PUBLIC HEARING DOCUMENT

SUMMARY OF EIA/EMP
FOR
DIPKA OPENCAST COAL MINE PROJECT
CAPACITY: FROM 37.50 MTPA TO 40.00 MTPA
PROJECT AREA: FROM 1999.293 HA. TO 1999.386HA.

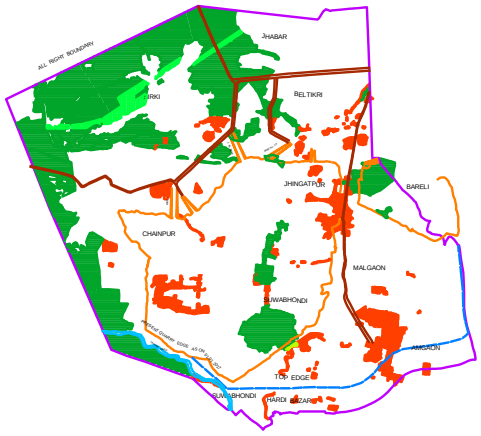
VILLAGES: DIPKA, CHAINPUR, BELTIKRI, JHINGATPUR, JHABAR, SIRKI, RENKI, SUWABHONDI, RATIJA, MALGAON, HARDIBAZAAR & AMGAON

TAHSIL: KATGHORA; DISTRICT: KORBA; STATE: CHHATTISGARH.

(Project categorized under Schedule 1(a): Mining of minerals, Category 'A'; ToR issued vide MoEF&CC File No. J-11015/487/2007-IA.II (M)pt., dated 08/06/2020 and J-11015/487/2007-IA.II (M), dated 09/01/2023)

Project proponent

South Eastern Coalfields Limited
(A Mini Ratna Company)



(February - 2023)

Consultant:

Central Mine Planning & Design Institute Limited (CMPDIL)

Kanke Road, Ranchi, Jharkhand-834031
(A Mini Ratna Company & A Subsidiary of Coal India Ltd)
NABET accreditation certificate no. NABET/EIA/2124/RA 0258 valid till 22.08.2024

PUBLIC HEARING DOCUMENT
SUMMARY OF EIA/EMP DIPKA OC EXPANSION PROJECT 40 MTPA

1.1 PROJECT DESCRIPTION:

The Dipka OC Expansion Project is expansion of an existing mega opencast coal mining project in the thick seam zone of SECL command area that produces power grade coal. It is under the administrative control of Dipka Area. The present proposal is for expansion from its existing capacity of 37.5 to 40 MTPA.

1.1.1 PROJECT LOCATION:

Dipka OCP Expansion, a part of Dipka and Hardi Blocks, is located in the south-central part of Korba Coalfield in Korba district of Chhattisgarh.

These blocks cover an area of 12.42 sq.km (excluding the area required for road, colony, infrastructure etc.).

Table -1.1: Project Location Details

Sl. No.	Particulars	
1.	Name	Dipka Opencast Expansion Project
2.	Villages	Chainpur, Beltikri, Jhingatpur, Jhabar, Sirki, Renki, Suwabhondi, Ratija, Malgaon, Hardibazaar, Amgaon & Dipka
3.	Tehsil	Katghora
4.	Pin Code	495452
5.	District	Korba
6.	State	Chhattisgarh
7.	Latitudes	N 22^{o}18'59"to N 22^{o}19'43"
8.	Longitudes	E 82^{0}30'47" to E 82^{0}33'34"
9.	Maximum Elevation	293m from MSL
10.	Topo sheet No.	64J/11
11.	Seismic Zone	Zone-II as per IS 1893 (Part 1) :2002 (5th revision)
12.	Nearest town	Korba at 26 Km
13.	Nearest City	Bilaspur (C.G)
14.	District head quarters	Korba
15.	State capital	Raipur (C.G)
16.	Nearest Airport	Raipur airport at about 230 km, Bilaspur-100 Km
17.	Nearest Railway Station	Gevra Road Railway Stations' on Champa-Gevra Road branch line of S.E.C Railway at 12 Km
18.	Nearest River (If	Hasdeo River is flowing at a distance of

Sl. No.	Particulars	
	any)	about 18 Km from the project.
19.	Other water bodies (Lake/Nalla etc.)	Lilagarh Nadi is flowing adjacent to the mine boundary, Ahiron River at 8 Km, Kholar Nalla at 5 Km & many small channels joining Hasdeo river.

(Source- Mine plan/PFR of Dipka OC/Form-I/Govt. Agencies)

1.1.2 PREVIOUS EC DETAILS:

Table -1.2: Details of Previous EC (Under EIA Notification, 2006)

Sl. No.	Particulars of EC obtained	File number	Date of EC granted	Validity
1	25 MTPA	J-11015/487/2007-IA-II(M)	03.06.2009	Life of the mine
2	30 MTPA	J-11015/487/2007-IA-II(M)	12.02.2013	Life of the mine
3	31 MTPA	J-11015/487/2007-IA-II(M)	06.02.2015	Life of the mine
4	35 MTPA	J-11015/487/2007-IA-II(M)	20.02.2018	Till 31st March 2019
5	35 MTPA	J-11015/487/2007-IA-II(M)	20.03.2019	One year
6	35 MTPA	J-11015/487/2007-IA-II(M)	09.03.2020	30 years or life of the mine whichever is earlier
7	37.5 MTPA	J-11015/487/2007-IA-II(M)	05.09.2022	30 years or life of the mine whichever is earlier

