TSTD/PC/ES/2024/01

Date: 27.09.2024

To,

The Member Secretary,

Jharkhand State Pollution Control Board,

H.E.C. Campus,

T.A.Division, Dhurwa,

Ranchi- 834 004

Sub.: - Environmental Statement (Form V) for Tata Steel Limited, Tinplate Division - FY'2023-24

Sir,

With the reference to the above, we are herewith submitting the Environmental Statement (Form V) for Tata Steel Limited, Tinplate Division, Golmuri for the FY' 2023-24 duly filled in prescribed format.

Thanking you,

Yours Faithfully,

For Tata Steel Limited, Tinplate Division

(Dr. Sourajyoti Dey)

Chief Works – Tinplate Division

Enclosure: - Form – V (Environmental Statement)

Copy to: - Regional Officer, J.S.P.C.B., M.15, New Housing Colony, Adityapur Jamshedpur - 839018

FORM – V

(See Rule – 14)

Environmental Statement for the financial year ending 31st March 2024

Part - A

i) **Name and address of the owner / occupier of the industry operation or process**

SHRI. T.V. NARENDERAN,
CEO & MANAGING DIRECTOR,
TATA STEEL LIMITED, TINPLATE DIVISION,
GOLMURI WORKS, JAMSHEDPUR- 831 003

ii) **Industry category Primary - (STC Code) Secondary - (STC – Code):** RED

iii) **Production capacity- Units**:

a) Electrolytic Tinplate & Tin Free Steel - 4,15,000 TPA
b) Lacquered sheets & Printed Sheets - 28,000 TPA

iv) **Year of establishment**: 1922

v) **Date of the last Environmental Statement submitted**: 29.09.2023

PART – B

1. **Water and Raw Material Consumption**

(a) Water consumption m^3/d

Process	: -	6737 m^3/d
Boiler/Cooling	: -	693 m^3/d
Domestic	: -	4835 m^3/d (Includes water supply to Town & Plant)

Name of Products	Process water consumption per unit of product output	
	During the previous Financial year (1)	During the current Financial year (2)
1) Electrolytic Tinplates / Tin Free Steel (Electrolytic Tinning Lines)	4.11 m^3 / MT	4.06 m^3 / MT
2) Tin Mill Black Plate Coil (TMBP) (Cold Rolling Mills)	1.86 m^3 / MT	1.81 m^3 / MT

(b) **Raw Material Consumption**

*Name of raw materials	Name of Products	Consumption of raw material per unit
	During the previous Financial year	During the previous Current year
	(1)	(2)

Sl. No.	Name of the Raw Materials	Name of the Product	Consumption of Raw Materials per Unit of output	
			During the Previous Financial year	During the Current Financial year
1.	Tin Mill Black Plate Coil (TMBP)	Electrolytic Tinplate/ Tin Free Steel	1.0499	1.0514
2.	Tin	-do-	0.00320	0.00305
3.	Hot Rolled Coil /FHCR	TMBP	1.155	1.161
4.	Rolling oil	"	0.00070	0.00085
5.	Hydrochloric Acid	"	0.00470	0.00514

Production for FY'2023 - 24: - Electrolytic Tinplate & Tin Free Steel – 3,78,202 MT
Printed sheets & Lacquered Sheets – 13,578 MT

* Industry may use codes if disclosing details of raw material would violate contractual Obligations, 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)

1) Pollution	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
a) Water – Effluent discharge			
TSS	108 Kg/day	19.2 mg/lit	NIL
BOD	84 Kg/day	15.0 mg/ lit	NIL
COD	464 Kg/day	82.7 mg/lit	NIL
O&G	28 Kg/day	5.0 mg/lit	NIL
b) Air - Stack Emission			
PM	145 Kg/day	15.2 mg/Nm3	NIL
SO2	525 Kg/day	56.9 mg/Nm3	NIL
NOx	414 Kg/day	49.9 mg/Nm3	NIL

Monitoring done by NABL approved lab.

