

EXECUTIVE – SUMMARY

- E.1 This Environmental Statement Report is prepared with a view to fulfill the statutory obligations laid down by Ministry Of Environment & Forest (MOEF), Government Of India vide their gazette notification no. G.S.R. 329 (E) dated 13th March 1992. The '**Environmental Audit**' has been made mandatory through this notification. The 'Environmental Audit' has subsequently renamed to '**Environmental Statement**' vide MOEF gazette notification no.G.S.R 386 (E) dated 22nd April 1993.
- E.2 Karma OCP is operating under the administrative control of Kuju Area of Central Coalfields Ltd.
- E.3 The coal is being produced by using opencast mining methods. A total 0.648 M tonne of coal was produced during year 2018-19. A total 1.08 Mm³ overburden has been removed to produce this quantity of coal.
- E.4 The water although not used directly during the coal extraction process, water is being consumed mainly for industrial purposes. Water is being consumed for associated industrial activities like for dust suppression, washing of HEMMs and for fire fighting purpose. The water consumption for the assessment year 2018-19 was 172 m³ / day. This includes 172 m³ / day for industrial use and zero for domestic use.
- E.5 The raw material i.e. High Speed Diesel and Lubricant are being used for automobiles mainly HEMM's and machines while Explosive is being used for overburden and coal removal purpose. The consumption of High Speed Diesel and Explosive for the assessment year 2018-19 were 2307.71 KL and 579.97 Ton respectively.
- E.6 The regular ambient air quality monitoring is being carried by the Institute of Environment CMPDI. Ltd as per the guidelines of Ministry of Environment and Forest. The result reveals that concentration of parameters i.e. SPM, SO₂, NO_x in ambient air, most of the time, are within the permissible limits. The quality of mine water at the disposal point is under the limits as prescribed. The noise level recorded is generally below the prescribed limits by Ministry of Environment & Forest. The noise generated in the project is of impulsive nature.
- E.7 Hazardous wastes are not being produced either from mining operations or from any pollution control facilities.
- E.8 Solid waste and topsoil removed during the process of coal extraction are being used for physical and biological reclamation purpose.
- E.9 At present following measures are being practised for environmental management in the project:
- (i) The water sprinkling is being done regularly on the haul roads and loading points.

- (ii) Tree plantation has been done in the project. A total of 6.25 Ha area is brought under plantation.
- (iii) Regular monitoring of environmental attributes (i.e. Air, Water and Noise) is being carried out in the project. The reports of the monitoring for the assessment year are attached herewith.
- (iv) The project submits consent application under Air (Prevention & Control of Pollution) Act, 1981 and Water (Prevention & Control of Pollution) Act, 1974.
- (v) The other proposals for additional investment for environment protection & pollution abatement in the project under consideration.

CHAPTER ONE

PROJECT DESCRIPTION

1.1 GENERAL

The project is under the administrative control of Kujua area of Central Coalfields Ltd. Karma OCP has produced 0.648 M tonnes of ROM coal during 2018-19. 1.08 Mm³ of overburden was removed for the targeted coal production. This project was granted environment clearance in year 2010 and has a licensed production capacity of 1.0 MTPA nominal and 1.2 MTPA peak.

1.2 LOCATION

Karma OCP lies between latitudes 23⁰ 38' 10" & 23⁰ 39' 10"N and longitude 85⁰ 31' 45" & 85⁰ 35' 32". It is included in Survey of India toposheet no 73E/6. It is situated in the Ramgarh distt. of Jharkhand state.

1.3 COMMUNICATION

Karma OCP is connected by 1.5 km long all weather-metaleed road from Kujua on the National highway no.33 between Ranchi and Hazaribagh. The Ranchi Road Railway Station on the Gomoh - Barkakana loop line of the Eastern Railway is the nearest railhead about 07 km from the colliery. The nearest airport is at Ranchi at a distance 75 km.

1.4 TOPOGRAPHY AND DRAINAGE

Ara forms a part of low land between Hazaribagh plateau in the north and Ranchi plateau in the south and represents undulating and uneven topography with intervening depressions occupied by paddy fields. The general slope of the ground south to north. The drainage of the area is controlled by Meramgara Nalla flowing west to north, a prominent tributary of Damodar River.

1.5 MINING SYSTEM

This block forms a separate elongated sub-basin in the western most part of Ramgarh Coalfield .It is separated from Ramgarh Main basin by a narrow strip of Archean Rocks. The area under refernce is Mahua – Tangri sector , which forms eastern most part of the Kaitha sub- basin , where Barakar Rocks are developed.