1.1.3 FOREST LAND AND ITS DETAILS:

Table – 1.3: Status of Forest Clearance

DETAILS OF FOREST LAND AND ITS APPROVAL				
	A. Forest Land (409.056 Ha) with FC/Stage-I Forest Clearance			
Sl no.	**Area (in ha)**	**File No of MoEFCC, New Delhi**	**Final FC approval date**	**Stage-1 issued date**
1	33.84 Ha	F.No. 8-8/2006-FC	-	03.03.2011
2	206.638 Ha	F.No. 8-80/2006-FC	-	20.10.2006
3	148.866 Ha	F.No.8-78/2006-FC	31.01.2022	
4	16.794 Ha	F.No.8C/6/591/98/FCW/78	11.01.2001	
5	2.918 Ha	F.No.8B/115/2001-FCW/869	03.04.2002	
Total	**409.056 Ha {240.478 ha Stage-I and 168.578 (Final FC)}**			
	B. Additional Forest land required for expansion- 0.093 Ha			
1	0.093 Ha	FC Reg No: 2013/028	Stage-I applied for revenue forest on 04.04.2013. File is currently at APCCF(LM) Office, Raipur	

Grand Total	**409.149 Ha**

1.1.4 ENVIRONMENTAL SENSITIVITY:

Table -1.4: Environmental Sensitivity

Sl. No	Areas	Name	Aerial Distance from center of the project (in km.)	
			Core Zone	Buffer Zone (10Km)
1.	National Park/ Sanctuary	*Nil*	-	-
2.	Biosphere Reserve/ Tiger Reserve/ Elephant Reserve/any other Reserve	*Nil*	-	-
3.	*Forest (RF/ PF/ unclassified)	*Unnamed protected Forest*	*1.67 Km from center of the project (Within Core zone)*	-
			-	*1.71 Km*
			-	*5.05 Km*
			-	*4.16 Km*
			-	*3.18 Km*
		Chindpani PF	-	*8.20 Km*
		Manikpur PF	-	*10.79 Km*
		Burgahan RF	-	*9.45 Km*
4.	Habitat for migratory birds	*None*	-	-
5.	Corridor for animals of schedule I & II of the Wildlife (Protection) Act, 1972	*None*	-	-
6.	Archaeological sites * Notified * Others	*None*	-	-
7.	Defense Installation	*None*	-	-
8.	Industries/Thermal Power Plants	*NTPC / BALCO / STPC*	-	*Within 10Kms.*
9.	Other Mines	Gevra OCP Surakachar UGP Banki UGP Balgi UGP Kusmunda OCP	- - - 	Adjacent (App.) 6.5 Kms. (App.) 7 Kms. (App.) 8 Kms. (App.) 6 Kms.
9	Airports	Raipur	-	(App.) 200 Kms

Sl. No	Areas	Name	Aerial Distance from center of the project (in km.)
10	Railway Lines	Gevra Road Rly. Stn.	- (app.) 19 Kms.
11	National / State Highways	State High-way	- More than 1 Km.
* Ref: MoEF&CC online proposal details on GIS.			

(Source- Mine plan/PFR of Dipka OC/Form-I/Govt. Agencies)

1.1.5 SALIENT FEATURES OF PROJECT:

Table 1.5 Salient features of project

Sl. No.	Particulars	Project Parameters
1	Type of the Project	Opencast Coal Mine
2	New / Expansion	Expansion
3	Item no. as per EIA Notification	1
4	Category as per EIA Notification	"A"
5	Mineable Reserve (MT):	164.93 as on 01/04/2022
6	(NC: Non-Coking & C: Coking)	(NC)
7	Volume of OB (Mm3)	295.84 as on 01/04/2022
8	Stripping Ratio (m3/t)	1.80
9	Normative Capacity (MTPA)	40
10	Ultimate depth of the quarry (m)	250m
11	Area of Excavation (Ha)	1002.146
12	Area of Dump (Ha)	External Dump-206Ha.; Internal Dump-756.093Ha; Top Soil dump-24Ha.
13	Life of mine (Years)	05 as on 01/04/2022
14	Av. gradient of the quarry floor (in de-gree)	3.37 – 6.34
15	Grade	G10/G11
16	Forest Land (Ha.)	409.149
17	Total Land use (Ha.)	1999.386
18	R&R involvement (Nos.)	PAF-1690
19	Capital cost (in Crore)	2129.09

(Source- Mine plan/PFR of Dipka OC/Form-I/Govt. Agencies)

Table 1.6: Geo-mining characteristics of the project

Sl. No.	Particulars	Unit	Values
1.	Seams	m	
(i)	Lower Kusmunda (Comb)	m	56.70 - 70.15
(ii)	Lower Kusmunda (Top)	m	34.70 - 44.85

