TATA

The Regional Officer
Jharkhand State Pollution Control Board
Near PTC Chowk, Matwari Road,
Hazaribag.

WBD/EMC/4016/ 132 /16
September 21, 2016

Sub.: **Environmental Statement for the year of 2015 - 2016**

Dear Sir,

Kindly find enclosed herewith 'Environmental Statement' in duplicate for the year of 2015 – 2016 for our following unit:

- WEST BOKARO COLLIERY

Thanking you,

Yours sincerely,

Sahabji Kuchroo
Chief (KBP & Project)

Encl.: As above.

c.c.: The Member Secretary
Jharkhand State Pollution Control Board
TA Building, Dhurwa
Ranchi.

भारतीय डाक
India Post

RL GHATOTAND SO <825314>
A RJ041451305IN
Counter No:1,OP-Code:01
To:REG OFFICER,JH S POLLUTION C BOA
Hazaribagh H.O, PIN:825301
From:SR MANAGER INV & ERG , TATA STEEL GHATO
Wt:132grams,
Amt:52.00 ,30/09/2016 ,13:03
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RL GHATOTAND SO <825314>
A RJ041451319IN
Counter No:1,OP-Code:01
To:MEMBER SECRETARY,JH S POLLUTION C BOA
Dhurwa S.O, PIN:834004
From:SR MANAGER INV & ERG , TATA STEEL GHATI
Wt:134grams,
Amt:52.00 ,30/09/2016 ,13:04
<<Track on www.indiapost.gov.in>>

TATA STEEL LIMITED
West Bokaro Division Ghatotand Jharkhand 825 314 India
Tel 91 6545 262356 (O) Fax 91 6545 262221 262172
Registered Office Bombay House 24 Homi Mody Street Mumbai 400 001
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

Form-V
(See Rule 14)
Environmental statement for the financial year ending 31st March 2016
(West Bokaro Colliery)

PART-A

i)	Name and address of the owner/ Occupier of the industry operation or process	:	**Mr. Sanak Ghosh, Chief (Quarry-AB), West Bokaro Division, TATA Steel Limited, P.O.: Ghatotand Dist. Ramgarh, Jharkhand- 825314**
ii)	Industry category Primary- (STC-code) Secondary- (SIC code)	:	SITC -321.4, 321.5A, 321.6A ISIC -2100
iii)	Production capacity- units	:	7.0 Million Tonns / Year ROM coal.
iv)	Year of establishment	:	1948
v)	Date of last environmental statement submitted		Letter no. WBD/EMC/4016/490/15, dated 26th Sept, 2015. For the year 2014-15.

PART-B
Water and Raw material Consumption

i) Water Consumption (m^3/d)

Process	:	0091.96 m^3/d
Cooling	:	1253.64 m^3/d
Domestic	:	777.23 m^3/d (For entire West Bokaro Division)

Name of the Product	Process Water Consumption per unit of product output	
	During the current Financial year (2014-15)	During the current Financial year (2015-16)
ROM Coal	0.1235 m^3/t (Process + Cooling)	0.1029 m^3/t (Process + Cooling)

ii) Raw material consumption

*Name of raw materials	Name of products	Consumption of raw material per unit of output	
		During the previous Financial year (2013-14)	During the current Financial year (2014-15)
Explosive (Slurry Emulsion) (Both Coal + Overburden)	ROM Coal	0.0018 tonnes / tonnes	0.0016 tonnes / tonnes

*Industry may use codes is disclosing details of raw material would violate contractual obligation otherwise all industries have to name the raw materials used.

PART-C

Pollution discharged to environment / unit of output
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (mass /day)	Concentration of pollutants in discharges (mass / volume)	Percentage of variation from prescribed standards with reason
a) Water	Mine water is being used in industrial and domestic purpose after treatment. Only during rainy season mine water is pumped out to water body after proper settling. Effluent analysis report is attached as **annexure-II.**		
b) Air	Air quality is monitored and found within prescribed limit (**annexure-I**).		

