provision of 11 sq m of land has been considered for construction of another room in future. Considering the amenities, infrastructure, internal roads etc to be provided in the township, requirement of land for encroachers has been estimated at 310.01 Ha (@ 130 m<sup>2</sup>/house).
- xviii. For Cluster-V, rehabilitation of 991 families is required. Total 72.53 ha of land has been earmarked for rehabilitation non-BCCL families. The BCCL houses will be resettled in satellite townships with equivalent type of houses in triple storey building. The weighted average plinth area of the houses proposed to be rehabilitated has been estimated at 48.09 sq m /house. Considering the amenities, infrastructure, internal roads etc to be provided in the township, requirement of land for BCCL houses has been estimated at 400.00 Ha. (@ 160 m<sup>2</sup> /House).
- xix. Public hearing was held on 04.05.2012. The issues raised were plantation, conservation, water spraying, drinking water, Excessive dust spreads through HEMM drill machine, polluted dust comes out from HEMM in Nichitpur OCP, mines run 100 mtrs distance from Chandour village, Tetulmari and no work is done for environment. Fire has been appeared around the colliery office. Steps may be taken for this and Chandour Sonar Basti should be displaced. Scarcity of water spraying in number, community building may be constructed in Mohalidih panchayat, for high school may be done for girls in Mohalidih panchayat, Electricity, water, and medical facilities may be arranged in Nagri kala north village, Covered transporting with tarpaulin may be arranged. Development of sports/game may be done through welfare fund. Plantation done in area V on 150 ha may be provided, there is a siding of (Area-IV) out of Cluster - V nearby, trees are being destroyed for extension of siding, steps for saving trees may be done,
- xx. Excessive dust spreads from Naya more to due to coal transporting of other area, covered transporting may be arranged for this.
- xxi. Transporting of covered Tarpaulin may done near girls high school, Closed UG mines may be opened., Leveling of OCP Pit and plantation may be done and a committee of villagers may be made for maintenance of plantation.
- xxii. Coal transportation would be mainly by rail cum conveyor mode and the remaining would be by road. There are three existing railway sidings, namely, S.B. Railway Siding, Jogta Railway Siding and Kankanee Railway siding. In cluster V the proposed Coal transportation of 1.519 MTPA peak production of coal from the mines at that time of operation (0.189MTPA of Tetulmari UG Colliery, 0.238 MTPA of Mudidih UG Colliery, 0.78 MTPA of Sendra Bansjoa OC Colliery, 0.156 MTPA of Kankanee UG Colliery, 0.156 MTPA of Bansdeopur UG Colliery) of Cluster-V after 15 years in Phase -II would be mainly transported by Conveyor to railway siding at Tetulmari and loading by rapid loading system. Presently the transportation of coal is upto railway siding by road.
- xxiii. In underground mining, maximum subsidence, slope and tensile strain over the mining area due to coal extraction in Tetulmari Colliery would be 4.59 m, 152.14mm/m and 74.52mm/m respectively. In Kankanee Colliery would be 2.1 m, 86.47 mm/m and 42.01 mm/m respectively. In Bansdeopur Colliery would be 1,69 m, 46.85 mm/m and

23.04 mm/m respectively. In Sendra Bansjora Colliery would be 1.532 m, 38.30 mm/m and 19.15 mm/m respectively.

- xxiv. It is planned to take up an additional 939.19 ha under plantation with 1878380 nos of plants. The Action Plan has also been prepared for Ecological Restoration OB dumps and voids. It was informed that the BCCL has formulated its Corporate Environment Policy.
- xxv. R&R involved. Out of 595 unstable sites identified in the Master Plan, 77 sites consisting of 5835 no. PAF's are affected in this cluster. The affected families will be rehabilitated in adjacent non-coal bearing area at a cost of Rs.104024.9 lakhs. The proposed rehabilitation sites for cluster-V are Bamakunda Mounza, Jursabad Mounza, Kharya Mouza, Mahanpur Mounza, Damodarpur Mounza. 8 nos. of fire projects as per the approved Jharia Action Plan for fire dealing have been prepared and shall be dealt for controlling the fires at Sendra bansjora, Mudidih, Tetulmari, Jogta and Bansdeopur . Mining would be undertaken in fire affected areas and measures adopted for dealing with fire as per approved Jharia Action Plan.
- xxvi. The CSR Rs 5/ton of coal production. The EMP Capital cost Rs 1180 Lakhs and recurring cost Rs 1036 Lakh. Mine closure cost would be Rs. 5479.28 Lakh. Capital Cost of all the projects in the cluster-V is 204.824 Crores.
- xxvii. All the mines of the clusters are pre-nationalization mines. Therefore, there is no existing mining plan. The Company has adopted "Corporate Environmental Policy" which has been approved by its Board of Directors on 21.04.2012.
- xxviii. The Public Hearing was held on 04.05.2012.
- xxix. No Forest land is involved in the cluster

3. The entire Jharia Action Plan, which consists of all fire dousing projects /plans had been surveyed by DGMS, which has been designated as the monitoring and scrutinizing agency by Hon'ble Supreme Court of India under the WP (PIL) 387/1997 i.e. Haradhan Roy Vs UOI.

4. This is a violation case. As per the Office Memorandum dated 12.12.2012, issued by the Ministry of Environment and Forests, with regard to the consideration of proposals for ToR/Environment clearance/CRZ clearance involving violation of the Environment (Protection) Act, 1986/EIA notification, 2006/CRZ notification, 2011, the Environmental Clearance will be granted after the written commitment in the form of a formal resolution by the Board of Directors submitted to the MoEF to ensure that violations will not be repeated and the State Government concerned initiates credible action on the violation by invoking powers under Section 19 of the Environment (Protection) Act,1986 for taking legal action under section 15 of the Act for the period for which the violation has taken place and evidence provided to the MoEF of the action taken. In this case, the Board's resolution has been received. As regards credible action, Jharkhand State Pollution Control Board, has issued directions of closure of collieries of M/S Bharat Coking Coal Limited under section 31A & 33A of Air (Prevention and Control of Pollution) Act.1981 & Water (Prevention and Control of Pollution) Act. 1974 respectively for

operating without obtaining Environmental Clearance. M/s BCCL has filed a Writ Petition (No. 4944/11) challenging the Board's directions of closure. The Jharkhand High Court has passed interim order on 25.08.2011 that "Till then, status quo, as on today, shall be maintained by the parties" and passed order on 18.01.2012 that "Until further orders, the interim order dated 25.08.2011 shall continue". In the light of interim orders of the Jharkhand High Court, the State Pollution Control Board is seeking legal opinion for initiating legal action against the collieries of BCCL in the Court of Law in terms of the OM of the MoEF. The State Government has been asked to expedite taking legal opinion and taking action under intimation to the MoEF.

