

ENVIRONMENTAL STATEMENT

(Form – V)

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

of

Lingaraj Opencast Mine

For the year 2022-23



Mahanadi Coalfields Ltd.

Post: Jagruti Vihar, Burla,

Dist: Sambalpur, Orissa-768020

FORM-V

ENVIRONMENTAL STATEMENT

Environmental statement for the financial year ending 31st March, 2023

Part – A

- i) Name & Address of the owner/ occupier : Dusmanta Kumar Pradhan
of the industry operation or process : Project Officer, Lingaraj OCP
(Name of the Project Officer/ Sub-Area : Office of the Project Officer
Manager & Office address to be given) P.O.: Deulbera Colliery, Talcher
Dist.:Angul, Odisha-759102
- ii) Industry Category : Primary (Coal Mining Operation)
- iii) Production Capacity (Coal production : 20 MTY (16.511 MT)
during the year 2022-23)
- iv) Year of establishment : 1991
- v) Date of the last Environmental Statement submitted : 19.09.2022

Part – B

Water & Raw Material Consumption

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

(I) Water Consumption (Cu-m/ day):

Sl. No.	Industrial/ Mining	Consumption in Cu-m/ day
1. a.	Haul Road Dust Suppression	3784
b.	Dust Suppression at CHP, Silo & Conveyor belt	2431
c.	Dust Suppression at Siding	1874
d.	Fire Fighting	325
e.	Workshop	70
f.	Others	181
2.	Domestic	---
3.	Total in kl/ day	8665

Name of the Product	Water Consumption per unit of product (ℓ/ t)	
	2021-22	2022-23
Coal	76.30	191.56

(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)	1.94 (Dept. + Cont.)	1.74 (Dept. + Cont.)
Petrol (ℓ/ t)	0.001 (Dept. + Cont.)	0.001 (Dept. + Cont.)
Lubricants (ℓ/ t)	0.03 (Dept. + Cont.)	0.03 (Dept. + Cont.)
Electricity (Units/ t)	2.04	2.90
Explosives (kg/ t)	0.42	0.33

Part – C

Pollution Discharged to Environment/ Unit of Output

(Parameter as specified in the 'Consent' issued)

Pollutants	Quantity of pollutants discharged (mass/ day)	Concentrations of pollutants in discharges (mass/ volume)			Percentage variation from prescribed standards with reasons
		Mine Effluent	OGT Outlet	STP Outlet	
Water (annual average)					
	Nil				Within the prescribed standards
TSS (mg/ℓ)		40	43	---	
BOD mg/ℓ)		---	---	---	
COD (mg/ℓ)		36	34	---	
pH		7.51	7.63	---	
O & G (mg/ℓ)		< 4	< 4	---	
Air (Ambient air quality of one station-annual average)– Near Lingaraj to Dera Road					
SPM ($\mu\text{g}/\text{m}^3$)	Not possible to quantify	178			Within the prescribed standards
PM ₁₀ ($\mu\text{g}/\text{m}^3$)		93			
PM _{2.5} ($\mu\text{g}/\text{m}^3$)		37			
SO ₂ ($\mu\text{g}/\text{m}^3$)		10			
NO _x ($\mu\text{g}/\text{m}^3$)		17			

Part – D
Hazardous Wastes

As specified under Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016

Hazardous Waste	Total Quantity (kg)	
	During the financial year 2021-22	During the current financial year 2022-23
(a) From process :		
i. Burnt Oil in Workshops	26480 kg	55692 kg
ii. Oil soaked filters	200 kg	700 kg
(b) From pollution control facilities:		
i. Oil / Oil emulsion recovery from Oil & Grease Trap	9.6 kg (Oil)	18 kg (Oil)
ii. Oily sludge	2900 kg	3100 kg
iii. Chemical Waste(if any)	---	---

Part – E
Solid Wastes (other than hazardous)

