



Central Coalfields Limited
Office of the Project Officer (Sirka Group)
P.O: Sirka, Dist: Ramgarh

Ref No: P.O/SG/Env Stmt/ 2017/

1924

Date: 22.09.2017

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To

The Member Secretary
Jharkhand State Pollution Control Board (JSPCB)
H.E.C, Dhurwa
Ranchi-834004

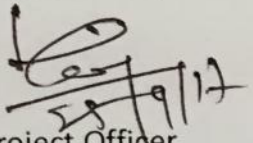
Sub: Submission of Environmental Statement of Sirka Colliery for the period from April-2016 to March-2017.

Dear Sir,

Enclosed please find herewith the Environmental Statement for the period from **April-2016 to March-2017** in respect of Air, Water & Noise quality report as analyzed by CMPDIL, Ranchi in respect of Sirka Colliery duly signed by the project proponent.

Thanking You.

Yours faithfully


Project Officer
Sirka Group (SG)

Copy to :

1. Regional Officer, JSPCB, Matwari Road, P.T.C Chowk, Hazaribagh
2. Regional Office MoEF(ECZ), Bungalow No. A-2, Shyamali Colony, Ranchi
3. The Dy.GM/HOD (Env), CCL HQ, Ranchi, for kind information
4. The G.M(A)/Sirka, for kind information
5. Asst. Manager (Env.) (A)

ENVIRONMENTAL STATEMENT

OF

SIRKA COLLIERY

FOR

2016-17



CENTRAL COALFIELDS LIMITED

**ENVIRONMENT DIVISION
CCL, RANCHI**

EXECUTIVE SUMMARY

- E.1 This Environmental Statement Report has been prepared with a view to fulfil the statutory obligations laid down by Ministry of Environment, Forest & Climate Change (MoEFCC), Govt. 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 been subsequently renamed to 'Environmental Statement' vide MoEFCC gazette notification no. G.S.R. 386 (E) dated 22nd April, 1993.
- E.2 Sirka Colliery is operating in Argada Area of Central Coalfields Ltd. The planned normative capacity of the Sirka u/g Project is to produce 0.040 Million Tonnes per year of raw coal and the peak capacity is 0.046 Million Tonnes per year. Also the normative capacity of Sirka OCP is 1 MTPA and the peak capacity is 1.150 MTPA. The Ministry of Environment, Forest & Climate Change (MoEFCC), Govt. of India vide no. J11015/462/2008-IA.II (M) dated 25th September, 2014 has granted Environmental Clearance to the Sirka Group.
- E.3 The coal in Sirka u/g is being produced by Bord and Pillar mining method through underground mines. Total 10,296 tonnes of coal was produced during year 2016-17. However, the coal in Sirka OCP is being produced using opencast mining methods. A total of 59,447 metric tonnes of coal was produced during the year 2016-17.
- E.4 The water although not used directly during the coal winning process, water is being consumed mainly for domestic purpose. The combined water consumption for Sirka group project (inclusive of Sirka and Argada colliery) the assessment year 2016-17 was 2180 m³/day. Out of this 250 m³/day was used for industrial purpose and 1930 m³/day was used for domestic purpose.
- E.5 The raw material i.e. High Speed Diesel (HSD) and Lubricant are being used for automobiles (mainly HEMMs) and machines while Explosive is being used for overburden and coal removal purpose. The consumption of lubricants and explosives for Sirka u/g for the assessment year 2016-17 was 440 litres and 3,775 Kg. respectively. Also, the consumption of explosives for Sirka OCP (combined for coal and OB) for the assessment year 2016-17 was 72,125 Kg.
- E.6 The quarterly ambient air quality monitoring is being carried out by CMPDI Ltd. as per the guidelines of Ministry of Environment Forest & Climate Change (MoEFCC). The results reveal that concentration of parameters i.e. SPM, SO₂, NO_x in ambient air for most of the time, are within the prescribed standards. The quality of mine water at the disposal point is meeting the permissible limit with respect to all the parameters. The noise level in the core as well as buffer zone are well within the prescribed norms.
- E.7 Hazardous waste are not being produced either from mining operations or from any pollution control facilities.
- E.8 Solid waste generated during the process of coal winning is being used for physical

and biological reclamation purpose. No solid waste gets generated in the case of Sirka u/g mine.

- E.9 At present following measures is being practiced for environmental management in the project:
- (i) The water sprinkling is being done regularly on the haul roads and loading points.
 - (ii) The O.B. generated in the Sirka OCP project is being reclaimed physically and biologically.
 - (iii) Tree plantation has been done in the project.
 - (iv) All service roads are metalled.
 - (v) Workshop effluents are allowed to settle in sump before final discharge.