5. The proposal was considered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 61<sup>st</sup> meeting held on 19-20 November, 2012 for granting Environmental Clearance. The Ministry of Environment & Forests has examined the application in accordance with the EIA Notification 2006 and under the provisions thereof, hereby accords environmental clearance for the above-mentioned **Cluster V (7 mines of a 4.854 (Normative) and 6.311 (Peak) production of MTPA in a combined ML area of 1957.08 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand** under the provisions of the Environmental Impact Assessment Notification, 2006 and amendments thereto and Circulars issued thereon and subject to the compliance of the terms and conditions, in addition to the general conditions, as mentioned below:

**A. Specific conditions:**

- i. The maximum production shall not exceed beyond that for which environmental clearance has been granted for the mine of cluster V as below:

MINES IN CLUSTER V							
S.no	Name of Mine		Status	Prod. capacity (MTPA)		ML (ha)	Life of Mine (years)
				Normative	Peak		
1	Tetulmari	UG Section	Operating	0.795	1.033	317.00	>30
		OCP Section	Operating				
2	Mudidih	OCP	Operating	1.553	2.019	378.05	>30
		UG Section	Operating				
3	Sendra Bansjora	OCP	Operating	0.750	0.975	249.63	23
		UG Section	Operating				
4.	Kankanee	OCP Section	Operating	0.480	0.624	258.12	>30
		UG Section	Operating				
5	Bansdeopur	OCP	Operating	0.676	0.879	104.72	>30
		UG Section	Operating				
6	Loyabad	UG Section	Closed	0	0	499.56	--
7	Nichitpur	OCP	Operating	0.600	0.780	150.00	10
		<b>Total</b>		<b>4.854</b>	<b>6.311</b>	<b>1957.08</b>	



- ii. The road transportation of coal during phase-I should be by mechanically covered trucks. The road used for coal transportation should be developed with avenue plantation on both sides.
- iii. The company must give priority to capacity building both within the company and to the local youth, who are motivated to carry out the work in future.
- iv. The details of transportation, CSR, R&R and implementation of environmental action plan for each of the 17 clusters should be brought out in a booklet form.
- v. A study should be initiated to analyse extent of reduction in pollution load every year by reducing road transport.
- vi. The expertise available internationally should be utilised for control of fire in Jharia Coalfields and for their reclamation and to further minimise time for fire and subsidence control.
- vii. The abandoned pits and voids should be backfilled with OB and reclaimed with plantation and or may be used for pisciculture.
- viii. BCCL may consider setting up a separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.
- ix. The locations of monitoring stations in the Jharia Coalfields should be finalised in consultation with the Jharkhand State Pollution Control Board.
- x. The smoke/dust emission vary from source to source (fuelwood, coal, flyash from TPPs, silica from natural dust, etc) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields.
- xi. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.
- xii. The proponent shall prepare time -series maps of the Jharia Coalfields through NRSA to monitor and prevent fire problems in the Jharia Coalfields by Isothermal mapping /imaging and monitoring temperatures of the coal seams (whether they are close to spontaneous ignition temperatures) and based on which, areas with potential fire problems shall be identified.
- xiii. Measures to prevent ingress of air (Ventilation) in such areas, to prevent restart fresh/spread fires in other areas including in mines of cluster V shall be undertaken.
- xiv. Permanent /regular ambient air monitoring is required for CO,CO<sub>2</sub>, Methane and its homologues .monitoring station, mobile monitoring should be established at suitable location as the temp in the mine is high ,in the presence of CH<sub>4</sub>,the coal may catch fire. Presence of Aromatic compounds should be investigated as most of the aromatic compounds are carcinogenic.
- xv. Local institution/university should be contacted for such type of study. Exact measurement for the presence of above gases and their potential danger/harmful effect on human should be assessed. ISM Dhanbad and any local university could be contacted for monitoring.
- xvi. The road transportation should be by bigger/high capacity trucks. The road should be strengthened carry the load of high capacity trucks. Railway siding with silo loading be completed by December, 2015 as informed by the proponent.
- xvii. Master Plan for dealing fire for next 12 year which is under implementation, Details of same from August2011 till date year-wise should be provided. An Action Plan which is in progress should be submitted to the Ministry.



- xxxii. Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.
- xxxiii. Mine discharge water shall be treated to meet standards prescribed standards before discharge into natural water courses/agriculture. The quality of the water discharged shall be monitored at the outlet points and proper records maintained thereof and uploaded regularly on the company website.
- xxxiv. ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to confirm to prescribed standards in case discharge into the natural water course
- xxxv. Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.
- xxxvi. Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.
- xxxvii. High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
- xxxviii. Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.
- xxxix. Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.
- xl. No depillaring operation shall be carried out below the township/colony.
- xli. The Transportation Plan for conveyor-cum-rail for Cluster-V should be dovetailed with Jharia Action Plan. Road transportation of coal during Phase-I should be by mechanically covered trucks, which should be introduced at the earliest. The Plan for conveyor-cum-rail for Cluster-V should be dovetailed with Jharia Action Plan. The road transportation of coal during phase-I should be by mechanically covered trucks.
- xlii. A study should be initiated to analyze extent of reduction in pollution load every year by reducing road transport.
- xliii. R&R of 5835 nos of PAF's involved. They should be rehabilitated at cost of shifting to safe areas at the cost of Rs 104024.9 Lakhs as per the approved Jharia Action Plan.
- xliv. A detailed CSR Action Plan shall be prepared for Cluster V group of mines. Specific activities shall be identified for CSR the budget of Rs. 242.7 Lakhs per year@ Rs 5/T of coal as recurring expenditure. The 265.25 ha of area within Cluster V ML existing as waste land and not being acquired shall be put to productive use under CSR and developed with fruit bearing and other useful species for the local communities. In addition to afforesting 250.57 ha of are at the post-mining stage, the waste land /barren land within Cluster V ML shall be rehabilitated/reclaimed as forest/agricultural land under CSR Plan in consultation with local communities. Third party evaluation shall be got carried out regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integrated with activities being taken up under CSR. The details of CSR undertaken along with budgetary provisions for the village-wise various activities and expenditure thereon shall be uploaded on the company website every year. The company must give priority to

