



PUBLIC CONSULTATION DOCUMENT & SUMMARY OF EIA/EMP OF

GEVRA OC EXPANSION PROJECT

(Gevra Area, SECL)

**Villages: Gevra, Mangaon, Ghatmuda, Dhurena, Dipka, Junadih, Bareli, Binjhara,
Beltikiri, Jhingatpur, Pondi, Kustumunda, Amgaon, Ralia, Bahanpat, Bhatora,
Bhilai-Bazar, Naraibodh, Khodari, Churail, Salora, Pandharipani & Barbhata**

Tehsil: Katghora; District: Korba; State: Chhattisgarh

**Capacity: Expansion from 52.5 to 70 MTPA
Area: Increase from 4184.486 ha to 4781.798 ha**

**(Based on ToR granted vide J-11015/85/2010-IA II (M) dt
07.03.22 and Amendment dated 09.01.23)**

**Project Proponent:
South Eastern Coalfields Limited
Seepat Road, Bilaspur, Chhattisgarh -495006
(A Mini Ratna Company)**

January- 2023

**Prepared by:
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 22.08.24

**Lab Services Provided by-M/s Go Green Mechanisms Pvt. Ltd., Ahmedabad (NABL & MoEFCC Accredited)
(For Air/Water/Noise and Soil), Baseline Period- March- May, 2022**

EXECUTIVE SUMMARY OF DRAFT EIA/EMP

GEVRA OPENCAST EXPANSION PROJECT (52.5 TO 70 MTPA)

1.0 PURPOSE OF THE REPORT

To obtain Environmental clearance (EC) for Gevra OC Expansion project from 52.5 to 70 MTPA and increase in area from 4184.486 ha to 4781.798 as required under EIA Notification, 2006 based on the TOR issued to the project vide file no. J-11015/85/2010-IA II (M) dt 07.03.22 and amendment dated 09.01.23.

1.1 Project Description

Gevra Opencast Coal Mine is a running mine with a capacity of 52.5 MTPA.

Table 1.1: Details of the project

S. No	Particulars	Details
1	Name of Project	Gevra Opencast Expansion Project
2	Name of the proponent	South Eastern Coalfields Limited (SECL)
3	Legal Status of company	Subsidiary of Coal India Limited, A Government of India Undertaking, A Mini Ratna Company
4	Mailing address	Office of the General Manager South Eastern Coalfields Limited, Gevra Area PO: Gevra Project, Korba district, Chhattisgarh, Pin-495452
5	E-mail	gmgvr.secl@coalindia.in
6	Telephone	07815-275430; 07815-275030
7	Fax No	07815-275434
Brief Description of the nature and size of the Project		
1	Nature	Opencast Coal Mining
2	Size	Existing: 52.5 MTPA in area 4184.486 ha Proposed : Expansion from 52.5 to 70 MTPA and increase in area from 4184.486 to 4781.798 ha
3	Category of Project	A
4	Type of Proposal	Expansion under EIA Notification,2006

Table 1.2 Location details of the project

S. No	Particulars	Details
1	Village	Gevra, Mangaon, Ghatmuda, Dhurena, Dipka, Junadih, Bareli, Binjhara, Beltikiri, Jhingatpur, Pondi, Kusmunda, Amgaon, Ralia, Bahanpat, Bhatora, Bhilai-Bazar, Naraibodh, Khodari, Churail, Salora, Pandharipani & Barbhata
2	Tehsil	Katghora
3	District	Korba
4	State	Chhattisgarh
5	Latitudes	N 22°18'00" to N 22°21'42"
6	Longitudes	E 82°32'00" to E 82°39'30"
7	Topo-sheet No.	64 J/11