PART-D

(As specified under Hazardous Wastes
[Management, Handling and Transboundry Movement Rules, 2008])

Hazardous Waste	Total Quantity (kg.)	
	During the current financial year (2014-15)	During the current financial year (2015-16)
(a) From Process		
1. Used lead acid Battery –	- 853 no's	- 727 no's
2. Used lubricating Oil	- 218450 lts / annum	- 285780 lts / annum
3. Oil soaked cotton (jute)	- 7430 kg / annum	- 9300 kg / annum
4. Discarded Chemical Container	- 16 no's	- 50 no's
5. Non ferrous scrap	- Nil	- Nil
(b) From Pollution control facilities	Nil	Nil

PART- E

Solid Wastes

Solid Wastes		Total Quantity (kg.)	
		During the current financial year (2014-15)	During the current financial year (2015-16)
(a)	From Process Overburden	200.41 Lakh m^3	187.45 Lakh m^3
(b)	From pollution control facilities	Nil	Nil
(C)	(1) Quantity recycled or reutilized within the unit Overburden	Near about 127.124 Lakh tons i.e. 70% of OB generated during last year has been used in backfilling of mined out area (below ground). Rest 54.481 Lakh tons i.e.30% was dumped on backfilling area (Above ground). Abandoned dumps are being afforested by tree plantation. Clay burnt bricks has been replaced by boulder (OB recycling) for the construction of toe wall.	
	(2) Sold	Nil	
	(3) Disposed	Nil	

PART-F

Please specify the characterization (in term of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Category of Waste	Characteristics	Quantity	Disposal Practice
Solid Waste Over Burden	Non coal material (*Solid*)	- 181.60 Lakh ton	Dumped in above and below ground. .
Haz. Waste 1. Used lead acid Battery –	Lead acid Battery (*Solid*)	- 727no's	Disposed off to authorized recycler.
2. Used lubricating Oil	Used Oil (*Liquid*)	- 285780 lts/ yr	
3. Oil soaked cotton (jute)	Used Cotton (*Solid*)	- 9300 kg	Storage in impervious bin
4. Non ferrous scrap	Non- Fe, Scrap (*Solid*)	- Nil-	Disposed off to authorized agencies.

PART-G

Impact of the pollution abatement measure taken on conservation of natural resources and on the cost of production

Adequate dust suppression arrangement is made in haul roads. Dust suppression with chemical dosing is adequately practiced in area, which not only reduce the water consumption but also effectively control the dust. Sewage Treatment Plant (STP) is installed in colony.

For resource conservation, division has utilization of OB SHALE coal. The shale coal has high calorific value but due to high ash content, was disposed off earlier along with OB in dumps. By effective utilizing it as a fuel in power plants, replaces same quantity of natural coal thus conserve resources. The utilized OB SHALE coal reduces the possibility of fire in OB dumps and same amount as waste from OB. Last year about 3.80 Lakh tons of OB shale coal was sold to other agencies.

The combined impact due to implementation of pollution prevention and control measures on cost per tonne of ROM coal, of entire west Bokaro division (Washery, PH, Mines, Eng. Services, Logistic, etc.) is Rs. 31.45 (Rupees thirty-one and forty-five paisa only).

PART-H

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

Greenery over abandoned overburden, dump yard, medicinal garden, bio-diversity projects, Use of surfactant with water to increase moisture retention time of haul road, which consequently reduces water consumption, online ambient air quality monitoring is being practiced.

PART-I

Any other particular for improving the quality of the environment

West Bokaro Division of TATA Steel Ltd. is committed to improve safety and environment by strictly practicing Environment Management System (ISO:14001). Various programs are arranged such as green month, World Environmental day, Van Mohotsav for public awareness. One project of Mulberry plantation in OB dump is ongoing practice followed for generation of self-employment and environmental protection through economic benefit. One of the OB dump area is being developed as spice & medicinal garden. For biodiversity conservation artificial nesting of birds for creating niche nesting been initiated, biodiversity & a sustainable development policy developed at group level is strictly practiced in all sites. Entire mining operation is targeting for reduction in consumption of natural resources such as fresh water, Diesel, explosive & lube to conserve natural resources & minimize impact on environment.