Sl. No.	Particulars	Unit	Values
(iii)	Lower Kusmunda (Bot)	m	2.19 – 24.50
(iv)	Upper Kusmunda	m	24.69-35.82
(v)	Seam E&F	m	12.70- 19.05
2.	Specific Gravity of the seams	Mcum/t	1.58
3.	Av. gradient of the quarry floor		1 in 9 to 1 in 17
4.	Av. Quality of seam	Grade	G10/G11
5	Parting	m	
(i)	Parting between Lower Kusmunda (Bottom) and Lower Kusmunda (Top)	m	3.00-35.56
(ii)	Parting between Lower Kusmunda (Top)/(Combined) & Upper Kusmunda	m	12.17-78.63
(iii)	Parting between E&F and UK	m	30.14-62.12
(iv)	Top O.B.	m	8.02-85.15
6	Strike length of the quarry.	Km	3.0 – 4.0
7	Dip rise width of the quarry	Km	2.6 – 3.2
8	Maximum depth of the quarry	m	250
9	Surface area of the quarry	Ha	1002.146

1.1.6 PRODUCTION PROGRAMME FOR 40.0 MTPA:

Table – 1.7: Calendar Programme

	Coal (MT)	OB (Mm3)
Year 1	40	71.80
Year 2	40	71.80
Year 3	40	71.80
Year 4	40	71.80
Year 5	4.93	8.64
Total	**164.93**	**295.84**

1.1.7 LAND USE (PRE, DURING AND POST):

Pre-mining Land Use:

Table-1.8A

Activity	Types of land area (Ha)			Total land area (Ha)
	Forest	Tenancy / Agricul-tural	Govt.	
Nil	409.149	1409.244	180.993	1999.386

Core Area Land Use: (During Mining)

Table-1.8B

S.N	Activity	Types of land are (Ha)			Total land area (Ha)
		Forest	Tenancy/ Agri.	Govt.	
1	Quarry Area*	52.982	858.314	90.850	1002.146
2	External OB dump	54.718	125.212	26.070	206.000

S.N	Activity	Types of land are (Ha)			Total land area (Ha)
		Forest	Tenancy/ Agri.	Govt.	
3	Infrastructure, workshop, Administration building etc.	279.242	313.518	41.114	633.874
4	Roads	0.000	4.000	0.000	4.000
5	Green belt	0.000	23.000	0.000	23.000
6	Safety Zone	22.207	85.2	22.959	130.366
Total Land		**409.149**	**1409.244**	**180.993**	**1999.386**

* Including 756 .093 ha Internal dump, 24ha for Top soil & 222.053 ha for water body.

Post-mining Land Use:

Table – 1.8C

Details of Land Usage (Post - Mining)						
Sl. No	Land use during Mining	Land Use (ha)				
		Plantation	Water body	Public use	Undis-turbed	Total
1	External OB dump	206.000	0.000	0.000	0.000	**206.000**
2	Top soil dump	24.000	0.000	0.000	0.000	**24.000**
3	Excavation	756.093	222.053	0.000	0.000	**978.146**
4	Roads	4.000	0.000	0.000	0.000	**4.000**
5	Built up area	633.874	0.000	0.000	0.000	**633.874**
6	Green belt	23.000	0.000	0.000	0.000	**23.000**
7	Undisturbed area	130.366	0.000	0.000	0.000	**130.366**
	Total	**1777.333**	**222.053**	**0.000**	**0.000**	**1999.386**

(As per PR/Mine plan/PFR of Dipka OC 40 MTPA)

1.1.8 NATIONAL AND REGIONAL IMPORTANCE:

India is dependent mostly on thermal power, and the project is contributing in production of thermal power hence it is of national importance. In case of regional terms, roads with state transport facilities will be developed. The State Government is being benefited through financial revenues in crores of rupees by way of royalty, taxes etc., from the direct and indirect operations in the Study area.

1.2 DESCRIPTION OF THE ENVIRONMENT

To assess the impact of mining operation on different components of environment of proposed Dipka Opencast Expansion Project, the study was carried out to collect baseline data w.r.t. air, water, noise and soil quality, land use pattern, hydrology, flora & fauna, socio-economic aspects etc. during the Post-monsoon season (Oct 22- Dec 22). The present environmental status of the different monitored parameters is summarized.

Table 1.9: Summary of Baseline Data

Summary of Baseline Data

3.1 Details of Baseline data collection

Season (Post-monsoon)	Period of collection		Number of monitoring locations =9						
	From	To	Meteorology (Nos.)	Ambient Air Quality (Nos.)	Surface Water Quality (Nos.)	Ground water Quality (Nos.)	Ground Water Level (Nos.)	Noise Level (Nos.)	Soil Quality (Nos.)
	01-10-2022	31-12-2022	1	9	6	7	44	9	3

3.2 Meteorological Parameters

Sl	Parameter	Min. Value	Max. Value	Mean Value
1	Temperature (°C)	11	34	23
2	Wind Speed (m/s)	0	3.7	0.7
3	Relative Humidity (%)	28	92	61
4	Solar Radiation (W/m^2)	0	720	145.1
5	Rainfall	Total rainfall (mm)	No. of rainy days	Average annual rainfall (mm)
		0	0	0
6	Predominant Wind direction	North East (NE)		

