

BHARAT COKING COAL LIMITED

(A Subsidiary of Coal India Limited)

FORM- I & PROPOSED TERMS OF REFERENCE FOR EIA/EMP OF CLUSTER XVII OF BCCL MINES

	Name of Colliery/Washery	Existing			Proposed		
		Normative Prod. (Mty)	Peak Prod. (Mty)	Lease Hold (Ha)	Normative Prod. (Mty)	Peak Prod. (Mty)	Lease Hold (Ha)
1	Begunia Colliery (Closed for Production)	0	0	306.00	0	0	306.00
2	Victoria West Colliery (Closed for Production)	0	0	310.00	0	0	310.00
3	Victoria Colliery (Closed for Production)	0	0	223.00	0	0	65.43 (157.57 Ha merge with KOCP)
4	Damagoria Colliery (Closed for Production)	0	0	620.10	0	0	295.17 (324.93 Ha merge with KOCP)
5	<u>Proposed Kalyaneshwari OCP (KOCP)</u> 157.57 Ha in the LH of Victoria Colliery, 324.93 Ha in the LH of Damagoria Colliery & 369.33 Ha outside LH (for external OB Dumping)	-	-	-	4.00	5.20	851.83
6	Proposed Kalyaneshwari Coal Washery with approach road				3.65	3.65	15.66
	Total			1459.10	4.00	5.20	1844.09



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**Prepared by CMPDI, Regional Institute-II
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1. Introduction

The history of coal mining in Raniganj Coalfield was started since eighteenth century. The only energy source during those years, the mining was carried out through manual and semi-manual methods resulting into large scale degradation of land, forests and environment. The unscientific mining resulted into large scale mine fires, subsidence and land degradation. The mines of Raniganj Coalfield were taken over mines by ECL and BCCL from the erstwhile private mine owners. Most of the mines had their history from pre-nationalisation period.

During the takeover of the mines in 1972 in BCCL from private mine owners, the data like leasehold area, underground mine planning, production capacity was unknown. However, most of the mines were further reorganized. The following Table depicts the mines that were existing prior to nationalisation and their present status in Cluster no. XVII

Cluster No.	Name of Nationalised mine vested in BCCL	Name of the Pre-nationalised mine	Open cast mine	Under ground mine	Abn./ closed mine/	Opera-ting mine
XVII	Begunia	Begunia (R-6)		Y		
	Victoria West	Victoria West (R-5)		Y	Y	
	Victoria Colliery	Victoria (R-4)		Y	Y	
	Damagoria Colliery	New Damagoria, East Ramnagar, Chaptoria, Borira	Y	Y	Y	

The following Environmental rationale have been considered for clustering of the mines

- a) **Ambient air quality in a cluster of mines** - The group of mines having common transport and dispatch network has been kept under this cluster. This approach will ensure better assessment and prediction of air pollution load apart from taking up environmental management of abandoned mines and unstable or endangered sites due to subsidence, thereby enabling common control and mitigation measures.
- b) **Conservation of Coal** - Feasibility of expansion projects in the cluster by amalgamation of small units thus releasing huge coal sterilized under a number of mine barriers and better coal extraction percentage
- c) **Prominent wind direction** - cluster is so formed that emission of air pollutants due to mines of that cluster has impacts confined to the cluster
- d) **Surface hydrology** or water regime of the cluster of mines is common for common mitigation measures.
- e) **Ecological restoration** - The cluster has been formed such that right amount of overburden from proposed mine or places may be made available for filling the voids and resources are available for dozing and leveling the dumps and making biological reclamation for post mining land use.

f) Socio-economic environment - Dovetailing of Jharia Master Plan for social & environmental sustainability

Most of the mines are contiguous in nature and the environmental impact is overlapping in ambient environment due to cumulative effect of the mining activities.

The following mines/ washery exist/ proposed In the Cluster XVII of BCCL mines, (**refer location map**):

Cluster No.	Name of the Mine/ Washery	Status	Life (years)
XVII	Begunia Colliery	Closed for production since Jan 2013	-
	Victoria West Colliery	Closed for production since 1996, due to mine fire	-
	Victoria Colliery	Closed for production since 1989, due to mine fire and presently inundated.	-
	Damagoria Colliery	Closed since 2010	-
	Kalyaneshwari Opencast Project	157.57 Ha in the LH of Victoria Colliery, 324.93 Ha in the LH of Damagoria Colliery & 369.33 Ha outside LH.	33
	Kalyaneshwari Coal Washery	Proposed	26

2. Location

The location of the above mines/ proposed Coal Washery are as under:

SI No.	Name of the Mine	Latitude	Longitude
1	Begunia Colliery	23°43'8" to 23°44'4" N	86°47'46" to 86°49'46"E
2	Victoria West Colliery	23°43'54" to 23°45'06" N	86°48'00" to 86°50'05"E
3	Victoria Colliery	23°44'19" to 23°45'47" N	86°50'20" to 86°51'25" E
4	Damagoria Colliery	23°24'28" to 23°46'26" N	86°50'38" to 86°52'11" E
5	Proposed Kalyaneshwari Coal Washery	23°46'03" N	86°50'36" E

3. Production Details

SI No.	Name of Mine	Type	Production MTY		Expected Peak Production (MTY)	Category of mine for EC
		OC/UG/Mixed/ coal washery	1993-94	2012-13		
1	Begunia Colliery (Closed for Production)	UG	0.076	0.02	00	Lease renewal
2	Victoria West Colliery (Closed for Production)	UG	0.052	0	00	Lease renewal
3	Victoria Colliery ((Closed for Production)	UG	00	0	00	Lease renewal
4	Damagoria Colliery (Closed for Production)	OC	0.78	0	0	Lease renewal
5	Kalyaneshwari Opencast Project (Proposed)	OC	-	-	5.2	Proposed
6	Kalyaneshwari Coal Washery (Proposed)	Coal Washery	-	-	3.65	Proposed

4. Leasehold Area

SI No.	Name of Colliery/Washery	Existing Lease Hold (Ha)	Proposed Lease Hold (Ha)
1	Begunia Colliery (Closed for Production)	306.00	306.00
2	Victoria West Colliery (Closed for Production)	310.00	310.00
3	Victoria Colliery (Closed for Production)	223.00	65.43 (157.57 Ha merge with KOCP)
4	Damagoria Colliery (Closed for Production)	620.10	295.17 (324.93 Ha merge with KOCP)
5	Proposed Kalyaneshwari OCP (KOCP) 157.57 Ha in the LH of Victoria Colliery, 324.93 Ha in the LH of Damagoria Colliery & 369.33 Ha outside LH (for external OB Dumping)	-	851.83
6	Proposed Kalyaneshwari Coal Washery with approach road		15.66
	Total	1459.10	1844.09

5. Existing Environmental Condition:

1. Land Use:

a. Begunia Colliery

Sl.No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	0	0
		Not Backfilled	0	0
2	Abandoned Quarry	Backfilled	0	0
		Not Backfilled	0	0
3	External OB dump		0	0
4	Service building/ Mine Infrastructure/		15	0
5	Homestead land		54.43	16.9
6	Coal dump		0.5	0
7	Road and rail		3.9	3.9
8	Agricultural Land		52.9	52.9
9	Forest Land		0	0
10	Plantation		0	73.03
11	Water Body		72.9	72.9
12	Barren Land		106.37	86.37
	Total		306	306

b. Victoria West Colliery

Sl.No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	0	0
		Not Backfilled	0	0
2	Abandoned Quarry	Backfilled	0	0
		Not Backfilled	0	0
3	External OB dump		0	0
4	Service building/ Mine Infrastructure/		7.26	0
5	Homestead land		99	50.36
6	Coal dump		0.5	0