- capacity building both within the company and to the local youth, who are motivated to carry out the work in future. CSR should be Rs 4.6 Lakh for cluster-V for year 2012-13 and thereafter. Social Audit should be carried out for CSR for its actual implementation.
- xliv. Mine Closure Plan of Cluster -V is in draft stage ,the same should be submitted to ministry
- xlvi. For monitoring land use pattern and for post mining land use, a time series of landuse maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhubaneswar.
- xlvii. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five year before mine closure for approval. Habitat Restoration Plan of the mine area shall be carried out using a mix of native species found in the original ecosystem, which were conserved in-situ and ex-situ in an identified area within the lease for reintroduction in the mine during mine reclamation and at the post mining stage for habitat restoration.
- xlviii. A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company for implementing environment policy and socio-economic issues and the capacity building required in this regard. .
- xliv. Implementation of final mine closure plan for Cluster V, subject to obtaining prior approval of the DGMS in regard to mine safety issues
- I. Corporate Environment Responsibility:
- The Company shall have a well laid down Environment Policy approved by the Board of Directors.
  - 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.
  - 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.
  - To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

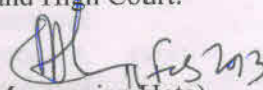
**B. General Conditions:**

- No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
- No change in the calendar plan of production for quantum of mineral coal shall be made.
- Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- Data on ambient air quality (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of

samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.

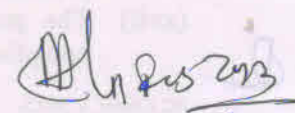
- (v) Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
- (vi) Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May 1993 and 31<sup>st</sup> December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.
- (vii) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
- (viii) Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.
- (ix) Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
- (x) Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
- (xi) A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
- (xii) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar.
- (xiii) The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>.
- (xiv) A copy of the environmental clearance letter shall be marked to concern Panchayat/ZilaParishad, Municipal corporation or Urban local body and local NGO, if any, from whom any suggestion /representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.
- (xv) A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.
- (xvi) The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> (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.
- (xvii) The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and

- in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB.
- (xviii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
- (xix) The Environmental statement for each financial year ending 31 March in For -V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by E-mail
6. The Ministry or any other Competent Authority may stipulate any further condition(s) for environmental protection.
7. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.
8. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.
9. The Environmental Clearance is subject to the outcome of the Writ Petition filed by M/S Bharat Coking Coal Limited (BCCL) in response to the closure orders issued by the Jharkhand State Pollution Control Board which is pending in the Jharkhand High Court.

  
(Dr. Manoranjan Hota)  
Director

**Copy to:**

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Jharkhand, Secretariat, Ranchi.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarapur, Bhubaneswar - 751023.
4. Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), H.E.C., Dhurwa, Ranchi - 834004.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. District Collector, dist. Dhanbad Government of Jharkhand.
8. Monitoring File    9.    Guard File    10.    Record File
- 9.

  
(Dr. Manoranjan Hota)  
Director

No. J-11015/01/2011-IA.II (M)  
Government of India  
Ministry of Environment & Forests

Paryavaran Bhawan,  
CGO Complex,  
New Delhi-110510.

To

Dated: 11 February, 2013

General Manager (E&F)  
**M/s Bharat Coking Coal Ltd.,**  
Koyala Bhawan,  
Dhanbad-826005  
Jharkhand

**Sub. : Cluster V (7 mines of a 4.854 (Normative) and 6.311 (Peak) production of MTPA in a combined ML area of 1957.08 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand (EC based on TOR granted on 16.03.2011) - Environment Clearance –reg.**

Sir:

This is with reference to letter no.43011/48/2010-CPAM dated 03.01.2011 along with the application for Terms of Reference (TOR) and this Ministry's letter Dated 16.03.2011 granting TOR. Your letter No. BCCL/GM (Env.)/EMP F-2012/526 dated 03.07.2012 and 28/29.12.2012 for environmental clearance on the above-mentioned subject.

2. The Ministry of Environment & Forests has considered your application. It is noted that the proposal is for grant of Environmental Clearance for new Cluster V, a group of 7 Mines (viz. Nichitpur, OCP, Mudidih colliery (Mixed), Tetulmari colliery (Mixed), Sendra Bansjora Colliery (Mixed), Kankanee colliery (Mixed), Bansdeopur colliery (Mixed), are operating and Loyabad colliery is non-producing/closed temporarily since April 2009 on account of lease renewal . The proponet has informed that:

- i. The proposal does not involve increase in lease hold area, change in technology or change in product mix in the mines.
- ii. The area has undulating topography with 7 mines of which 1 is UG mine(closed for production), 5 are mixed (OC and UG) and 1 OC mine of a combined ML area of 1957.08 ha and production capacity of 4.854 MTPA (normative) and 6.311 MTPA (peak). The details are as given below:

- iii. At present, out of the seven mines of Cluster-V, Nichitpur, OCP, Mudidih colliery (Mixed), Tetulmari colliery (Mixed), Sendra Bansjora Colliery (Mixed), Kankanee colliery (Mixed), Bansdeopur colliery (UG), are operating and Loyabad colliery is non-producing/closed temporarily since April 2009. The details of the cluster are given as under:

MINES IN CLUSTER V							
S.no	Name of Mine		Status	Prod. capacity (MTPA)		ML (ha)	Life of Mine (years)
				Normative	Peak		
1	Tetulmari	UG Section	Operating	0.795	1.033	317.00	>30
		OCP Section	Operating				