PART - D

HAZARDOUS WASTES

(as specified under hazardous wastes (management, handling and trans boundary movement rules, 2016)

Hazardous Wastes	Total Quantity	
	During the Previous Financial year	During the Current Financial year
a) From Process		
1. Used/Waste oil	284.24 MT	405.48 MT
2. Waste emulsion	214.69 MT	103.23 MT
3. Process residue	7.52 MT	8.09 MT
4. Waste Pickling Liquor	16767 KL	18278.3 KL
5. Alkali residue	3866.18 KL	4070.64 KL
b) From Pollution Control Facilities		
1. ETL Sludge	561.12 MT	1558.58 MT
2. CRM Sludge	1340 MT	1506 MT

PART – E

SOLID WASTES

	Total Quantity	
	During the previous Financial year	During the Current Financial year
a) From Process		
- Steel Scrap	67411.144 MT	73236.2 MT
- Tin sludge/Dross	8.961 MT	13.915 MT
- Iron Oxide	2754.00 MT	2833.24 MT
b) From Pollution control facility		
- Fly Ash	17231.2 MT	19970.3 MT

c) *Quantity recycled or re-utilized within the Unit	During the previous Financial year	During the Current Financial year
*Sold	67420.105 MT	73250.115 MT
* Reutilized	2754 MT	2833.24 MT
* Disposed	17231.2 MT	19970.3 MT

Note: Sold - Steel Scrap and Tin sludge/dross; Disposed to Fly ash brick manufacturers - Fly ash Reutilized at Paint industry - Iron oxide (by product of ARP)

PART – F

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

A. **Solid Wastes –**

1. **Steel Scrap:** - Generates during rolling, shearing and plating operation. These scraps are of different categories. Industrial scraps like uncoated coil ends/sheet ends, Cold Rolled sheets, Black Plates, Electrolytic tinplate, defective and folded scrap are generated during production of tinplate. These scraps are segregated, stored in Scrap Yard and sold to outside parties.
2. **Tin Sludge & Dross:** - These solid wastes are generated from Electrolytic Tinplating Line. SnO_2 is the major component of the dross. It is being sold to outside parties.
3. **Iron Oxide:** - Iron oxide is a by-product of ARP which is dispatched to Paint Industry for its reutilization in paint making. The major component is Iron (III) oxide – hydroxide.
4. **Fly Ash: -** Generates from coal fired Boilers for steam generation. Fly ash consists primarily of oxides of silicon, aluminum, iron, and calcium. Entire generated Fly ash as shown below is being provided to fly ash brick manufactures on free of cost basis.

Apr'23	May'23	Jun'23	Jul'23	Aug'23	Sep'23	Oct'23	Nov'23	Dec'23	Jan'24	Feb'24	Mar'24
1494.5	1711.14	1704.4	1676.5	1779.85	1732.74	1729	1665.55	1695.1	1522.5	1605.27	1653.76

Unit: - MT

B. **Hazardous waste**

1. **Used Oil & Waste emulsion**: - It is generated in Cold rolling and lubricating operations. Used oil and waste emulsion oil/mucks are collected and stored in drums and finally disposed through to authorized recyclers and pollution control board authorized CHWTSDF
2. **Waste Pickling Liquor:** Waste Pickling Liquor is generated from pickling line and is acidic in nature. It is being treated/recycled at in-house Acid Regeneration Plant (ARP). Regenerated Acid is generated at ARP which is again reused back in the Pickling process.
3. **Alkali Waste:** Alkali wastewater is intermittently dumped from ECL process, and it is treated at CRM waste water treatment plant.
4. **Process Waste:** It is generated in solution center unit, and it is collected in the drums and disposed through authorized recyclers.
5. **Sludge** – There are two separate effluent generated from Electrolytic Tinning Line (ETL) i.e., Hexavalent chromate waste effluent and Process waste effluent. Hexavalent chromate waste effluent is reduced to trivalent form as slurry at Effluent treatment plant and dewatered in filter press as chromate sludge cake. Process waste effluent is neutralized and precipitated at effluent treatment plant as slurry and dewatered in filter press as process sludge cake. Another type of sludge is generated from Wastewater treatment plant of Cold rolling mills is in the form of sludge cake after dewatering in filter press. We have engaged CHWTSDF (M/s Adityapur Waste Management Pvt. Ltd., Sinni) for disposal of ETL sludge and CRM sludge.