Sl.No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
7	Road and rail		7.5	7.5
8	Agricultural Land		7.7	7.7
9	Forest Land		0	0
10	Plantation		0	71.4
11	Water Body		33.2	33.2
12	Barren Land		154.84	139.84
	Total		310	310

c. Victoria Colliery

Sl.No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	0	0
		Not Backfilled	0	0
2	Abandoned Quarry	Backfilled	4.36	0
		Not Backfilled	1.31	0
3	External OB dump		0	0
4	Service building/ Mine Infrastructure		3.12	0
5	Homestead land		25.3	18.22
6	Coal dump		0	0
7	Road and rail		4.14	4.14
8	Agricultural Land		49.05	34.64
9	Forest Land		0	0
10	Plantation		0	52.81
11	Water Body		3.69	3.69
12	Barren Land		132.03	109.5
	Total		223.00	223.00

d. Damagoria Colliery

Sl.No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	0	0
		Not Backfilled	0	0
2	Abandoned Quarry	Backfilled	43.76	0
		Not Backfilled	40.83	0
3	External OB dump		16.64	0
4	Service building/ Mine Infrastructure		1.82	0
5	Homestead land		16.62	7.78
6	Old Coal dump		2.310	0
7	Road and rail		48.22	33.22
8	Agricultural Land		214.08	69.0845
9	Forest Land		0	0
10	Plantation		24.78	289.6425
11	Water Body		17.39	26.728
12	Barren Land		193.65	193.645
	Total		620.1	620.1

e. Proposed Kalyaneshwari Washery

Sl.No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	0	0
		Not Backfilled	0	0
2	Abandoned Quarry	Backfilled	0	0
		Not Backfilled	0	0
3	External OB dump		0.00	0.00
4	Service building/ Mine Infrastructure		0	0
5	Homestead land		1.89	0
6	Old Coal dump		0.000	0.000
7	Road and rail		0	0
8	Agricultural Land			
9	Forest Land			
10	Plantation		0.00	15.66
11	Water Body		0.00	0.00
12	Barren Land		13.77	0.00
	Total		15.66	15.66

f. Proposed South side External OB Dump

Sl.No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	0	0
		Not Backfilled	0	0
2	Abandoned Quarry	Backfilled	0	0
		Not Backfilled	0	0
3	External OB dump		0.00	0
4	Service building/ Mine Infrastructure		0	0
5	Homestead land		0.67	0
6	Old Coal dump		0.000	0
7	Road and rail		1.1	0
8	Agricultural Land		234.08	0
9	Forest Land		0	0
10	Plantation		0.00	369.33
11	Water Body		2.90	0
12	Barren Land		130.58	0
	Total		369.33	369.33

Land use of the cluster:

Sl.No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	0.00	0.00
		Not Backfilled	0.00	0.00
2	Abandoned Quarry	Backfilled	48.12	0.00
		Not Backfilled	42.14	0.00
3	External OB dump		16.64	0.00
4	Service building/ Mine Infrastructure		27.20	0.00
5	Homestead land		197.91	93.26
6	Old Coal dump		3.31	0.00
7	Road and rail		64.86	48.76
8	Agricultural Land		557.81	164.32
9	Forest Land		0.00	0.00
10	Plantation		24.78	871.87
11	Water Body		130.08	136.52
12	Barren Land		731.24	529.36
	Total		1844.09	1844.09

2. Air Quality

Baseline data was generated by M/s PDIL, Dhanbad in respect of SPM, PM₁₀, PM_{2.5}, SO₂ and NO_x from 19th March to 18th June 2011. The value of SPM is found to be in the range of 79 to 158 µg/m³, PM₁₀, in the range of 24 to 44 µg/m³, PM_{2.5}, in the range of 10 to 19 µg/m³, SO₂ in the range of 6.2 to 11.6 µg/m³ and NO_x in the range of 9.7 to 16.9 µg/m³. The monitoring data shows that ambient air quality parameters are well within the prescribed limits.

3. Water Quality :

Water sampling was carried out by M/s PDIL, Dhanbad and the results are as follows

Ground Water Quality at a Glance in Comparison to Drinking Water Standard

Parameters	Range of recorded Concentration (Results expressed in mg/l except pH)		
	Minimum	Maximum	Desirable/Permissible Limits as per IS: 10500
pH	7.1	7.6	6.5-8.5
Total Suspended Solid	4	10	-
Total Dissolved Solids	404	484	500 / 2000
Total Alkalinity as CaCO ₃	224	254	200 / 600
Total Hardness, as CaCO ₃	230	386	300 / 600
Chloride as Cl	52	88	250 / 1000
Sulphate as SO ₄	38	72	200 / 400
Nitrate as NO ₃	1.1	2.8	45/ 100
Iron as Fe	0.04	0.8	0.3 / 1.0

Surface Water at a Glance

Parameters	Range of recorded Concentration (Results expressed in mg/l except pH)		
	Minimum	Maximum	Limit as per IS: 2296 Class 'C'
pH	7.2	7.9	6.5-8.5
Total Suspended Solids	10	16	-
Total Dissolved Solids	132	166	1500
Total Hardness, as CaCO ₃	74	112	-
Calcium Hardness, as CaCO ₃	38	66	-
Chloride as Cl	12	20	600
Sulphate as SO ₄	06	12	400
Nitrate as NO ₃	1.6	3.8	50
Iron as Fe	0.04	0.08	5.0

Waste Water Discharge at a Glance

Parameters	Range of recorded Concentration (Results expressed in mg/l except pH)		
	Minimum	Maximum	Limits As per MoEF Notification (Sch.-VI)
pH	8.2	8.3	5.5-9.0
Total Suspended Solids	16	22	100
Total Dissolved Solids	806	840	-
Total Hardness as CaCO ₃	390	412	-
Chemical Oxygen Demand	8	14	250
Chloride as Cl	44	52	-
Sulphate as SO ₄	156	168	-
Nitrate as N	2.2	2.8	10
Iron as Fe	0.4	0.8	3

4. Hydrogeology and Water Usage

SI No.	Name of the Mine	Mine Discharge	Water Consumption	Additional Water requirement in future	Remarks
1	Begunia UG	1170 KLD	▪ Domestic : 190 KLD (mine water)	Nil	Excess mine water is supplied to the local villages.
2	Victoria West UG	2025 KLD	▪ Domestic – 800 KLD Barakar river after filtration)	Nil	

5. Resettlement & Rehabilitation

Under the Master Plan total of 3025 nos of houses are to be resettled & rehabilitated in 4.17 Ha of BCCL land and 72.71 Ha of non-BCCL land and will be paid compensation as envisaged in the Master Plan. 8.51 Ha of land will be required for resettlement of non-BCCL project affected families other than the Master Plan and will be paid compensation in accordance with the CIL's R&R Policy.

6. Base Line Noise Level Study

Noise levels will be monitored for the Core Zone & Buffer Zone as per the procedure.

7. Base Line Soil Analysis

Soil samples will be taken as per the procedure and analyzed.

8. Flora & Fauna

Studies on baseline flora & fauna will be carried out in the core & buffer zones.

9. Mitigation Measures

The following mitigation measures have been taken by the project for control of environmental pollution:

Air Pollution Control:

The dust suppression measures are taken to keep the air pollution within acceptable limits.

Domestic Wastewater Pollution Control:

The domestic wastewater is being treated through septic-tank cum soak pit combination.

Industrial Effluent: Mine water is allowed to settle into settling tank for treatment.

Bio-reclamation: Degraded land will be reclaimed. The cluster has unstable areas which will be stabilized, dozed backfilled and biologically reclaimed.

10. Environmental benefits by clustering of mines.

All the environmental issues of the cluster will be addressed in such a manner that there will be clear environmental benefits by clustering of the mines. The following would be the environmental benefits by clustering of mines.

Better land management:

- Effective large scale Reclamation, Waste management and Post-mining land-use planning.
- Reclaimed land can be handed over back to State Govt. for gainful utilization.
- Amalgamation of small lease mines into clusters will facilitate in scientific extraction of coal blocked in barriers of small mines thus increasing conservation of coal

Water management:

- Major drainage systems will not be disturbed/ diverted.
- Effective water management and water conservation can be done.
- Green belts along the banks will be done, this will check erosion, improve water conservation, help in rain water harvesting, and improve aesthetics and overall environment.

Air quality management:

- Emissions can be controlled from mineral transportation, mining, fires(if any) etc. Effective and better Air quality Impact assessment and Modeling possible and so a better AQMP can be designed.
- Diversion of roads and rail lines as per Master Plan possible. (i.e. Common Transportation System for addressing air pollution problems). Green belts along major roads will help in emissions control and noise attenuation.

Ecological management:

- Effective large scale Bio-reclamation strategies for closed and proposed mines possible. Native species, medicinal plants parks and block plantation with fruit and commercial trees will be done which are useful to the local society. This will attract in migration of fauna and establishing of micro ecosystems. Degraded vegetation land and fallow lands will be converted into vegetable farms.