2	Mudidih	OCP	Operating	1.553	2.019	378.05	>30
		UG Section	Operating				
3	Sendra Bansjora	OCP	Operating	0.750	0.975	249.63	23
		UG Section	Operating				
4.	Kankanee	OCP Section	Operating	0.480	0.624	258.12	>30
		UG Section	Operating				
5	Bansdeopur	OCP	Operating	0.676	0.879	104.72	>30
		UG Section	Operating				
6	Loyabad	UG Section	Closed	0	0	499.56	--
7	Nichitpur	OCP	Operating	0.600	0.780	150.00	10
<b>Total</b>				<b>4.854</b>	<b>6.311</b>	<b>1957.08</b>	

The major project parameters of the mines of Cluster-V are given below:

Name of Mines	Tetumari OC	Tetumari UG)	Mudidih OC	Mudidih UG	Sendra Bansjore OC	Sendra Bansjore UG
<b>Quarry Area</b>						
<b>Lease Area (Ha)</b>	317.00		378.05		249.63	
<b>Life (in years)</b>	12	>30	10	>30	23	2
<b>Method of Mining</b>	Shovel Dumper Combination	Bord & Pillar	Shovel Dumper Combination	Bord & Pillar	Shovel Dumper Combination	Bord & Pillar
<b>Production in 1993-94 (MT)</b>	0.270	0.129	0	0.241	0.329	0.317
<b>Production in 2009-10(MT)</b>	0.680	0.108	0.177	0.095	0.110	0.134
<b>Proposed peak Production (MTPA)</b>	0.845	0.188	1.781	0.238	0.780	0.195
<b>Seams to be worked</b>	VIIIA, VIII, VII, V/VI,	II & III	XII,XI,X, VIIIC,VIII A,VIII,VII ,V/VI, IV	IV T&B	VIII/VIIIA to IV	III
<b>Grade of Coal</b>	W-IV & D	D	W-II/ W-IV	W-IV	W-IV to D	W-III
<b>Mineable Reserve (Mt)</b>	8	9.6	7.44	37.63	2.57	12
<b>Manpower</b>	495	1403	421	1060	421	1399



<b>Depth of the mine</b>	75-116 m	167-185 m	55-128 m	115-300 m	100-120 m	137-190 m
<b>Cost of production (Rs/ton)</b>	775.67	4160.43	997.75	4575.43	3538.36	4745.95

TECHNICAL PARAMETERS OF CLUSTER –V						
Name of Mines	Bansdeopur OC	Bansdeopur UG	Loyab ad UG (Closed)	Kankanee OC	Kankanee UG	Nichitpur OC
Lease Area (Ha)	104.72		499.56	258.12		150.00
Life (in years)	3	>30	-	11	>30	10
Method of Mining	Shovel Dumper Combination	Bord& Pillar	-	Shovel Dumper Combination	Bord& Pillar	Shovel Dumper Combination
Max depth(m)	125 m	112-186 m		75-155 m	160-280 m	58-150 m
Grade of Coal	ST-II, W-II, W-III	W-IV, W-III	St-II, W-II	W-IV	W-IV & D	W-IV & D
Mineable Reserve MT	1.67	5.16	-	4.15	21	6.40
Seams to be worked	XIV,XIII,XII,XI,X and IX	VIII and X	-	XI, XII, XIII, XIV	X, VIIC, VIIIA, VIII	VIII/VIII A to V/VI, IV, III, II
Manpower	473	713	-	212	610	728
Production in 1993-94 (MT)	0	0.136	-	0	0.212	0.273
Production in 2009-10(MTPA)	0	0.095	-	0.813	0	0.643

Proposed peak Production (MTPA)	0.723	0.156	-	0.468	0.156	0.78
Coos production (Rs/T)	453.60	2768.37	--	482.43	9824.71	1138.18

The details of post-mining land use of Cluster-V :

Sl. No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	112.13	0.00
		Not Backfilled	123.47	0.00
2	Abandoned Quarry	Backfilled	82.53	0.00
		Not Backfilled	48.98	0.00
3	External OB dump		73.07	0.00
4	Service building/ mine Infrastructure		13.87	0.0
5	Coal dump		12.15	0.0
6	Road and rail		124.03	113.22
7	Homestead Land		272.93	248.00
8	Agricultural Land		14.00	14.00
9	Forest Land		0.00	0.00
10	Plantation		150.45	1089.64
11	Water Body		29.19	95.95
12	Barren Land		900.28	396.28
	<b>Total</b>		<b>1957.08</b>	<b>1957.08</b>

Details of Rehabilitation in Cluster- V		
Total Voids		25.87Mm <sup>3</sup>
Total External OB		21.92Mm <sup>3</sup>
Total Unstable Sites		77no.
Total Affected Area		1383420 m2
No. of Houses to be rehabilitated		5835 no. as per JAP
Land for Resettlement	BCCL	39.76 Ha
	Non BCCL	72.53 Ha
Total Cost of fire dealing		Rs.16465 lakhs
Total Cost of resettlement		Rs. 104024.9 lakhs

Environmental issues: Mitigation and benefits		
S.N.	Major Env. Issues	Mitigation measures and Benefit
1.	Voids(172.45 ha) (123.47 operating quarry+ 48.98 abandoned quarry)	105.69 ha backfilling and 66.76 ha water body
2.	Ext.OB Dumps (73.07 ha)	Use for backfilling and plantation.
3.	Fire /Unstable area 77 site with 1383420 square m consisting of 5835 PAF	Dig out fire at the cost of Rs.164.65 crores and rehabilitate affected families at the cost of Rs 1040.25 crores
4.	Reclamation /Mine closure	Additional plantation in 939.19 ha land at the cost of Rs 8745.12 lakhs. (Funds allocated for mine closure as per MOC guidelines and adopted by BCCL @Rs 1 lakhs /ha in case of U/G mine and Rs 6 lakhs/ha in case of OCP mines)
5.	CSR	Rs 243 Lakhs per year@ Rs 5/T of coal

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	Non BCCL	72.53 Ha
Total Cost of fire dealing		Rs.16465 lakhs
Total Cost of resettlement		Rs. 104024.9 lakhs

