

# **ENVIRONMENTAL STATEMENT**

**(Form – V)**

*Under Rule – 14 of Environment Protection Rules, 1986  
and Amendment, 1993*

*of*

## **Bharatpur Opencast Mine**

**For the year 2022-23**



**MCL**

**Mahanadi Coalfields Ltd.**

**Post: Jagruti Vihar, Burla,**

**Dist: Sambalpur, Orissa-768020**

**FORM-V**  
**ENVIRONMENTAL STATEMENT**  
**Environmental statement for the financial year ending 31<sup>st</sup> Mar, 2023**

**Part – A**

- i) Name & Address of the owner/ occupier of the industry operation or process (Name of the Project Officer/ Sub-Area Manager & Office address to be given) : Shri Sunil Sharma  
Project Officer, BOCB  
P.O: N. S. Nagar, Bharatpur  
Dist: Angul- Odisha
- ii) Industry Category : Primary (Coal Mining Operation)
- iii) Production Capacity : 20.00 MTPA  
(Coal production during the year 2021-22) : 9.250 MT
- iv) Year of establishment : 1985
- v) Date of the last Environmental Statement submitted : 16<sup>th</sup> September, 2022

**Part – B**

**Water & Raw Material Consumption**

Note: Average Water Consumption (m<sup>3</sup>/ day) for the whole year is given. Raw material consumption is given per unit of coal produced.

**(I) Water Consumption (m<sup>3</sup>/ day):**

Ser No.	Industrial/ Mining	Consumption in m <sup>3</sup> / day
1.a	Haul Road Dust Suppression	1560
b	Dust Suppression at CHP	1210
c	Dust Suppression at Siding	1120
d	Fire Fighting	460
e	Workshop	56
f	Others	56
2.	Domestic	10
3.	<b>Total in m<sup>3</sup>/ day</b>	<b>4472</b>

Name of the Product	Water Consumption per unit of product (ℓ/ t)	
	During previous financial year (2021-22)	During current financial year (2022-23)
Coal	178.74	176.46

**(II) Raw Material Consumption (per tonne of coal):**

Name of Raw Material	Consumption of Raw Material (per tonne of Coal produced)	
	2021-22	2022-23
H.S. Diesel (ℓ/ t)	1.353	1.306
Petrol (ℓ/ t)	Nil	Nil
Lubricants (ℓ/ t)	0.029	0.073
Electricity (Units/ t)	4.553	3.488
Explosives (kg/ t)	0.624	0.626

**Part – C**  
**Pollution Discharged to Environment/ Unit of Output**

(Parameter as specified in the 'Consent' issued)

<b>Pollutants</b>	<b>Quantity of pollutants discharged (mass/ day)</b>	<b>Concentrations of pollutants in discharges (mass/ volume)</b>			<b>Percentage variation from prescribed standards with reasons</b>
<b>Water (annual average)</b>					
		<b>Mine Effluent</b>	<b>OGT Inlet</b>	<b>STP Outlet</b>	Parameters are within the prescribed standards
TSS (mg/l)	Not possible to quantify	0.00	37.00	31.29	
BOD mg/l)		-	-	<2	
COD (mg/l)		0.00	29.84	24.0	
pH		7.48	7.33	7.3	
O & G (mg/l)		<4	<4	<4	
<b>Air (Ambient air quality of one station – annual average) North-West point of Mine</b>					
SPM ( $\mu\text{g}/\text{m}^3$ )	Not possible to quantify	173.40			Parameters are within the prescribed standards
RPM ( $\mu\text{g}/\text{m}^3$ )		64.35			
SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )		13.83			
NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )		18.045			

**Part – D**  
**Hazardous Wastes**

As specified under Hazardous Wastes (Management & Handling) Rules, 1989.