1.2 Baseline scenario

a.	Period of Base Line Data Collection						
	From (DD/MM/YYYY)						: 01/03/2022
	To (DD/MM/YYYY)						: 30/05/2022
b.	Season (Summer / Pre-monsoon / Post-monsoon / Winter)						: Summer
c.	No. of Ambient Air Quality (AAQ) Monitoring Locations						: 12
d.	Details of AAQ Monitoring						
	Criteria Pollutants	Unit	Maximum Value	Minimum Value	98 Percentile Value	Prescribed Standard	
	PM ₁₀	µg/m ³	123.1	42.0	123.1	300	
	PM _{2.5}	µg/m ³	69.8	21.8	69.8	NA	
	SO ₂	µg/m ³	31.1	10.0	31.1	120	
	NO _x	µg/m ³	44.4	18.4	44.4	120	
e.	No. of Ground Water Monitoring Locations						: 08
f.	Details of Ground Water Monitoring						
	Criteria Pollutants	Unit	Maximum Value	Minimum Value	98 Percentile Value	Prescribed Standard	
	pH	---	7.97	7.18	7.97	6.5-8.5	
	TSS	mg/l	<5	<5	<5	---	
	TDS	mg/l	352	216	352	500-2000	
	Total Hardness	mg/l	198	136	198	200-600	
	Chlorides	mg/l	62.98	31.99	62.98	250-1000	
	Fluoride	mg/l	0.97	0.08	0.97	1-1.5	
g.	No. of Surface Water Monitoring Locations						: 10
h.	Details of Surface Water Monitoring						
	Criteria Pollutants	Unit	Maximum Value	Minimum Value	98 Percentile Value	Prescribed Standard	
	pH	-	8.3	7.1	8.3	6.5 to 8.5	
	DO	mg/l	8.5	5.8	8.5	4(minimum)	
	BOD	mg/l	2.6	<2	2.6	3	
	COD	mg/l	10	<5	10	-	
i.	No. of Ambient Noise Monitoring Locations						: 12
j.	Details of Noise Monitoring						
	Parameter	Unit	Maximum Value	Minimum Value	98 Percentile Value	Prescribed Standard	
	L _{eq} (Day)	dB(A)	71.5	45.5	71.5	75	
	L _{eq} (Night)	dB(A)	57.3	33.6	57.3	70	
k.	No. of Soil Monitoring Locations						: 03

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Parameter	Unit	Maximum Value	Minimum Value	98 Percentile Value
pH	-	6.9	5.83	6.9
Nitrogen	kg/ha	388.78	111.59	388.78
Phosphorus	kg/ha	12.52	2.87	12.52
Potassium	kg/ha	268.35	122.68	268.35
Electric Conductivity	uS/cm	531.70	256.70	531.70
l Ground Water Table				
i Range of Water Table Pre-Monsoon Season (Meters Below Ground Level (m bgl)):				
From				: 5.76
To				: 14.6
ii Range of Water Table Post-Monsoon Season (Meters Below Ground Level (m bgl)):				
From				: 2.3
To				: 11.98

1.3 Anticipated environmental impacts

Sl. No.	Criteria Pollutants	Unit	Baseline Concentration (98 percentile value)	Minimum Value	Incremental concentration	Total GLC	Prescribed 24hr Standard
1	PM ₁₀	µg/m ³	80.2	59.3	18.54	98.74	100
2	PM _{2.5}	µg/m ³	44.3	32.6	5.32	49.62	60
3	SO ₂	µg/m ³	25.5	18.4	0.01	25.51	80
4	NO ₂	µg/m ³	36.7	25.4	10.06	46.76	80

Note: Above values are for highest incremental value obtained through modelling in buffer zone in downwind direction.

Anticipated Radius of influence on the groundwater regime of Gevra OC study area, Gevra Area, SECL.

Project	Projected drawdown of intersected aquifer (m)		Radius of influence (m)	
	Up-dip	Down-dip	Up-dip	Down-dip
Gevra OC	77.45	208.24	474.28	1275.20

