

**ENVIRONMENTAL STATEMENT
IN
FORM-V**

(Under Rule-14, Environmental (Protection) Rules, 1986)

(2018-2019)

**FOR
SIMLONG OCP
(OPENCAST PROJECT)
Rajmahal Area
Eastern Coalfields Limited**

Prepared at
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CMPDI

ISO 9001:2015 Company

ENVIRONMENTAL STATEMENT FOR SIMLONG COLLIERY

FOR THE YEAR: 2018-2019

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CHAPTER – I INTRODUCTION

1.1 GENESIS:

The Gazette Notification vide G.S.R No. 329 (E) dated 13th March, 1992 and subsequently renamed to 'Environmental Statement' vide Ministry of Environment & Forests (MOEF), Govt. of India gazette notification No. G.S.R No. 386 (E) Dtd.22nd April'93 reads as follows.

"Every person carrying on an industry, operation or process requiring consent under section 25 of the Water Act 1974 or under section 21 of the Air Act 1981 or both or authorisation under the Hazardous Waste Rules, 1989 issued under the Environmental Protection Act 1986 shall submit an Environmental Audit Report for the year ending 31st March in Form V to the concerned State Pollution Control Board on or before the 30th day of September every year."

In compliance with the above, the work of Environmental Statement for Simlong Colliery was entrusted to CMPDI by GM (Environment & Forest), Eastern Coalfields Limited.

1.2 PROJECT DESCRIPTION:

The Simlong Colliery of ECL is located in Pakur district of Jharkhand. The rated capacity of the Colliery is 2.00 MTY and peak capacity is 2.30 MTY. The total available quarriable area is 337.74 Ha including 81.09 Ha of Forest land. The total mineable reserves are 38.80 MT with an average stripping ratio of 3.55 m³/t. The life of the project is 26 years including 2 years of construction period. The mine comes under the administrative control of GM, Rajmahal Area.

Environmental clearance for the Simlong OCP has been granted for peak production capacity of 2.30 MTY by MoEF&CC vide letter no J-11015/128/2011/.II (M) dated 24th December, 2014.

The production from Simlong OCP was suspended during 2018-19.

1.2.1 COMMUNICATION:

Simlong Colliery lies at a distance of about 0.5 Km. off the metalled road from Godda to Dharampur at a distance of about 34 Km. from Godda. The nearest Railway station is Pakur of E.Rly. at a distance of about 55 Km. from the project site.

The location map of Simlong Colliery project is given in Plate-I.

1.2.2 SALIENT FEATURES:

1	Rated capacity per annum	2.30 MT
2	Total Block Area	337.74 Ha
3	Mineable reserve	38.80 MT
4	Life of mine	26 Years
5	Average stripping ratio	3.55 Cum/Te

1.3 ENVIRONMENTAL SCENARIO:

The Environmental monitoring is carried out quarterly as per guidelines of Ministry of Environment and Forests (MOEF) by CMPDI, RI-I starting from Q/E Sept.1999. Accordingly, ambient air quality is monitored at three stations. The details of the sampling stations are given below:

Area	Project	Station code	Monitoring Station
Rajmahal	Simlong Colliery	17A1	Manager's Office
Rajmahal	Simlong Colliery	17A2	Guest House
Rajmahal	Simlong Colliery	17A3	NHS Type Qtr.

Samples of mine water and drinking water are collected in each quarter and analysed for quality. Noise level is recorded at three locations.

However, the monitoring schedule has been changed from September, 2016.

The environmental monitoring results for the year ending March, 2019 are appended as Annexures – I, II and III. The environmental monitoring results for the year 2018-19 can be summarised as given below:

AMBIENT AIR QUALITY

The PM₁₀ concentration was found in the range of 28.4 to 88.5 µg/m³ and was within the limits as per the standards. The PM_{2.5} concentration was found in the range of 27.1 to 46.5 µg/m³ and was within the limits as per NAAQS, 2009. The SO₂ concentration remained below 10.0 µg/m³ and NO_x concentration was in the range of 11.0 to 19.8 µg/m³ and was within the limits as per the standards.

