TSJ/EMD/C-23/175/23
28 Sept 2023

The Member Secretary
Jharkhand State Pollution Control Board
T.A. Division Building,
HEC Campus, Dhurwa
Ranchi- 834004

Sub.: Submission of Environmental Statement (Form 5) for Tata Steel Limited - Main Works, Jamshedpur for the year 2022-23

Dear Sir,

With the reference to the captioned subject, we are herewith submitting the Environmental Statement (Form 5) for Tata Steel Limited - Main Works, Jamshedpur for the year 2022-23.

Requesting you to kindly acknowledge the same and put in your records for future reference.

Your faithfully
For Tata Steel Limited

Head Environment Clearance& Compliance
Tata Steel Limited

Encl: As above

Copy to: Regional Officer, Jharkhand State Pollution Control Board, Jamshedpur

TATA STEEL LIMITED
Environment Management Jamshedpur 831 001 India
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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

ENVIRONMENTAL STATEMENT
FOR THE YEAR 2022-2023

Main Steel Works
TATA STEEL LIMITED

Submitted by:
ENVIRONMENTAL MANAGEMENT DEPARTMENT
TATA STEEL LIMITED
JAMSHEDPUR-831001
JHARKHAND

[Form V]

Environment Statement for the Financial Year ending 31st March 2023

PART-A

(i)	**Name & address of the owner/occupier of the industry operation or process:**	Mr. T.V. Narendran CEO & MD Tata Steel Limited Jamshedpur-831001 East Singhbhum, Jharkhand
(ii)	**Industry Category**	Red Category
	Primary STC Code:	3312
	Secondary SIC Code	331200
(iii)	**Production Capacity**	Production Capacity: 11 MTPA Crude Steel (Major units are: RMM, Blast Furnaces, Coke ovens, Sinter Plants, Pellet Plant, LD Shops, HSM, CRM, WRM, MM, NBM, CAPL*, Captive Power Plant, Captive Railway Sidings and Utilities, JAMIPOL**) **CAPL is being owned and operated by M/s Jamshedpur Continuous Annealing and Processing Company (JCAPCPL), a joint venture formed by Tata Steel and Nippon Steel and Sumitomo Metal Corporation (NSSMC) to manufacture and market high-quality, automotive- grade continuous annealed products inside premises of Jamshedpur steel works.* ***Lime Grinding Plant and Bentonite Grinding Plant, JAMIPOL a joint venture of Tata Steel*
(iv)	**Year of Establishment**	1907
(v)	**Date of last Environment Statement submitted**	September 22, 2022, vide letter no. EMD/C-23/168/22

PART-B

WATER & RAW MATERIAL CONSUMPTION

i) Water Consumption (m^3/day)
Process & Cooling : 57,584
Domestic Consumption: 10,250

Name of the product	**Process water consumption/unit of product output (m^3/tcs)**	
Crude Steel	During the Previous Financial Year (2021-22)	During the Current Financial year (2022-23)
	2.18	1.97

ii) Raw Material Consumption (Works):

Name of raw material	Name of products	Consumption of raw material per unit of output (kg/ton of crude steel)	
		During the Previous Financial Year (2021-22)	During the Current Financial year (2022-23)
Iron Ore	Crude Steel	1678.20	1820.44
Coking Coal		621.29	566.14
Limestone		318.72	179.03
Non-Coking Coal		195.06	192.25
Dolomite & Pyroxenite		129.57	289.33
Purchase Pellet		1.41	26.36
Quartzite and Other materials		15.92	11.75
Zinc & Zinc Alloys		0.74	0.60
Ferro Manganese - High Carbon Lumps		0.71	0.76
Ferro Manganese - Medium Carbon		1.58	0.81

PART-C

Pollution discharged to environment/unit of output.