Socio-economics improvement:

- Good R&R package available to affected people. People and infrastructure are safe and free from dangers of fire and subsidence. Pollution free and aesthetic environment with acceptable post-mining land-use is possible. QoL, amenities, literacy, employment opportunities will increase. Mined out land after reclamation will be handed over to the local people.
- Common Resettlement township in the vicinity of the cluster of mines will facilitate socio-economic benefits to PAPs through large scale reclamation of land and putting them to post-mining land use like agriculture, horticulture, fisheries, animal husbandry etc
- Surplus mine water from a cluster of mines can be collected in a reservoir and utilized for drinking, irrigation etc for benefit of the peripheral villages of the cluster

11. Mine closure/ mine Reclamation Plan

The environmental issues of proposed and abandoned mines will be addressed and their reclamation will be done through an integrated mine closure/ reclamation plan.

Reclamation during mining:

- All mined out land and its related land disturbance activities will be reclaimed. Reclamation shall proceed in a "contemporaneous" manner, i.e., in accompaniment to normal mining activities. Reclamation procedures shall include:
 - ❖ Backfilling, regrading and stabilizing the degraded land with appropriate drainage control.
 - ❖ Revegetating all disturbed areas. Trees shall be planted on affected land with native and commercial species. Areas to be developed for industrial, commercial or residential uses shall be re vegetated for the interim period, as necessary, to control erosion. Efforts to promote in-migration of fauna will be

done.

- Reclamation will take care of storm water drainage and other surface and groundwater management requirements.
- Safety provisions for people and adjoining property will be looked into during mining and reclamation.

Final reclamation after mining:

a) Backfilling, Regrading, Slope Stability and Recontouring:

- Piles or dumps of waste material such as mining waste shall be stockpiled in such a manner as to facilitate phased reclamation. They shall be segregated from topsoil and growth media salvaged for use in reclamation.
- Permanent placement of piles or dumps of waste material, such as mining waste and overburden, shall not be placed within wetlands.
- Where backfilling is proposed for urban uses (e.g., roads, building sites, or other improvements sensitive to settlement), the fill material shall be compacted. All cut slopes, including final highwalls and quarry faces; and fill slopes, including permanent piles or dumps of mine waste and overburden shall have slope stability that is suitable for the proposed end use and shall conform to the surrounding topography and/or approved end use.

b) Revegetation:

- A revegetation plan will be developed. A vegetative cover suitable for the approved end use and capable of self-regeneration without continued dependence on irrigation, soil amendments or fertilizer shall be established on disturbed lands. Vegetative cover density and species-richness shall be introduced to stabilize the surface against effects of long-term erosion and shall be similar to naturally occurring habitats in the surrounding area.
- Prior to closure, all access roads, haul roads, and other traffic routes to be reclaimed shall be stripped of any remaining road base materials and covered with suitable growth media or topsoil, and revegetated.
- Indigenous plant species shall be used for revegetation, except when introduced species are necessary to meet the end uses specified in the approved reclamation plan.
- Soil stabilizing practices shall be used where necessary to control erosion and for successful plant establishment.
- Protection measures, such as fencing of revegetated areas and/or the placement of cages over individual plants, shall be used in areas where grazing, trampling, herbivory, or other causes threaten the success of the proposed revegetation. Fencing shall be maintained until revegetation efforts are successfully completed.

c) Erosion control and stream diversion:

- Reclamation will take care of storm water drainage and other surface and groundwater management requirements.
- Reclamation activities shall be conducted to protect on-site and downstream beneficial uses of water.
- Surface runoff and drainage shall be controlled by berms, silt fences, sediment ponds, revegetation, hay bales, or other erosion-control measures, to ensure that surrounding land and water resources are protected from erosion, gullyng, sedimentation and contamination.
- The site will be graded to a flatter slope where necessary to minimize future erosion of topsoil, to direct surface runoff flow to retention ponds.
- Gullies and washouts will be repaired by backfilling, and stabilized with vegetative cover where appropriate.

d) Stream Protection, including Surface and Groundwater:

- Surface and groundwater shall be protected from siltation and pollutants that may diminish water quality.

e) Habitat protection:

- Habitats of local and native fauna shall be established on disturbed lands in a condition similar to or better than that, which existed before the lands were disturbed. Rare, threatened or endangered species and their respective habitat shall be conserved.

g) Buildings, structure and equipment removal:

- All mining and processing equipment (mobile or stationary) will be removed from the site. All man-made structures will be removed or demolished; any remains of such structures will be disposed of or recycled off-site.
- Any remaining stockpiles of material will be transported elsewhere for sale or utilized in the mine's reclamation via backfilling of quarries.
- All buildings, structures and equipment shall be dismantled and removed prior to final site closure except those buildings, structures and equipment which are necessary for the end use. All lands shall be reclaimed to a neat, clean condition by removing all visible debris, litter, junk, worn-out or unusable equipment or materials, as well as all poles, pilings and cables.

Comprehensive Mine Closure Plan

The Ministry of Coal vide letter 55011-01-2009-CPAM dated 7th January 2013, had published the guidelines for preparation of Mine Closure Plan (MCP). These guide lines will be adopted by the proponent (BCCL) for Mine closure Plan.

The Mine Closure Plan will have two components viz. i) Progressive or Concurrent Mine Closure Plan and ii) Final Mine Closure Plan. Progressive Mine Closure Plan would include various land use activities to be done continuously and sequentially during the entire period of the mining operations, whereas the Final Mine Closure activities would start towards the end of mine life, and may continue even after the reserves are exhausted and/or mining is discontinued till the mining area is restored to an acceptable level to create a self sustained ecosystem.

After the closure of the mine, the reclaimed leasehold area and any structure thereon, which is not to be utilized by the mine owner, shall be surrendered to the State Govt. concerned following a laid down procedure as in vogue at that point of time.

The details of the Mine Closure Plan released by the Ministry of Coal are enclosed. The Closure Plan shall include the following.

- ❖ **Mined-Out Land:** The MCP will describe the proposals/ measures to be implemented for reclamation (both physical and biological) and rehabilitation of mined out land including the manner in which the actual site of the pit will be restored for post mining land use.
- ❖ **Water Quality Management:** The MCP will describe in detail the existing surface and ground water bodies available in the lease hold areas and the measures to be taken for protection of the same including control of erosion, sedimentation, siltation, water treatment, diversion of water courses, if any measures for protection of contamination of ground water from leaching etc. Quantity and quality of surface water bodies shall also be indicated and corrective measures proposed to meet the water quality conforming to the permissible limits should also be described. Report of hydrological study carried out in the area may also be submitted. The water balance chart should be given. If there is potential of Acid Mine Drainage, the treatment method should be given.
- ❖ **Air Quality Management:** The MCP will describe the existing air quality status. The corrective measures to be taken for prevention of pollution of air should be described.
- ❖ **Waste Management:** The MCP will describe the type, quality and quantity of wastes generated and their disposal practice. If no utilization of waste material is proposed, the manner in which the waste material will be stabilized should be described. The protective measures to be taken for prevention of siltation, erosion and dust generation from these waste materials should also be described. If toxic and hazardous elements are present in the waste material, the protective measures to be taken for prevention of their dispersal in air, environment, leaching in the surface and ground water etc. should be described. As far as possible, reclamation and afforestation shall proceed concurrently with the mine activity.

❖ **Top Soil Management:** Before filling up the subsided/degraded land top soil will be removed and stacked separately . After the subsided land is filled up graded and compacted the top soil will be re-laid .

❖ **Management of Coal Rejects from Washery:** The Proposed Kalyaneshwari Coal Washery will not any rejects. The steps to be taken for proper functioning of the slurry pond, and its utilization, , arrangement for water re-circulation, measures to prevent water pollution from slurry ponds, arrangement for surplus water overflow etc. shall be given.

❖ **Infrastructure:** The existing infrastructural facilities available such as roads, aerial ropeways, conveyer belts, railways, power lines, buildings & structures, water treatment plant, water supply sources in the area etc. and their future utilization should be evaluated. If retained, the measures to be taken for their physical stability and maintenance should be described. If decommissioning proposed, dismantling and disposal of building structures, support facilities and other infrastructure such as electric transmission line, water line, gas pipeline, water works, sewer line, telephone cables, underground tanks, transportation infrastructure such as roads, rails, bridges, culverts etc, electrical equipments and infrastructures such as electric cables, transformers should be described in connection with restoring land for further use.

❖ **Disposal of Mining Machinery:** The decommissioning of mining machineries and their possible post mining utilization, if any, should be described.

❖ **Safety and Security:** The MCP will describe the safety measures implemented to prevent access to surface openings for underground workings; excavations etc. such as fencing carried out by barbed wires and arrangements proposed during the mine abandonment plan and up to the site being opened for general public should be described.