ENVIRONMENTAL STANDARDS:

Environmental Standards for Ambient Air Quality (AAQ):

Station Category	<i>Environmental standard for Raniganj Coalfield vide MoEF, Govt. of India, Gazette Notification No. GSR 742 (E) dated 25.09.2000 for 24 hourly samples at 500 meters from dust generating point</i>			<i>National Ambient Air Quality Standards (NAAQS), 2009 for industrial, residential and rural areas for 24 hours samples</i>
	Pollutant Concentration (µg/m ³)			
	PM ₁₀	SO ₂	NO _x	PM _{2.5}
Industrial	300.0	120.0	120.0	60.0
Residential	100.00	80.0	80.0	

WATER QUALITY

Ground water percolates into working area from the surrounding aquifers which have been exposed due to opencast mining. The mine is dewatered regularly to maintain dry working conditions. This mine discharge water is partly utilized for dust suppression by sprinkling at coal faces and on haul roads. Part-B of the Environmental Statement proforma contains the detailed break-up of water consumption.

The analysis results reveal that most of the parameters are below permissible limits prescribed by Ministry of Environment & Forests (MOEF) as General

Standards for Class-'A' effluent (Effluent discharged into inland surface water) and IS-10500:2012 standards for drinking water.

Mine water and Drinking water analysis results are given in Annexure-III.

NOISE LEVEL

The noise level was found in the range of 49.1 to 71.6 dB(A). The noise level recorded is below permissible limit prescribed by Ministry of Environment and Forest (MOEF).

Noise Level Standard as per Noise Pollution (Regulation and Control) Rules, 2000 for different station categories is given below:

Station Category	Limits for noise (Leq dB (A))	
	Day Time (6am-10pm)	Night Time (10pm-6am)
Industrial	75.0	70.0
Commercial	65.0	55.0
Residential	55.0	45.0

CHAPTER - II
ENVIRONMENTAL STATEMENT FORM – V

Environmental statement for the financial year ending March, 2019

PART – A

SL. NO.	HEADING	PARTICULARS
(I)	NAME AND ADDRESS OF THE PROJECT	Name : SIMLONG COLLIERY Address: AGENT, Simlong OCP, P.O. – Dhamni Pahar, Dist. – Pakur (Jharkhand)
(II)	INDUSTRY CATEGORY	Red
(III)	PRODUCTION CAPACITY	2.30 MTY
	PRODUCTION DURING 2018-19	Nil
(IV)	YEAR OF ESTABLISHMENT	Taken over mine from pre-nationalisation period
(V)	DATE OF THE LAST ENVIRONMENTAL STATEMENT SUBMITTED	September, 2018

PART – B

WATER AND RAW MATERIAL CONSUMPTION

(I) WATER CONSUMPTION (Cu.m/day)

Mine water

- a. Total quantity of mine pumping during 2018 – 19 : Nil m³/day
- b. Quantity of mine water utilized along with purpose : Nil m³/day
(for industrial use only)
- c. Quantity of mine water discharged outside: Nil* m³
* Mine water is not discharged outside as excessive mine water is stored in adjacent abandoned quarry, acts as primary sedimentation tank, for future needs and supplied to nearby villages for agricultural use if required.
- d. Place of discharge: Nil

Other water sources

- a. Name of source: Groundwater through tubewells
- b. Total quantity of water drawn along with purpose during 2018 – 19 : Nil

		2017-18	2018-19
	A. MINING		
i	Dust suppression		
ii	Fire fighting		
iii	Others (service building etc.)	Nil	Nil
	B. COOLING (in radiators of trucks/HEMM)		
	C. DOMESTIC		
i	Colony		
	TOTAL	0.0	0.0

(II) RAW MATERIAL CONSUMPTION:

Name of raw material	Name of products	Consumption of raw material (Total during year)	
		During previous financial year (2017-18)	During current financial year (2018-19)
1. Explosive	Coal and OB	Nil	Nil
2. Diesel		61890*	11,300*
3. Lubricants		336*	Nil

*consumption for whole year is given

**PART – C
POLLUTION GENERATED**

Pollution	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants discharged (mass/volume)	Percentage variation from prescribed standards with reasons
WATER	-	Mine water discharge Analysis results are given in Annexure-III.	The analysis results reveal that most of the parameters are below permissible limits prescribed by MOEF as General Standards for class 'A' effluent (Effluent discharged into inland surface water).

