

FORM-V

ENVIRONMENTAL STATEMENT

Environment statement for the financial year ending 31st March 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 Prabhanjan Nayak, Project Officer, Basundhara (West) OCP, Mahalaxmi Area, PO: Basundhara, Dist.: Sundargarh (Odisha) Pin: 770076
- ii) Industry Category : Primary (Coal Mining Operation)
- iii) Production Capacity (Coal production during the year 2021-22) : 8.0 MT (949988.62 tons)
- iv) Year of establishment : 16.02.2004
- v) Date of the last Environmental Statement submitted. : 16.09.2022

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):

Serial No.	Industrial/ Mining	Consumption in Cu-m/ day
1. a	Haul Road Dust Suppression	2395.20
b	Dust Suppression at CHP	0
c	Dust Suppression at Siding	220.80
d	Fire Fighting	36.00
e	Workshop	10.00
f	Others	5.00
2.	Domestic	0.
	Total in kℓ/ day	2667.00

Name of the Product	Water Consumption per unit of product (ℓ/ t)	
	2021-2022	2022-23
Coal	505.89	973.47

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

Name of Raw Material	Consumption of Raw Material (per tonne of Coal produced)	
	2021-2022 (Dept.+ Contractual)	2022-2023 (Dept.+ Contractual)
H.S. Diesel (ℓ/ t)	1.545	2.071
Petrol (ℓ/ t)	0.00042	0.00012
Lubricants (ℓ/ t)	0.054	0.024
Electricity (Units/ t)	6.590	6.478
Explosives (kg/ t)	1.775	0.016

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

Monitoring Station: M1-Basundhara (E) OCP's Sump (Annual Average)

		Mine Effluent	OGT Outlet	STP Outlet	
TSS (mg/ℓ)	Not possible to quantify	33.50	-	-	Values within prescribed limits.
BOD mg/ℓ)		-	-	-	
COD (mg/ℓ)		26.58	-	-	
pH		6.88	-	-	
O & G (mg/ℓ)		<4.00	-	-	

Ambient air quality of one station (Annual Average): Southwest of Working Face Gopalpur Village, Near CMPDI Camp (Annual Average)

SPM ($\mu\text{g}/\text{m}^3$)	Not possible to quantify	167.71	Values within prescribed limits.
PM ₁₀ ($\mu\text{g}/\text{m}^3$)		86.04	
SO ₂ ($\mu\text{g}/\text{m}^3$)		13.39	
NO _x ($\mu\text{g}/\text{m}^3$)		18.04	
PM _{2.5} ($\mu\text{g}/\text{m}^3$)		35.17	

Part – D**Hazardous Wastes****As specified under Hazardous Wastes (Management & Handling) Rules, 1989.**

Hazardous Waste	Total Quantity (kg)	
	During the previous financial year (2021-22)	During the current financial year (2022-23)
(a) From process:		
i. Burnt Oil in Workshops	9430 Liters	8710 Liters

ii. Oil-soaked filters	330 Numbers	504 Numbers
(b) From pollution control facilities:		
i. Oil/ Oil emulsion recovery from Oil & Grease Trap	Nil	Nil
ii. Oily sludge	Not present	Not present
iii. Chemical Waste (if any)	Not present	Not present

Part – E
Solid Wastes (other than hazardous)

Particulars	Total Quantity	
	During the previous financial year (2021-22)	During the current financial year (2022-23)
(a) From process (Topsoil and Over burden)	0.098 MM3	0.045 MM3
(b) From pollution control facilities (STP & Sed-Pond Sludge)	-	
(c) 1- Quantity recycled or re-utilized (OB back-filled)	0.245 MM3(0.098 MM3 Backfilled and 0.147 MM3 re-handled)	0.717 MM3 (0.045 MM3 Backfilled +0.672 MM3 Backfilled from External OB Dump)
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)	8710 Liters	Transferred to regional store from where it is auctioned to authorized agency.
Oil-soaked filters(kg) (from W/Shop)	504 Numbers	Disposed in impervious lined pit
Oil & Grease (kg) (from ETP/ OGT)	Nil	N.A.
Oily Sludge (te.) (From ETP/ OGT)	Not present	N.A.
Oil emulsion	Not present	N.A.
Chemical Waste if any (kg)	Not present	N.A.

Battery (nos.)	18	Transferred to Regional Store
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Note: A detailed note on disposal practices of the above should be given separately.