3.3 Ambient Air Quality
Note: (Please Specify range in case of data monitored at multiple locations)

Monitoring Location (Core /Buffer)	Criteria Pollutant	Unit	Observed Value		Mean Value	Prescribed Standard
			From	To		
Core Zone	PM10	**in µg/m3**	106.5	131.6	120	300
	PM2.5	**in µg/m3**	60.6	76.5	68.6	-
	SO2	**in µg/m3**	28.2	35.6	32.8	120
	NO2	**in µg/m3**	22.5	32.0	27.6	120
Buffer Zone	PM10	**in µg/m3**	48.1	83.0	63.7	100
	PM2.5	**in µg/m3**	22.4	51.5	34.9	60
	SO2	**in µg/m3**	6.7	23.8	16.4	80
	NO2	**in µg/m3**	5.3	21.1	12.9	80

3.4 Surface Water Quality

Monitoring Location	Criteria Pollutant	Unit [mg/L]	Observed Value		Standard as per IS: 2296-1982	CPCB Water Quality Criteria	
			From	To		Class	Standard
Core Zone	pH	-	7.16	7.44	6.5 to 8.5	C	6.5 to 8.5
	TSS	mg/L	15.0	20.0	-	C	-
	TDS	mg/L	502	570	1500	C	1500
	Total Hardness	mg/L	316.0	356.0	-	C	-
	Chlorides	mg/L	69.98	77.98	600	C	600
	Fluoride	mg/L	0.6	0.7	1.5	C	1.5
	DO	mg/L	5.6	5.9	Min, 4	C	Min, 4
	BOD	mg/L	2.6	2.9	3	C	3
	COD	mg/L	20.0	25.0	-	C	-
	(Hg)	mg/L	BQL(QL=0.001)	BQL(QL=0.001)	-	C	-
Buffer Zone	pH	-	7.16	7.90	6.5 to 8.5	C	6.5 to 8.5
	TSS	mg/L	7.0	27.0	-	C	-
	TDS	mg/L	160.0	518.0	1500	C	1500
	Total	mg/L	73.0	304.0	-	C	-

	Hardness						
	Chlorides	mg/L	16.99	103.97	600	C	600
	Fluoride	mg/L	0.02	0.69	1.5	C	1.5
	DO	mg/L	6.40	7.5	Min, 4	C	Min, 4
	BOD	mg/L	BQL(QL=2)	2.7	3	C	3
	COD	mg/L	BQL(QL=5)	15.0	-	C	-
	Total Coliform	mg/L	13	42	5000	C	5000
	Heavy Metal (Hg)	mg/L	BQL(QL=0.001)	BQL(QL=0.001)	-	C	-

3.5 Ground Water Quality

Monitoring Location	Criteria Pollutant	Unit	Observed Value		Standard as per IS:10500 Desired Limits	IS:10500 Permissible Limits
			From	To		
Core Zone	pH	-	7.26	7.58	6.5 to 8.5	No Relaxation
	TSS	mg/L	BQL(QL=5)	BQL(QL=5)	Not Specified	Not Specified
	TDS	mg/L	242.00	312.00	500	2000
	Total Hardness	mg/L	152.0	194.0	200	600
	Chlorides	mg/L	43.99	53.98	250	1000
	Fluoride	mg/L	BQL(QL=0.1)	BQL(QL=0.1)	1	1.5
	DO	mg/L	5.50	6.10	Not Specified	Not Specified
	BOD	mg/L	BQL(QL=2)	BQL(QL=2)	Not Specified	Not Specified
	COD	mg/L	BQL(QL=5)	BQL(QL=5)	Not Specified	Not Specified
	Heavy Metal (Hg)	mg/L	BQL(QL=0.0005)	BQL(QL=0.0005)	0.001	No Relaxation
Buffer Zone	pH	-	6.49	7.56	6.5 to 8.5	No Relaxation
	TSS	mg/L	BQL(QL=5)	BQL(QL=5)	Not Specified	Not Specified
	TDS	mg/L	249.0	704.0	500	2000
	Total Hardness	mg/L	106.0	322.0	200	600
	Chlorides	mg/L	59.98	138.96	250	1000
	Fluoride	mg/L	BQL(QL=0.1)	0.13	1	1.5
	DO	mg/L	5.9	6.8	Not Specified	Not Specified
	BOD	mg/L	BQL(QL=2)	BQL(QL=2)	Not Specified	Not Specified
	COD	mg/L	BQL(QL=5)	BQL(QL=5)	Not Specified	Not Specified
	Heavy Metal (Hg)	mg/L	BQL(QL=0.0005)	BQL(QL=0.0005)	0.001	No Relaxation

3.6 Ground Water level (Phreatic surface)

3.6.1 Monitoring Location	Range of Water Table Pre-monsoon Season (in m below ground level)	Range of Water Table Post-Monsoon Season (in m below ground level)

	From	To	From	To
Core Zone	4.36 m	8.42 m	2.20 m	5.10 m
Buffer Zone	3.65 m	8.21 m	1.80 m	7.50 m

3.7 Noise level

Monitoring Location	Category	Observed Noise Level (dB(A))				Prescribed Standard (dB(A))	
		Day Time Level		Night Time Level		Day Time Level	Night Time Level
		From	To	From	To		
Core Zone	Industrial area	66.5	71.3	52.9	61.2	75	70
Buffer Zone	Residential area	44.3	51.1	35.6	39.1	55	45