**PART – D
HAZARDOUS WASTE**

(As specified under Hazardous waste management and handling Rules, 1989)

Hazardous waste	Total quantity		Disposal method
	During Previous financial year (2017-18)	During current financial year (2018-19)	
A) From process			
i) Used oil	16 litres	Nil	Sent to ECL HQ, by area store for necessary action.
ii) Lead-Acid Batteries			
a. Automobile batteries	Nil	Nil	
b. Cap-lamp batteries	NA	NA	
iii) Used Cotton waste	Nil	Nil	
iv) Metal Scrap	Nil	Nil	

**PART – E
SOLID WASTE**

Particulars	Total quantity (In Million Cu.m)	
	During Previous financial year (2017-18)	During current financial year (2018-19)
a) From process (Mining)	-	-
b) From pollution control facilities	-	-
c) Quantity recycled or reutilized (back filled)	-	-

PART – F

PLEASE SPECIFY THE CHARACTERISTICS (IN TERMS OF CONCENTRATION AND QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTE AND INDICATE THE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTE.

Hazardous waste generation has been dealt in Part – D. Used oil is sent to other collieries for their internal use. Used batteries are issued to scrap auctioneers against delivery order issued from ECL Headquarters.

There was no solid waste generation due to mining activities as the production was suspended in 2017-18.

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, following pollution control measures have been implemented.

1.0 AIR POLLUTION CONTROL MEASURES:

The following measures have been taken to control air pollution.

1. Dust extractors are provided with drills and they are fully functional during drilling operation. However, at present the operation in the mine is suspended.
2. Personnel working in dusty areas wear protective respiratory devices and are also provided with adequate training and information on health aspects and safety.
3. 10 nos. of fixed sprinklers have been installed along coal transportation route for dust suppression.
4. 1 no. of mobile water sprinkler is used for dust suppression within the mine.
5. Routine monitoring of ambient air on fortnightly basis is being done by CMPDI, RI – I at three stations.

2.0 **WATER POLLUTION CONTROL MEASURES:**

The following measures have been taken to control water pollution from mine:

1. Settling tanks are provided before final discharge of mine water.
2. Two settling tanks for colony with capacity of 9000 m³ are under preparation and another one is abandoned quarry sump for mine with capacity of 1094580 m³.
3. Domestic effluents are discharged to nearby nallah after passing through settling tank etc.

3.0 **NOISE POLLUTION CONTROL MEASURES:**

- i. Effective periodic maintenance and CBM of HEMMs help in reducing the noise level.
- ii. Persons exposed to HEMM operation, drilling and blasting etc. are provided with ear-muffs/plugs.
- iii. Green-belt around the opencast mine help in reducing noise level.

PART – H

ADDITIONAL INVESTMENT PROPOSALS FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION.

The following are the additional investment proposals for environmental Protection:

- i) The Environmental monitoring of the mine will be continued fortnightly as per the guidelines of Ministry of Environment and Forest (MOEF).
- ii) Plantation work will be carried out in future as per proposed plan.
- iii) Construction of Sedimentation pond and Oil & Grease Tank at the project site is under consideration.
- iv) Construction of roof top rain water harvesting structure in the Project is under proposal.

PART – I

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

- i. The Environmental Monitoring is carried out fortnightly for the colliery by CMPDI, RI-I as per the guideline of Ministry of Environment and Forest (MOEF) and based on the result thereof; colliery takes necessary action if needed.