Pollution	Quantity of pollutants discharged (mass/day)		Concentrations of pollutants in discharges (mass / volume)		% of variation from prescribed standards
	(Tons/day)		(mg/L)		
(a) Water	**2021-22**	**2022-23**	**2021-22**	**2022-23**	
TSS	0.95	0.96	72	62	-38%
COD	2.07	1.66	128	110	-56%
BOD	0.18	0.20	10	13	-57%
Oil & grease	0.03	0.03	1.5	2.0	-80%
(b) Air	**2021-22**	**2022-23**	**2021-22**	**2022-23**	
	(Tons/day)		(mg/Nm^3)		
PM	7.25	6.65	15.20	10.66	-89%
SO_2	16.77	16.80	72.60	84.25	-
NOx	16.35	15.86	84.70	79.62	-

PART-D

Hazardous Waste

[As Specified under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016]

Hazardous Waste	Total Quantity (Tonnes)	
	During the Previous Financial Year (2021-22)	During the Current Financial year (2022-23)
(a) From Process		
Kiln Dust	18,862	19465
GCP Sludge*	5,65,567	5,93,687
Mill Sludge	2499	2949
Used Oil	2325	1134
Waste Grease	185.00	139.20
Muck Waste	5846	10852
Tar Sludge	1946	2219
Zinc dust Ash	158	19
Iron Hydroxide Sludge	357	338
Chrome Sludge	73.5	101.0
(b) From Pollution Control Facilities		
APCE Dust	1,63,051	1,89,284
BOD Sludge	396	413
*GCP Sludge includes sludges from LD Shops and Blast Furnaces		

PART-E

Solid Wastes

(a) From Process	**Total Quantity (tonnes)**	
	During the Previous Financial Year (2021-22)	During the Current Financial year (2022-23)
BF Slag	43,51,309	43,68,945
LD Slag	16,14,344	16,40,534
Lime Fines	2,14,666	2,20,114
Mill Scale	99,412	1,05,523
Fe bearing Muck	13,531	12,654
(b) From Pollution Control Facilities- Nil		
(c) Quantity recycled or re-utilized within the unit		
	During the Previous Financial Year (2021-22)	During the Current Financial year (2022-23)
BF Slag	14,018	10,106
LD Slag	3,39,308	1,90,117
Lime Fines	1,96,088	2,06,357
Mill Scale	1,00,433	1,05,368
Fe bearing Muck	13,390	12,618

Sold		
	During the Previous Financial Year (2021-22)	During the Current Financial year (2022-23)
BF Slag	43,05,189	44,23,258
LD Slag	15,33,948	16,31,726
Lime Fines	17,772	15,559
Mill Scale	0	0
Fe bearing Muck	0	0
Disposed		
	During the Previous Financial Year (2021-22)	During the Current Financial year (2022-23)
BF Slag	0	0
LD Slag	0	0
Lime Fines	0	0
Mill Scale	0	0
Fe bearing Muck	0	0

PART-F

Chemical Composition of majority of waste as produced in process of Tata Steel's Jamshedpur operation is given below:

Name of Wastes	Chemical Composition (%)	Disposal Method
Coal Tar Sludge	C – 90-95; Moisture – 1.3 S – 0.3-0.7; CV – 8800 KCal/kg Sp. Gr. – 1.2; Ash – 0.04-0.05	Mixed with coal & used in Coke Plant
BOD Sludge	VM – 50; Ash – 26 Moist. – 20; CV – 5800 KCal/kg	Mixed with coal & used in Coke Plant
B F Slag	CaO – 32; MgO – 9 SiO_2 – 34.5; MnO – 0.25 P_2O_3 – Nil; Al_2O_3 – 1.2 S – 1.4; TiO_2 – 1.2; FeO – 0.33	• Sold to cement plant. • Used in construction
GCP Sludge from Blast Furnace	Fe(T) – 33.65; MnO – 0.14 CaO – 3.45; Al_2O_3 – 3.64 SiO_2 – 6.40; S – 0.230; P_2O_5 – 0.307 TiO_2 – 0.30; MgO – 1.40 Alkali – 0.5 to 0.7; C – 21-24	• Used in Sinter Plant • Used in Pellet Plant
L D Slag	Fe(T) – 18-25; MgO – 1-2 CaO – 45-55; MnO – 0.5-1.0 SiO_2 – 10-12; Al_2O_3 – 0.8-1.0 P_2O_5 – 3.5-4.0; S – 0.2 TiO_2 – 0.8-1; Alkali – 0.18	• Used in construction. • Used in Sinter Plant
GCP Sludge from LD Shops	Fe(T) – 55 to 60; MgO - <1.0 CaO – 10-15; MnO - <0.5 SiO_2 – 1.5-2.0; Al_2O_3 - <0.5 P_2O_5 – 0.29; TiO_2 - <0.1	• Used in Sinter Plant