PART – G

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

i. Installation of Variable Frequency Drive (VFD) across ECL-1, ECL-2 and 6hi-1 of CRM resulting in annual electrical saving of 0.693 million units.

ii. 200 numbers 40 watt Tube lights converted into LEDs 18 watt tube lights resulting in annual electrical saving of 0.037 million units.

iii. Placement of Timer in all Office AC at Solution Centre resulting in annual electrical saving of 0.108 million units.

iv. Modification of ICW pump of 220KW in place of two 220 KW at CRM in annual electrical saving of 0.030 million units.

v. 100 number of 70 watt metal halide converted into 35 watt LEDs lights in annual electrical saving of 0.030 million units.

vi. 40 number of 400 watt metal halide converted into 135 watt LEDs lights in annual electrical saving of 0.091 million units.

vii. We are using 2 Compressor after modification at CRM 2 Chiller unit instead of using 3 compressors resulting in annual electrical saving of 0.385 million units.

viii. Two nos of 7.5 KW motor are equipped with VFD previously it from MCC in annual electrical saving of 0.292 million units.

ix. Change in fuel at annealing furnaces to propane gas fired system from HSD liquid fired system. Propane consumption at annealing furnace has reduced, as a result of Heating Hood optimization (i.e utilizing heating hood's residual heat for fresh bases).

x. WHRS (Waste heat recovery system) with reuse of rinse water for making DM water at Cold rolling mill area for water conservation.

xi. Transparent sheets have been used in the pickling line, temper mills and Annealing furnace area to reduce energy consumption for illumination during daytime.

xii. Installed solar water heater at works canteen and hospital to conserve energy.

xiii. Diversion of WHRS effluent discharge from underground trench to over ground through laying of new pipeline and FRVE tank and strengthening of collection tanks of existing CRM effluent treatment plant.

xiv. Rainwater harvesting systems were installed at hospital area and ETL-2 area for recharge of underground water.

xv. Implementation of Ground Water Directorate approved Rain water harvesting plan at Works.

xvi. Installation of pumping arrangements at low lying area.

xvii. Installation of additional Continuous Emission Monitoring System at Boiler.

xviii. Installation of turbo ventilators at Shop Floor (ETL – 1, 6 Hi Mill bay and ECL)

xix. Installation of 600 TR Chiller Plant based on environment friendly refrigerant (R134A)

xx. Installation of solar panel (200 KWP Capacity) on BOO model at Solution Centre Rooftop [Phase-1]

xxi. Installation of Solar panel (1.1 MWp capacity) on BOO model at Mills ECR rooftop [Phase-2]

xxii. High power consuming Conduction reflow converted to 100% Induction reflow in both Tinning Lines

PART – H

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

i. Augmentation of ETLs effluent treatment plant partially completed including additional waste water collection sump, filter press and sludge pits for improvement in treated effluent quality.

ii. CRM waste water Treatment plant augmentation has been completed with the facilities of additional neutralization tanks, pressure sand filter and filter press.

iii. Project initiated for removal of deposits of existing water body (Works bund) and beautification to maintain the wholesomeness of water has been completed.

iv. Continuous Online Emission monitoring system (CEMS) and effluent monitoring system installed.

v. Air pollution control devices such as ESPs, Wet Scrubbers and Bag filters have been installed to reduce air emissions.

vi. To prevent dust generation inside the plant, e.g.: Installation water fogging system at Boiler conveyor to control dust, installation of sprinklers resurfacing of roads completed.

vii. Inside works road cleaning by mechanized vacuum cleaning machine started.

viii. Regular water sprinkling on the roads is being done to minimize dust concentration in ambient air inside the plant.

ix. Up-gradation of ash handling system has been completed at boiler to control dust for better ambient air quality.

x. Wheels washing system has been installed for vehicle entry at Solution centre to prevent entry of dust through truck wheels.

xi. Rehabilitation of Sewage network for township and bustee area completed, comprising with Sewage pumping Station (SPS) and Packaged Sewage treatment Plant (PSTP) and systems are operational.

xii. Environmental laboratory had been set up for better monitoring & control of effluent discharge quality on regular basis.

xiii. Regular monitoring of stack emission, ambient air quality, noise and effluent quality being done.

xiv. Fencing of secured landfill has been completed.

xv. Construction of road at secondary product area has been completed for control of road emission.