❖ **Economic Repercussions of closure of mine:** Manpower retrenchment, compensation to be given, socio-economic repercussions and remedial measures consequent to the closure of mines will be described.

❖ **Mine Closure Cost:** It has been estimated that typically closure cost for an opencast mine will come around Rs. 6.0 Lakhs per hectare of the property leasehold and would be Rs. 1.0 Lakhs per hectare for underground mine leasehold at current price levels (August, 2009) and these rates will stand modified based on wholesale Price Index as notified by Government of India from time to time.

12. Master Plan for Dealing with Fire, Subsidence & Rehabilitation

The cluster of mines will be dovetailed with the approved Master 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 & Govt. of India. In cluster-XVII, 8 nos. of sites consisting

of 3035 no. of houses/families are affected by subsidence. The affected families will be rehabilitated in adjacent non coal bearing area at a cost of Rs. 28982.29 lakhs

Following will be the R&R package that will be given to affected families as per approved Master Plan

A very attractive R&R package, for the affected people who are to be shifted from endangered areas, has been proposed in the Master plan and has been approved both by Govt. of Jharkhand and Govt. of India. **But no employment will be offered for any rehabilitation under this Master Plan.**

It may be noted that this R&R package is offered for safety of the people living in endangered areas and not for project implementation and mining of coal and thereby gaining any type of profit.

R&R package for non-BCCL authorised families:

a) Land Compensation: Head of every displaced house shall be given compensation for his land at the market rate.

b) House Compensation: Every head of displaced house will get replacement value for his house and other structures over the homestead land, the value of which shall be estimated on the basis of PWD civil rates. (Pucca house: Rs. 4.8 lakhs/unit and for Kutcha house: Rs. 1.37 lakhs/unit)

c) Other Benefits: Head of each house will be provided a plot of 100 sq.m land at the proposed township. In case his requirement of land is more than 100 sq.m, additional land may be provided, on payment basis as per market rate if land is available.

If this offer is not acceptable, head of each house shall be provided a constructed flat of around 40 sq.m as super built up area in a triple storied building. A house owner not opting for a plot will be offered equivalent cash compensation in lieu of free plot.

d) Basic amenities: Each township will be provided with all basic amenities and infrastructural facilities like Primary school, High school, Bank, Post office, Community centre, Shopping centre, Hospital, Play ground, Children Park, Water supply, Sewage disposal & sanitation, Road, Culverts & Drains, and Power Supply etc.

e) Income generation benefit: Head of each house shall be paid 250 days/year wage as per State Govt's minimum wage rate for a period of 2 years.

f) Shifting Allowance: The head of every house is proposed to be paid 0.10 lakhs as shifting allowance from their present living places to the resettlement sites.

R&R package for non-BCCL unauthorised families (encroachers):

a) No compensation will be paid to the house owner having no home stead land (unauthorised). Instead the following benefits will be provided to them.

b) Head of each house will be provided a constructed house on 27 sq.m land as super built up area in triple storey building in resettlement site with all basic amenities like Primary school, High school, Bank , Post office, Community centre, Shopping centre, Hospital, Play ground & children park, Water Supply, Sewage disposal & sanitation, Road, Culverts & Drains, Power Supply etc.

b) Income generation benefit: Head of each house shall be paid 250 days/year wage as per State Govt's minimum wage rate for a period of 2 years.

c) Shifting Allowance: The head of every house is proposed to be paid 0.10 lakhs as shifting allowance from their present living places to the resettlement sites.

ACTION PLAN FOR REHABILITATION OF FAMILIES AFFECTED UNDER THE MASTER PLAN

Colliery	Site name & no.	Affected Area (Sq.m.)	No. of Houses					Land for Resettlement		Total Amount (Rs in Lakhs)
			BCCL	Pvt.	Enchr	Oth.	Total	BCCL (Ha)	Non BCCL (Ha)	
Begunia	Barakar Town/1A,1B,1C, &1D	375299	61	2093	0	18	2172	0.98	56.51	22649.13
Victoria West	Baltoria/O2	81656	176	57	0	0	233	2.82	1.54	946.10
Victoria West	Barakar Town /O3	239416	0	14	0	0	14	0.00	0.38	103.91
Victoria West	Jhanakpura/O4	71270	0	286	0	2	288	0.00	7.72	2661.69
Victoria West	Jhewri Mohalla/O6	30491	0	71	0	51	122	0.00	1.92	1208.83
Victoria West	Karimdanga/O7	48382	0	143	0	1	144	0.00	3.86	1133.33
Victoria West	Pahalsadarga /O5	15235	0	29	0	0	29	0.00	0.78	210.30
Victoria	Heslok Pit Area/O1	20806	23	0	0	0	23	0.37	0.00	69.00
TOTAL	8	882555	260	2693	0	72	3025	4.17	72.71	28982.29

Rehabilitation requirements other than Master Plan:

1. BCCL Houses & structures : 100 nos.
2. Authorized private houses : 845 nos.
3. Authorized private other structures : 6 nos

FORM 1

(I) Basic Information

S.No	Item	Details																						
1	Name of the Project	<p>Cluster XVII comprising of following mines:</p> <table border="1"> <thead> <tr> <th>Name of Mine</th> <th>Type of Mine/Washery</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>Begunia Colliery</td> <td>UG</td> <td>Closed for production</td> </tr> <tr> <td>Victoria West Colliery</td> <td>UG</td> <td>Closed for production</td> </tr> <tr> <td>Victoria Colliery</td> <td>UG</td> <td>Closed for production</td> </tr> <tr> <td>Damagoria Colliery</td> <td>OC</td> <td>Closed for production</td> </tr> <tr> <td>Kalyaneshwari OCP (within the LH of Victoria & Damagoria collieries)</td> <td>OC</td> <td>Proposed</td> </tr> <tr> <td>Kalyaneshwari Coal Washery</td> <td>Coal Washery</td> <td>Proposed</td> </tr> </tbody> </table>	Name of Mine	Type of Mine/Washery	Status	Begunia Colliery	UG	Closed for production	Victoria West Colliery	UG	Closed for production	Victoria Colliery	UG	Closed for production	Damagoria Colliery	OC	Closed for production	Kalyaneshwari OCP (within the LH of Victoria & Damagoria collieries)	OC	Proposed	Kalyaneshwari Coal Washery	Coal Washery	Proposed	
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Kalyaneshwari Coal Washery	Coal Washery	Proposed																						
2	S.No. of the schedule	1(a)																						
3	Proposed capacity/area/length/tonnage to be handled/command area/lease area/number of wells to be drilled	<p><u>Kalyaneshwari OCP (Proposed)</u> Normative Production: 4.00 MTPA Peak Production : 5.20MTPA Capital Req : Rs.2880.17 Crs</p> <p><u>Kalyaneshwari Coal Washery :</u> Capacity: 3.65 MTPA Capital Req : Rs.200.55 Crs Total Area 1844.09 Ha</p>																						
4	New/Expansion/Modernization	<p>This cluster of mines is located in the western part of the Raniganj Coalfield in Burdwan district of West Bengal. These mines were taken over by BCCL from private mine owners after nationalization through Coal Mines Nationalization Act, 1972-73. All the mines in the cluster are closed for production on date. Kalyaneshwari OCP has been proposed within the LH of Victoria & Damagoria Collieries. Kalyaneshwari Coal Washery has been proposed with coal linkage with the proposed Kalyaneshwari OCP EMP clearance for the cluster of is required as lease renewal is to be obtained from State Govt</p>																						
5	Existing capacity/Area etc.	<table border="1"> <thead> <tr> <th rowspan="2"></th> <th rowspan="2">Name of Colliery/Washery</th> <th colspan="3">Existing</th> <th colspan="3">Proposed</th> </tr> <tr> <th>Normative Prod. (Mty)</th> <th>Peak Prod. (Mty)</th> <th>Lease Hold (Ha)</th> <th>Normative Prod. (Mty)</th> <th>Peak Prod. (Mty)</th> <th>Lease Hold (Ha)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Begunia Colliery (Closed for Production)</td> <td>0</td> <td>0</td> <td>306.00</td> <td>0</td> <td>0</td> <td>306.00</td> </tr> </tbody> </table>		Name of Colliery/Washery	Existing			Proposed			Normative Prod. (Mty)	Peak Prod. (Mty)	Lease Hold (Ha)	Normative Prod. (Mty)	Peak Prod. (Mty)	Lease Hold (Ha)	1	Begunia Colliery (Closed for Production)	0	0	306.00	0	0	306.00
	Name of Colliery/Washery	Existing			Proposed																			
		Normative Prod. (Mty)	Peak Prod. (Mty)	Lease Hold (Ha)	Normative Prod. (Mty)	Peak Prod. (Mty)	Lease Hold (Ha)																	
1	Begunia Colliery (Closed for Production)	0	0	306.00	0	0	306.00																	