1.4 Mitigation measures

EXISTING POLLUTION CONTROL MEASURES

A. Air Pollution, Control & Conservation Measures:

1. Long range fogging machine with horizontal throw of 40 m is in operation.
2. Wind Breaker/barrier system installed at the railway siding.
3. 2 no. mechanized sweeping machine is in operation.
4. Vertical Greenery System has been developed in the mine.
5. Fixed Sprinklers (400 no., 12 km) are in operation.
6. Sufficient no. of mobile water sprinklers of 70 KL (15 Nos) and 9 KL (22 Nos, Contractual) are used for dust Suppression in mine haul roads and in coal tipper roads on regular basis.
7. At all along conveyor, Transfer Points, CHP, Silo's and at 30,000 T Ground Bunker water sprinkling arrangement is working effectively to suppress dust at source. At few crusher! Feeder breakers and at 5000 Te capacity Ground Bunker mist spray water sprinklers are operating for dust control.
8. Trucks are optimally loaded to prevent spillage on haul roads. Coal loaded trucks are covered before leaving the mine premises.
9. Whenever the coal dust / slurry accumulates on Haul roads and other roads of Mine premises, the same is cleaned by the use of Graders & Loaders.
10. Dust extractors are working effectively in Drills to reduce dust emission.
11. Extensive Plantation done on overburden dumps, which act as dust & noise barrier between mine area and residential area.
12. Thick green belts developed around residential areas. Also plantation done along colony roads and around other mine infrastructures.
13. Employees are provided with LPG connections, restricting burning of coal for domestic use.
14. All approach roads to mine and all other roads which are in regular use are black topped. Internal roads & other permanent haul roads in side mine are WBM roads.
15. Coal extraction from Surface Miners reduced the requirement of drilling & blasting and further crushing at In Pit & Surface crushers

B. Water Pollution, Control & Conservation Measures:

1. Oil and Grease trap is in operation for treating effluent water from HEMM Washing. After treatment, water is reused for HEMM washing. This Oil & Grease Trap is a zero discharge plant.
2. Settling ponds are provided for treating the mine water discharge as well as OB Dump run-off. Catch drains (at a length of 11.5 KM) with Check dams are provided for Channeling and Settling of OB dump and CHP runoff.
3. Domestic Effluent Treatment Plant (DETP) is constructed for treating Domestic Effluent of the residential colonies, properly constructed storm water drains have been maintained in the colony.

C. Noise Pollution Control & Conservation Measures:

1. Generally, the blasting operations are carried out in between 12.00 noon to 4.00 PM.
2. Proper maintenance of HEMM to reduce the avoidable vibrations and noise.
3. Employees who are exposed to higher level of noise are provided with Ear Plugs.
4. Extensive Plantation done on overburden dumps, which act as noise barrier between mine area and residential area.

5. Thick green belts developed around residential areas. Also plantation done along Colony roads and around other mine infrastructures. These green belts also act as noise barriers.
6. At crushers/feeder breakers synthetic liners are fitted in few hoppers to reduce noise generation.
7. HEMMs are provided with noise proof cabins for operators.
8. Shock tube initiation system of delay blasting is adopted for Coal & OB Blasting to reduce blast related noise & vibrations.
9. Introduction of Surface Miners reduced the requirement of drilling & blasting and further crushing at In Pit & Surface crushers

D. Hazardous Wastes Management:

1. Oil and grease filters are stored in a drum placed on cemented concrete floor to prevent contamination of soil & ground water.
2. The waste oil is stored in a container in the workshop for proper disposal.
3. Used oil/burnt oil are stored in specified drums at work sites on concrete floors.
4. Oil & grease generated at workshop after treatment by oil & grease trap is safely stored and disposed. Good housekeeping of workshop is followed.

ADVANCE ACTION FOR POLLUTION CONTROL IN LINE WITH PROPOSED EXPANSION (52.5 to 70 MTPA)

SL. NO.	MITIGATION MEASURE	STATUS AND TIMELINE
1	Fixed water sprinklers coal transportation road	LOA had issued vide no.GM(C)/ SECL/ BSP/ WO/ GVR/ 2021/ 112 Dt: 04.05.2021 for an amount of Rs. 4.04 Cr. covering 12 KM length (400 nos. sprinklers with 25m throw). Work completed in Oct 2022.
2	Fixed water sprinklers at Hardi Bazar	Water spraying are being done through water tankers.
3	Tyre Washing System	LOA was issued on 02.09.2021 for an amount of Rs. 47.12 Lakhs. Structural work completed. Water supply work under progress.
4	3 nos. Fogging machine	4 no. of fog canon has been purchased and 2 nos. working on haul road and other dust generating sources, remaining 2 yet to be delivered. Delivery expected by March 2023.
5	1 nos. Sweeping machine	Completed. One addl. Machine delivered in Jan 2022
6	CAAQMS machine	Retendered on 03.12.2021 & cancelled in Nov 2022 due to cost discrepancy. Tender will be again floated in Jan 2023.