PROPOSED PRODUCTION IN OPEN CAST CLUSTER –V								
Sl No.	Year	Nicitpur OC	Tetulmari OC	SendraB ansjore OC	Bansdeo pur OC	Mudidi h OC	Kankan ee OC	Total
1	2012-13	1.75	1.20	1.30	2.50	7.00	2.50	16.25
2	2013-14	1.70	1.10	1.40	2.50	7.10	2.50	16.3
3	2014-15	1.70	1.00	1.20	2.35	6.80	2.30	15.35
4	2015-16	1.65	1.00	1.10	2.55	7.20	2.40	15.9
5	2016-17	1.60	1.00	1.10	2.50	6.90	2.50	15.6

6	2017-18	1.75	1.20	1.20	2.35	6.80	2.30	15.6
7	2018-19	1.75	1.20	1.20	2.40	7.00	2.40	15.95
8	2019-20	1.80	1.20	1.20	2.50	7.00	2.40	16.1
9	2020-21	1.85	1.10	1.40	2.50	7.15	2.40	16.4
10	2021-22	1.85	1.20	1.20	2.35	7.20	2.35	16.15
11	2022-23	1.80	1.10	1.50	2.55	7.00	2.55	16.5
12	2023-24	1.80	1.10	1.50	2.50	7.10	2.50	16.5
		21	13.4	15.3	29.55	84.25	29.1	192.6

LIST OF FIRE IN CLUSTER -V		
Sl. No.	Name of the fire	Fire Status
1	Kankanee XIII & XIV seam fire	Active
2	Jogta XV, XIV, XIII, XII, XI seam fire	Active
3	Loyabad XV, XIV, XIII seam fire	Active
4	SendraBansjora XIV, XIII, XII, XI seam fire	Active
5	Bansdeopur XIV, XII seam fire	Active
6	Tetulmari IV seam fire	Active
7	Tetulmari VI/VII seam fire	Active
8	Mudidih fire	Dormant
9	West Mudidih IX/X seam fire	Extinguished
10	SendraBansjora X seam	Active

GROUPING OF FIRES INTO PROJECTS		
SL. No.	CODE NAME OF FIRE PROJECTS	ORIGINAL FIRE NAME
1	JCF-F/SIJUA/SENDRA BANSJORA/I/21 (Part-I)	Sendra X seam
2	JCF-F/SIJUA/MUDIDIH/9	Mudidih Fire
3	JCF-F/SIJUA/TETULMARI(W)/II/15	Tetulmari V/VI seam
4	JCF-F/SIJUA/TETULMARI(E)/II/16	Tetulmari IV seam
5	JCF-F/SIJUA/SENDRA BANSJORA/I/21	Ekra XI,XII seam
6	JCF-F/SIJUA/JOGTA/II/27	Jogta XV, XIV, XIII, XII,XI seam
7	JCF-F/SIJUA/BANSDEOPUR(E)/II/29	Bansdeopur XIII,XIV seam
8	JCF-F/SIJUA/BANSDEOPUR(W)/II/30	Bansedopur XIII,XIV seam

- iv. The cluster is bound in the East by Cluster-VI mines of BCCL, in the west by Cluster-IV mines of BCCL, in the north by non-coal bearing area of metamorphic and in the south by Cluster-XI mines of BCCL.
- v. The project area is mainly drained by Nagri Jore, renamed Sendra Jore in latter part, which is flowing north to south through mid of the cluster.
- vi. Isothermal mapping using thermal imaging has been got done by NRSA. Measures would be taken to prevent ingress of air (ventilation) in such areas, which may re-start fresh fires.

- vii. There would be no external OB dumps. At the end of the mining there would be no void and the entire mined out area re-vegetated. A minimum safety distance of 60m would be maintained between opencast and underground operations.
- viii. A total area of 939.19 ha would be reclaimed and afforested. Eco-restoration for all clusters of BCCL mines is to be implemented in two phases over a period of 10 years, of which, Phase-I is from 2011-16 and Phase-II from 2016-2021. During Phase-I, development of a model restoration plantation is being carried out and thereafter 90 ha area of the area would be restored by BCCL in their 3 mining areas. During Phase-II (2016-2021), replication/expansion of proposed restoration models in the 126 ha area spread over 13 mines area of BCCL would be taken up as per road map prepared by Forest Research Institute, Dehradun.
- ix. Total 21.92 Million m<sup>3</sup> of OB will be generated from one opencast mine and five mixed mines (Nichtipur, OCP, Mudidih colliery (Mixed), Tetulmari colliery (Mixed), Sendra Bansjora Colliery (Mixed), Kankanee colliery (Mixed), Bansdeopur colliery (Mixed) during their whole life. This 21.92 Million m<sup>3</sup> of OB will be as external OB dump initially and shall be dumped internally over the de-coaled area progressively. 73.07 Ha of external OB dump has been biologically reclaimed. And 172.45 Ha of abandoned quarry will be backfilled, levelled and plantation developed over them. The height of the OB dump will be maximum 60 m. At the end of the project, the void of the OC mines will be filled up keeping the maximum depth of 30 m for artificial recharge.
- x. The project area is mainly drained by Sendra and Ekra nalas which are flowing through the cluster. Damodar River is the master drainage of the area. Total water discharge from the mine of the cluster is 11025 cum/day. Total water requirement of cluster-V is 9537 m<sup>3</sup>/day, of which 3,477 m<sup>3</sup>/day is for mining operations and 6060 m<sup>3</sup>/day is for domestic use. Ground water level is in the range from 1.60-6.8 m bgl during pre-monsoon and 0.80-4.85 m bgl during post-monsoon in the core zone. The existing water body is 29.19 ha. But in the post- mining stage, void will be left in an area of 95.95 ha with water at 15-20mt depth for community use/Pisciculture.
- xi. Fires and rehabilitation of affected families from fire and subsidence affected areas within Cluster-V would be carried out in phased manner.
- xii. OB dump fires would be dealt with by cooling, quenching and removal, excavation of fire material and filling with cohesive soil and surface sealing.
- xiii. Reclamation work on two OB dumps of about 8 ha will be carried out.
- xiv. The mines in the cluster have been severely affected by fire and subsidence mainly due to unscientific mining prior to nationalization. No mining would be undertaken in fire affected areas.
- xv. Opencast mining is proposed before start of underground mining.
- xvi. The cluster of mines will be dovetailed with the approved Jharia Action Plan for dealing with fire, subsidence and rehabilitation of people. Master Plan for dealing with fire, subsidence and rehabilitation within the leasehold area of BCCL has already been approved by Government of Jharkhand & Government of India.