CHAPTER ONE

PROJECT DESCRIPTION

1.1 General

The Sirka project is under the administrative control of Argada area of Central Coalfields Limited. It is one of the taken over mine and it belonged to M/s Bird & Co. Ltd. at the time of nationalisation in 1973. At the time of nationalisation the production of coal was 0.35 Million Tonnes per Year.

1.2 Location

Sirka project is located in the eastern part of South Karanpura coalfields in Argada area and is surrounded by metamorphic rocks in the north and south. It lies between latitudes $23^{\circ} 30'$ and $23^{\circ} 40'$ and longitude $85^{\circ} 25'$ and $85^{\circ} 28'$. It is included in the Survey of India Toposheet no. 73E/6. Sirka colliery is situated in the east whereas Damodar River makes its western and southern boundaries. It is situated in the Ramgarh district of Jharkhand state.

1.3 Communication

Sirka Project is connected by all-weather metalled road from Ramgarh on the National Highway (NH) no. 33 between Ranchi and Hazaribagh. It is situated at a distance of 10 km from Ramgarh. The nearest Railway station is Argada, on Gomoh - Barwadih line of Eastern Railway that is within 2 km of the mine. The nearest airport is at Ranchi at a distance 80 km.

1.4 Topography and Drainage

Sirka colliery forms a part of lowland between Hazaribagh plateau in the north and Ranchi plateau in the south and represents undulating sloping towards south topography. An ephemeral stream, called Pararu nalla flows in the east of the property, along N-S alignment, discharging water into Damodar River. The Damodar River flows along the western and southern boundary of Sirka block.

1.5 Mining System

Opencast mining system is being practiced in the project considering geomining conditions of the deposits namely (i) gradient of seams (ii) multiple seams (iii) the property being faulted with as many as 10 faults (iv) Sirka combined Argada and Argada A seams being already developed on semi horizon pattern. Shovel (electric), dumper mining system in combination with drill is being used for opencast mining system. In Sirka UG coal is extracted using Bord & Pillar method.

CHAPTER TWO

ENVIRONMENTAL STATEMENT FOR COAL MINING PROJECT

Environmental Statement for the Assessment Year **2016-17**

Part-A

(I) **Name and address of the Project:**

Name: Sirka colliery Project

Address: Project Officer

Place: Sirka

District: Ramgarh

(II) Industry category: Primary

(III) Production capacity: for Sirka OCP-1.00 million tonnes /year
For Sirka UG-0.040 million tonnes /year

(IV) Year of Establishment: 1925

(V) Date of the last Environment Report submitted: September 2016

Part-B

Water and Raw Material Consumption

(I) Water Consumption (m³/day)

<u>Industrial</u>		<u>2016 -17</u>
(a)	Haul road dust suppression	: 110
(b)	Workshop	: 75
(c)	Fire-fighting	: 40
(d)	Others (service building etc.)	: 25
	Sub Total	: 250 m³/day

Domestic

2016 -17

(a)	Colony	: 1930
(b)	Arboriculture	: Nil
	Sub Total	: 1930 m³/day
	<u>Total</u>	: 2180 m³/day

Note: The data of water consumption given above is the combined data for both Sirka UG and Sirka OCP.

Name of product	Water consumption (per tonne of coal produced)	
	During Financial year (2016-17)	During Financial year (2015-16)
ROM Coal	Nil	Nil

Note: There is no direct relationship between water consumption and coal production.

(II) Raw Material consumption:

Name of raw material	Name of product	Consumption of raw materials (per tonne of coal produced)	
		During Financial year (2016-17)	During Financial year (2015-16)

		Nil	Nil
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However, the following materials are being consumed for coal production

S.No.	Materials	2016-17 (Sirka u/g)	2016-17 (Sirka OCP)
01.	Explosives (in kg.)	3775	72125
02.	Lubricants (in litres)	440	33,350
03.	Detonators (in nos.)	9849	15,040

Part-C

Pollution Generated

Pollutants	Quantity of pollutants Generated	% variations from prescribed standards with reasons
<u>Water</u>		
(a) Discharge from mine	1636.35 m ³ /day	The results reveal that all the parameter is under the prescribed limit. The quality of mine water at the disposal point visa-vis the prescribed standards are given in Annexure.
(b) Workshop Effluent	75 m ³ /day	Quantity of effluent from the workshop is low and as such do not pose any problem
(c) Domestic Discharge	NA	Not applicable
<u>Air</u>		
The SPM, SO ₂ and NO _x are main pollutants generated from coal mining project.	The quantity of air pollutants from mine is difficult to quantify. However, concentration of air pollutants are measurable & is given in Annexure.	The results of air pollutants are under the prescribed limits.
<u>Noise</u>		
Operation of HEMMS generated noise	Recorded noise level are placed as Annexure.	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 Waste	Total Quantity	
	During Financial year (2016-17)	During Financial year (2015-16)
From mining process	Nil	Nil
From pollution control facilities	Nil	Nil

Part-E

Solid Wastes

Solid Wastes	Total quantity of Solid Waste Generated in million cubic metres (Mm3)	
	During Financial year (2016-17)	During Financial year (2015-16)
From mining process		
(i) Top Soil	Nil	Nil
(ii) OB	0.695	0.543
From pollution control facilities	Nil	Nil
Quantity recycled or reutilized	The Overburden generated during the coal winning process is being reutilized for the reclamation physically & biologically along with the top soil.	