7	Establishment of 10 Ha. Sal Nursery	The work of establishment of 10 Ha. Sal Nursery will be undertaken through CGRVVN. The proposal is under approval for an amount of Rs. 56849047.45/- undertaken through CGRVVN.
8	10 additional Long range fogging machine	4 no. of fog canon has been purchased and 2 nos. working on haul road and other dust generating sources, remaining 2 yet to be delivered. Delivery expected by March 2023 Additional 7 no. will be put into operation on hiring basis. Work order will be issued by 1st week of Jan 2023.
9	Installation of additional 02 Silos with Rapid Load out System under "First Mile Connectivity" program	Work Order has been issued in Oct,2020. The physical work is likely to be completed by March, 2023. Budget-1576.88 cr

1.5 Environmental monitoring programme

Table 1.3: Environment Monitoring Summary

S. No.	Name of Monitoring Station	Parameters	Frequency	Standards followed
AIR /NOISE				
1	DETP/TA Office	Air-SPM,PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂	Air- twice in a week	-NAAQS, 2009 for stations located outside core zone. & Coal Mine Standards, 2000 for stations located in core zone -CPCB Protocol For Ambient Level Noise Monitoring -CTO Special Conditions
2	Shakti Nagar			
3	Urja Nagar	Heavy metals- Ni, As, Hg, Pb	Heavy metals- at six months	
4	Dy.GM Office			
5	Bhilai Bazar Village	Noise- Leq(in dB(A) – Day and Night time	Noise- fortnightly	
6	Dhurena Village			
7	Ganga Nagar Village			
8	Ralia Village			
EFFLUENT WATER				
1	Mine water at discharge point	pH , TSS, COD, TDS , BOD and Oil & Grease	Fortnightly	-Coal Mine Standards, 2000 and -General Standards for Discharge of Environmental Pollution (Part A: Effluent) as per Schedule VI, Environment (Protection) Rules
2	Workshop effluent before treatment at O&G trap			
3	Workshop effluent after treatment at O&G trap	All Parameters	Once a year	
4	Discharge of DETP,GEVRA Area			
5	OB dump run-off &mine discharge water after treatment			

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	at settling pond			-CTO Special Conditions
6	Upstream of Laxman Nalla			
7	Downstream of Laxman Nalla			
8	Mine sump Water			
DRINKING WATER				
1	4.5 MLD Water Filter Plant (Water After Treatment)	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	Well Water of Executive Colony -Near Shivmandir, Urja Colony			
3	Water of Workers Colony - Near Ajad Chowk from Tube Well			
4	Colony Tap Water DAV Public School, Gevra			
5	Well Water of Vijay Nagar Rehabilitation Village Of Maya Ram Kawan			
6	Drinking Water ,Ganga Nagar Hand Pump Govt. School			
7	Drinking Water, Nehru Nagar Hand Pump Govt. School			
GROUNDWATER				
1	Bore well water from Sarasinagar	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	Four times a year- Pre monsoon (April/ May), Monsoon(Aug), Post monsoon(Nov) & Winter(Jan)	-IS 10500:2012
2	Bore well water from Ralia			
3	Bore well water from Gobarghora			
4	Bore well water from Sarasinagar			
5	Bore well water from Vijay Nagar (Bhinjhra)			
6	Bore well water from Gevra Basti			

1.6 Additional Studies

1.6.1. PUBLIC CONSULTATION:

To ascertain the concern of local affected persons and others who have a plausible stake in environmental impacts due to operations of the project, public consultation for enhancing the production capacity from 52.5 MTPA to 70 MTPA and increase in area from 4184.486 ha to 4781.798 ha will be conducted as per EIA Notification, 2006 and subsequent amendments. The compliance of the issues raised during the Public hearing as well as responses received in writing from persons having a plausible stake in environmental aspects of the project will be provided with final EIA/EMP report along with time bound action plan and budgetary provision.

1.7 PROJECT BENEFITS

Project will considerably improve the socio-economic status of the adjoining areas. This will result in following benefits:

- Improvements in Physical Infrastructure
- Improvements in Social Infrastructure
- Increase in Employment Potential
- Contribution to the Exchequer
- Meet energy requirement
- Post-mining Enhancement of Green Cover

CSR activities are taken up as per Govt. Policy in consultation with District Administration. Details of year wise CSR activities carried out by Project Proponent is submitted along-with Six Monthly Compliance Report.