- xvii. For Cluster-V, 39.76 Ha of land is required for rehabilitation of 2485 families. Encroachers will be provided with a house constructed on about 27 sq. m land in triple storied building in the resettlement site. However, provision of 11 sq m of land has been considered for construction of another room in future. Considering the amenities, infrastructure, internal roads etc to be provided in the township, requirement of land for encroachers has been estimated at 310.01 Ha (@ 130 m<sup>2</sup>/house).
- xviii. For Cluster-V, rehabilitation of 991 families is required. Total 72.53 ha of land has been earmarked for rehabilitation non-BCCL families. The BCCL houses will be resettled in satellite townships with equivalent type of houses in triple storey building. The weighted average plinth area of the houses proposed to be rehabilitated has been estimated at 48.09 sq m /house. Considering the amenities, infrastructure, internal roads etc to be provided in the township, requirement of land for BCCL houses has been estimated at 400.00 Ha. (@ 160 m<sup>2</sup> /House).
- xix. Public hearing was held on 04.05.2012. The issues raised were plantation, conservation, water spraying, drinking water, Excessive dust spreads through HEMM drill machine, polluted dust comes out from HEMM in Nichitpur OCP, mines run 100 mtrs distance from Chandour village, Tetulmari and no work is done for environment. Fire has been appeared around the colliery office. Steps may be taken for this and Chandour Sonar Basti should be displaced. Scarcity of water spraying in number, community building may be constructed in Mohalidih panchayat, for high school may be done for girls in Mohalidih panchayat, Electricity, water, and medical facilities may be arranged in Nagri kala north village, Covered transporting with tarpaulin may be arranged. Development of sports/game may be done through welfare fund. Plantation done in area V on 150 ha may be provided, there is a siding of (Area-IV) out of Cluster – V nearby, trees are being destroyed for extension of siding, steps for saving trees may be done,
- xx. Excessive dust spreads from Naya more to due to coal transporting of other area, covered transporting may be arranged for this.
- xxi. Transporting of covered Tarpaulin may done near girls high school, Closed UG mines may be opened., Leveling of OCP Pit and plantation may be done and a committee of villagers may be made for maintenance of plantation.
- xxii. Coal transportation would be mainly by rail cum conveyor mode and the remaining would be by road. There are three existing railway sidings, namely, S.B. Railway Siding, Jogta Railway Siding and Kankanee Railway siding. In cluster V the proposed Coal transportation of 1.519 MTPA peak production of coal from the mines at that time of operation (0.189MTPA of Tetulmari UG Colliery, 0.238 MTPA of Mudidih UG Colliery, 0.78 MTPA of Sendra Bansjoa OC Colliery, 0.156 MTPA of Kankanee UG Colliery, 0.156 MTPA of Bansdeopur UG Colliery) of Cluster-V after 15 years in Phase -II would be mainly transported by Conveyor to railway siding at Tetulmari and loading by rapid loading system. Presently the transportation of coal is upto railway siding by road.
- xxiii. In underground mining, maximum subsidence, slope and tensile strain over the mining area due to coal extraction in Tetulmari Colliery would be 4.59 m, 152.14mm/m and 74.52mm/m respectively. In Kankanee Colliery would be 2.1 m, 86.47 mm/m and 42.01 mm/m respectively. In Bansdeopur Colliery would be 1,69 m, 46.85 mm/m and

23.04 mm/m respectively. In Sendra Bansjora Colliery would be 1.532 m, 38.30 mm/m and 19.15 mm/m respectively.

- xxiv. It is planned to take up an additional 939.19 ha under plantation with 1878380 nos of plants. The Action Plan has also been prepared for Ecological Restoration OB dumps and voids. It was informed that the BCCL has formulated its Corporate Environment Policy.
- xxv. R&R involved. Out of 595 unstable sites identified in the Master Plan, 77 sites consisting of 5835 no. PAF's are affected in this cluster. The affected families will be rehabilitated in adjacent non-coal bearing area at a cost of Rs.104024.9 lakhs. The proposed rehabilitation sites for cluster-V are Bamakunda Mounza, Jursabad Mounza, Kharya Mouza, Mahanpur Mounza, Damodarpur Mounza. 8 nos. of fire projects as per the approved Jharia Action Plan for fire dealing have been prepared and shall be dealt for controlling the fires at Sendra bansjora, Mudidih, Tetulmari, Jogta and Bansdeopur . Mining would be undertaken in fire affected areas and measures adopted for dealing with fire as per approved Jharia Action Plan.
- xxvi. The CSR Rs 5/ton of coal production. The EMP Capital cost Rs 1180 Lakhs and recurring cost Rs 1036 Lakh. Mine closure cost would be Rs. 5479.28 Lakh. Capital Cost of all the projects in the cluster-V is 204.824 Crores.
- xxvii. All the mines of the clusters are pre-nationalization mines. Therefore, there is no existing mining plan. The Company has adopted "Corporate Environmental Policy" which has been approved by its Board of Directors on 21.04.2012.
- xxviii. The Public Hearing was held on 04.05.2012.
- xxix. No Forest land is involved in the cluster

3. The entire Jharia Action Plan, which consists of all fire dousing projects /plans had been surveyed by DGMS, which has been designated as the monitoring and scrutinizing agency by Hon'ble Supreme Court of India under the WP (PIL) 387/1997 i.e. Haradhan Roy Vs UOI.