(II) Solid Wastes:

Solid Waste	Quantity generated in the year 2022-2023	Disposal Practices
Topsoil (m ³)	Nil	Topsoil not scraped
OB (m ³)	0.717 MM ³ (0.045 MM ³ Backfilled +0.672 MM ³ Backfilled from External OB Dump)	Backfilled
STP & Sed-Pond Sludge	-	-

Land Reclamation & OB disposal – progressive till 31st March 2023:

	Area (ha.)	OB Volume/ Nos. of Plants
1) External OB dump	2.99	0.230 MM ³
2) Excavated land	214.30	37.224 MM ³
3) Land affected (1+2)	225.72	-
4) Backfilled (out of 2)	112.10	36.994 MM ³
5) Land physically reclaimed (out of 3)	35.50	Nil
6) Land biologically reclaimed (out of 3)	17.20	41480 nos.

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 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	Installation of 80 nos. of mist sprayers on a stretch of 2.2 Km, from Bankibahal check gate to Basundhara check gate, has been done. 03 no. of 28 KL mobile

			water tankers are used for dust suppression on roads to minimize airborne dust from vehicles. A robotic nozzle mounted water tanker has been deployed to abate dust at the siding and the coal transportation road. A fog cannon has also been deployed to suppress dust.
2	Biological reclamation of land.	Provided	2,34,385 nos. of trees planted on an area of 91.42 Ha till date by OFDC/CGRVVN, govt. agencies of Orissa & Chhattisgarh in and around mines, the density being 2500/ ha. The OB dump is being re-handled and will be used for technical reclamation of internal dump and topsoil is being spread over the surface for carrying out plantation.
3	Green belt around mine & infrastructures.	Provided	A total of 46000 plants have been planted over the safety zone area, i.e., 18.40 ha.
4	Drills fitted with dust control devices.	Provided	Water Injection system is provided for wet drilling as well as dust extractors are provided.
5	Dust suppression/ dust extraction system to be provided in CHP.	Provided	CHP is non-functional at present but mist blowers along with fixed sprinklers have been installed at CHP.
6	Improved maintenance of plant & machinery.	Provided	By systematic and scheduled maintenance.
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	Two numbers of sumps have been established in the abandoned quarry area and in Basundhara (W) OCP's mine void, which serves as artificial ground water recharge resource.
2	Run-off around reclamation area will be controlled by providing catch drains and	Provided	Drains constructed.

	sedimentation lagoon combination.		
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-utilised	Provided	Drains have been constructed.
4	Domestic wastewater will be treated in screens, oxidation pond/ aerated lagoon. Sanitary waste to be disposed off into septic tank & soak-pit.	-	Septic tank and soak pit combination provided.
5	Workshop effluents will be treated in oil & grease trap & sedimentation tank.	Not Provided	Yet to be constructed.
6	Zero discharge from mine shall be maintained.	Maintained	Measures are being taken.
7	Piezometers shall be installed for measurement of under-ground water depth and its quality	Provided	4 nos. of piezometers are installed at the following locations: 1. MIP 13: Village Tumulia, inside the campus of Manikeswari College. 2. MIP 15: Backside of Sardega Primary school 3. MIP 16: Village Kulhaparha (new basti) on the road from Sardega to Gopalpur 4. MIP 17: Village Gopalpur, CMPDI Exploration Camp.

Table – 1.3
Land Reclamation

Sl. No.	EMP Provisions	Whether provided or not	Remarks
1	Topsoil Management: Proper stripping, Storage, and Relocation of topsoil.	Provided	-
2	Physical Reclamation of OB Dump: Proper reshaping and regrading of top surface, providing drainage arrangements and topsoil spreading on external and internal dumps.	Under progress	External dump is active.
3	Biological Reclamation: Plantation of suitable species of	Provided	2,34,385 nos. of trees planted on an area of 91.42 Ha till date by

herbs, shrubs & indigenous trees over technically reclaimed dumps.	OFDC/CGRVVN, govt. agencies of Orissa & Chhattisgarh in and around mines, the density being 2500/ ha. The OB dump is being re-handled and will be used for technical reclamation of internal dump and topsoil is being spread over the surface for carrying out plantation.
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IMPACT OF POLLUTION CONTROL MEASURES ON COST OF PRODUCTION

Cost of Environmental Management during 2022-2023 was **Rs.34.82 per ton of coal.**

Part – H


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

Head	Amount Rs. (approx)
Repairing of CT road	2,00,000.00
ETP & OGT upgradation	2,00,000.00
Dust suppression	10,00,000.00
Annual CAAQMS charges	30,00,000.00
REM Expenses	1,60,00,000.00
Consent to Operate Fees	2,00,000.00
Total	2,10,00,000.00