Table 1.5: Status of CSR Expenditure incurred for the last eight years is as follows:

Sector	In Rs in lakhs							
	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Education	2.49	15.36	274.99	2.88	1.44		NIL due to COVID	
Road infrastructure	123.79	5178.06	82.3					
Health	11	0		20.88		25		54.83
Sanitation	10	1011.79	267.91	200.69	40.05	35.95		
Culture and Sports	76	9.5	25	25	25	25		7.57
Social infrastructure	0	7.32	185.63	21.89				34.57
Drinking water			7.5	2.63				95.96
TOTAL	223.28	6222.03	843.33	273.97	66.49	85.95		192.93

Corporate Environment Responsibility (CER)

CER has already been provisioned in EIA/EMP of 49 MTPA & 52.5 MTPA i.e. 22.852 crores which will be implemented in Phase-II (expansion from 52.5 to 70 MTPA) in following activities:

SN	TABLE : DETAILS OF ACTIVITIES OF CER
1	Creation of Health infrastructure & assistance
2	Creation of Education facilities.
3	Infrastructure development
4	Environment sustainability
5	Hygiene and Health
6	Sustainable livelihood
7	Development of Sports facility & cultural activity
8	Skill Development

EMPLOYMENT POTENTIAL:

In the project: There has been direct employment opportunities for 4391 manpower of different categories.

1.8 Environment Management Plan

ADMINISTRATIVE STRUCTURE OF EMP IMPLEMENTATION

Organization Structure for Environment Management



**Table 1.6: Schedule for implementation of progressive mine closure activities
(Remaining Life of mine: 16 years (Starting from FY 2022-23))**

Activities in Reclamation Phase, each phase@5year	1 st				2 nd				3 rd				4 th				Mine Closure		
																	1	2	3
16 Years of Remaining Life																			

1.10 Explanation of how, adverse effects have been mitigated:

Action Plan with budget and timeline for implementing the additional measures for mitigating the adverse effects is summarized as below:

1	Table 1.8 ADDITIONAL CAPITAL EXPENDITURE (proposed in EMP of 52.5 to 70 MTPA)	Amount in Rs crores
a	Green belt between residential area and mine (2 km)	7.0
b	Tyre washing arrangement (additional 2 no.)	1.0
c	Sprinkler system with mist spray in CHP/Transfer points and enclosure system for coal unloading facility	1.0
d	Rainwater harvesting measures	0.5
e	Noise protection personal equipment like ear muff/plug and other measures like Acoustic Panel Technology Noise barrier, etc	1.0
f	Integrated Continuous effluent monitoring system with real time tracking and server linkage	2.02
g	Miscellaneous Environmental Control measures as per EC conditions/Issues raised during Public hearing	2.5
	TOTAL ADDITIONAL CAPITAL EXPENDITURE	15.02 crores

2	Table 1.9 ADDITIONAL REVENUE EXPENDITURE (proposed in EMP of 52.5 to 70 MTPA)	Amount in Rs crores
a	Fog Cannon (Additional -8 no.) @0.6 cr/unit	4.8
b	Mechanized Sweeping Machine (Additional 2 no.) @0.5 cr/unit	1.0
c	Green belt around the mine boundary (14 km) @8 lakh/ha	1.12
d	Grass bedding over slope with support measures per year (60 ha @10 lakh/ha)	6.0
e	Soil and Moisture Conservation of top soil @Rs 3500/ha	1.0
f	Grassland creation over reclaimed OB dumps per year (6 ha @8 lakh/ha)	0.48
g	Wildlife Conservation Plan implementation	10.09
h	Groundwater recharge and monitoring per year (lump sum)	1.0
i	Environment Monitoring per year	3.0
j	Third party audit of compliance of various clearances at suitable interval	1.0
k	Specialized studies like slope stability, fly ash related studies, topsoil management, Just transition, development of eco park, floating solar park, ecological restoration, OB to sand or similar from scientific institution of repute per year	5.0
	TOTAL ADDITIONAL REVENUE EXPENDITURE	34.49 crores