S.No	Item	Details							
		2	Victoria West Colliery (Closed for Production)	0	0	310.00	0	0	310.00
		3	Victoria Colliery (Closed for Production)	0	0	223.00	0	0	65.43 (157.57 Ha merge with KOCP)
		4	Damagoria Colliery (Closed for Production)	0	0	620.10	0	0	295.17 (324.93 Ha merge with KOCP)
		5	Proposed Kalyaneshwari OCP (KOCP) 157.57 Ha in the LH of Victoria Colliery, 324.93 Ha in the LH of Damagoria Colliery & 369.33 Ha outside LH (for external OB Dumping)	-	-	-	4.00	5.20	851.83
		6	Proposed Kalyaneshwari Coal Washery with approach road				3.65	3.65	15.66
		Total				1459.10	4.00	5.20	1844.09
6	Category of Projects i.e., 'A' or 'B'	'A' (more than 50 ha)							
7	Does it attract the general condition? If yes, please specify.	NO							
8	Does it attract the specific condition? If yes, please specify.	NO							
9	Location	Sl No.	Name of the Mine/Washery	Latitude			Longitude		
		1	Begunia UG	23 ⁰ 43'8" to 23 ⁰ 44'4" N			86 ⁰ 47'46" to 86 ⁰ 49'46"E		
		2	Victoria West UG	23 ⁰ 43'54" to 23 ⁰ 45'06" N			86 ⁰ 48'00" to 86 ⁰ 50'05"E		
		3	Victoria UG	23 ⁰ 44'19" to 23 ⁰ 45'47" N			86 ⁰ 50'20" to 86 ⁰ 51'25" E		
		4	Damagoria Colliery	23 ⁰ 24'28" to 23 ⁰ 46'26" N			86 ⁰ 50'38" to 86 ⁰ 52'11" E		

S.No	Item	Details			
		5	Proposed Kalyaneshwari Coal Washery	23 ⁰ 46'03" N	86 ⁰ 50'36" E
	Plot/Survey/Khasra No.	<p>Begunia mouza (1865, 1867, 1868, 1870, 1890, 1906, 1984, 1986 – 1991, 1993, 1995 – 2001, 2003, 2004, 2006, 2007, 2022, 2024, 2026, 2027 – 2033, 2055, 2062, 2064, 2066, 2079 - 2081, 2095, 2100, 2101, 2103, 2105, 2175 – 2177, 2184, 2185, 2326 – 2330, 2332, 2333, 2368, 2369, 2408, 2409P, 2410P, 2417P, 2418, 2419, 2805, 2806, 2811, 2826, 2827, 2833, 2834, 2836), Chungari mouza (530P, 801), Manberia mouza (30, 31, 33 – 36, 41 – 58, 29/322, 29/323, 31/329, 31/330, 39/332, 39/333, 51/335, 58/340, 58/342), Baltoria mouza (1, 52, 58, 85, 109, 113, 126, 142, 148, 150, 152 – 155, 173, 176, 187, 198, 201, 204, 216, 220, 221, 238, 253, 262, 263, 264, 272, 273, 8/299, 8/300, 2/301, 168/303, 178/304, 49/311, 49/312, 54/316, 117/330, 142/367, 140/362, 150/370, 167/371, 249/413, 253/433, 253/424, 253/425, 253/426, 253/430, 253/433, 253/441, 38/472, 52/473, 253/495, 258P, 257, 260, 144P, 218, 227, 228 – 233, 234P, 234P, 236P, 237P, 484, 235P), Lalbazar mouza (1 – 3, 9, 13, 14, 17, 18, 20, 21, 24, 25, 27 – 31, 34, 37P, 44 – 47, 52 – 61, 63 – 67, 69P, 71, 75 – 79, 81, 83, 85, 89 – 95, 97, 98, 101 – 104, 107 – 109, 112, 114 – 122, 124, 126 – 130, 135 – 139, 141, 145, 149, 150, 165, 166, 173, 177 – 187, 190 -193, 196, 200, 201, 203, 213 – 217, 238 – 242, 261, 263, 265, 267, 275 -277, 283 – 285, 287, 288, 291 – 304, 308, 315, 320, 352, 353, 355 – 358, 364, 365, 367, 369 – 380, 385, 390, 400 – 402, 407, 408, 411, 414, 417, 419, 461 – 463, 485, 486, 493, 496, 501, 512, 525, 545, 565, 567, 569 -583, 586, 587, 593 – 598, 600, 622, 627, 631, 632, 655, 673, 683 – 685, 687, 692, 694, 696, 699, 700, 705, 718, 720, 734 – 736, 854, 884, 886, 889, 890, 907, 950, 1051 – 1055, 1076, 1115, 1141, 1148 – 1150, 1153, 1155, 1156P, 1157, 1165 – 1167, 1234, 1235, 1241, 1242, 1249, 1281 – 1287, 1292 – 1167, 1313 – 1316, 1320 – 1331, 1336 – 1339, 1342, 1343, 1354, 1367 – 1369, 1371, 1397 -1400, 1407, 1408, 1414, 1417 – 1419, 1421 – 1429, 1431, 1432, 1436 – 1439, 1441 – 1450, 1453, 1455 – 1459, 1461 – 1463, 1467, 1468, 1470, 1472, 1478, 1479, 1480, 1487, 1503, 1507, 1560 – 1562, 1568, 1570, 1580, 1583, 1585 – 1589, 1593, 1595, 1596, 1598, 1601 – 1603, 1610, 1612, 1613, 1617, 1650, 1652, 1653, 1655, 1656, 1662, 1663, 1667 – 1669, 1671, 1675 – 1679, 1686, 1691, 1693, 1694, 1696, 1697, 1700, 1704, 1706, 1709 – 1718, 1720, 1721, 1723 – 1725, 1727, 1732, 1735, 1754, 1757 – 1762)</p>			

S.No	Item	Details
.		Damagoria Mouza, Chaptoria Mouza, Borira Mouza, Lalbazar Mouza, Nakrajoria Mouza (P), Degari Mouza, Salanpur Mouza (P), Jamaldi Mouza, Indkata Mouza (P).
	Village	Barakar, Chungari, Lalbazar, Petna, Kulti, Manberia, Baltoria , Borira,
	Tehsil	Asansol
	District	Burdwan
	State	West Bengal
10	Nearest railway station/airport along with distance in kms.	Railway station Barakar (1 km), Air Port (kolkata): 200 km
11	Nearest Town, city, District Headquarters along with distance in kms.	Asansol (17 kms) & Dhanbad (47 KM)
12	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Kulti Municipality Tel: Nil
13	Name of the applicant	Mr Tarasish Mondal
14	Registered Address	General Manager BCCL, Chanch/Victoria Area PO- Barakar. Dist. - Burdwan. West Bengal - 713324
15	Address for correspondence:	
	Name	Mr Tarasish Mondal
	Designation (Owner/Partner/CEO)	General Manager
	Address	General Manager BCCL, Chanch/Victoria Area PO- Barakar. Dist. - Burdwan. West Bengal - 713324.
	Pin Code	713324
	E-mail	cgmcv@bccl.gov.in
	Telephone No.	0341 2520062, 64, 06540 270076
	Fax No.	0341-2520063
16	Details of Alternative Sites examined, if any. Location of these sites should be shown on a topo sheet.	Not Applicable as coal mining is site specific.
17	Interlinked Projects	Proposed Kalyaneshwari Coal Washery

S.No	Item	Details
18	Whether separate application of interlinked project has been submitted?	Not required
19	If yes, date of submission	Not applicable
20	If no, reason	Not applicable
21	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980 ? (b) The Wildlife (Protection) Act, 1972 ? (c) The C.R.Z Notification, 1991 ?	NO
22	Whether there is any Government Order/Policy relevant/relating to the site?	NO
23	Forest land involved (hectares)	NO
24	Whether there is any litigation pending against the project and/or land in which the project is proposed to be set up? (a) Name of the Court (b) Case No. (c) Orders/directions of the Court, if any and its relevance with the proposed project.	NO