3.8 Soil Quality

3.8.1 Physical Characteristics

Monitoring Location	Soil Texture	Particle Size Distribution						Water Holding Capacity (%)		Porosity (%)	
		Sand (%)		Silt (%)		Clay (%)					
		From	To	From	To	From	To	From	To	From	To
Core Zone	Loam/Sandy loam	49.3	56.1	28.7	31.8	15.2	20.1	32.42	41.6	45	47
Buffer Zone	Loam/Sandy loam	49.3	56.1	27.2	30.6	16.7	20.1	32.1	38.7	45	47

3.9 Chemical Properties

Monitoring Location	Criteria Parameter	Unit	Observed Value	
			From	To
Core Zone	Nitrogen	kg/ha	262.5	371.28
	Phosphorus	kg/ha	10.9	15.31
	SAR	-	1.13	1.19
Buffer Zone	Nitrogen	kg/ha	206.64	371.28
	Phosphorus	kg/ha	11.54	15.31
	SAR	-	1.15	1.18

3.10 Whether Traffic study has been conducted [Yes/No] If Yes, — Yes

3.10.1 **Existing**

Road	V (volume in PCU/ day)*	C (capacity in PCU/day)*	Existing V/C Ratio	LOS
4 Lane Undivided (Two-Way) of 20m Width (Collector Road)	9034.05	15000	0.602	**D**

*Based on no. of hour considered in traffic study

3.10.2 **Proposed**

Road	V (volume in PCU/ day)	C (capacity in PCU/day)	Existing V/C Ratio	LOS
No additional vehicle is proposed. All coal will be dispatched through Rapid SILO.				

3.11	Whether any Schedule-I Species found in the study area? [Yes/No]:	Yes- But not in the core zone.
3.11.1	Details of Schedule-I Species	Python & Monitor lizard and sloth bear reported in Secondary data of Forest. (Study area)
3.11.2	Whether conservation plan for Schedule-I Species has been prepared?	Yes, WLCP
	Fund Provision made (Lakhs)	15.47 Cr.

1.3 Anticipated Environmental Impacts & Mitigative Measures

1.3.1 Impact due to Air Pollution and its Management

Table – 1.10(i): Air Quality Impact Prediction

Sl. No.	Criteria Pollutants	Unit	Baseline Concentration (98 percentile value)	Minimum Value	Incremental concentration	Total GLC	Prescribed Standard
1	PM_{10}	**µg/m^3**	83.00	65.00	3.53	86.53	100
2	$PM_{2.5}$	**µg/m^3**	51.50	36.70	1.07	52.57	60
3	SO_2	**µg/m^3**	23.80	15.40	0.00	23.80	80
4	NO_2	**µg/m^3**	21.10	12.10	1.93	23.03	80
Note: Above values are for highest incremental value obtained through modelling at Suphel-para Village (Newsa) (L5) located at 2.43 km in downwind (SSW) direction.							

Table – 1.10(ii): Air Pollution Control Measures

Potential Sources of air pollution	Magnitude of air pollution	Control Measures (Existing and proposed)
Drilling	High dust generation Risk of occupational hazard	Wet drilling technology. Drillers shall be equipped with closed cabin personal protective gear to reduce occupational hazard.
Blasting	High dust generation (Impact lasts for short period)	By improvising blasting techniques and adopting controlled blasting methods. Water spray prior to blasting.
Loading of material on dumper	Air emission	Air conditioned cabin for loading operator. Water spray (Fogging system) on mineral ore / overburden material prior to loading.
Transportation	High dust potential	• Provision for automatic water sprinkler system on permanent road and water spray by tankers on temporary road. • Green belt of trees with good footage on both sides of the haul road. • Provision of water spray on the dumper to arrest fine dust before it is transported to the CHP. • Fogging system for dust suppression. • Mechanized sweeping machine. • Rapid SILO system –Rail transport
Surface Miner	High potential of dust and occupational hazard	Surface miner should not be run with water sprinkling arrangements.
Storage	High potential and Occupational hazards.	Covered storage yards with greenbelt of adequate width all around. Wind Breaker/VGS

1.3.2 Impact due to Water Pollution and its Management

The possible sources of water due to project activities are:

- Seepage from strata and backfilled area
- Direct precipitation of rainfall and overburden runoff
- Workshop effluents and domestic effluent

Mine Water

The quantity of mine water generated from seepage of strata or backfilled area will be drained by suitable pumps. In the rainy season heavy duty pumps will be deployed to throw accumulated water into garland drains made around the periphery of the quarry.

1.3.3 Hydrogeology

Table – 1.10(iii): Stage of Ground Water extraction (%) for Dipka

SoGWE as per CMPDIL	Category	Ground Water Level Trend (cm/year)				Critical values	Remarks
		Hardi Bazar (KOB-003-OW)		Banki Mogra (KOB-013-OW)			
		pre-monsoon	post-monsoon	pre-monsoon	post-monsoon		
62.78	Safe (≤70%)	3.30	-3.65	1.55	-9.78	Neither rise nor fall when >-10 to 10 cm	Acceptable since there is no significant decline trend in both pre-monsoon and post-monsoon together.