4. This is a violation case. As per the Office Memorandum dated 12.12.2012, issued by the Ministry of Environment and Forests, with regard to the consideration of proposals for ToR/Environment clearance/CRZ clearance involving violation of the Environment (Protection) Act, 1986/EIA notification, 2006/CRZ notification, 2011, the Environmental Clarence will be granted after the written commitment in the form of a formal resolution by the Board of Directors submitted to the MoEF to ensure that violations will not be repeated and the State Government concerned initiates credible action on the violation by invoking powers under Section 19 of the Environment (Protection) Act,1986 for taking legal action under section 15 of the Act for the period for which the violation has taken place and evidence provided to the MoEF of the action taken. In this case, the Board's resolution has been received. As regards credible action, Jharkhand State Pollution Control Board, has issued directions of closure of collieries of M/S Bharat Coking Coal Limited under section 31A & 33A of Air (Prevention and Control of Pollution) Act.1981 & Water (Prevention and Control of Pollution) Act. 1974 respectively for

operating without obtaining Environmental Clearance. M/s BCCL has filed a Writ Petition (No. 4944/11) challenging the Board's directions of closure. The Jharkhand High Court has passed interim order on 25.08.2011 that "Till then, status quo, as on today, shall be maintained by the parties" and passed order on 18.01.2012 that "Until further orders, the interim order dated 25.08.2011 shall continue". In the light of interim orders of the Jharkhand High Court, the State Pollution Control Board is seeking legal opinion for initiating legal action against the collieries of BCCL in the Court of Law in terms of the OM of the MoEF. The State Government has been asked to expedite taking legal opinion and taking action under intimation to the MoEF.

5. The proposal was considered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 61<sup>st</sup> meeting held on 19-20 November, 2012 for granting Environmental Clearance. The Ministry of Environment & Forests has examined the application in accordance with the EIA Notification 2006 and under the provisions thereof, hereby accords environmental clearance for the above-mentioned **Cluster V (7 mines of a 4.854 (Normative) and 6.311 (Peak) production of MTPA in a combined ML area of 1957.08 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand** under the provisions of the Environmental Impact Assessment Notification, 2006 and amendments thereto and Circulars issued thereon and subject to the compliance of the terms and conditions, in addition to the general conditions, as mentioned below:

**A. Specific conditions:**

- i. The maximum production shall not exceed beyond that for which environmental clearance has been granted for the mine of cluster V as below:

MINES IN CLUSTER V							
S.no	Name of Mine		Status	Prod. capacity (MTPA)		ML (ha)	Life of Mine (years)
				Normative	Peak		
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6	Loyabad	UG Section	Closed	0	0	499.56	--
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	<b>Total</b>			<b>4.854</b>	<b>6.311</b>	<b>1957.08</b>	



- ii. The road transportation of coal during phase-I should be by mechanically covered trucks. The road used for coal transportation should be developed with avenue plantation on both sides.
- iii. The company must give priority to capacity building both within the company and to the local youth, who are motivated to carry out the work in future.
- iv. The details of transportation, CSR, R&R and implementation of environmental action plan for each of the 17 clusters should be brought out in a booklet form.
- v. A study should be initiated to analyse extent of reduction in pollution load every year by reducing road transport.
- vi. The expertise available internationally should be utilised for control of fire in Jharia Coalfields and for their reclamation and to further minimise time for fire and subsidence control.
- vii. The abandoned pits and voids should be backfilled with OB and reclaimed with plantation and or may be used for pisciculture.
- viii. BCCL may consider setting up a separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.
- ix. The locations of monitoring stations in the Jharia Coalfields should be finalised in consultation with the Jharkhand State Pollution Control Board.
- x. The smoke/dust emission vary from source to source (fuelwood, coal, flyash from TPPs, silica from natural dust, etc) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields.
- xi. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.
- xii. The proponent shall prepare time -series maps of the Jharia Coalfields through NRSA to monitor and prevent fire problems in the Jharia Coalfields by Isothermal mapping /imaging and monitoring temperatures of the coal seams (whether they are close to spontaneous ignition temperatures) and based on which, areas with potential fire problems shall be identified.
- xiii. Measures to prevent ingress of air (Ventilation) in such areas, to prevent restart fresh/spread fires in other areas including in mines of cluster V shall be undertaken.
- xiv. Permanent /regular ambient air monitoring is required for CO,CO<sub>2</sub>, Methane and its homologues .monitoring station, mobile monitoring should be established at suitable location as the temp in the mine is high ,in the presence of CH<sub>4</sub>,the coal may catch fire. Presence of Aromatic compounds should be investigated as most of the aromatic compounds are carcinogenic.
- xv. Local institution/university should be contacted for such type of study. Exact measurement for the presence of above gases and their potential danger/harmful effect on human should be assessed. ISM Dhanbad and any local university could be contacted for monitoring.
- xvi. The road transportation should be by bigger/high capacity trucks. The road should be strengthened carry the load of high capacity trucks. Railway siding with silo loading be completed by December, 2015 as informed by the proponent.
- xvii. Master Plan for dealing fire for next 12 year which is under implementation, Details of same from August2011 till date year-wise should be provided. An Action Plan which is in progress should be submitted to the Ministry.