Mill Scale	Fe(T) – 72-75; MnO - <0.5 SiO_2 - <0.5; Al_2O_3 - <0.5 MgO – 0.1; Oil – 10-12	• Used in Sinter Plant
Mill Sludge	Fe(T) – 42.76; MgO – 0.35 CaO – 0.65; MnO – 0.27 SiO_2 – 1.12; Al_2O_3 – 0.50 P_2O_5 – 0.089; TiO_2 – 0.03 Cr_2O_3 – 0.03; Oil – 10-12	• Used in Sinter Plant
Lime Fines	CaO – 66.5; Al_2O_3 – 0.26 SiO_2 – 1.53; MgO – 5.68	• Sold • Used in Sinter Plant

PART-G

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

Sl. No.	Pollution abatement Measures taken in 2022-23	Impact on conservation of natural resources & others
1	Upgradation of CETP phase 2 from 4 MGD to 9 MGD is in progress	Will subsequently reduce freshwater consumption
2	Upgradation of water system at LD1 & LD2	Reduction in freshwater consumption
3	Setting up of 17.68 MWDC / 13.1 MWAC Solar Power Plants at various locations inside TSJ Works are in progress	Will subsequently reduce the amount of energy used from the grid.

PART-H

Additional Measures Investment Proposal of Environmental Protection Including Abatement of Pollution

- Upgradation of the existing pollution control equipment to bring down dust level.
- Improvement in water recycling facility for reducing the wastewater discharge.

PART-I

Any other particulars for improving the quality of environment.

- Replacement of 10 years above old & outlived Split/window AC to increase the efficiency and reduction in power consumption is in progress.
- LD Slag after metal recovery is being used internally in the manufacturing process as well as externally in brick and road making works.
- BF Slag is being granulated through online slag granulation facilities available at BFs and made available to the Cement plants for cement making.
- We have planted approx. 1,33,692 nos. saplings during April 2022 to March 2023 inside the works, Township and JMD area.

Details of Plantation (nos.) done during April 2022 – March 2023

Month	Plantation in Town and JMD	Plantation in Works	Species
Apr-22	659	857	*Karanj,conocarpus, Syzygium, fox tail Palm , Arica Palm*
May-22	428	1813	*Mahagoney,Conocarpus,Juniperious,Kanel,Hibicus,Tecoma,Foxtail Palm*
June-22	1900	2140	*Conocarpus, Juniperious, Cassia fistula, Techoma, Sita Ashok, Terminalia argintia, Bottel brush, Mahagoney , Arjun,Karanj, Putranjiva,Arica Palm, Sizygium , fox tail Palm*
July-22	30370	1362	*Putranjiva,conocarpus, ashoka, Juniperious, Syzygium Sp.,Arica Palm, Exeroa*
August-22	33451	897	*Arjun, Karanj,conocarpus, Syzygium, fox tail Palm , Arica Palm ,Juniperious, Puterenjevia*
Sept-22	30826	1324	*Plumeria, Conocarpus, Juniperious, Cassia fistula, Techoma , Arjun,, Hemliya Spathodia , Sizygium , fox tail Palm Puterenjevia ,*
Oct-22	12867	573	*Conocarpus, Cassia fistula, Arjun, Karanj, Putranjiva,Arica Palm, Syzygium , fox tail Palm,Juniperious .*
Nov-22	3875	535	*Juniperious (Thuja), conocarpus, Syzygium, Auricaria, foxtail palm*
Dec-22	1391	280	*Conocarpus, Putranjiva,Arica Palm, Syzygium , fox tail Palm,Juniperious .*
Jan-22	1575	1744	*Fox tail Palm, Juniperious, Conocarpus, Putranjiva,Arica Palm, Syzygium .*
Feb-22	999	280	*Conocarpus, Kamani Arica Palm Arjun, Puternjiva , Foxtail palm,*
March-22	3288	258	*Concarpus, Fox tail Palm, Techoma*
Total	**1,21,629**	**12,063**	**1,33,692**