The strata generally show southerly dip of 25 to 27 with east-west strike in the western part of Mahua – Tangri sector Area, whereas in the eastern part of the area strata generally show south westerly dip of 22 to 25 with NW –SE strike.

Out of 11 correlated coal seams known to occur in this block only 5 Coal seams namely VI, VIIA, VII T & B, VII L and VIII A occurring in ascending order have Ref. Geological Plan.

Mineable Reserves

The total mineable reserves has been estimated as 18.18 MT and total volume of OB as 34.4 Mm³ corresponding to an average stripping ratio 1.87 cu.M/T.

Marketability

Major consumers of coal produced from this Coalfield are Power, Cement, Railway and Fertilizer.

Mining System

Horizontal system of Mining with Shovel Dumper combination has been proposed in P.R, considering the steep gradient of the seams. Both coal and OB are extracted by Horizontal slicers of 10 M height. The targeted output of 1 MT would be achieved in 4th year of quarry operation.

1.6 Quality

The coal produced at Karma Opencast is of superior grade non-coking coal. The grade of ROM is 'G-5'

1.7 Life of the Project

Life of the Project has been estimated as 19 years.

CHAPTER TWO**ENVIRONMENTAL STATEMENT FOR COAL MINING PROJECT****Environmental Statement for the assessment year ending 31st March 2017****PART - A****(I) NAME AND ADDRESS OF THE PROJECT:**

Name: Karma OCP
 Address: Project Officer,
 Place: P.O.Karma
 Distt: Ramgarh

(II) INDUSTRY CATEGORY: Primary**(III) PRODUCTION CAPACITY: 1 MT/Y (Targeted)****(IV) YEAR OF ESTABLISHMENT: 2009****(V) DATE OF THE LAST ENVIRONMENTAL REPORT SUBMITTED:**

- Last report submitted in September, 2018

PART - B**WATER AND RAW MATERIAL CONSUMPTION****(I) WATER CONSUMPTION (in cubic meter/Day):**

SL No.	Head	2017-2018	2018-2019
1	Dust Suppression	112/Day	112/Day
2	Workshop	40/Day	40/Day
3	Fire-fighting	10/Day	10/Day
4	Others (service building etc.)	10/Day	10/Day
5	Domestic	-	-
6	Arboriculture	-	-
	Total	172 KL/Day	172 KL/Day

Name of Product	Water consumption per unit of Product m3 /tonne of Coal	
	2017-18	2018-19
Coal	0.09	0.09

(II) Raw Material Consumption:

SI No	Name of raw material	Consumption of raw material	
		2017-18	2018-19
	No raw material is used for coal production.	Nil	Nil

However Explosives: 579.97 Ton and Diesel: 2307.71 KL has been used in year 2018-19.

PART - C
POLLUTION GENERATED

Pollutants	Quantity of Pollutants Generated	% of variations from prescribed standards with reasons
<u>Water</u>		
(a) Discharge from mine	24 M ³ / day	The quality of mine water at the discharge point vis-à-vis the prescribed standards are given in Annexure-1 . All parameters are under prescribed standards.
(b) Workshop Effluent	Nil	Quantity of effluent from the workshop is nil .
(c) Domestic Discharge	Nil	Not Applicable as there is no colony at Karma OCP.
<u>Air</u>		
The SPM, SO ₂ and NO _x are main pollutants generated from coal mining activities	It is difficult to quantify the air pollutants from coal mine. But concentration of air pollutants, are measurable.	The Ambient air quality monitoring results are placed as Annexure 1 . All parameters are under prescribed limits.
<u>Noise</u>		
Operation of HEMM generate noise	Recorded noise levels are placed as Annexure 1 .	The noise level in and around the project is under the prescribed limits.

PART - D
HAZARDOUS WASTES

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

Hazardous Wastes	Total Quantity	
	During the previous assessment year (2017-18)	During the current assessment year (2018-19)
From Mining Process	Burnt Oil	Burnt Oil
From Material handling System	NIL	NIL

Note: The entire process of Coal mining, handling and despatch do not give rise to production of any hazardous wastes.

