# ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST MARCH'2015.

**PART – A**

| | | |
|---|---|---|
| **1.** | **Name and address of the owner of the industry operation or process** | **SRI ANUTOSH MAITRA**<br>**Chief Executive Officer**<br>**SAIL / Bokaro Steel Plant, Bokaro Steel City, Jharkhand** |
| **2.** | **Industry Category** | **Primary** |
| **3.** | **Production capacity** | **4.0 Million Tonne crude steel per annum** |
| **4.** | **Year of establishment** | **1972** |
| **5.** | **Date of last environment statement submitted** | **27.06.2014** |

## PART – B

## WATER AND RAW MATERIAL CONSUMPTION

### (i). WATER CONSUMPTION (Basic data )

| Sl. No. | Purpose | 2013-14 | 2014-15 |
|---|---|---|---|
| 1 | Process/ cooling | 46296 $m^3$ /day | 46028 $m^3$ /day |
| 2 | Domestic | 195504 $m^3$/day | 198458 $m^3$/day |

| Sl. No. | Name of products | Process water consumption per unit of product output | |
|---|---|---|---|
| | | *During the financial year 2013-14* | *During the current financial year 2014-15* |
| 1 | Crude Steel | 4.48 $m^3$/Tonne crude steel | 4.40 $m^3$/Tonne crude steel |

### (ii). RAW MATERIAL CONSUMPTION

| Sl. No. | Name of Raw Material | Name of products | CONSUMPTION OF RAW MATERIAL PER UNIT OUTPUT | |
|---|---|---|---|---|
| | | | *During the previous financial year* | *During the current financial year* |
| | | Crude Steel | 2013-14 | 2014-15 |
| 1 | Coal | | 0.91645 | 0.92488 |
| 2 | Ore fines | | 0.78798 | 1.03505 |
| 3 | Ore lump | | 0.72563 | 0.65843 |
| 4 | Lime Stone | | 0.25308 | 0.22789 |
| 5 | Dolomite | | 0.19991 | 0.23875 |
| 6 | Mn-ore | | 0.00000 | 0.00000 |
| 7 | Other alloying element | | 0.00818 | 0.00881 |
| | Total | | 2.89123 | 3.09381 |

# PART – C

## POLLUTION DISCHARGE TO ENVIRONMENT/UNIT OF OUTPUT

**(Parameters as specified in the consent order)**

| S. N. | PARTICULARS | QUANTITY POLLUTANTS DISCHARGED PER UNIT OF OUT PUT(KG/T OF CRUDE STEEL | QTY. OF POLLUTAN -TS DISCHAR-GED (kg/Day) | CONC. OF POLLUTAN-TS DISCHAR-GED MASS/ VOL. (Unit : mg/Lit.) | % FROM PRESCRIBED STANDARDS REASON |
|---|---|---|---|---|---|
| 1. | WATER | *TOTAL POLLUTANT LOAD FROM PLANT FROM ALL OUTFALLS* | | | |
| | Suspended Solids | 0.056095714 | 588.78 | 32.71 | All below norm |
| | Oil & Grease | 0.00066025 | 6.93 | 0.385 | -do- |
| | Phenolic Comp. | 0.00007168 | 0.7528 | 0.0418 | -do- |
| | Cyanide | 0.00002778 | 0.2916 | 0.0162 | -do- |
| | BOD | 0.01622659 | 170.31 | 9.4619 | -do- |
| 2. | AIR | | | | |
| | Particulate Matter | 0.9587 | - | - | -do- |

