ENVIRONMENT STATEMENT FORM- V

(See Rule 14)

Environment statement for the financial year ending 31st march' 2017

PART A

(i)	Name and address of the owner of the Industry operation or process	**Shri K Harinarayana,** Chief Executive Officer Hall No. M-01, Old ADM Building, Ispat Bhawan, Bokaro Steel City – 827001, Jharkhand
Operation or Process		
(ii)	Industry Category	**PRIMARY**
(iii)	Production Category –Units	**Steam – 2180 TPH** **Power – 338 MW**
(iv)	Year of Establishment	**2001**
(v)	Date of last Environment Statement submitted	**28.09.2016**

PART B

WATER AND RAW MATERIAL CONSUMPTION

(i) Water consumption m^3/day (Basic data 2015-16)

Financial Year	2015-2016	2016-2017
Process	7093	6098
Cooling	70000	70000
Domestic	1200	1200

Process water consumption per unit of product output			
Sl.No	Name of Products	During the previous financial year (2015-2016)	During the current financial year (2016-2017)
1.	**Steam**	**0.218 m^3/T**	**0.190 m^3/T**

(ii) RAW MATERIAL CONSUMPTION

Name of Raw**	Name of Products	Consumption of Raw material Per Unit of Output (Per Ton of STEAM)	
		2015-2016 During the previous financial year (per Ton Steam)	2016-2017 During the current financial year (per Ton Steam)
Middling Coal	Steam & Power	**160.16 kg**	**164.57 kg**
Furnace Oil		**0.301 L**	**0.569 L**
Blast Furnace Gas		*** 220.99**	*** 214.40**
Coke Oven Gas		*** 14.04**	*** 4.82**

*** Unit of BF & CO gas is (x 10^3 Nm^3/hr)**

(**Industry may use code if disclosing details of raw material would be violate contractual obligations, otherwise all industries have to name the raw materials used)

PART C

POLLUTION DISCHARGED TO ENVIRONMENT / UNIT OF OUTPUT

(Parameters as specified in the consent order)

Pollutants	Quantity of Pollutants discharged (mass/day) Kg/Ton	Concentrations of Pollutants discharged (Mass/vol.) mg/Nm^3	% variation from prescribed standards with reasons
(a) Water	0.022	Nil	The entire water discharge from different outfalls is under 100% recirculation.
(b) AIR	...	73	Within Prescribed limits.

PART D

HAZARDOUS WASTES
(As specified under Hazardous Waste Management and Handling Rules, 1989)

Hazardous Wastes	Total Quantity	
	During the previous financial year (2015-2016)	During the Current financial year (2016-2017)
Burnt Transformer oil*	Nil	Nil
Spent Lubricating oil**	Nil	Nil

***Burnt Transformer oil**

Burnt/used Transformer oil is being disposed off through disposal wing of Bokaro Steel Plant.

****Spent Lubricating Oil**

Spent Turbine Oil and other lubricating oil from gear casings and machines are sent to Oil Regeneration Unit of BSL/SAIL.

PART E

SOLID WASTES

TOTAL QUANTITY (TONNE)		
	During the previous financial Year (2015-2016) (T/Yr.)	During the current financial Year (2016-2017) (T/Yr.)
1. **FROM PROCESS** (i) Fly Ash along with bottom ash is being sent to ash pond as ash slurry	**6,68,000**	**6,75,300**
2. **FROM POLLUTION CONTROL FACILITY**	**5,34,400**	**5,40,223**
3. **QUANTITY RECYCLED / REUTILIZED WITHIN THE UNIT**	About 100 MT	About 350 MT

(i) Metal scrap*		

Note:

- **All Metal scrap** is sent back to BSL scrap yard for charging in steel Melting shop of BSL.
- Waste of ACSR conductor and waste of motor winding are e-auctioned through M/s MSTC to vendors for recycling.

PART F

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

Characterization (in terms of composition of quantum) of hazardous as well as solid wastes

SOLID WASTE	COMPOSITION	QTY. (YEAR)
1. Fly Ash	SiO_2	57.54%
	Al_2O_3	16.55%
	TiO_2	1.36%
	Fe_2O_3	10.60%
	FeO	0.99%
	CaO	1.32%
	MgO	0.40%
	Na_2O	0.29%
	K_2O	1.00%
	SO_3	0.56%
	P_2O_5	0.70%
	C	1.36%
	Undermined	7.33%

PART G

(Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.)

TREATMENT FACILITIES AND RE-CIRCULATION OF WATER SUPPLY IN BOKARO STEEL PLANT

Industrial Effluent Treatment facilities: (Under SAIL/BSL)

Treatment in sludge compartment: (Mainly for Deptts. Under SAIL/BSL)

a. Ash Pond : Sludge water form ;

   (i) TPP along with concentrated sludge from BF, GCP local recirculation.

   (ii) Other Units of Bokaro Steel Plant.

b. After settlement of suspended particles, clarified water passes through oil catcher where floating oil is separated out. Effluent goes to cooling ponds for recirculation after cooling.

Local Recirculation system:

There are the localized re-circulating systems serving in particular area.

Domestic Effluent / Sewage Treatment facilities: (Under SAIL/BSL)

Five Nos. of Oxidation ponds with three stages treatment facilities have been provided for treatment township sewage By SAIL/ Bokaro Steel Plant.