(II) Activity

- 1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (Topography, Land use, changes in water bodies, etc.)**

Sl.No.	Information/Checklist confirmation	Yes /No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data.																																																																																																				
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	<p>Total leasehold area of the cluster is 1453.19 Hectares. <u>Present land use is as under</u></p> <table border="1" data-bbox="581 621 1333 1272"> <thead> <tr> <th>Sl.No</th> <th colspan="2">Type of land use</th> <th>Present mining land use (in Ha)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">1</td> <td rowspan="2">Running Quarry</td> <td>Backfilled</td> <td>0.00</td> </tr> <tr> <td>Not Backfilled</td> <td>0.00</td> </tr> <tr> <td rowspan="2">2</td> <td rowspan="2">Abandoned Quarry</td> <td>Backfilled</td> <td>48.12</td> </tr> <tr> <td>Not Backfilled</td> <td>42.14</td> </tr> <tr> <td>3</td> <td>External OB dump</td> <td></td> <td>16.64</td> </tr> <tr> <td>4</td> <td>Service building/ Mine Infrastructure</td> <td></td> <td>27.20</td> </tr> <tr> <td>5</td> <td>Homestead land</td> <td></td> <td>197.91</td> </tr> <tr> <td>6</td> <td>Old Coal dump</td> <td></td> <td>3.31</td> </tr> <tr> <td>7</td> <td>Road and rail</td> <td></td> <td>64.86</td> </tr> <tr> <td>8</td> <td>Agricultural Land</td> <td></td> <td>557.81</td> </tr> <tr> <td>9</td> <td>Forest Land</td> <td></td> <td>0.00</td> </tr> <tr> <td>10</td> <td>Plantation</td> <td></td> <td>24.78</td> </tr> <tr> <td>11</td> <td>Water Body</td> <td></td> <td>130.08</td> </tr> <tr> <td>12</td> <td>Barren Land</td> <td></td> <td>731.24</td> </tr> <tr> <td></td> <td>Total</td> <td></td> <td>1844.09</td> </tr> </tbody> </table> <p><u>Post mining land use:-</u></p> <table border="1" data-bbox="581 1308 1317 1887"> <thead> <tr> <th>Sl.No.</th> <th colspan="2">Type of land use</th> <th>Post-mining land use (in Ha)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">1</td> <td rowspan="2">Running Quarry</td> <td>Backfilled</td> <td>0.00</td> </tr> <tr> <td>Not Backfilled</td> <td>0.00</td> </tr> <tr> <td rowspan="2">2</td> <td rowspan="2">Abandoned Quarry</td> <td>Backfilled</td> <td>0.00</td> </tr> <tr> <td>Not Backfilled</td> <td>0.00</td> </tr> <tr> <td>3</td> <td>External OB dump</td> <td></td> <td>0.00</td> </tr> <tr> <td>4</td> <td>Service building/ Mine Infrastructure</td> <td></td> <td>0.00</td> </tr> <tr> <td>5</td> <td>Homestead land</td> <td></td> <td>93.26</td> </tr> <tr> <td>6</td> <td>Old Coal dump</td> <td></td> <td>0.00</td> </tr> <tr> <td>7</td> <td>Road and rail</td> <td></td> <td>48.76</td> </tr> <tr> <td>8</td> <td>Agricultural Land</td> <td></td> <td>164.32</td> </tr> </tbody> </table>	Sl.No	Type of land use		Present mining land use (in Ha)	1	Running Quarry	Backfilled	0.00	Not Backfilled	0.00	2	Abandoned Quarry	Backfilled	48.12	Not Backfilled	42.14	3	External OB dump		16.64	4	Service building/ Mine Infrastructure		27.20	5	Homestead land		197.91	6	Old Coal dump		3.31	7	Road and rail		64.86	8	Agricultural Land		557.81	9	Forest Land		0.00	10	Plantation		24.78	11	Water Body		130.08	12	Barren Land		731.24		Total		1844.09	Sl.No.	Type of land use		Post-mining land use (in Ha)	1	Running Quarry	Backfilled	0.00	Not Backfilled	0.00	2	Abandoned Quarry	Backfilled	0.00	Not Backfilled	0.00	3	External OB dump		0.00	4	Service building/ Mine Infrastructure		0.00	5	Homestead land		93.26	6	Old Coal dump		0.00	7	Road and rail		48.76	8	Agricultural Land		164.32
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1.2	Clearance of existing land, vegetation and buildings?	Yes	<p data-bbox="581 485 1382 663">BCCL land: 317.28 Ha, Govt land: 7.36 Ha and Private land: 532.66 Ha are required for the proposed Kalyaneshwari project. 15 Ha of BCCL land is required for the proposed Kalyaneshwari Coal Washery. The aforesaid requires clearance of existing land , vegetation and buildings.</p> <p data-bbox="581 663 873 695">(Source = As per Draft PR)</p>															
1.3	Creation of new land uses?	Yes	<p data-bbox="581 737 1268 768">Land use will be as per details given in Point No. 1.1.</p> <p data-bbox="581 768 1268 800">(Source = As per details and record available at Colliery Office)</p>															
1.4	Pre-construction investigations e.g. bore holes, soil testing?	Yes	<p data-bbox="581 848 943 879">No. of Bore Holes =46 Nos.</p> <p data-bbox="581 879 1081 911">Bore Hole density = 14 Nos. / Sq. KM.</p> <p data-bbox="581 911 984 942">Meterage drilled = 11373.41 m</p> <p data-bbox="581 942 873 974">(Source = As per Draft PR)</p>															
1.5	Construction works?	Yes	<p data-bbox="581 995 1382 1100">Office, Workshop, sub-stations, Explosive magazine, Statutory building, community building, coal stock, Coal Washery, road & culverts.</p> <p data-bbox="581 1100 873 1131">(Source = As per Draft PR)</p>															
1.6	Demolition works?	Yes	<p data-bbox="581 1142 1382 1247">BCCL Houses/Structures: 75 nos, Encroachers' houses / Structures: 55 nos, Authorized Private houses: 845 nos, Authorized private others structures : 6 nos.</p> <p data-bbox="581 1247 883 1278">(Source = As per Draft PR)</p>															
1.7	Temporary sites used for construction works or housing of construction workers?	No	<p data-bbox="971 1367 995 1398">--</p>															
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	<p data-bbox="581 1541 1300 1646">BCCL Houses/Structures: 75 nos, Encroachers' houses / Structures: 55 nos, Authorized Private houses: 845 nos, Authorized private others structures : 6 nos.</p> <p data-bbox="581 1646 883 1677">(Source = As per Draft PR)</p>															
1.9	Underground works including mining or tunneling?	No	<p data-bbox="581 1740 1284 1772">Not required since the proposed project is an opencast mine</p> <p data-bbox="581 1772 873 1803">(Source = As per Draft PR)</p>															

Sl.No.	Information/Che cklist confirmation	Yes /No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data.
1.10	Reclamation works?	Yes	Cracks and subsidence area will be filled up and graded properly. Plantation will be done over the area. Void area will be backfilled and physically & biologically reclaimed. (Source = As per details and record available at Colliery Office)
1.11	Dredging?	No	---
1.12	Offshore structures?	No	---
1.13	Production and manufacturing processes?	Yes	In opencast mine coal will be produced by drilling & blasting and shovel - dumper combination by opencast method (Source = As per Draft PR)
1.14	Facilities for storage of goods or materials?	Yes	- 2 nos of Coal Stock complex with total area of 27018 sq m will be provided. - Explosive magazine of 60t capacity will be provided for storage of explosives as per the guidelines of Indian Explosives Act. & DGMS. - Workshop for maintenance and storage of material will be provided. (Source = As per Draft PR)
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	OB will be dumped at planned site internally and externally and will be reclaimed biologically. Oil & Grease trap and sedimentation pond/sump is proposed for settling of suspended solids.
1.16	Facilities for long term housing of operational workers?	Yes	Operational workers will be arranged from existing strength of the mine, which have already been provided with housing facilities at the residential colonies of the collieries (Source = As per the data and records available in colliery office)
1.17	New road, rail or sea traffic during construction or operation?	No	----
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	----