# PART – D

## DETAILS OF HAZARDOUS WASTE GENERATION & DISPOSAL DURING 2014-15

| S.N. | HAZARDOUS WASTE | ANNUAL QTY (T) | SOURCE OF GENERATION | TYPE OF DISPOSAL | CATEGORY OF WASTE |
|---|---|---|---|---|---|
| 1 | Acid Sludge | Nil | By Product plant of Coke Ovens | Neutralised with lime and disposed in hazardous waste pit | 13.1 of schedule – 1 |
| 2 | Spent Alkaline | Nil | do | Disposed in hazardous waste pit | 12.6 of Schedule -2 |
| 3 | Acidic Tar Sludge | 900 | do | Disposed in hazardous waste pit | 13.4 of Schedule – I |
| 4 | Spent Vanadium Pentaoxide | 0.800 | do | do | 17.2 of Schedule - I |
| 5 | Sulphur Sludge | 150 | do | do | 17.1 of Schedule – I |
| 6 | Decanter Tar Sludge | 75 | do | Charged with coal blend in Coke oven batteries | 13.3 of Schedule – I |
| 7 | Decanter Tar Sludge | 400 | do | Disposed in hazardous waste pit | 13.3 of Schedule – I |
| 8 | Tar Muck with Sand etc. | 200 | do | Disposed in hazardous waste pit | 13.4 of Schedule – I |
| 9 | Oil & Grease Muck | 110 | Mills area | do | 4.1 of Schedule – I<br>4.4 of Schedule – I |
| 10 | Asbestos Rope | 15.63 | Coke oven area | do | 15.2 of Schedule – I |
| 11 | Transformer oil | 0 KL | DNW | Sold to authorised buyer | 5.1 of Schedule – I |
| 12 | Oil sludge from oil regeneration unit | 0.498 | Oil regeneration unit | Handed over to I.O.C. For regeneration/disposal | 4.1 of Schedule – I |
| 13 | Zinc dross | 423.7 | HDGC/CRM | Sold to authorised parties | 6.3 of Schedule – I |
| 14 | Zinc ash | 119.57 | do | do | 6.2 of Schedule – I,<br>C-14 of Schedule – II |
| 15 | Used batteries | 1204 | Mills/Iron zone/OG/Traffic | do | C-12.3 of Schedule – I<br>C-14 of Schedule – II |
| 16 | ETP sludge | 1100 | BOD plant of COBPP | Charged in Coke Oven batteries by mixing in coal | 34.3 of Schedule – I |
| 17 | Flue Dust | 43845 | Blast furnace | Internal Recycling | 34.1 of Schedule – I |

*HAZARDOUS WASTE AUTHORIZATION REF. No.: PC/HW/DHN/66/06/D-3021(A) dtd. 24.10.11 was valid up to 31.3.2015. Applied for renewal in Jan'2015.*

# PART – E

# SOLID WASTE

| S. N. | | | DURING PREVIOUS FINANCIAL YEAR (2013-14) (TONNE/Yr.) | DURING CURRANT FINANCIAL YEAR (2014-15) (TONNE/Yr.) |
|---|---|---|---|---|
| 1 | FROM PROCESS | | | |
| | a | Blast Furnace slag | 1621799 | 1613496 |
| | b | SMS Slag | 415328 | 421081 |
| | c | Lime Dust | 4252.81 | 2775 |
| | d | Mill Scale | 49453 | 58226 |
| | e | Coke Breeze | 314465 | 341383 |
| 2 | FROM POLLUTION CONTROL FACILITY | | | |
| | a | Flue dust | 53002 | 43845 |
| | b | ESP dust | 10060 | 12235 |

## 1. RECYCLED/REUTILISED WITHIN THE UNIT

| | SOLID WASTE | QTY. (Tonne) | |
|---|---|---|---|
| | | *2013-14* | *2014-15* |
| a | Blast furnace slag | 703490 | 825845 |
| b | SMS slag | 267993 | 321251 |
| c | Lime dust | 0.00 | 0.00 |
| d | Mill Scale | 49453 | 58226 |
| e | Coke breeze | 314465 | 341383 |
| f | Flue dust | 53002 | 43845 |
| g | ESP Dust | 10060 | 12235 |

