FORM-V
ENVIRONMENTAL STATEMENT
Environmental statement for the financial year ending 31st Mar, 2022

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 A.K.B. Singh Project Officer, BOCP P.O: N. S. Nagar, Bharatpur Dist: Angul- Odisha
ii)	Industry Category	: Primary (Coal Mining Operation)
iii)	Production Capacity (Coal production during the year 2021-22	: 20.00 MTPA : 9.250 MT
iv)	Year of establishment	: 1985
v)	Date of the last Environmental Statement submitted	: 23rd September, 2021

Part – B
Water & Raw Material Consumption

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

(I) Water Consumption (m^3/ day):

Ser No.	Industrial/ Mining	Consumption in m^3/ day
1.a	Haul Road Dust Suppression	1500
b	Dust Suppression at CHP	1260
c	Dust Suppression at Siding	1020
d	Fire Fighting	630
e	Workshop	50
f	Others	60
2.	Domestic	10
3.	**Total in m^3/ day**	4530

Name of the Product	Water Consumption per unit of product (ℓ/ t)	
	During previous financial year (2020-21)	During current financial year (2021-22)
Coal	243.85	178.74

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

Name of Raw Material	Consumption of Raw Materia l (per tonne of Coal produced)	
	2020-21	2021-22
H.S. Diesel (ℓ/ t)	0.782	1.353
Petrol (ℓ/ t)	Nil	Nil
Lubricants (ℓ/ t)	0.047	0.029
Electricity (Units/ t)	5.624	4.553
Explosives (kg/ t)	0.624	0.624

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
Water (annual average)					
	Not possible to quantify	**Mine Effluent**	**OGT Inlet**	**STP Outlet**	Parameters are within the prescribed standards
TSS (mg/ℓ)		0.00	45.5	39.3	
BOD mg/ℓ)		-	-	<2	
COD (mg/ℓ)		0.00	37.0	-	
pH		6.64	7.16	7.48	
O & G (mg/ℓ)		<4	<4	<4	
Air (Ambient air quality of one station – annual average) North-West point of Mine					
SPM ($\mu g/m^3$)	Not possible to quantify	235.45			Parameters are within the prescribed standards
RPM ($\mu g/m^3$)		97.64			
SO_2 ($\mu g/m^3$)		17.48			
NO_x ($\mu g/m^3$)		28.33			

Part – D
Hazardous Wastes

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

Hazardous Waste	Total Quantity (kg)	
	During the previous financial year (2020-21)	During the current financial year (2021-22)
(a) From process i) Burnt Oil in workshop ii) Oil soaked filters	44280 Litrs. 1950 Nos.	41370 Ltrs.
(b) From pollution control facilities i) Oil/ Oil emulsion recovery from Oil & Grease Trap ii) Oily sludge iii) Chemical wastes (if any)	64 Ltrs 398 Cum Nil	i) 50.50 Ltrs (oil) ii) 168.00 m^3 (oily sludge) Nil

Part – E
Solid Wastes (other than hazardous)

Particulars	Total Quantity	
	During the previous financial year (2020-21)	During the current financial year (2021-22)
(a) From process (Top soil and Over burden)	9.858 Mm^3	11.345 Mm^3
(b) From pollution control facilities (STP & Sed-Pond Sludge)	312.00 m^3	507 m^3
(c) 1- Quantity recycled or re-utilized (OB back-filled)	9.858 Mm^3	11.345 Mm^3
2- Sold	Nil	Nil
3- Disposed	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 2021-22	Disposal Practices
Burnt Oil, etc. (ℓ) (from W/Shop)	41370 Lit	By auction to the authorized party
Oil & Grease (kg) (from ETP/ OGT)	50.50 Lit	By auction to the authorized party
Oily Sludge (tonne.) (from ETP/ OGT)	168.00 m^3	Disposed off on OB dump.
Battery (nos.)	82	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 2021-22	Disposal Practices
Top Soil (m^3)	1.578 Mm^3	Spreaded over back filled area for Plantation
OB (m^3)	11.344 Mm^3	Used to fill in Quarry voids
STP & Sed-Pond Sludge	507 m^3	Used as Manure in Colony & Plantation

Land Reclamation & OB disposal – progressive till March, 2022:

	Area (ha.)	OB Volume/ Nos. of Plants
1) External OB dump	49.50	9. 22 Mm^3
2) Excavated land	536.04	210.354 Mm^3
3) Land affected (1+2)	585.54	-
4) Backfilled (out of 2)	342.18	201.134 Mm^3
5) Land physically reclaimed (out of 3)	212.56	-
6) Land biologically reclaimed (out of 3)	171.62#	352900 Nos. of plants

This includes 30.46 Ha of Ext. OB dump

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 Joragharia 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	**Top soil Management:** Proper stripping, Storage, and Relocation of top soil.	Provided	
2	**Physical Reclamation of OB Dump:** Proper reshaping and regarding of top surface, Providing drainage arrangements and top soil spreading for external and internal dumps.	Provided	
3	**Biological Reclamation:** 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 **2021-22** was Rs. 8.82 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	50.00 Lakhs.
Environmental Monitoring Cost	90.00 Lakhs.
Consent to operate fee	80.00 Lakhs.
Plantation on OB dump	30.00 Lakhs
Dust Suppression measures	600.00 Lakhs.
Total	**850.00 Lakhs**

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.

31/7/22

Signature of the Project Officer.

PROJECT OFFICER
BHARATPUR OCP


AIR & NOISE MONITORING STATION
PLANTATION
ETP
EFFLUENT MONITORING
JAGANNATH O.C.P.
MAHANADI COALFIELDS LIMITED
BHARATPUR OPENCAST PROJECT
BHARATPUR AREA
(Certified that the Plan is correct)
MINE WORKING PLAN
SCALE :- 1:5000