Sl.No.	Information/Che cklist confirmation	Yes /No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	Yes	Diversion od existing DB road will be provided. Total diversion length will be 3.00 km
1.20	New or diverted transmission lines or pipelines?	No	----
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	Yes	----
1.22	Stream crossings?	Yes	----
1.23	Abstraction or transfers of water form ground or surface waters?	Yes	<p><u>Begunia UG</u> <u>Abstraction of water</u> Mine Water = 1170 KLD.</p> <p><u>Water Used for</u> a) Industrial = 200 KLD.(Source: mine water) b) Domestic Water : 190 KLD (Source: mine water)</p> <p><u>Victoria West UG</u> <u>Abstraction of water</u> Mine water= 2025 KLD Barakar River : 800 KLD</p> <p><u>Water Used for</u> a) Domestic Water :800 KLD (SourceBarakar River)</p> <p><u>Proposed Kalyaneshwari OCP</u> <u>Abstraction of water</u> Mine Water = 180210 KLD.</p> <p><u>Water Used for</u> a) Industrial = 658.7 KLD.(Source: mine water) Water requirement for Kalyaneshwari Washery: 0.38 MGD</p> <p>(Source = As per details and record available at Colliery Office & Draft PR))</p>

Sl.No.	Information/Che cklist confirmation	Yes /No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	Yes	New water body will be created after the mining operation.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes.	Transport of materials will be done through tippers, Jeep etc. Personnel are transported by the public / personal conveyance or conveyance provided by the Company. (Source = As per the data and records available in colliery office)
1.26	Long-term dismantling or decommissioning or restoration works?	Yes	A Progressive Mines closure Plan & Final Mines Closure Plan will be prepared for decommissioning of the Project.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No.	During decommissioning activities will not have any adverse environmental effect. (Source = As per details and record available at Colliery Office)
1.28	Influx of people to an area in either temporarily or permanently?	No	Coal Mining is going on for more than 100 Years in the Ranigunj Coal Fields. The existing Population is largely depending on the Mining activities in the Area. Hence no more influx of people is expected apart from the manpower required for the Project. (Source = As per details and record available at Colliery Office)
1.29	Introduction of alien species?	No	----
1.30	Loss of native species or genetic diversity?	No	----
1.31	Any other actions?	No	----

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S.No.	Information/checkbox confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data				
2.1	Land especially undeveloped or agricultural land (ha)	Yes	BCCL land: 317.28 Ha, Govt land: 7.36 Ha and Private land: 532.66 Ha are required for the proposed Kalyaneshwari project. 15 Ha of BCCL land is required for the proposed Kalyaneshwari Coal Washery. The aforesaid requires clearance of existing land , vegetation and buildings.				
2.2	Water (expected source & competing users) unit: KLD	Yes	<p><u>Begunia UG</u> <u>Abstraction of water</u> Mine Water = 1170 KLD.</p> <p><u>Water Used for</u> a) Industrial = 200 KLD.(Source: mine water) b) Domestic Water : 190 KLD (Source: mine water)</p> <p><u>Victoria West UG</u> <u>Abstraction of water</u> Mine water= 2025 KLD Barakar River : 800 KLD</p> <p><u>Water Used for</u> a) Domestic Water :800 KLD (SourceBarakar River)</p> <p><u>Proposed Kalyaneshwari OCP</u> <u>Abstraction of water</u> Mine Water = 180210 KLD.</p> <p><u>Water Used for</u> a) Industrial = 658.7 KLD.(Source: mine water) Water requirement for Kalyaneshwari Washery: 0.38 MGD</p> <p>(Source = As per details and record available at Colliery Office & Draft PR)</p>				
2.3	Minerals (MT)	Yes	<table border="1"> <thead> <tr> <th>Name of Mine</th> <th>Mineable Reserve (MT)</th> </tr> </thead> <tbody> <tr> <td>Proposed Kalyaneshwari OCP</td> <td>101.92</td> </tr> </tbody> </table> <p>(Source = As per Draft PR)</p>	Name of Mine	Mineable Reserve (MT)	Proposed Kalyaneshwari OCP	101.92
Name of Mine	Mineable Reserve (MT)						
Proposed Kalyaneshwari OCP	101.92						
2.4	Construction	Yes	Construction material will be required for the construction of				

S.No.	Information/checlist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
	material – stone, aggregates, sand / soil (expected source – MT)		office, Workshop, sub-stations, Explosive magazine, Statutory building, community building, coal stock, Coal Washery, road & culverts. (Source = As per Draft PR)
2.5	Forests and timber (source – MT)	No	(Source = As per details and record available at Colliery Office)
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Electrical Energy :37.34 M kwh/annum. (Source of Electrical Power – DVC.) (Source = As per details and record available at Colliery Office)
2.7	Any other natural resources (use appropriate standard units)	No	----

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna and water supplies).	No	Spent / burnt oil and oil soaked filters, old batteries. The aforesaid are being taken care of as per Hazardous Waste (Management & Handling) Rules, 1989 and 2003 and sent to stores for disposal through authorized agents. (Source = As per details and record available at Colliery Office)
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water-borne diseases)	No	----
3.3	Affect the welfare of people e.g. by changing living conditions?	No	The project has positive impact on the welfare of people.
3.4	Vulnerable groups of	No	----

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
	people who could be affected by the project e.g. hospital patients, children, the elderly etc.,		
3.5	Any other causes.	No	----

4. Production of solid wastes during construction or operation or decommissioning (MT/month).

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
4.1	Spoil, overburden or mine wastes.	Yes	388.82 Million Cum of OB will be generated
4.2	Municipal waste (domestic and or commercial wastes).	Yes	Generated municipal waste generated will be disposed off as per provisions of municipal solid waste management & handling rules. Domestic Waste in colony is treated in septic tank-cum-soak pit. No commercial waste is generated. (Source = As per details and record available at Colliery Office)
4.3	Hazardous wastes (as per Hazardous Waste Management Rules).	Yes	Spent / burnt oil and oil soaked filters, old batteries. The aforesaid are being taken care of as per Hazardous Waste (Management & Handling) Rules, 1989 and 2003 and sent to stores for disposal through authorized agents. (Source = As per details and record available at Colliery Office)
4.4	Other industrial process wastes	No	-
4.5	Surplus product	No	-
4.6	Sewage sludge or other sludge from effluent treatment.	Yes	Being treated in septic tank-cum-soak pit. (Source = As per details and record available at Colliery Office)
4.7	Construction or demolition wastes	No	There is no major construction or demolition is involved for Mining purpose.
4.8	Redundant machinery or equipment	Yes	The redundant machineries or equipments will transferred to other collieries where required. If they have outlived this working life, they will be surveyed off and disposed as per Company's Rule. (Source = As per details and record available at Colliery

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
			Office)
4.9	Contaminated soils or other materials	No	-
4.10	Agricultural wastes	No	-
4.11	Other soil wastes	No	-

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr).

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources.	Yes	Diesel equipment will be maintained to comply with the emission norms. The SO ₂ & NO _x from diesel operated Tippers are insignificant.
	Emissions from production processes.	Yes	Suspended Particulate Matter (SPM) is being taken care of with water sprinkling to keep the level within permissible limit. As per the records of existing mines the level of pollutants are well within limit of Central Pollution Control Board (CPCB) standard. (Source = As per details and record available at Colliery Office)
5.3	Emissions from materials handling including storage or transport.	Yes	Suspended Particulate Matter (SPM) & Respiratory Particulate Matter (RPM) get generated from coal transportation. They are taken care of by water sprinkling on the transport routes. (Source = As per details and record available at Colliery Office)
5.4	Emissions from construction activities including plant and equipment.	No	
5.5	Dust or odors from handling of materials including construction materials, sewage and waste.	Yes	Dust gets generated during drilling, blasting, transportation, loading, unloading etc. Water sprinkling is done to prevent the dust from becoming air borne. (Source = As per details and record available at Colliery Office)
5.6	Emissions from incineration of waste.	No	-
5.7	Emissions from burning of waste in open air (e.g. slash materials,	No	-

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
	construction debris).		
5.8	Emissions from any other sources.	No	-

6. Generation of Noise and Vibration and Emissions of Light and Heat:

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
6.1	From operation of equipment e.g. engines, ventilation plant, crushers.	Yes	Noise and vibration will be generated during drilling , blasting, coal and OB transportation and movement of other HEMM (Source = As per details and record available at Colliery Office)
6.2	From industrial or similar processes.	No	-
6.3	From construction or demolition.	No	
6.4	From blasting or Drilling.	Yes	Noise and vibration will be generated during deep hole drilling and blasting
6.5	From construction or operational traffic.	Yes	Coal and OB will be transported from the working face to the respective dumps. Coal will be transported to the sidings . Noise will be generated due to movements of HEMM. (Source = As per details and record available at Colliery Office)
6.6	From lighting or cooling systems	No	-
6.7	From any other sources.	No	-