PART - E
SOLID WASTES

Solid Waste	Total quantity of solid waste generated (M m ³)	
	2017-18	2018-19
(a) From mining process- O.B.	1.194	1.08
(b) From pollution control facilities	NIL	NIL
(c) Quantity recycled or reutilized	No topsoil was generated and overburden generated was kept at OB dumpsites.	

PART - F

CHARACTERISTICS OF HAZARDOUS AND SOLID WASTE AND THEIR DISPOSAL PRACTICE

The process of coal winning by open cast mining processes produced O.B and top soil as solid waste in the form of sand stone, hard stone, fine clay, and earth within lease hold area temporarily, as these materials later used for land reclamation physically and biologically. During the year 2018-19, 1.08 Mm³ O.B were generated.

The O.B mainly consists of the following:

1. Soil
2. Shale band (including carbonaceous shale)
3. Hard Sand stone

DISPOSAL PRACTICE

(i) TOP SOIL

Topsoil is a precious natural resource and it loses its natural qualities unless special care is taken during Stripping, storage and carpeting. Land gets degraded due to mining operations. This degraded land is to be reclaimed. Topsoil removed is used to provide a cover over the reclaimed area.

(ii) INTERNAL DUMPS

There is no provision of internal dumping in the project report due to high gradient of seams.

PART - G

IMPACT OF POLLUTION CONTROL MEASURES ON CONSERVATION OF NATURAL RESOURCES AND CONSEQUENTLY ON COST OF PRODUCTION

1.0 Air Pollution Control Measures:

Drilling:

Drilling operation generates fugitive dust. This is controlled by providing dust extraction & collection arrangement in the drills and also by using wet drilling. This is being the

part of coal winning process thus do not have any additional impact on cost of production.

Blasting:

Blasting generates fugitive dust. Blasting is being carried out in congenial atmosphere. This does not have any impact on conservation of natural resources. This is being the part of coal winning process thus do not have any additional impact on cost of production.

Dust Suppression & / or Extraction:

Dust suppression and / or extraction are being provided at different transfer points of CHP, coal stock, coal & OB transportation roads and on other service roads. The dust suppression is mainly carried out by water sprinkling. Water used for this purpose is mainly the mine water discharge.

The cost of dust suppression and / or extraction is included in the over all cost of production as the cost for environment management measures.

2.0 **Land Reclamation:**

Coal extraction process by open pit mining method requires removal of material overlying the coal. This material needs to be reclaimed as it will generate dust and to partly cover the void created by extraction of coal. Thus reclamation of O.B dumps is being done as pollution control measure. The reclamation of OB dumps also helps in improving / restoring the natural resources in and around the project.

Physical and biological reclamation cost is included in the over all cost of production as the cost for environment management measures.

3.0 **Water Pollution Control Measures:**

Domestic Effluents: Nil

Mine water:

Mine water is collected in the dip side of the mine in order to arrest the suspended solids. The part of this water is being used in the project for dust suppression, fire fighting etc. The cost of pumping, treatment and discharge of mine water is included in the over all cost of production as the cost for environment management measures.

Surface Run-off:

Runoff from quarry area, OB dump is being collected in garland drains at the toe of dumps. This is then allowed to be stored in mine sump. This cost is included in the over all cost of production as the cost for environment management measures.

Workshop Effluents:

Workshop effluent is being treated for removal of Oil & Grease and Suspended Solids. The cost of treatment of workshop effluent is included in the over all cost of production as the cost for environment management measures.

PART - H

**ADDITIONAL INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION
INCLUDING ABATEMENT OF POLLUTION**

1. The Project will continue to carry regular environmental monitoring for air, water and noise pollutants as per the guidelines of Ministry of Environment & Forest.
2. The Environmental Statement Report will be prepared for each assessment year as per the guidelines of Ministry of Environment & Forest.
3. The project will continue to take Air & Water consent from State Pollution Control Board for each year.
4. Water consumption for the project for each year is submitted to Jharkhand State Pollution Control Board in Water Cess Return Format.

The other proposal for additional investment for environmental protection and pollution abatement in the project is under consideration.

PART - I

**ANY OTHER PARTICULARS IN RESPECT OF ENVIRONMENTAL PROTECTION AND
ABATEMENT OF POLLUTION**

The suggestions made by different statutory agency e.g. Ministry of Environment & Forest, Central Pollution Control Board and State Pollution Control Board etc. are being implemented from time to time in the project for better environmental conditions in and around the project.

Project Officer/Agent
Karma OCP

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6/10/19
Project Office, Agent

Karma OCP