O/C

The Member Secretary,
Jharkhand State Pollution Control Board,
T.A. Division (Ground Floor),
H.E.C. Dhurva, Ranchi – 834004
Jharkhand

WBD/EMC/4016/082/18
Date: 20.09.2018

Subject: Submission of Environmental Statement of West Bokaro Colliery unit of West Bokaro Division, Tata Steel Limited for the year 2017-18

Dear Sir,

Please find enclosed herewith the duly filled "Environmental Statement" (Form-V) of **West Bokaro Colliery** unit of West Bokaro Division, Tata Steel Ltd. for the year 2017-18.

Kindly acknowledge the same & oblige.

Thanking you,
Yours sincerely,

20.9.18

Head (E&F)
West Bokaro Division
Tata Steel Ltd.

Encl: As Above

Copy to : The Regional Officer, Jharkhand State Pollution Control Board, PTC Chowk, Matwari, Hazaribagh – 825301 (Jharkhand)

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 Fort Mumbai 400 001
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

FORM - V
(See Rule -14)

ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31st MARCH, 2018

UNIT: WEST BOKARO COLLIERY, TATA STEEL LIMITED

PART - A

1	Name and address of the owner/ occupier of the industry, operation or process	:	Mr. Anurag Dixit, Chief (Q-SEB), West Bokaro Colliery TATA Steel Limited, P.O.- Ghatotand Dist. Ramgarh, Jharkhand-825314
2	Industry Category	:	Major
3	Production Capacity	:	7 MTPA Raw Coal
4	Year of Establishment	:	1948
5	Date of last Environmental Statement submitted.	:	25th September 2017

PART - B
WATER AND RAW MATERIAL CONSUMPTION

i. Water Consumption (m3/d):

Process : 102.88
Cooling/ Spraying in mine pits : 1226.77
Colony : 7975.44

Name of the product	Process water consumption per product output (m3/ton)	
	During the Previous Financial Year (2016-17)	During the current Financial Year (2017-18)
Raw Coal	0.093 (Process + Spraying)	0.096 (Process + Spraying)

ii. Raw Material Consumption:

Name of Raw materials	Name of the product	Consumption of Raw Material per unit of output	
		During previous financial year (2016-17)	During current financial year (2017-18)
Explosives (Slurry Emulsion) (Both Coal + Overburden)	Raw Coal	0.32 kg/ton	0.25 kg/ton

PART - C
POLLUTION DISCHARGES TO ENVIRONMENT/ UNIT OF OUTPUT (PARAMETERS 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
Water	Zero Effluent Discharge is maintained. Mine water is being used in industrial and domestic purpose after treatment. Only during monsoon season mine water is pumped out to water body after proper settling.		

Pollutants	Quantity of pollutants discharged (mass /day)	Concentration of pollutants in discharges (mass / volume)	Percentage of variation from prescribed standards with reason

Air

Air quality is monitored and found within prescribed limit. Details for FY'18 are as follows:

AAQ Report: Core Zone

Parameter	Location AB	Location SE	Standard
SPM	356	413	700
RPM	162	169	300
PM10	54.9	72	100
PM2.5	32.7	46	60
SO2	16.8	16	120
Nox	35.1	46	120

All values are in (µg/m3)

AAQ Report: Buffer Zone

Parameter	Pundi	Banji	Chainpur	Duni	Mukunda Beda	Standard
PM10	51.08	54.92	68.53	51.60	72.29	100
PM2.5	26.05	32.64	42.75	30.72	46.09	60
SO2	13.44	14.19	16.78	13.94	16.86	80
Nox	28.89	27.96	27.46	28.80	28.46	80

All values are in (µg/m3)

This is an opencast mine and does not have single point source of air pollutants. So, the quantity of air pollutants discharged in Kg/day cannot be ascertained. The above data shows the average ambient air quality during 2017-18.

PART - D
HAZARDOUS WASTE

[as specified under Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016]

Hazardous Waste	Total Quantity (kg)	
	During the previous financial year (2016-17)	During the current financial year (2017-18)
(a) From Process		
1. Used lead acid Battery	1. 728 nos.	1. 523 nos.
2. Used lubricating Oil	2. 288 KL	2. 324 KL
3. Oil soaked cotton (jute)	3. 8180 Kg	3. 8200 Kg
4. Discarded Chemical Container	4. 48 nos.	4. 50 nos.
5. Non-ferrous scrap	5. Nil	5. Nil
(b) From Pollution control facilities	Nil	Nil

PART - E
SOLID WASTE

Solid waste from this mine is generally of two categories i.e. Overburden/rejects removed during mining operations.