xvi. Installation of additional new ESP at Boiler

xvii. Installation of TFS fume extraction system at ETL – II

xviii. Laying of new over ground Hume pipe for carrying treated effluent

xix. Diversion of effluent discharge through over ground pipeline & FRVE composite drain

xx. Installation of Resin based Treatment plant for extraction of Chrome and generation of Demineralized Water.

xxi. Installation of Continuous Ambient Air Quality Monitoring Station at Works.

xxii. Plantation of trees at Works as per plan.

xxiii. Installation of pumping arrangements at collection tank at boiler for reuse of boiler back wash water in ash conditioning

xxiv. Control of fugitive emission by fixing paver block on loose soil at new truck parking area and yard

xxv. Construction of additional hazardous waste storage shed in Secondary Product area

xxvi. Construction of RCC settling pit near works bund

xxvii. Construction of overhead 6Hi emulsion wastewater collection tank with recovery system at CRM WWTP-2

xxviii. Replacement of seven old tanks with new acid storage tanks in TFA1

xxix. Construction of new sludge holding tank at ETL

xxx. Capacity enhancement/augmentation of ETL filter press

xxxi. Construction of loading point at yard for emergency disposal of sludge through CHWTSDF.

Expenses incurred for environment protection including abatement of pollution, prevention of pollution

1. AIR POLLUTION

i Boiler modification (1994)

ii Exhaust Duct & Scrubber systems (CRM) (1994)

iii Installation of New Boiler with ESP (2004)

v Installation of Incinerator & Autoclave at Hospital (2012)

v Up-gradation of Exhaust duct & Scrubber systems at CRM (2005)

vi Up-gradation of FBC Boiler with ESP & Fly ash handling system (2010-11)

vii Fumes exhaust duct & scrubber system at CRM-II

viii Wheels washing system made for vehicle entry at Solution center (2013)

ix Installation water fogging system at Boiler conveyor (2013-14)

x Road surfacing and Paver block for dust control (2014-15)

xi Procurement of mechanized vacuum cleaning machine (2015-16)

xii Installation of online stack emission monitoring system (2015-16)

xiii Road construction at secondary product area for dust control (2016-17)

xiv Installation of additional new ESP at Boiler (2017-18)

xv Installation of TFS fume extraction system at ETL - II (2017-18)

xvi Installation of Continuous Ambient Air Quality Monitoring Station (2018-19)

xvii Plantation of trees (2018-19)

xviii Installation of additional Continuous Emission Monitoring System at Boiler (2019-20)

xix Installation of turbo ventilators at Shop Floor (ETL – 1, 6 Hi Mill bay and ECL) (2019-20)

xx Control of fugitive emission by fixing paver block on loose soil at new truck parking area and yard (2019-20)

xxi Installation of solar panel (200 KWP Capacity) on BOO model at Solution Centre Rooftop [Phase-1] (2020-21)

xxii Plantation of trees (2020-21)

xxiii Installation of 600 TR Chiller Plant based on environment friendly refrigerant (R134A) (2020-21)

xiv Construction of additional hazardous waste storage shed in secondary product area (2020-21)

xxv Plantation of trees (2021-22)

xxvi Reconstruction of Temper Mill-1 stack (2021-22)

xxvii Installation of Solar panel (1.1 MWp capacity) on BOO model at Mills ECR rooftop [Phase-2] (2021-22)

xxviii High power consuming Conduction reflow converted to 100% Induction reflow in both Tinning Lines (2022-23)

xxix Installation of an additional ash silo at Boiler area for emergency purpose (2023-24)

xxx Installation of Mist canaon at Boiler area (2023-24)

xxix Plantation of trees – 1000 Nos. (2023-24)

xxviii Annual Oprn. & Maint. cost of air pollution control equipment (2023-24)