<b>Hazardous Waste</b>	<b>Total Quantity (kg)</b>	
	<b>During the previous financial year (2021-22)</b>	<b>During the current financial year (2022-23)</b>
<b>(a) From process</b> i) Burnt Oil in workshop ii) Oil soaked filters	41370 Ltrs. 1950 Nos.	29820 Ltrs. -
<b>(b) From pollution control facilities</b> i) Oil/ Oil emulsion recovery from Oil & Grease Trap ii) Oily sludge iii) Chemical wastes (if any)	i) 50.50 Ltrs (oil) ii) 168.00 m <sup>3</sup> (oily sludge) iii) Nil	i) 88.00 Ltrs (oil) ii) 279 m <sup>3</sup> (oily sludge) iii) Nil

**Part – E**  
**Solid Wastes (other than hazardous)**

<b>Particulars</b>	<b>Total Quantity</b>	
	<b>During the previous financial year (2020-21)</b>	<b>During the current financial year (2021-22)</b>
<b>(a) From process (Top soil and Over burden)</b>	11.345 Mm <sup>3</sup>	12.64 Mm <sup>3</sup>
<b>(b) From pollution control facilities (STP &amp; Sed-Pond Sludge)</b>	507 m <sup>3</sup>	325 m <sup>3</sup>
<b>(c) 1- Quantity recycled or re-utilized (OB back-filled)</b>	11.345 Mm <sup>3</sup>	12.64 Mm <sup>3</sup>
<b>2- Sold</b>	Nil	Nil
<b>3- Disposed</b>	Nil	Nil

## Part – F

**Please specify the characteristics (in terms of concentration & quantum) of hazardous as well as solid waste and indicate the disposal practice adopted for both these categories of wastes.**

### (I) Hazardous Wastes:

Name of Hazardous Wastes	Quantity generated in the year 2022-23	Disposal Practices
Burnt Oil, etc. (ℓ) (from W/Shop)	29820 Lit	By auction to the authorized party
Oil & Grease (kg) (from ETP/ OGT)	88 Lit	By auction to the authorized party
Oily Sludge (tonne.) (from ETP/ OGT)	279.00 Te	Disposed off on OB dump.
Battery (nos.)	84	By auction to authorized party

**Note:** A detailed note on disposal practices of the above should be given separately.

### (II) Solid Wastes:

Solid Waste	Quantity generated in the year 2022-23	Disposal Practices
Top Soil (m <sup>3</sup> )	1.175 Mm <sup>3</sup>	Spreaded over back filled area for Plantation
OB (m <sup>3</sup> )	11.465 Mm <sup>3</sup>	Used to fill in Quarry voids
STP & Sed-Pond Sludge	325 m <sup>3</sup>	Used as Manure in Colony & Plantation

### **Land Reclamation & OB disposal – progressive till March, 2023:**

	Area (ha.)	OB Volume/ Nos. of Plants
1) External OB dump	49.50	9.22 Mm <sup>3</sup> 65454 Nos. of plants
2) Excavated land	555.23	221.562 Mm <sup>3</sup>
3) Land affected (1+2)	604.73	-
4) Backfilled (out of 2)	361.94	212.342 Mm <sup>3</sup>
5) Land physically reclaimed (out of 3)	212.56	-
6) Land biologically reclaimed ( out of 3)	141.16	3,94,343 Nos. of plants

## Part – G

### **Impact of pollution control measures on conservation of natural resources and consequently on cost of production.**

In order to carry out mining in an eco-friendly manner, a detailed Environmental Management Plan (EMP) was prepared by Regional Institute-VII of CMPDIL. The main pollution control measures suggested in EMP along with the measures implemented so far have been summarized in the Table-1.1 to 1.3.

**Table – 1.1**  
**Air Pollution Control Measures**

Sl. No.	EMP Provisions	Whether provided or not	Remarks
1	Watering and grading of all roads to minimize air-borne dust from vehicles.	Provided.	
2	Biological reclamation of land.	Provided.	
3	Green belt around mine & infrastructures.	Provided.	
4	Drills fitted with dust control devices.	Provided.	
5	Dust suppression/ dust extraction system to be provided in CHP.	Provided.	
6	Improved maintenance of plant & machinery.	Being maintained by scheduled plan.	
7	Mechanized coal transportation system.	Provided.	