## 2. SOLD

| | SOLID WASTE | QTY. (Tonne) | |
|---|---|---|---|
| | | *2013-14* | *2014-15* |
| a | Blast furnace slag | 914829 | 732619 |
| b | SMS slag | 52744 | 20120 |
| c | Lime dust | 4252.81 | 2775 |

| | | | |
|---|---|---|---|
| **d** | **Mill Scale** | **0.00** | **0.00** |
| **e** | **Ferric Oxide** | **2132.45** | **1253** |

| **3. DISPOSAL** | | | |
|---|---|---|---|
| **a** | **Blast furnace slag** | **3480** | **55032** |
| **b** | **SMS slag** | **94591** | **79710** |
| **c** | **Flue dust** | **NIL** | **NIL** |

## PART – F

| S. N. | SOLID WASTE | PERCENTAGE COMPOSITION | | QTY.(YEAR) |
|---|---|---|---|---|
| 1 | BF SLAG | $SiO_2$ | 29.35-31.85 | PLEASE REFER PART-E |
| | | $Al_2O_3$ | 19.65-22.71 | -do- |
| | | CaO | 32.48-34.35 | -do- |
| | | MgO | 10.05-11.71 | -do- |
| | | FeO | 0.26-0.60 | -do- |
| | | $K_2O$ | 0.39.0.49 | -do- |
| | | $T_1O_2$ | 0.95-1.15 | -do- |
| | | Basicity | 1.05-1.17 | -do- |
| 2 | SMS SLAG | CaO | 44.35-48.96 | -do- |
| | | FeO | 13.16-17.06 | -do- |
| | | $SiO_2$ | 14.42-15.73 | -do- |
| | | MgO | 13.16-17.81 | -do- |
| | | MnO | 0.59-1.02 | -do- |
| | | $P_2O_5$ | 1.50-2.05 | -do- |
| | | $AL_2O_3$ | 0.83-1.15 | -do- |
| | | Basicity | 2.88-3.30 | -do- |
| 3 | LIME DUST | CaO | 78.97 | -do- |
| | | $SiO_2$ | 3.72 | -do- |
| | | $Al_2O_3$ | 2.62 | -do- |
| | | $Fe_2O_3$ | 0.67 | -do- |
| | | FeO | Nil | -- |
| | | MgO | 9.28 | -do- |
| 4 | FLUE DUST | Total Fe | 30.32 | -do- |
| | | $SiO_2$ | 9.98 | -do- |
| | | CaO | 8.72 | -do- |
| | | MgO | 0.23 | -do- |
| | | $P_2O_5$ | 0.12 | -do- |
| | | S | 0.09 | -do- |

# PART – G

## WASTE MATERIAL RECYCLED IN SINTER PLANT DURING 2014-15

| S. N. | WASTE MATERIAL | QTY (In Tonne) |
|---|---|---|
| 1 | LIME DUST/ ESP DUST | 12235 |
| 2 | MILL SCALE | 58226 |
| 3 | FLUE DUST | 43845 |
| 4 | L.D.SLAG DUST | 107905 |

# PART - H

## SECONDARY SCHEMES FOR AIR

| S. N. | AREA | SCHEMES |
|---|---|---|
| 1 | COKE OVEN | Hot Complex Repair of Batt#6 completed. Cold repair of Batt#3 completed. Battery #7 is under rebuilding. Dry Fog Dust Suppression System has been installed in Coke Sorting & Coal Handling plant of Coke oven. |
| 2 | SINTER PLANT | Installation of ESP in half band of M/C-3 completed. |
| 3 | BLAST FURNACE | ESP based de-dusting system has been installed in BF #2. Dry Fog dust suppression system installed in PSD-1 |
| 4 | SMS | Secondary emission control system is to be installed in SMS#1& SMS#2 .Under Stage-2 approval. |

## SCIENTIFIC GREEN BELT DEVELOPMENT INSIDE AND OUTSIDE THE PLANT

**TOTAL NO. OF TREES PLANTED IN TOWNSHIP TILL DATE - 3442402**
**TOTAL NO. OF TREES PLANTED IN WORKS TILL DATE - 705850**

**TOTAL NO. OF TREES PLANTED INSIDE BSL QUARTERS IN VARIOUS SECTORS TILL DATE - 43200**

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**TOTAL - 4191452**

**(New replacement plantation is also going on)**