Annexure-I**Air Quality Monitoring Report**

Station No	Station Name	Month	Fortnight	Date of Sampling	PM ₁₀	PM _{2.5}	SO ₂	NO _x
17A1	Manager's Office	April	First	12-Apr-18	87.2	34.2	<10.0	15.2
17A1	Manager's Office	April	Second	26-Apr-18	87.8	34.6	<10.0	15.6
17A1	Manager's Office	May	First	12-May-18	88.4	34.8	<10.0	15.5
17A1	Manager's Office	May	Second	26-May-18	88.5	35.1	<10.0	15.8
17A1	Manager's Office	June	First	14-Jun-18	86.3	34	<10.0	14.7
17A1	Manager's Office	June	Second	28-Jun-18	86.2	33.8	<10.0	14.5
17A1	Manager's Office	July	First	13-Jul-18	83.6	31.8	<10.0	13.9
17A1	Manager's Office	July	Second	27-Jul-18	83	30.9	<10.0	13.6
17A1	Manager's Office	August	First	09-Aug-18	28.4	31.8	<10.0	13.9
17A1	Manager's Office	August	Second	31-Aug-18	81.5	28.2	<10.0	12
17A1	Manager's Office	September	First	07-Sep-18	80.8	27.9	<10.0	11.9
17A1	Manager's Office	September	Second	21-Sep-18	80.5	27.6	<10.0	11.7
17A1	Manager's Office	October	First	11-Oct-18	81.7	28.4	<10.0	12.4
17A1	Manager's Office	October	Second	29-Oct-18	82.8	28.3	<10.0	12.8
17A1	Manager's Office	November	First	14-Nov-18	82.5	29.6	<10.0	12.8
17A1	Manager's Office	November	Second	28-Nov-18	82.8	29.7	<10.0	12.9
17A1	Manager's Office	December	First	05-Dec-18	84.1	31.9	<10.0	15.3
17A1	Manager's Office	December	Second	29-Dec-18	84.5	30.7	<10.0	14.1
17A1	Manager's Office	January	First	05-Jan-19	85.2	41.7	<10.0	18.7
17A1	Manager's Office	January	Second	30-Jan-19	85.4	38.7	<10.0	18.2
17A1	Manager's Office	February	First	15-Feb-19	85.7	38.3	<10.0	16.4
17A1	Manager's Office	February	Second	27-Feb-19	85.4	39.7	<10.0	18.6
17A1	Manager's Office	March	First	14-Mar-19	87	45.9	<10.0	19.3
17A1	Manager's Office	March	Second	27-Mar-19	87.5	46.5	<10.0	19.1
17A2	Guest House	April	First	13-Apr-18	85.3	33.1	<10.0	14.7
17A2	Guest House	April	Second	26-Apr-18	85.9	33.8	<10.0	14.9
17A2	Guest House	May	First	12-May-18	86.8	34.1	<10.0	14.8
17A2	Guest House	May	Second	26-May-18	87.2	34.3	<10.0	14.6
17A2	Guest House	June	First	14-Jun-18	85.5	33.8	<10.0	14
17A2	Guest House	June	Second	28-Jun-18	85.3	33.6	<10.0	14.1
17A2	Guest House	July	First	13-Jul-18	83	31.2	<10.0	13.5
17A2	Guest House	July	Second	27-Jul-18	82.8	30.6	<10.0	13.2
17A2	Guest House	August	First	09-Aug-18	28.6	31.2	<10.0	13.5
17A2	Guest House	August	Second	31-Aug-18	81.3	27.6	<10.0	11.8
17A2	Guest House	September	First	07-Sep-18	80.6	27.5	<10.0	11.6
17A2	Guest House	October	First	21-Sep-18	80.2	27.3	<10.0	11.3
17A2	Guest House	October	First	11-Oct-18	81.5	28.2	<10.0	12.2
17A2	Guest House	October	Second	29-Oct-18	82.6	28	<10.0	12.5
17A2	Guest House	November	First	14-Nov-18	82.3	29.4	<10.0	12.5
17A2	Guest House	November	Second	28-Nov-18	82.5	29.6	<10.0	12.6
17A2	Guest House	December	First	05-Dec-18	84.2	31.5	<10.0	15.1
17A2	Guest House	December	Second	29-Dec-18	84.3	30.3	<10.0	14.2
17A2	Guest House	January	First	05-Jan-19	84.8	42.3	<10.0	16.8
17A2	Guest House	January	Second	30-Jan-19	84.9	37.5	<10.0	16.8
17A2	Guest House	February	First	15-Feb-19	85.2	37.4	<10.0	19.8
17A2	Guest House	February	Second	27-Feb-19	85	36.8	<10.0	17.4
17A2	Guest House	March	First	14-Mar-19	87.1	40.3	<10.0	17.5
17A2	Guest House	March	Second	27-Mar-19	87.3	43.4	<10.0	17.5
17A3	NHS Type Qtr.	April	First	13-Apr-18	83.6	32.8	<10.0	14.9