1.3.4 Impact due to Noise and Vibration and its Management

The main sources of noise at the proposed project are:

- Drilling and blasting
- Coal and OB handling arrangements
- Vehicular movement
- Heavy machinery

The background noise levels would increase due to the above noise generating sources. The area can sustain during the mining activities with the following noise control measures:

- Diesel power machines and other HEMM, will be maintained properly as per maintenance schedule to prevent undesirable noise.
- Drill machine operators and dumper drivers will be provided with ear-plugs and earmuffs, if required.
- Regular noise level monitoring would be done periodically for taking corrective action, wherever required.
- Excessive planting of green belt along the road and around the offices will be done.

Note: This is running mine and all safety measures are being implemented.

1.3.5 Impact on Land and its Management

As the mining operations will be advanced the land use pattern of the project will change due to internal backfilled dumps as well as formation of external dumps.

A. Status of existing land use:

Total land of the project is 1999.386 Ha., including land for quarry, external dumps, industrial complex, roads, green belt, safety zone etc. The break-up of land use is given in Table 11.8(b).

B. Conceptual post mining land use:

The conceptual post-mining land use plan is shown above in table – 11.8 (c). An area of 1777.333 Ha. is proposed to be afforested by way of plantation on reclaimed external OB dumps, Top soil dump, reclaimed excavation area, green belt etc. as against degradation of 409.149 Ha. of forest by the mining activity.

C. Reclamation

The reclamation plan has been designed within the natural constraints of the site. Native species will be selected for planation. Plants will be grown in backfilled areas, OB dump, along the road sides, mine premises and mine take area. Green belt will be developed in a phased manner.

1.3.6 Impact on Flora and Fauna and its Management

There are no endangered or rare species of flora and fauna within the project area. In the buffer zone, some Scheduled-I species have been reported in forest records. A WLCP has been prepared by TFRI, Jabalpur for conservation of wildlife and it is in the final process for approval and implementation. Moreover, massive plantation work undertaken by the project authorities will attract birds and other fauna in the future.

1.3.7 Management of Socio-economic impacts

The R&R plan is under process for PAFs and PAPs. The infrastructures of the surrounding area will be strengthened due to CSR activities and business opportunities created locally. It will help to sustain the development of this area including further development of infrastructural facilities.

1.4 ENVIRONMENTAL MONITORING PROGRAM:

Table 1.11: Environment Monitoring Program

S. No.	Name of Monitoring Station	Parameters	Frequency	Standards followed
AIR /NOISE				
1	Malgaon Village	Air- SPM,$PM_{2.5}$, PM_{10}, SO_2, NO_2	Air- twice in a week Heavy metals-	-NAAQS, 2009 for stations located outside the core zone.
2	Near Railway Siding			
3	New Excv. Workshop			
4	Pragati Nagar			

5	Hardi Bazar	Heavy metals- Ni, As, Hg, Pb Noise- Leq(in dB(A) – Day and Night time	at six months Noise- fort-nightly	& Coal Mine Standards, 2000 for stations located in core zone -CPCB Protocol For Ambient Level Noise Monitoring -CTO Special Conditions
6	Batari			
7	Jhabhar			
8	Ratija			
EFFLUENT WATER		**Parameters**	**Frequency**	**Standards followed**
1	U/S of Lilagarh Nala before entering mining lease boundary Dipka	pH , TSS, COD, TDS , BOD and Oil & Grease All Parameters	Fortnightly Once a year	-Coal Mine Standards, 2000 and -General Standards for Discharge of Environmental Pollution (Part A: Effluent) as per Schedule VI, Environment (Protection) Rules -CTO Special Conditions
2	D/S of Lilagarh Nala after leaving mining lease boundary Dipka			
3	Workshop Effluent Dipka (WBP)			
4	Mine Effluent after Settling Dipka (WBP)			
DRINKING WATER		**Parameters**	**Frequency**	**Standards followed**
1	Dipka colony drinking water Guest House	24 Parameters – Color, Odour, Phenolic compounds, Turbidity , pH, Alkalinity, Total Hardness, Iron, Chlorides, Residual free chlorine, TDS, Ca, Cu, Mn, Sulphate, Nitrate, F, Se, As, Pb, Cr, Sn, Bo, Fecal Coliform	Monthly	-IS 10500:2012
2	Dipka water from CGM office Dipka			
3	Proposed New Location-Hardi Bazar borewell water			
4	Proposed New Location-Renki Borewell water			
GROUNDWATER		**Parameters**	**Frequency**	**Standards followed**
1	Well water at Nawadih	35 Parameters – Color, Odour, Phenolic compounds, Turbidity , pH, Alkalin-	Four times a year- Pre monsoon (April/ May),	-IS 10500:2012
2	Well water at Boida			
3	Well water at Renki			

4	Well water at Nunera	ity, Total Hardness, Iron, Chlorides, Residual free chlorine, TDS, Ca, Cu, Mn, Sulphate, Nitrate, F, Se, As, Pb, Cr, Sn, Bo, Fecal Coliform and etc. + Ground water level	Monsoon(Aug), Post monsoon(Nov) & Winter(Jan)	
5	Well water at Urta			
6	Well water at Tiwarta-1			
7	Well water at Nonbirra			
8	Well water at Jawali			
9	Well water at Hardibajar			
10	Well water at Jhabar			
11	Well water at Dholpur			
12	Well water at Pantora			
13	Well water at Dhatura			
14	Well water at Phuljhar			
15	Well water at Kerakachhar			
16	Well water at Chonrha			

EMERGENCY PROCEDURES

In the process of regular monitoring as per the schedule discussed earlier, if any environmental parameters such as air quality, water quality, noise levels etc. found to be above the prescribed levels of standards immediate control measures are to be adopted at the source of generation of pollution.