PART H

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

1. ASH POND MANAGEMENT

- Entire ash pond area is divided in six compartments. Ash slurry from the plant is discharged through 06 no pipelines in a single compartment at a time. When it is fully filled up the ash slurry discharge is diverted into another and in the meantime the filled up pond is evacuated. The evacuated ash is disposed off in nearby area in the form of ash mound. The entire job is at present outsourced to M/s HSCL who are doing it quite satisfactorily.
- **Zero discharge** concepts is fully functional for the ash pond effluent is 100% re-circulated so there is no discharge to any water body, hence NO WATER POLLUTION.
- Toe Drain (length is about 3 KM) has been constructed for seepage water from ash pond which free from ash. The maintenance of the Toe drain is going on regularly.
- BPSCL and SAIL/BSL have identified 04 (four) abandoned quarries at Maheshpur in Bokaro Steel Plant premises which is 05 KM far from our ash pond

and capacity is about 20 lakh Cum. Clearance obtained from DMO, owner (SAIL/BSL) and JSPCB for back filling these quarries to make useful land.

- MOU has been signed with NHAI contractor's M/s Dilip Buildcon for using about 2 Lakh Cum ash in a new 2/4-lanes NH-23 from Ramgarah to Dhanbad. They have already lifted around 70000 MT of fly ash till 31st March' 2017.
- Bokaro Steel Plant Township is also planning to broaden some of the major roads within the town for which ash will be utilized.
- Around 5000 trees and grass were planted in and around ash pond area during last year
- Greenery would be increased by regular plantation in and around peripheral areas. Power Plant is committed to maintain an eco friendly environment. We have developed the eco-friendly garden in plant. It is a continuous process and plant is adhering to this principle.

2. STACK EMISSION

- All Boilers in Power Plant are provided with Electrostatic Precipitators (ESPs) to restrict Stack Emission. AMC of ESP are being carried out by the OEM and the performance has been quite satisfactory.
- Stack Emission parameters related to all Boilers are found to be well within the prescribed limit of 100mg/ Nm3 for old Boilers and 50mg/Nm3 for New Boiler (Unit #9 only).
- Round the clock surveillance, Monitoring & maintenance of ESPs are done to maintain the prescribed norms.
- An online stack emission monitoring system has been installed and working successfully. Monitoring is being done by Yokogawa System and parameter is displaying in CPCB & JSPCB.

3. EFFLUENT DISCHARGE

- Zero Discharge concepts is fully functional for the ash pond effluent and entire effluent is 100% re-circulated so there is no discharge to any water body, hence **NO WATER POLLUTION**.
- Only storm drain water goes to drain No. 1 of BSL, treatment of which is taken care of by BSL itself.
- **On-line Effluent Monitoring System has** been installed and working successfully. Real time data transmission is being done through NEVCO server to JSPCB & CPCB.

4. AMBIENT AIR QUALITY (AAQ)

- AAQ monitoring, stack emission monitoring, Noise level monitoring and Effluent water analysis at specified frequency with reporting of data" has been outsourced to and done by M/s Scientific Research Laboratory, Ranchi. Since BPSCL is well within the premises of the Bokaro Steel Plant, the ambient quality is presumed to be similar to that of Bokaro Steel Plant.
- Bokaro Steel Plant has already installed an online AAQ monitoring and data is shared by BPSCL. A consent letter from BSL is attached.

5. NOISE POLLUTION

- Noise level is well within the prescribed limit. Noise Level Monitoring has been done by an outsourced agency M/s Scientific Research Laboratory, Ranchi as well as departmentally.

6. DRY ASH COLLECTION SYSTEM

- The dry ash collection system exists and in working condition for CPP Boilers and unit # 9.
- LOI has been issued to four different parties for lifting of fly ash free of cost. The names are:
    1. M/s Arya Bricks @1000 MT/month
    2. M/s Ranju Enterprises@500 MT/month
    3. M/s Soil India @1000 MT/month
    4. M/S Goenka bricks Private limited @1000MT/month
- LOI has been issued to M/s Bangur Cement for lifting of dry fly ash free of cost @1000 MT/month
- Regular advertisement has been publishing for lifting of fly ash free of cost from BPSCL.
- Installed & commissioned a fly ash brick plant (capacity 2500 to 3000 per shift) in BPSCL premises.
- Necessary arrangements are being done for utilization of bricks in the plant via circulars both in BPSCL and BSL stating, "only ash bricks is to be used for all construction activities.
- 9,000 MT of ash has been utilized to develop an echo-friendly garden in RCPH area.

7. RAIN WATER CONSERVATION/ HARVESTING MANAGEMENT

- The existing power plant has a well-designed storm drainage system.
- A network of drains collects the storm water and discharges the same to cooling pond of Bokaro Steel Plant.
- The cooling pond also acts as the raw water reservoir

- The water collected in the cooling pond also recharges the ground water table.

PART I

(Any other particulars for improving the quality of the environment)

Scientific Green Belt Development in and around BPSCL

Total No of trees Planted in township till date (in line with BSL)	33, 59,452
Total No of trees Planted inside BPSCL premises	10,000

Mahendra Prasad
Deputy Manager / Civil
Bokaro Power Supply Co. (P) Ltd.