Part-F

Characteristics of Hazardous and Solid Waste and Their Disposal practice

Hazardous wastes are not being produced or released either from mining operation or pollution control facilities. The process of coal winning by open cast mining process produced O.B and top soil as solid waste temporarily, as these materials are later used for land reclamation. During the year 2015-16, 0.543 Mm3 O.B were generated. The O.B generally consists of the following constituents:

1. Soil
2. Shale band (including carbonaceous shale)
3. Soft Sandstone.

Part-G
Impact of Pollution Control Measures on Conservation of Natural Resources and Consequently on Cost of Production

Disposal Practice

(i) Top Soil

Top soil is a precious natural resource and it loses its natural qualities unless special care is taken during stripping, storage and carpeting of top soil. Land gets degraded due to mining operation. This degraded land is to be reclaimed. Top soil has not been removed from the project during 2015-16.

(ii) Internal Dumps

Internal dumps and external dumps have been planned in a continuity. They have been planned during the planning stage of the project. Once external dumps get stabilized, they are proposed to be extended to cover the open pit by backfilling during coal extraction process.

(iii) External Dumps

Location of external dump is shown in the location plan given in Annexure-1. The Overburden in the colliery at present is being dumped internally.

AIR POLLUTION CONTROL MEASURES

In order to carry out mining in an eco-friendly manner, following air pollution control measures have been implemented:

S.No.	Measures Suggested	Status Provided or To be Provided
01	All drills are to be provided with dust collection & extraction arrangement	Provided
02	Biological reclamation of O.B dumps	Reclamation is being done
03	Overburden and coal piles will be wetted before loading	Continuity to be ensured
04	Blasting is to be carried out during congenial atmosphere	Being carried out
05	All transfer points to be provided with dust suppression system	To be Provided
06	All the roads used for HEMM movement to be water sprayed regularly	Being done
07	It is proposed to provide water sprinkling system for coal stock	Being done

WATER POLLUTION CONTROL MEASURES

- Mine water is pumped into the sedimentation lagoon created naturally in the dip side of the mine. This water is then passed to natural drains through sedimentation lagoon.
- The catch drains has been constructed around the foot of the O.B. dumps in Sirka OCP in order to collect surface run-off water from the dumps and convey them to the settling ponds.
- Colony and other service buildings are provided with septic tank and soak pit.
- A garland drain is provided around the quarry in Sirka OCP to collect the surface run-off. This also prevent storm water to enter in to the quarry area.

NOISE POLLUTION CONTROL MEASURES

- Blasting operation is carried out between 2.00 PM to 3.00 PM in Sirka OCP.
- Regular maintenance of HEMMs, CHP and other equipments.
- Use of HEMMs with sound proof cabin.
- Providing green belt around noise generating centers.

MEASURES FOR RECLAMATION OF LAND

At present overburden generated during mining in Sirka OCP is being used as re-filling material in de-coaled area of quarry. As soon as the dumps reaches to its final stage, it is proposed to start technical and biological reclamation of the dumps. At the end of mining operation, some decoaled area will remain empty, which would be used for storing rain water. The presence of such a water body will help in increasing the moisture content of soil of adjacent area and ultimately it would promote the growth of vegetation.

In the case of Sirka UGP this is not applicable as it is an underground mine.

Part-H

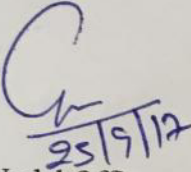
Additional Investment Proposal for Environmental Protection Including Abatement of Pollution

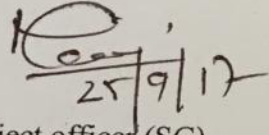
- The Project will continue to carry regular environmental monitoring for air, water and noise pollutants as per the guidelines of MoEFCC.
- The Environmental Statement Report will be prepared for each assessment year as per the guidelines of Ministry of Environment Forest & Climate Change (MoEFCC).
- The project will continue to take Air & Water consent from Jharkhand State Pollution Control Board (JSPCB) for each year.
- Water consumption for the project for each year is submitted to Jharkhand State Pollution Control Board (JSPCB) 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 & Climate Change, Central pollution Control Board and Jharkhand State Pollution Control Board etc. are being implemented from time to time in the project for better environmental conditions in and around the project.


25/9/17
Nodal Officer
Sirka Group, Sirka


25/9/17
Project officer (SG)
Sirka Group, Sirka