1.5 ADDITIONAL STUDIES:

1.5.1 DISASTER MANAGEMENT AND RISK ASSESSMENT:

Dipka OC is an expansion of running mine. The “Emergency organization & Evacuation Plan” of Dipka Mine is in force. It has been prepared as per DGMS guidelines.

1.5.2 SOCIAL IMPACT ASSESSMENT, R&R PLAN

There are 12 nos. of villages including Dipka itself, involved in the project comprising a total land area of 1999.386 Ha. It involves rehabilitation of 1690 families. Out of which 470 rehabilitated at different sites, 1137 cash grant and 75 balance and is under process. Land oustees are compensated as per CIL R & R policy, 2012.

1.5.3 PUBLIC HEARING

Public hearing will be conducted at site after submission of Draft EIA/EMP report (EIA notification, 2006). All the concerns/issues raised during public consultation would be recorded and appropriately dealt with and given due care by the project proponent. All the proceedings including the detailed action plan against the issues given by the project

proponent and the authenticated compliance of the concerns/issues recorded during public consultation proceedings would be incorporated in the Final EIA/EMP report.

1.5.4 TRAFFIC SURVEY

The traffic density survey has been conducted at three strategic points and the estimated average Level of Service (LoS) is D (Stable Flow).

1.5.5 INTEGRATED HYDROLOGICAL STUDY

To assess the mining impact on base flows, a scientific study on integrated hydrological study has been carried out by NIT, Raipur. In this study, it has been established that mining activities have no negative impact on the downstream of Lilagar River's base flow.

1.6 PROJECT BENEFITS:

The expansion of the existing Dipka OC Project will enhance the socio-economic activities in the adjoining areas. This will result in following benefits:

1. Employment Generation
2. Meet Energy needs of Nation
3. Improvements in Physical Infrastructure
4. Improvements in Social Infrastructure
5. Contribution to the Exchequer
6. Enhancement of Green Cover
7. Vocational Training Programme
8. Secondary Employment opportunities (Approx. 3 times of Direct employments)

1.7 ENVIRONMENTAL MANAGEMENT PLAN:

The responsibility for implementing an environmental management plan would rest with the environment management structure who would be properly assisted by a team of qualified and trained personnel.