**Table – 1.2**  
**Water Pollution Control Measures**

Sl. No.	EMP Provisions	Whether provided or not	Remarks
1	Mine water is to be collected in central sump on dip side of pit. This will act as sedimentation lagoon.	Provided	
2	Run-off around reclamation area will be controlled by providing catch drains and sedimentation lagoon combination.	Provided	
3	Surface run-off from external dump would be collected through a series of contour drains which would be connected to a water retention pond. The clear water from this pond will be discharged to natural water course.	Provided	
4	Domestic waste water will be treated in screens, oxidation pond/ aerated lagoon. Sanitary waste to be disposed off into septic tank & soak-pit.	Provided	
5	Workshop effluents will be treated in oil & grease trap & sedimentation tank.	Provided	
6	Zero discharge from mine shall be maintained.	Maintained.	
7	Piezometers shall be installed for measurement of underground water depth and its quality.	Installed	MTP 09: Inside the premises of Joragadia Panchayat High School & MTP 10: Inside the premises of Danara High School.

**Table – 1.3**  
**Land Reclamation**

Sl. No.	EMP Provisions	Whether provided or not	Remarks
1	<b>Top soil Management:</b> Proper stripping, Storage, and Relocation of top soil.	Provided	
2	<b>Physical Reclamation of OB Dump:</b> Proper reshaping and regarding of top surface, Providing drainage arrangements and top soil spreading for external and internal dumps.	Provided	
3	<b>Biological Reclamation:</b> Plantation of suitable species of herbs, shrubs & indigenous trees over technically reclaimed dumps.	Provided	

**IMPACT OF POLLUTION CONTROL MEASURES ON COST OF PRODUCTION**

Cost of environmental management during the year **2022-23** was Rs. 9.016 per tonne of Coal (approx).

**Part – H**

Additional measures/ investment proposal for environmental protection including abatement of pollution, prevention of pollution.

Head	Amount Rs. (approx)
Expenditure on ETP & STP	20.00 Lakhs.
Environmental Monitoring Cost	120.00 Lakhs.
Consent to operate fee	80.00 Lakhs.
Plantation on OB dump	50.00 Lakhs
Dust Suppression measures	600.00 Lakhs.
<b>Total:</b>	<b>870.00 Lakhs</b>