Chief
Quarry-AB
West Bokaro

Mr. Sanak Ghosh, Chief (Q.AB),
West Bokaro Division, TATA Steel Limited,
P.O.: Ghatotand, Dist. Ramgarh, Jharkhand- 825314

AIR QUALITY REPORT AT WORK PLACE

Name of Industry: **West Bokaro Colliery**

No. of sampling points: **(03)**
Sampling position: **Mines**

1. CMC

Location	Date of Sampling (24 hrs.)	SO_2	NO_X	RPM	SPM
CMC	01-02 Jan.16	21	47	194	480
	01-02 Feb.16	17	26	64	213
	01-02 Mar.16	13	37	162	464
Maximum		**21**	**47**	**194**	**480**
Average		**17**	**37**	**140**	**386**
Limit		**120 µg/ m^3**	**120 µg/ m^3**	**300 µg/ m^3**	**700 µg/ m^3**

AIR QUALITY REPORT AT WORK PLACE

Sampling position: **Mines**

2. FRS

Location	Date of Sampling (24 hrs.)	SO_2	NO_X	RPM	SPM
FRS	04-05 Jan.16	17	42	182	358
	02-03 Feb.16	12	35	128	298
	02-03 Mar.16	17	42	130	370
Maximum		**17**	**42**	**182**	**370**
Average		**15**	**40**	**147**	**342**
Limit		**120 µg/ m^3**	**120 µg/ m^3**	**300 µg/ m^3**	**700 µg/ m^3**

AIR QUALITY REPORT AT WORK PLACE

Name of Industry: **West Bokaro Colliery**

No. of sampling points: **(03)**

Sampling position: **Mines**

3.FMS

Location	Date of Sampling (24 hrs.)	SO_2	NO_X	RPM	SPM
FMS	05-06 Jan.16	14	31	71	238
	03-04 Feb.16	12	17	72	258
	03-04 Mar.16	10	23	92	201
Maximum		**14**	**31**	**92**	**258**
Average		**12**	**24**	**78**	**232**
Limit		**120 µg/ m^3**	**120 µg/ m^3**	**300 µg/ m^3**	**700 µg/ m^3**

AMBIENT AIR QUALITY REPORT

Name of Industry: **West Bokaro Colliery**

No. of sampling points: **(03)**

Sampling position: **Mines**

1. Banjee

Location	Date of Sampling (24 hrs.)	SO_2	NO_X	PM_{10}	$PM_{2.5}$
Near Banjee	07-08 Jan.16	11	24	62	29
	12-13 Feb.16	16	31	60	40
	04-05 Mar.16	9.1	22	75	37
Maximum		**16**	**31**	**75**	**40**
Average		**12**	**26**	**66**	**35**
Limit		**80 µg/m^3**	**80 µg/m^3**	**100 µg/m^3**	**60 µg/m^3**

AMBIENT AIR QUALITY REPORT

Name of Industry: **West Bokaro Colliery**

No. of sampling points: **(03)**
Sampling position: **Mines**

2.Pundi

Location	Date of Sampling (24 hrs.)	SO_2	NO_X	PM_{10}	$PM_{2.5}$
Near Pundi	05-06 Jan.16	13	27	42	22
	10-11 Feb.16	17	27	55	38
	02-03 Mar.16	12	24	60	27
Maximum		**17**	**27**	**60**	**38**
Average		**14**	**26**	**52**	**29**
Limit		**80 $\mu g/m^3$**	**80 $\mu g/m^3$**	**100 $\mu g/m^3$**	**60 $\mu g/m^3$**

AMBIENT AIR QUALITY REPORT

Sampling position: **Mines**
Mukundabera

Location	Date of Sampling (24 hrs.)	SO_2	NO_X	PM_{10}	$PM_{2.5}$
Mukundabera	14-15 Jan.16	19	37	76	48
	19-20 Feb.16	14	30	81	46
	12-13 Mar.16	13	31	75	40
Maximum		**19**	**37**	**81**	**48**
Average		**15**	**33**	77	**45**
Limit		**80 $\mu g/m^3$**	**80 $\mu g/m^3$**	**100 $\mu g/m^3$**	**60 $\mu g/m^3$**

EFFLUENT QUALITY

SAMPLING DATE: 01, 02, 03 March 2016

LOCATION		LEVELS			
		pH	TSS	COD	Oil & Grease
Mines area	SE	8.2	26	32	<1.0
	ACD	8.4	27	64	<1.0
	E	8.2	24	64	<1.0
LIMIT		5.5-9.0	100 mg/L	250 mg/L	05 mg/L

AMBIENT NOISE MONITORING

LOCATION		NOISE LEVELS dB(A)			
		DURING DAY TIME		DURING NIGHT TIME	
		LIMIT	ACTUAL	LIMIT	ACTUAL
Mines area	SE	75	55-58	70	52-53
	ACD	75	54-57	70	50-51
	E	75	53-55	70	49-52

20/9/16

Sr. Manager (Env. & Ergo.)
West Bokaro
Tata Steel