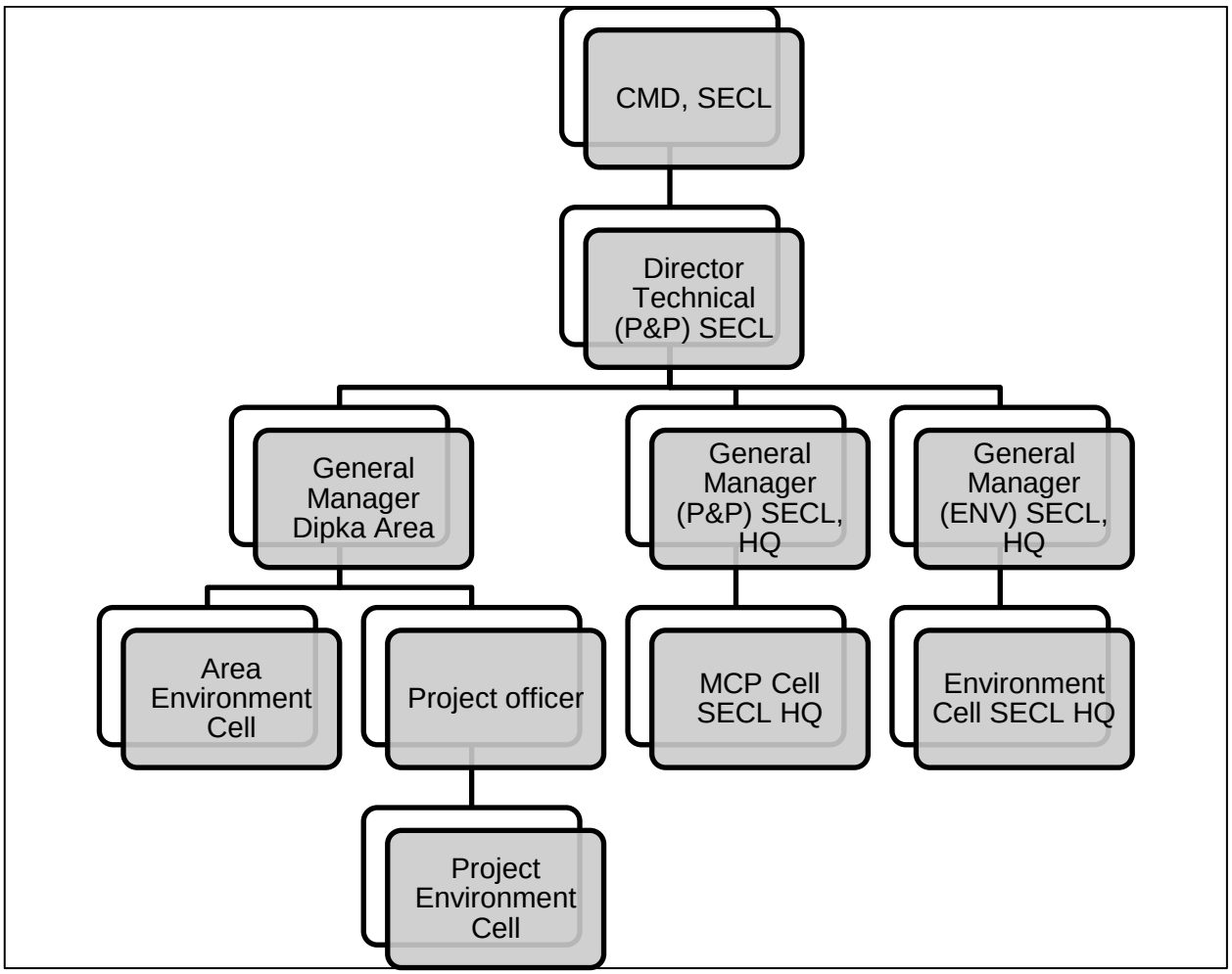


Figure – 1.1 Organization Structure for Environment Management

SECL Board vide its meeting dated 18.09.20 has accorded approval for adopting Corporate Environment Policy-2018 of Coal India Limited.

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

MECHANISM OF REPORTING OF NON-COMPLIANCES/INFRINGEMENTS

In order to monitor the compliance of Environmental Clearance (EC) and Forest Clearance (FC) stipulations in coal mines, an Apex Committee has been constituted at MoC level vide its OM dated 22.06.2019.

In continuation with the above, as per directives of MoC, Committees have also been

made at CIL Level, at Subsidiaries level and at Area level for regular inspection, monitoring & compliance of EC/FC/CTO conditions with time bound action plan.

The committee at area level is doing an inter area audit and submitting its report/findings consisting of noncompliance to GM (Environment), SECL. Based on this report, corrective action as well as preventive action is being taken along with an action plan with a timeline. Some of the mines are also inspected by third parties like ICFRE (Indian Council of Forestry Research and Education) which submits its report to SECL (HQ). Based on the findings action is taken over the non-compliances or partial compliance.

SECL regularly submits half yearly compliance reports and also submits environmental audit statements of the previous financial year by 30th September to the Regional Office/ Integrated Regional Office of MoEFCC/SPCB on time which contains details of compliances of environmental clearance.

1.8 OVERALL JUSTIFICATION FOR IMPLEMENTATION OF THE PROJECT:

The existing capacity of Dipka OC is 37.5 MTPA-project area 1999.293 Ha. The expansion of Dipka OC 40.00 MTPA (project area 1999.386 Ha.) has been proposed by outsourcing for both coal and OB. The baseline study carried out for the study area indicates that all the physical, chemical and biological characteristics of the environmental attributes in the surrounding area are within the permissible limits. Based on this environmental assessment, the possible impacts during both pre-project and post-project phases are anticipated and the necessary Environmental Management Plan has been formulated to address the impacts. The coal extracted will be used for power generation which ultimately acts as a catalyst for country growth. The overall project implementation will not have an appreciable impact on the environment. The project benefits leads to Employment opportunities, increased revenue and infrastructural development and other commercial business opportunities in the area. The affected stakeholders' demand will be fulfilled using appropriate funds in consultation of central/state authority. Thus, it can be concluded that with the judicious and proper implementation of the pollution control and mitigation measures, the proposed project can proceed without much negative significant impact on the environment.

1.9 EXPLANATION OF HOW, ADVERSE EFFECTS HAVE BEEN MITIGATED:

The mining activities will be dealt with control measures along with its monitoring as feedback to strengthen the measures. The other associated activities like R&R of project affected people will be in order to maximise its benefit to them. The detailed analysis of the environmental impacts and the remedial measures proposed/recommended, it can be concluded that not much significant deterioration in the ecosystem is likely to occur due to the proposed project. The dedicated capital and revenue fund will be utilised for allocated remedial measures. Action Programme for EMP Implementation is given below:

Sl NO.	Duration/ Activities	1	2	3	4	5	MC1	MC2	MC3
1	Rehabilitation & Resettlement of Project Affected Families/ Persons								
2	Anticipatory Afforestation/ Plantation								
3	Compensatory Afforestation								
4	Dump Reclamation								
A	External Dump	Already done. (Only internal dumping in undergoing)							
	a. Filling(Dumping)								
	b. Reclamation (Technical)								
	c. Plantation								
B	Internal Dump								
	a. Filling								
	b. Re-handling into internal dump								
	c. Reclamation (Technical)								
	d. Plantation								
5	Environmental monitoring / health monitoring								
6	Operation/ maintenance of oil, grease trap, DETP								
7	Water sprinkling on haul roads, CHP								
8	CSR Activities in villages								
9	Mine closure activity								

Fig 1.2: ACTION PROGRAMME FOR EMP IMPLEMENTATION (DIPKA OC)

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