Solid Wastes		Total Quantity (kg)	
		During the previous financial year (2016-17)	During the current financial year (2017-18)
(a)	From Process: • From Mining as Overburden	200.43 lakh m^3	188.91 lakh m^3
(b)	From pollution control facilities	Nil	Nil
(c)	I. Quantity recycled or reutilized within the unit • Overburden	• 200.43 lakh m3 Entire OB is dumped inside mine pit	• 188.91 Lakh m3 Entire OB is dumped inside mine pit
	II. Sold	Nil	Nil
	III. Disposed	100%	100%

PART - F
THE CHARACTERISTICS (in terms 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*)	- 188.91 lakh m^3	- Dumped above and below ground.
Hazardous Waste			
1. Used lead acid Battery –	Lead acid Battery (*Solid*)	1. 523 nos.	1. Disposed off to authorized recycler.
2. Used lubricating Oil	Used Oil (*Liquid*)	2. 324 kl	2. Disposed off to authorized recycler.
3. Oil soaked cotton (jute)	Used Cotton (*Solid*)	3. 8200 kg	3. Storage in impervious bin.
4. Non-ferrous scrap	Non- Fe, Scrap (*Solid*)	4. Nil	4. Disposed off to authorized agencies.

PART - G

IMPACT OF POLLUTION ABATEMENT MEASURES 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.
- Efforts were made to reduce the consumption of lubricant oil used in Heavy Mining Equipment's, by timely maintenance, arresting leakages and eliminating spillages. Similarly, attempts were also made to reduce the consumption of electricity in operations. In colony and offices, some electrical light points have been replaced with solar lights to save consumption of electricity.
- Sewage Treatment Plant (STP) is working smoothly in the Mukundabeda.
- 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. 71.74 (Rupees seventy-one and seventy-four paisa only).

In addition to the above Tata Steel Rural Development Society (TSRDS) is engaged in peripheral developmental activities in villages around the mine. The projects of the Society include irrigation and agricultural extension projects, plantation programmes, installation of solar street lights and illuminate villages on through low cost, construction of ponds in support to provision of irrigation water and for other domestic use and in recharging groundwater by arresting the flow of rainwater in downstream, creation of SAVE FOREST groups, civic amenities development, medi-care and health education, rural sports, skill development and promotion of rural cultural activities.

PART-H

ADDITIONAL MEASURES/ INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION, PREVENTION OF POLLUTION

- Greenery over abandoned overburden, dump yard, in pit dump area practiced which is a continuous process.
- Green belt all along the safety zone is being done.
- 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.
- During monsoon 2018, we are having the proposal to plant 50,000 saplings in available sites within the lease area.
- ₹ 100.00 lakhs have been planned to be spent towards buying scientific equipment and strengthening the environmental laboratory.
- Pilot Project for the stabilizing the dump slopes is under progress.
- Implementation of wet drilling interlocking system in the new drill machine.
- Implementation of electronic detonator system in blasting to reduce ground vibration and fly rock.

PART-I

ANY OTHER PARTICULARS 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 Sustainability Month, Green Month, World Environmental Day, World River Day, Earth Day, Biological Diversity Day, Forestry Day, World Water Day, Van Mohotsav for public awareness. The mine is also certified to ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007.
- One pilot project of Butterfly, Hibiscus and Medicinal Park on mined-out area is ongoing practice followed for generation of self-employment and environmental protection through economic benefit.
- For biodiversity conservation and sustainable developed, a study along with IUCN has been initiated in all mining clusters and 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.
- The Company is having a full-fledged Environmental Management Department with personnel from relevant fields to take care of all environmental aspects relating to the mines of TATA STEEL. This department has in-house capabilities for monitoring various environmental parameters and suggesting to the management for necessary abatement measures.

Mr. Anurag Dixit, Chief (Q-SEB)
West Bokaro Colliery, TATA Steel Limited,
P.O. - Ghatotand, Dist.- Ramgarh, Jharkhand - 825314