**Part – I**

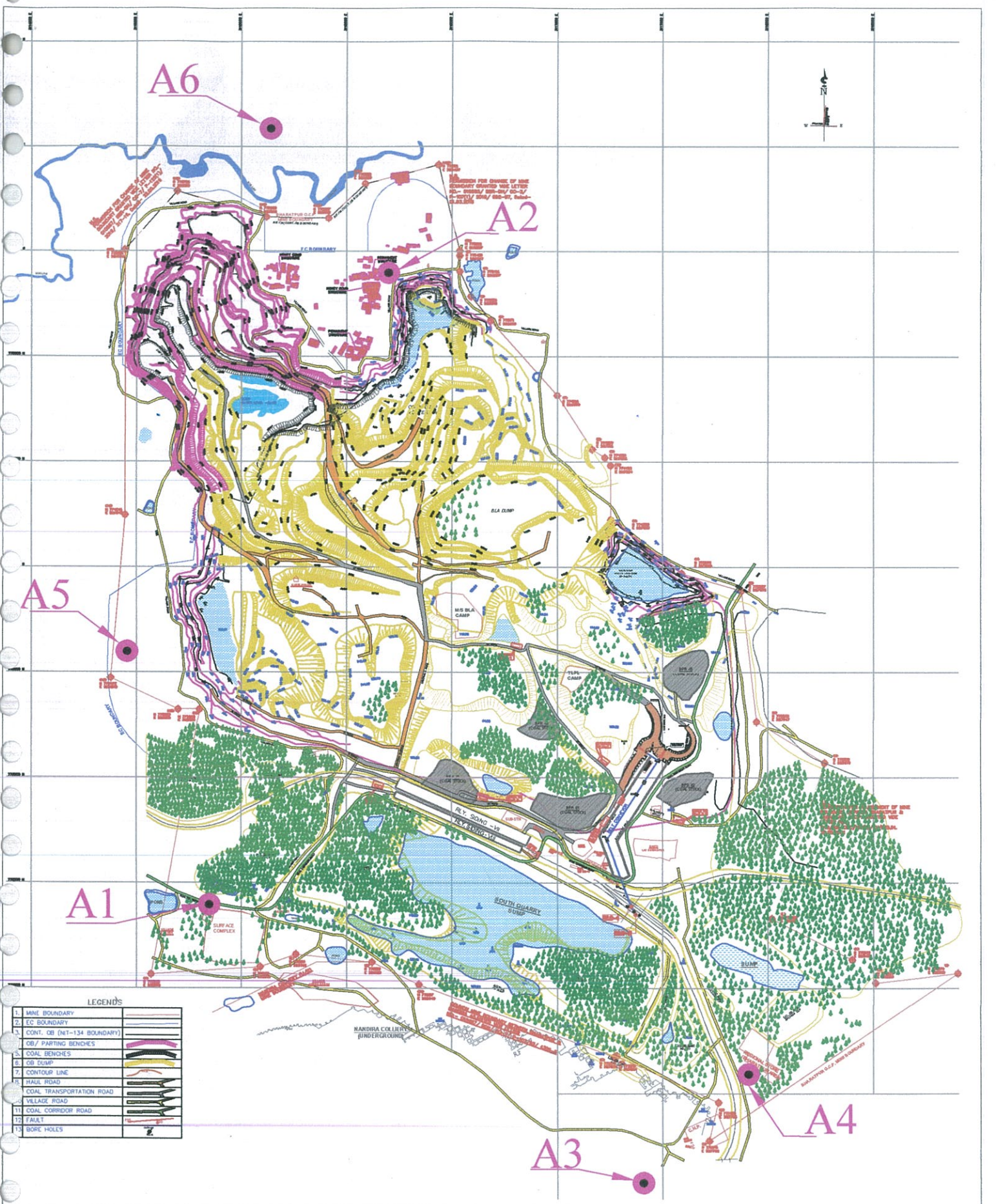
Any other particulars in respect of environmental protection and abatement of pollution.

**Note: Please attach a plan showing the relevant features like Present Working/ Quarry, External Dump, Back-filling, Plantation, Sedimentation Pond/ MDTP, Oil & Grease Trap/ ETP, Workshop, CHP, STP, etc. and Environmental Monitoring Stations.**

SCW  
30/05/22

**Signature of the Project Officer.**






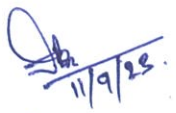
**LEGENDS**

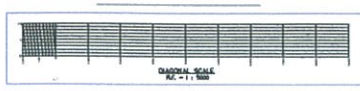
1. MINE BOUNDARY	[Symbol]
2. EC BOUNDARY	[Symbol]
3. CONT. OB (NT-134 BOUNDARY)	[Symbol]
4. JOB / PARTING BENCHES	[Symbol]
5. COAL BENCHES	[Symbol]
6. OB DUMP	[Symbol]
7. CONTOUR LINE	[Symbol]
8. HAUL ROAD	[Symbol]
9. COAL TRANSPORTATION ROAD	[Symbol]
10. VILLAGE ROAD	[Symbol]
11. COAL CORRIDOR ROAD	[Symbol]
12. FAULT	[Symbol]
13. BORE HOLES	[Symbol]

**AIR MONITORING STATIONS**

A1	NEAR ETP/ WORKSHOP
A2	N-W POINT OF MINES
A3	NEAR MGR RLS
A4	NEAR REGIONAL STORE
A5	NEAR NATEDI VILLAGE-NAAQs
A6	NEAR JORAGADIA-NAAQs

  
 11/09/2023  
 (Surveyor)

  
 11/9/23  
 (P.E.O)



**MAHANADI COALFIELDS LIMITED**  
 BHARATPUR OPENCAST PROJECT  
 BHARATPUR AREA  
 (Certified that the Plan is correct)

MINE WORKING PLAN

SCALE = NTS  
 DATE = 11/09/2023  
 PROJECT FILE NO. BHP/OP/2013/001/001