Part – I

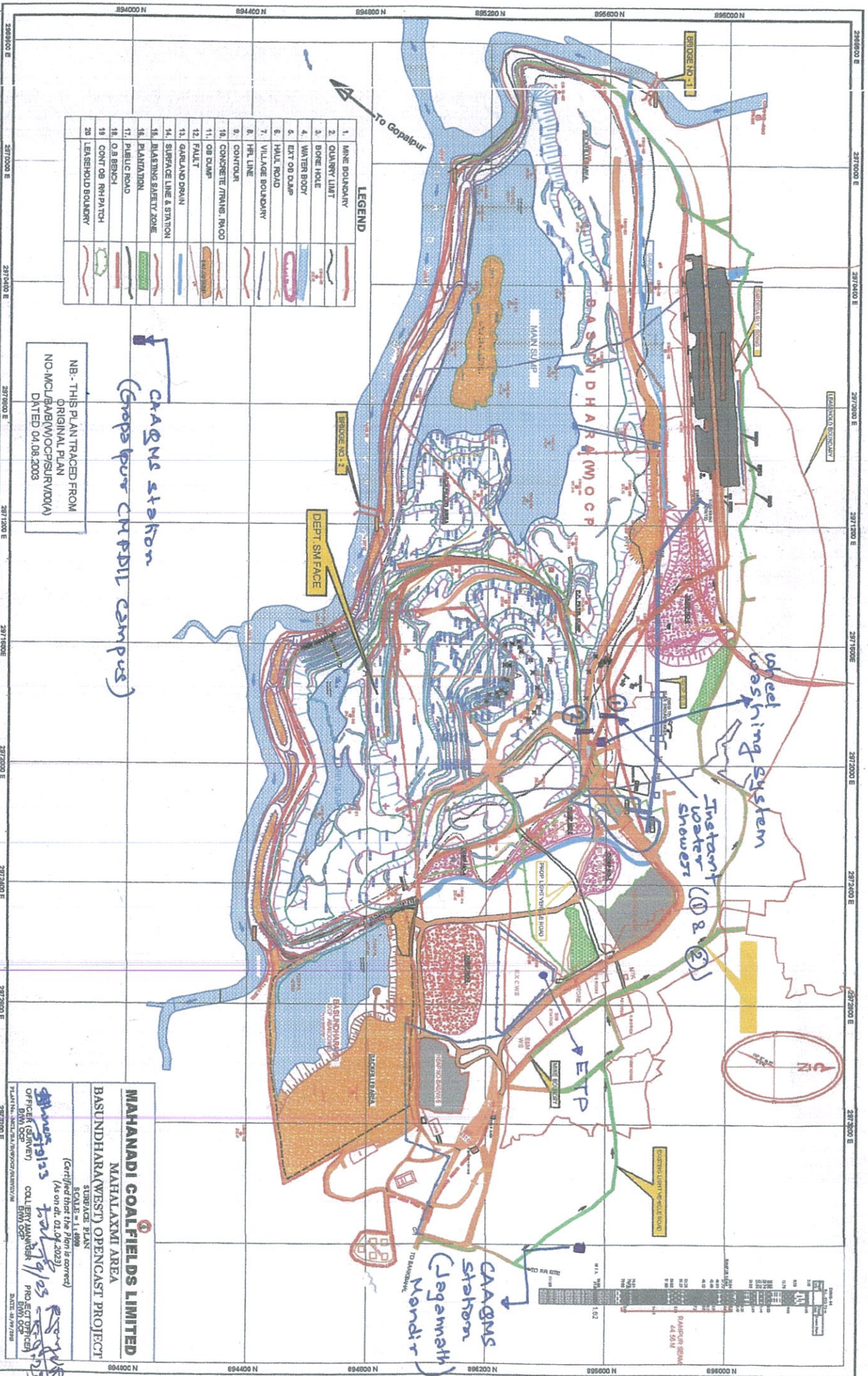
Any other particulars for improving the quality of the environment.

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: Attached.


6-9-23

Signature of the Project Officer.

(with seal)
Project Officer, Basundhara (W) OCP
परियोजना अधिकारी, बसुंधरा (प) ओसीपी
ପରିସ୍ରାଜନା ଅଧିକାରୀ, ବସୁଧରା (ପ) ପ୍ରକଳ୍ପ



NB - THIS PLAN TRACED FROM ORIGINAL PLAN NO-MCUD/BA/WM/OC/PSUR/00(A) DATED 04.08.2008

CHAAGNS station
(Gopalpur CRPDL campus)



Suljay Das.

MAHANADI COALFIELDS LIMITED
MAHALAXMI AREA
BASUNDHARA (WEST) OPENCAST PROJECT
 STORAGE PLAN
 SCALE = 1:1,000
 (Certified that the plan is correct)
 OFFICER (SIGNED) *[Signature]*
 (As on dt. 04.08.2008)
 COLLECTOR MANDAR
 PWD SECTION
 DATE: 04/08/2008