Particulars	Total Quantity	
	During the financial year 2021-22	During the current financial year 2022-23
(a) From process (Top soil and Over burden)	14.501 Mm ³	14.549 Mm ³
(b) From pollution control facilities (STP & Sed-Pond Sludge)	Nil	Nil
(c) 1- Quantity recycled or re-utilized (OB back-filled)	14.501 Mm ³	14.549 Mm ³
2- Sold	---	---
3- Disposed	---	---

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)	55692 kg	By auction to authorized parties.
Oil soaked filters(kg) (from W/Shop)	700 kg	Stored in impervious lined pit.
Oil & Grease (kg) (from ETP/ OGT)	18 kg (Oil)	By auction to authorized parties.
Oily Sludge (kg) (from ETP/ OGT)	3100 kg	Stored in impervious lined pit.
Oil emulsion	---	---
Chemical Waste if any (kg)	---	---
Battery (nos.)	228 nos.	By auction to authorized parties.

(II) Solid Wastes:

Solid Waste	Quantity generated in the year 2022-23	Disposal Practices
Top Soil (Mm ³)	0.487 Mm ³	Spread over the backfilled area for plantation.
OB (Mm ³)	14.062 Mm ³	Used to fill quarry voids.
STP & Sed-Pond Sludge	---	---

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

	Area (Ha.)	OB Volume/ Nos. of Plants
1) External OB dump	108.88	47.98 Mm ³ /302525nos.
2) Excavated land	430.00	223.572 Mm ³
3) Land affected (1+2)	538.88	---
4) Backfilled (out of 2)	142.00	175.592 Mm ³ / 103102 nos.
5) Land physically reclaimed (out of 3)	*144.28	---
6) Land biologically reclaimed (out of 3)	*144.28	405627nos.

*144.28 Ha. reclaimed area includes 37.23 Ha. of reclaimed backfilled area and 107.05 Ha. of reclaimed external OB dump area. The 144.28 Ha. area has been taken in to account for the calculation of physical reclamation and also for biological reclamation.

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	Water sprinkling 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.	Scheduled maintenance is carried out.	
7	Mechanized coal transportation system.	Provided	

Table – 1.2
Water Pollution Control Measures

Sl. No.	EMP Provisions/ Additional precautions	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 re-utilized.	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	Domestic waste water is disposed in septic tanks with soak pits / STP.
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 under-ground water depth and its quality	Provided	MTP 01: Near the premises of Mandapal Hospital. MTP 04: Inside Central Nursery (beside golf hut), Jagannath Area

Table – 1.3
Land Reclamation

Sl. No.	EMP Provisions	Whether provided or not	Remarks
	Top soil Management:		
1	Proper stripping, Storage, and Relocation of top soil.	Provided	
	Physical Reclamation of OB Dump:		
2	Proper reshaping and re-grading of top surface, Providing drainage arrangements and top soil spreading on external and internal dumps.	Provided	
	Biological Reclamation:		
3	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 2022-23 was Rs. 17.22 per tonne of Coal.

Part – H

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

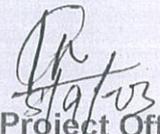
Head	Amount Rs. (approx)
Tree plantation	110 lakhs
Statutory Expenses	200 lakhs
Air Quality Management	1500 lakhs
Water quality management	15 lakhs
REM cost and CAAQMS maintenance cost	135 lakhs
Environment Awareness Programmes	2 lakh
Total	1962 lakhs

Part – I

Any other particulars for improving the quality of the environment

Various competitions among the children, employees and family members of employees were carried out on the occasion of World Environment Day 2022 to increase awareness about pollution control measures.

Note: A plan is attached herewith showing the relevant features like Present Working / Quarry, External Dump, Back-filling, Plantation, Sedimentation Pond / MDTP, Oil & Grease Trap / ETP, Workshop, CHP etc. and Environmental Monitoring Stations.


Signature of the Project Officer.
(with seal)

परियोजना अधिकारी.
लिंगराज ओ.सी.पी.
PROJECT OFFICER
LINGARAJ O.C.P.