2. WATER POLLUTION

i. Effluent Treatment plant at ETLs (1978)
ii. Effluent treatment plant & Acid Regeneration plant at CRM (1994)
iii. Cascade drains with settling pits & ponds (1995)
iv. Up-gradation of Effluent treatment Plant at CRM (2005)
v. Up-gradation of Effluent treatment Plant at ETLs (2007-08)
vi. Rainwater Harvesting at Hospital & ETL-2 (2007-08)
vii. Secure landfill facility (2008-09)
viii. Rehabilitation of Sewage network for township and bustee area (2013)
ix. Effluent Treatment & Acid Regeneration Plant -2 at CRM (2012)
x. New Automatic pH recorder & cascade drain at final discharge (2013)
xi. New Secure land fill facility (2013-14)
xii. Storm water drain modification & re-rerouting towards works bund
xiii. Waste Water Treatment Plant at CRM-II with water recycling
xiv. Augmentation of effluent treatment plant at CRM
xv. Catchment drain and pits around waste water treat. plant at CRM (2013)

xvi. Set-up of Environmental laboratory (2010-11)

xvii. Augmentation of ETLs effluent treatment plant being done (2015-16)

xviii. Works bund removal of deposits & beautification (2015-16)

xix. Installation of online effluent monitoring system (2015-16)

xx. Fencing of secured landfill (2016-17)

xxi. Works bund removal of deposits & beautification (2016-17)

xxii. Augmentation of ETLs effluent treatment plant being done (2016-17)

xxiii. Laying of new over ground Hume pipe for carrying treated effluent (2017-18)

xxiv. Diversion of effluent discharge through over ground pipeline & FRVE composite drain (2017-18)

xxv. Installation of Resin based Treatment plant for extraction of Chrome and generation of Demineralized Water (2017-18)

xxvi. Diversion of WHRS effluent discharge through over ground pipeline & FRVE tank and strengthening of collection tanks of existing CRM WWTP (2018-19)

xxvii. Implementation of Ground Water Directorate approved Rain water harvesting plan at Works (2018-19)

xxviii. Installation of pumping arrangements at low lying area (2019-20)

xxix. Installation of pumping arrangements at collection tank at boiler for reuse of boiler back wash water in ash conditioning (2019-20)

xxx. Construction of RCC settling pit near Works bund (2020-21)

xxxi. Construction of overhead 6Hi emulsion wastewater collection tank with recovery system at CRM WWTP-2

xxxii. Replacement of seven old tanks with new acid storage tanks in TFA1

xxxiii. Construction of new sludge holding tank at ETL (2022-23)

xxxiv. Capacity enhancement/augmentation of ETL filter press (2022-23)

xxxv. Construction of sludge loading point at yard for emergency purposes (2023-24)

xxxvi. Installation of flow meters (2023-24)

xxxvii. Annual Oprn. & Maint. cost of Acid Regeneration Plant (2023-24)

xxxviii. Annual Oprn. & Maint. cost of Effluent Treatment Plants (2023-24)

PART – I

Any other particulars for improving the quality of the environment.

i. Electronic waste (e-waste) management initiative taken by awareness sessions and dedicated e-waste bins kept in respective places for collections.

ii. Regular training for awareness among employees on environment and climate change issues being conducted.

iii. Safety standard for handling of hazardous waste management prepared and training has been given to employees involved in hazardous waste management.

iv. Under green development initiative, tree plantations are being done on world environment day inside and outside premises of the company.

v. Celebration of world environment day is being organized for environment awareness amongst employees by conducting quiz, poster and slogan competitions.

vi. Installation of Variable Frequency Drive (VFD) in various units/plants for conservation of energy.

vii. Good housekeeping is being maintained in the plant.

viii. Implementation of Ground Water Directorate approved Rain water harvesting plan.

ix. Plantation of saplings/trees at Works as per plan.

x. Installation of turbo ventilators at Shop Floor (ETL – 1, 6 Hi Mill bay and ECL).

xi. Installation of 600 TR Chiller Plant based on environment friendly refrigerant (R134A)

xii. Installation of solar panel (200 KWP Capacity) on BOO model at Solution Centre Rooftop [Phase-1]

xiii. Installation of Solar panel (1.1 MWp capacity) on BOO model at Mills ECR rooftop Phase-2]

xiv. High power consuming Conduction reflow converted to 100% Induction reflow in both Tinning Lines

xv. Installation of Mist canaon at Boiler area for control of fugitive dust

xvi. Installation of an additional ash silo at Boiler area for emergency purpose

Signature :

Name : Dr. Sourajyoti Dey
Designation : Chief Works – Tinplate Division
Address : Tata Steel Limited, Tinplate Division
Gomuri Works, Jamshedpur-831003

Date: - 27.09.2024
Place: - GOLMURI, JAMSHEDPUR