Station No	Station Name	Month	Fortnight	Date of Sampling	PM ₁₀	PM _{2.5}	SO ₂	NO _x
17A3	NHS Type Qtr.	April	Second	26-Apr-18	84.8	33.2	<10.0	14.7
17A3	NHS Type Qtr.	May	First	12-May-18	85	33.6	<10.0	14.6
17A3	NHS Type Qtr.	May	Second	26-May-18	85.5	33.8	<10.0	14.8
17A3	NHS Type Qtr.	June	First	14-Jun-18	84.1	32.7	<10.0	14.2
17A3	NHS Type Qtr.	June	Second	28-Jun-18	84.3	32.4	<10.0	14
17A3	NHS Type Qtr.	July	First	13-Jul-18	82.6	30.5	<10.0	13.2
17A3	NHS Type Qtr.	July	Second	27-Jul-18	82	30.1	<10.0	12.8
17A3	NHS Type Qtr.	August	First	09-Aug-18	28.5	30.5	<10.0	13.2
17A3	NHS Type Qtr.	August	Second	31-Aug-18	81	27.5	<10.0	11.6
17A3	NHS Type Qtr.	September	First	07-Sep-18	80.2	27.2	<10.0	11.2
17A3	NHS Type Qtr.	October	First	21-Sep-18	80	27.1	<10.0	11
17A3	NHS Type Qtr.	October	First	11-Oct-18	81.2	28	<10.0	12
17A3	NHS Type Qtr.	October	Second	29-Oct-18	82.3	28.2	<10.0	12.4
17A3	NHS Type Qtr.	November	First	14-Nov-18	82.1	29.2	<10.0	12.4
17A3	NHS Type Qtr.	November	Second	28-Nov-18	82.4	29.4	<10.0	12.3
17A3	NHS Type Qtr.	December	First	05-Dec-18	84	31.1	<10.0	14.5
17A3	NHS Type Qtr.	December	Second	29-Dec-18	84.2	30.1	<10.0	13.9
17A3	NHS Type Qtr.	January	First	05-Jan-19	84.7	38.7	<10.0	17.4
17A3	NHS Type Qtr.	January	Second	30-Jan-19	84.8	36.1	<10.0	17.4
17A3	NHS Type Qtr.	February	First	14-Feb-19	85.1	39.8	<10.0	18.3
17A3	NHS Type Qtr.	February	Second	27-Feb-19	85.2	38.4	<10.0	19.2
17A3	NHS Type Qtr.	March	First	14-Mar-19	87.4	40.1	<10.0	18.6
17A3	NHS Type Qtr.	March	Second	27-Mar-19	87.6	42.5	<10.0	18.3

Analysis of Heavy Metals in Air

Station No	Station Name	Month	Fortnight	Date of Sampling	Arsenic (ng/m ³)	Cadmium (µg/m ³)	Chromium (µg/m ³)	Mercury (µg/m ³)	Nickel (ng/m ³)	Lead (µg/m ³)
17A1	Manager's Office	Sept	First	07-Sep-18	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
17A1	Manager's Office	Sept	Second	21-Sep-18	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
17A1	Manager's Office	March	First	14-Mar-19	<0.005	<0.001	<10.0	<0.001	<0.10	<0.005
17A2	Guest House	Sept	First	07-Sep-18	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
17A2	Guest House	Sept	Second	21-Sep-18	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
17A2	Guest House	March	First	14-Mar-19	<0.005	<0.001	<10.0	<0.001	<0.10	<0.005
17A3	NHS Type Qtr.	Sept	First	07-Sep-18	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
17A3	NHS Type Qtr.	Sept	Second	21-Sep-18	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
17A3	NHS Type quarter	March	First	14-Mar-19	<0.005	<0.001	<10.0	<0.001	<0.10	<0.005

Environmental standards:

National Ambient Air Quality Standards (NAAQS) for residential, industrial and rural areas for 24 hourly/yearly samples:

Heavy Metal	Arsenic (As) (ng/m ³)	Cadmium (Cd) (µg/m ³)	Chromium (Cr) (µg/m ³)	Mercury (Hg) (µg/m ³)	Nickel (Ni) (ng/m ³)	Lead (Pb) (µg/m ³)
Concentration	6	Not specified	Not specified	Not specified	20	0.5

Annexure-II**NOISE LEVEL**

Cluster No	Station No	Station Name	Month	Fortnight	Date of Sampling	Noise Level dB(A)
Simlong Colliery	17N1	Manager's Office	April	First	13-Apr-18	61.7
Simlong Colliery	17N1	Manager's Office	April	Second	26-Apr-18	60.9
Simlong Colliery	17N1	Manager's Office	August	First	09-Aug-18	63.6
Simlong Colliery	17N1	Manager's Office	November	First	14-Nov-18	68.7
Simlong Colliery	17N1	Manager's Office	February	First	15-Feb-19	71.6
Simlong Colliery	17N2	Guest House	April	First	13-Apr-18	52.3
Simlong Colliery	17N2	Guest House	April	Second	26-Apr-18	50.7
Simlong Colliery	17N2	Guest House	August	First	09-Aug-18	54.7
Simlong Colliery	17N2	Guest House	November	First	14-Nov-18	58.2
Simlong Colliery	17N2	Guest House	February	First	15-Feb-19	62.4
Simlong Colliery	17N3	NHS Type Qtr.	April	First	13-Apr-18	49.8
Simlong Colliery	17N3	NHS Type Qtr.	April	Second	26-Apr-18	49.1
Simlong Colliery	17N3	NHS Type Qtr.	August	First	09-Aug-18	52.9
Simlong Colliery	17N3	NHS Type Qtr.	November	First	14-Nov-18	56.7
Simlong Colliery	17N3	NHS Type Qtr.	February	First	15-Feb-19	61.3

EFFLUENT WATER QUALITY (5 PARAMETERS)

Station No	Station Name	Month	Fortnight	Date of Sampling	pH	TSS	TDS	O&G	COD
17MW1	Mine discharge water	April	First	13-Apr-18	7.39	18	346	<2.0	24
17MW1	Mine discharge water	April	Second	25-Apr-18	7.42	12	318	<2.0	20
17MW1	Mine discharge water	MAY	First	11-May-18	7.58	14	344	<2.0	24
17MW1	Mine discharge water	MAY	Second	25-May-18	7.17	12	320	<2.0	16
17MW1	Mine discharge water	June	First	14-Jun-18	7.96	20	402	<2.0	24
17MW1	Mine discharge water	June	Second	28-Jun-18	7.17	14	382	<2.0	16
17MW1	Mine discharge water	July	First	13-Jul-18	8.05	18	354	<2.0	24
17MW1	Mine discharge water	July	Second	27-Jul-18	8.26	24	334	<2.0	16
17MW1	Mine discharge water	August	First	08-Aug-18	7.69	12	322	<2.0	16
17MW1	Mine discharge water	August	Second	31-Aug-18	7.72	14	350	<2.0	12
17MW1	Mine discharge water	September	Second	21-Sep-18	7.81	18	348	<2.0	16
17MW1	Mine discharge water	October	First	12-Oct-18	7.21	20	364	<2.0	24
17MW1	Mine discharge water	October	Second	31-Oct-18	7.93	18	380	<2.0	12
17MW1	Mine discharge water	November	First	14-Nov-18	7.38	22	328	<2.0	12
17MW1	Mine discharge water	November	Second	28-Nov-18	7.81	18	342	<2.0	16
17MW1	Mine discharge water	December	First	07-Dec-18	8.07	26	392	<2.0	20
17MW1	Mine discharge water	December	Second	29-Dec-18	8.50	18	356	<2.0	16
17MW1	Mine discharge water	January	First	04-Jan-19	8.36	20	398	<2.0	24
17MW1	Mine discharge water	January	Second	30-Jan-19	8.20	18	380	<2.0	20
17MW1	Mine discharge water	February	First	04-Feb-19	8.43	20	412	<2.0	28
17MW1	Mine discharge water	February	Second	27-Feb-19	8.08	22	430	<2.0	28
17MW1	Mine discharge water	March	Second	28-Mar-19	8.16	28	428	<2.0	12