- xviii. Underground mining should be taken up after completion of reclamation of Opencast mine area after 15 years.
- xix. No mining shall be undertaken where underground fires continue. Measure shall be taken to prevent/ check such fire including in old OB dump areas where the fire could start due to presence of coal /shale with sufficient carbon content.
- xx. The rejects of washeries in Cluster –V should be send to FBC based plant.
- xxi. There shall be no external OB dumps. At the end of the mining there shall be no void and the entire mined out area shall be re-vegetated. Areas where opencast mining was carried out and completed shall be reclaimed immediately thereafter.
- xxii. There shall be no water body left at the end of mining.
- xxiii. A detailed calendar plan of production with plan for OB dumping and backfilling (for OC mines) and reclamation and final mine closure plan for each mine of cluster-V shall be drawn up and implemented.
- xxiv. The void shall be converted into a water reservoir of a maximum depth of 15-20 m and shall be gently sloped and the upper benches of the reservoir shall be stabilised with plantation and the periphery of the reservoir fenced. The abandoned pits and voids should be backfilled with OB and biologically reclaimed with plantation and or may be used for pisciculture
- xxv. Mining shall be carried out as per statuette from the streams/nalas flowing within the lease and maintaining a safe distance from the Nalas flowing along the lease boundary. A safety barrier of a minimum 60m width shall be maintained along the nalas/water bodies. The small water bodies in OC shall be protected to the extent feasible and the embankment proposed along water body shall be strengthened with stone pitching.
- xxvi. Active OB dumps near water bodies and rivers should be rehandled for backfilling abandoned mine voids. However, those which have been biologically reclaimed need not be disturbed.
- xxvii. Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation. During post mining stage, a total of 1957.08 ha area would be reclaimed. The total additional area under plantation would be 939.17 ha ( green belt of 76 ha, Ext. OB dump 73.07 ha, backfilled area, 300.35 ha, other undisturbed area 489.77 ha) by planting 1878380 plants in 939.19 ha at a total cost Rs 7202.46 lakhs.
- xxviii. The road should be provided with avenue plantation on both side as trees act as sink of carbon and other pollutant.
- xxix. Specific mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted are and relevant for Cluster V shall be implemented.
- xxx. The locations of monitoring stations in the Jharia Coalfields should be finalized in consultation with the Jharkhand State Pollution Control Board. The Committee stated that smoke/dust emission vary from source to source (fuel wood, coal, flyash from TPPs, silica from natural dust, etc) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM10 and PM2.5) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.
- xxxi. No groundwater shall be used for the mining activities. Additional water required, if any, shall be met from mine water or by recycling/reuse of the water from the existing activities and from rainwater harvesting measures. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry to dewatering of mine.

- xxxii. Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.
- xxxiii. Mine discharge water shall be treated to meet standards prescribed standards before discharge into natural water courses/agriculture. The quality of the water discharged shall be monitored at the outlet points and proper records maintained thereof and uploaded regularly on the company website.
- xxxiv. ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to confirm to prescribed standards in case discharge into the natural water course
- xxxv. Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.
- xxxvi. Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.
- xxxvii. High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
- xxxviii. Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.
- xxxix. Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.
- xl. No depillaring operation shall be carried out below the township/colony.
- xli. The Transportation Plan for conveyor-cum-rail for Cluster-V should be dovetailed with Jharia Action Plan. Road transportation of coal during Phase-I should be by mechanically covered trucks, which should be introduced at the earliest. The Plan for conveyor-cum-rail for Cluster-V should be dovetailed with Jharia Action Plan. The road transportation of coal during phase-I should be by mechanically covered trucks.
- xlii. A study should be initiated to analyze extent of reduction in pollution load every year by reducing road transport.
- xliii. R&R of 5835 nos of PAF's involved. They should be rehabilitated at cost of shifting to safe areas at the cost of Rs 104024.9 Lakhs as per the approved Jharia Action Plan.
- xliv. A detailed CSR Action Plan shall be prepared for Cluster V group of mines. Specific activities shall be identified for CSR the budget of Rs. 242.7 Lakhs per year@ Rs 5/T of coal as recurring expenditure. The 265.25 ha of area within Cluster V ML existing as waste land and not being acquired shall be put to productive use under CSR and developed with fruit bearing and other useful species for the local communities. In addition to afforesting 250.57 ha of area at the post-mining stage, the waste land /barren land within Cluster V ML shall be rehabilitated/reclaimed as forest/agricultural land under CSR Plan in consultation with local communities. Third party evaluation shall be got carried out regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integrated with activities being taken up under CSR. The details of CSR undertaken along with budgetary provisions for the village-wise various activities and expenditure thereon shall be uploaded on the company website every year. The company must give priority to

- capacity building both within the company and to the local youth, who are motivated to carry out the work in future. CSR should be Rs 4.6 Lakh for cluster-V for year 2012-13 and thereafter. Social Audit should be carried out for CSR for its actual implementation.
- xliv. Mine Closure Plan of Cluster –V is in draft stage ,the same should be submitted to ministry
  - xlvi. For monitoring land use pattern and for post mining land use, a time series of landuse maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhubaneswar.
  - xlvii. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five year before mine closure for approval. Habitat Restoration Plan of the mine area shall be carried out using a mix of native species found in the original ecosystem, which were conserved in-situ and ex-situ in an identified area within the lease for reintroduction in the mine during mine reclamation and at the post mining stage for habitat restoration.
  - xlviii. A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company for implementing environment policy and socio-economic issues and the capacity building required in this regard. .
  - xliv. Implementation of final mine closure plan for Cluster V, subject to obtaining prior approval of the DGMS in regard to mine safety issues
    - 1. Corporate Environment Responsibility:
      - a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
      - 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.
      - 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.
      - d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

**B. General Conditions:**

- (i) No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
- (ii) No change in the calendar plan of production for quantum of mineral coal shall be made.
- (iii) Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- (iv) Data on ambient air quality (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of

- samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.
- (v) Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
  - (vi) Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May 1993 and 31<sup>st</sup> December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.
  - (vii) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
  - (viii) Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.
  - (ix) Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
  - (x) Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
  - (xi) A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
  - (xii) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar.
  - (xiii) The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>.
  - (xiv) A copy of the environmental clearance letter shall be marked to concern Panchayat/ZilaParishad, Municipal corporation or Urban local body and local NGO, if any, from whom any suggestion /representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.
  - (xv) A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.
  - (xvi) The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> (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.
  - (xvii) The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and

- in e-mail) to the respective Regional Office of the Ministry, respective Zonal Offices of CPCB and the SPCB.
- (xviii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
- (xix) The Environmental statement for each financial year ending 31 March in Form –V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by E-mail
6. The Ministry or any other Competent Authority may stipulate any further condition(s) for environmental protection.
  7. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.
  8. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.
  9. The Environmental Clearance is subject to the outcome of the Writ Petition filed by M/S Bharat Coking Coal Limited (BCCL) in response to the closure orders issued by the Jharkhand State Pollution Control Board which is pending in the Jharkhand High Court.

(Dr. Manoranjan Hota)  
Director

**Copy to:**

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Jharkhand, Secretariat, Ranchi.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarapur, Bhubaneswar – 751023.
4. Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), H.E.C., Dhurwa, Ranchi – 834004.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. District Collector, dist. Dhanbad Government of Jharkhand.
8. Monitoring File      9.      Guard File      10.      Record File
- 9.

(Dr. Manoranjan Hota)  
Director