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
7.1	From handling, storage, use or spillage of hazardous materials.	No	Hazardous Materials like spent oil soaked filters, old batteries will be disposed off as per the existing Rules & Guidelines of Hazardous Waste (Management & Handling) Rules, 1989 and 2003 and sent to stores for disposal through authorized agents. (Source = As per details and record available at Colliery Office)
7.2	From discharge of	Yes	Total Suspended Solid (TSS) in the mine water will

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
	sewage or other effluents to water or the land (expected mode and place of discharge)		be taken care in settling ponds and in mine sumps before discharge. There will be practically no discharge from workshop as industrial discharge will be put in closed water circuit and utilized for industrial use and non-drinking purposes. Sewage will be treated in septic tank-cum-soak pits. (Source = As per details and record available at Colliery Office)
7.3	By disposition of pollutants emitted to air into the land or into water.	No	Release of pollutants mainly dust will be mitigated by water sprinkling, metalled roads and avenue plantations. (Source = As per details and record available at Colliery Office)
7.4	From any other sources.	No	-
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	-

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment.

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances.	Yes	Risk exists on account of storage and use of explosives and fuel. Safety precautions as per statute will be taken to avoid such risks. (Source = As per the data and records available in colliery office)
8.2	From any other causes.	Yes	1) Movement of heavy machineries 2) Slope failure 3) Coal/OB Dump fire Precautions are taken as per statutes and guidelines and circulars issued by DGMS from time to time. (Source = As per details and record available at Colliery Office)
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods,	Yes	The Project is falling within the seismically active Zone:- III (Source = As per details and record available at Colliery Office)

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
	earthquakes, landslides, cloudburst etc.)?		

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality.

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
9.1	Lead to development of supporting, facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.	Yes	Economic growth associated with coal mining activity leads to semi urban like development. This supports development of ancillary and supporting industries and other related activities. (Source = As per details and record available at Colliery Office)
	Supporting infrastructure (roads, power supply, waste or waste water treatment etc.).	Yes	Housing, Roads, Power Supply, Water Supply & other community facility improvement. (Source = As per details and record available at Colliery Office)
	<ul style="list-style-type: none"> • Housing development • Extractive industries 	Yes	Housing facility with market and basic amenities are existing.
	supply industries other	Yes	Ancillary & Supply Industries will develop which in turn will generate employment in directly and lead to growth in income generation. do (Source = As per details and record available at Colliery Office)
9.2	Lead to after-use of the site, which could have an impact on the environment.	Yes	Some of the activity enumerated in 9.1 above could assume permanent residency with appropriate facilities. Community Development like Health Care facilities, educations facilities & Self Employment Scheme will improve the quality of life. Beyond this, physically and biologically reclaimed land would undergo transformation over time which would have positive impact on environment. (Source = As per details and record available at Colliery Office)

Sl. No.	Information / Checklist confirmation	Yes / No.	Details thereof (with approximate quantities / rates, wherever possible) with source of information data.
9.3	Set a precedent for later developments.	Yes	Activities at 9.1 & 9.2 above culminate in conjunction with local set up and in a number of cases has set precedence of economic development leading to over all socio-economic growth of the area. (Source = As per details and record available at Colliery Office)
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects.	Yes	Coal occurs in layers continuously for long distances. Associated mining activity with numerous such closely located centers as indicated at 9.1, 9.2 and 9.3 along with other activities could have cumulative impact. (Source = As per details and record available at Colliery Office)

III) Environmental Sensitivity

Sl. No.	Areas	Name / Identity	Aerial distance (within 15 Km.) Proposed project location boundary.
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value.	Nil	NA Topo Sheet no 73/I/9-10, 73/I/13-14
2	Areas which are important or sensitive for ecological reasons – wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests.	Panchet Dam Maitjon Dam Khudia River Barakar River Damodar River Panchet Hills	6 KM 8 km 2 Km 0 Km 1.5 Km 9.5 km Topo Sheet no 73/I/9-10, 73/I/13-14
3	Area used by protected, important or sensitive species of flora or fauna for breeding, resting, foraging, resting, over wintering, migration.	Panchet Dam Maitjon Dam	6 KM 8 km
4	Inland, coastal, marine or underground waters.	No	Topo Sheet no 73/I/9-10, 73/I/13-14
5	State, National boundaries.	Jharkhand	0 Km
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas.	Grand Chord Rly. Line. NH-2	0 KM 0 KM Topo Sheet no 73/I/9-10, 73/I/13-14
7	Defense installations	No	
8	Densely populated or built-up area	Mugma Panchet Chirkunda Barakar	1. KM 6 KM 1 KM 0 KM Topo Sheet no 73/I/9-10, 73/I/13-14

Sl. No.	Areas	Name / Identity	Aerial distance (within 15 Km.) Proposed project location boundary.
9	Areas occupied by sensitive man-made land uses (<i>hospitals, schools, places of worship, community facilities</i>).	Hospitals, Schools, Places of warship, Community facilities exist in general in the above towns.	Topo Sheet no 73/I/9-10, 73/I/13-14
10	Areas containing important, high quality or scarce resources (<i>ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals</i>).	No	Topo Sheet no 73/I/9-10, 73/I/13-14
11	Areas already subjected to pollution or environmental damage. (<i>those where existing legal environmental standards are exceeded</i>)	No	Topo Sheet no 73/I/9-10, 73/I/13-14
12	Areas susceptible to natural hazard which could cause the project to present environmental problems. (<i>earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions</i>).	Yes	The area falls within the zone III of earthquake map of india

PROPOSED TERMS OF REFERENCE FOR EIA STUDIES

Following aspects are proposed to be covered in the EIA/ EMP document:-

1. All the environmental issues of the cluster will be addressed in such a manner that there will be clear environmental benefits by clustering of the mines.
2. Address the issues of abandoned mines and their reclamation through an integrated Reclamation Plan.
3. The cluster approach will be dovetailed with the Jharia Action Plan.
4. Location map showing all the mines and Area boundary along-with major surface features like road, rail line, surface water bodies, pits etc.
5. The buffer zone will comprise of 10 km zone around the mine lease area of the cluster as a whole.
6. Present land use of core zone (cluster) as per our record and by satellite imagery for buffer zone.
7. Description of the technology used for mining and allied activities.
8. Detail of the coal handling, loading and transportation arrangement for each mine.
9. A site plan showing the areas ear-marked for various components of the individual mines.
10. Justification for selection of mining technology proposed for the mines.

Baseline studies

1. List of flora and fauna in the core and buffer zones with conservation measures as per recent survey of the block.
2. Description of the present environmental scenario based on one-season (non-monsoon) primary base-line data of core and buffer Zone on Ambient Air Quality (SPM, RPM, SO₂, NO_x), Water Quality, Noise Level, Soil Characteristics and Socio-economic study.
3. Detailed Hydro-geological studies covering the entire block for ground water clearance from Central Ground Water Authority and also to study the impact of mining activity on ground water resources. The same shall form part of the EMP.
4. Water balance study showing the impact of mine-pumping of ground water and its discharge into surface water bodies.
5. Prediction of incremental impact on following components of environment due to increase in capacity:-
 - i) Air including noise
 - ii) Water
 - iii) Soil
 - iv) Flora & Fauna

v) Socio-economic scenario

Air quality impact modeling will be done by using ISCST3 model for the entire cluster taking into account the incremental impact from each mine and predicting the increase in SPM levels vis a vis known levels as on date. Isopleths showing the resultant SPM levels over the whole block shall be drawn.

6. Impact due to blasting, noise and vibration.
7. Environmental management plan for mitigation of impacts.
8. Detail of health-care facilities available for local population.
9. Safety and risk-analysis study.
10. Brief description of profiles of various agencies involved in the preparation of the EIA/EMP report.
11. To suggest an organizational structure for implementation of the control measures.
12. Status of Ground-water clearance, Project Approval of BCCL Board etc where applicable.
13. The generic structure of the EIA will be based on the guidelines as per EIA Notification, 2006.

I hereby give undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any to the project will be revoked at our risk and cost.

Date:

Place

Mr Tarasish Mondal
General Manager
BCCL, Chanch/Victoria Area
PO- Barakar. Dist. - Burdwan.
West Bengal - 713324.