Note: All parameters are in mg/l unless specified otherwise

Effluent Water Quality Standards (MoEF Schedule – VI Standards)

Parameters	pH	TSS	TDS	Oil & Grease	COD
Limit	5.5-9.0	100	Not Specified	10	250

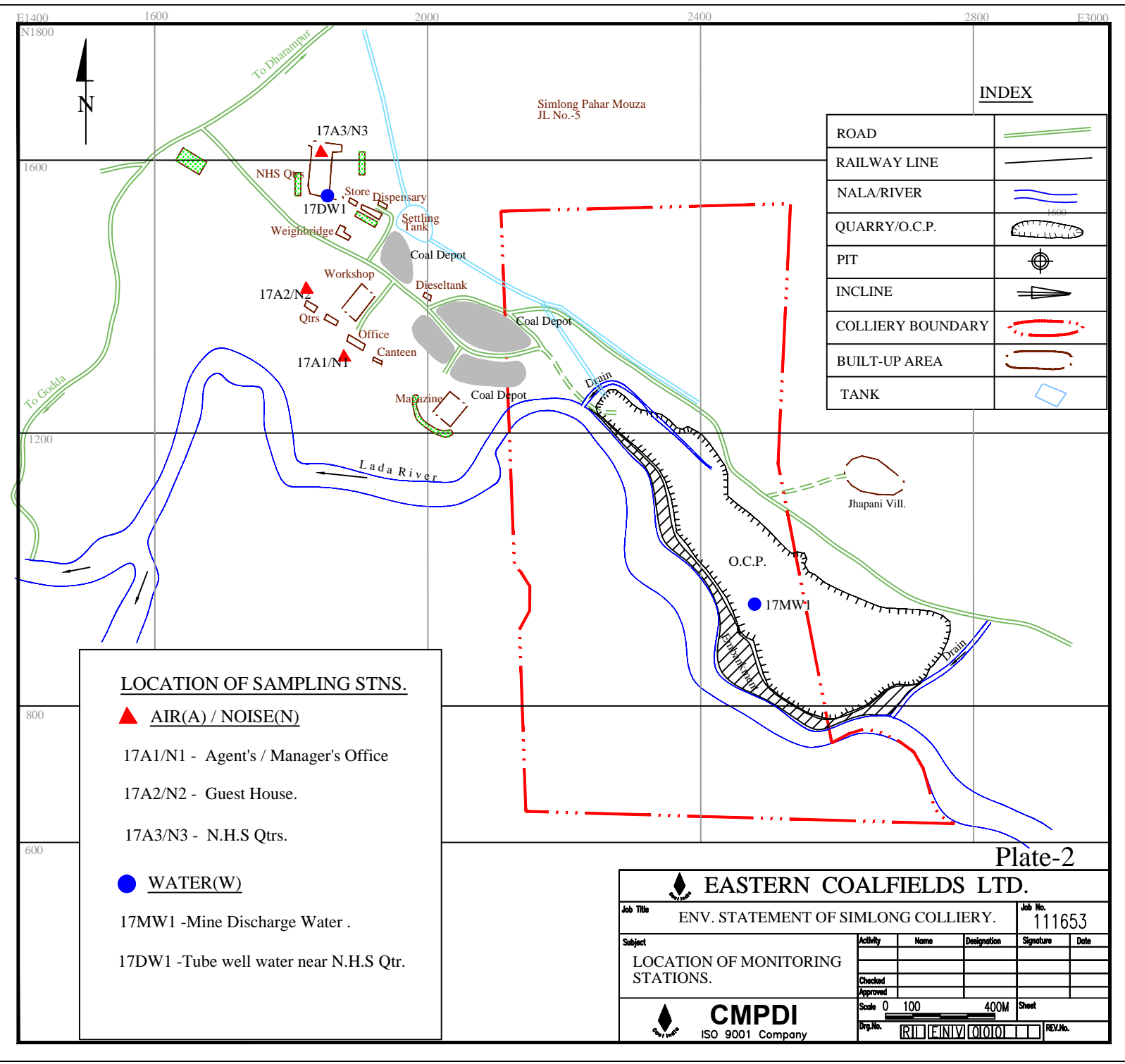
EFFLUENT QUALITY STANDARDS (29 PARAMETERS)

Cluster	Simlong Colliery	Effluent Water (MOEF Schedule-VI Standard)
Station No	17MW1	
Station Name	Mine discharge water	
Month	September	
Fortnight	First	
Date of Sampling	07-Sep-18	
Colour	3	Unobjectionable
Odour	Unobjectionable	Unobjectionable
TSS	24	100.0
pH	7.75	5.5-9.0
Temperature (Deg C)	30.2	Shall not exceed 5°C above the receiving water temp
Oil & Grease	<2.0	10.0
Total Residual Chlorine	<0.02	1.0
Ammonical Nitrogen	0.43	50.0
Total Kjeldahl Nitrogen	1.58	100.0
Free Ammonia	<0.4	5.0
BOD	10	30.0
COD	24	250.0
Arsenic	<0.005	0.2
Lead	<0.005	0.1
Hexavalent Chromium	0.03	0.1
Total Chromium	0.06	2.0
Copper	0.03	3.0
Zinc	0.04	5.0
Selenium	<0.005	0.05
Nickel	<0.10	3.0
Fluoride	0.36	2.0
Dissolved Phosphate	1.72	5.0
Sulphide	0.009	2.0
Phenolics	<0.001	1.0
Manganese	0.38	2.0
Iron	0.13	3.0
Nitrate Nitrogen	4.6	10.0
Cadmium	<0.001	2.0
Total Dissolved Solids	384	Not Specified

Annexure-III**Groundwater Quality Report**

Area	Simlong Colliery	Indian Drinking Water Standard (IS-10500:2012)	
Project	17DW1		
Quarter	Tube well water near Kali Mandir		
Sample No	Sept'18		
Sampling Station	First		
Date of sampling	07-Sep-18	Desirable Limit	Permissible Limit
Colour,Hazen unit Max	3	5.0	15.0
Odour	Unobjectionable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity,NTU Max	2	1.0	5.0
pH	8.30	6.5-8.5	No relaxation
Total Hardness	136	200.0	600.0
Iron	0.06	0.30	No relaxation
Chlorides	34	250.0	1000.0
Res Free chlorine	0.04	0.20	1.0
Dissolved Solids	260	500.0	2000.0
Calcium	56	75.0	200.0
Copper	0.02	0.05	1.5
Manganese	<0.02	0.1	0.3
Sulphate	58	200.0	400.0
Nitrate	12.50	45.0	No relaxation
Fluoride	0.30	1.0	1.5
Selenium	<0.005	0.01	No relaxation
Arsenic	<0.005	0.01	0.05
Lead	<0.005	0.01	No relaxation
Zinc	0.04	5.0	15.0
Hex Chromium	<0.01	0.05	No relaxation
Boron	<0.01	0.5	1.0
Coliforms (MPN)	Nil	Shall not be detectable in any 100 ml sample	
Phenolics	<0.001	0.001	0.001
Alkalinity	120	200.0	200.0
Cadmium	<0.001	0.003	0.003

NOTE: All parameters are in mg/l unless specified otherwise.



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TANK	

LOCATION OF SAMPLING STNS.

- AIR(A) / NOISE(N)**
- 17A1/N1 - Agent's / Manager's Office
- 17A2/N2 - Guest House.
- 17A3/N3 - N.H.S Qtrs.
-
- WATER(W)**
- 17MW1 -Mine Discharge Water .
- 17DW1 -Tube well water near N.H.S Qtr.

Plate-2

EASTERN COALFIELDS LTD.

Job Title	ENV. STATEMENT OF SIMLONG COLLIERY.				Job No.	111653
Subject	LOCATION OF MONITORING STATIONS.				Checked	
	Activity	Name	Designation	Signature	Date	
	Approved					
	Scale	0 100 400M		Sheet		
	Drp.No.	RIIENVI0001			REV.No.	

CMPDI
ISO 9001 Company