TSLMD/ENV/24-09/35

Date: 27/09/2024

To
The Environmental Engineer & Regional In-charge
West Bengal Pollution Control Board, Regional Office,
P.S: Bhabanipur, Raghunathchak,
PO: Barghasipur, Haldia,
Dist-Purba Medinipur, Pin-721657

Sub: Submission of Environmental Statement in FORM V for the year 2023-2024

Dear Sir,

We hereby submit the Environmental Statement of Tata Steel Limited, Metaliks Division (Formerly known as Tata Metaliks Limited) in FORM-V for the year 2023-2024

Please, acknowledge & receive the same.

Thanks & regards,
For Tata Steel Limited, Metaliks Division

Sakti Sankar Bandopadhyay
Chief (PI-Operation & Maintenance)

Encl. as above

Copy to: OSD (O&E), West Bengal Pollution Control Board, Paribesh Bhawan, Kolkata 700106

West Bengal Pollution Control Board
Received
0 SEP 2024
UNCHECKED
O & E Cell

FORM V

(See rule 14)

Environment Statement for the financial year ending with 31st March 2024

PART – A

i. *Name and address of the owner / occupier of the industry -*

M/s Tata Steel Limited, Metaliks Division (Formerly known as Tata Metaliks Ltd.) Vill- Mahreshpur, P.O. - Samraipur, P.S.- Kharagpur (Local), Dist – Paschim Medinipur. West Bengal, Pin – 721301.

ii. *Industry category* : **Red**
Primary- (STC Code) : *21-500003*
Secondary- (STC Code)

iii. *Year of establishment* : 1994 (Pig Iron Division)
2010 (Ductile Iron Pipe Division)

iv. *Production Capacity – Units* :

Name of Product	Hot Metal	Ductile Iron Pipe
Capacity	600000 TPA	455672 TPA

v. *Date of last environment statement submitted:* 26th September 2023.

PART – B

Water and Raw Material Consumption:

i. ***Water consumption in m^3 / d***

	PI Division	*DIP Division*
	m^3 / d (appx.)	*m^3 / d (appx.)*
Process (including wash)	923	1518
Cooling	809	
Domestic	193	68
Total	1925	1586

Name of Products	**Process water consumption per unit of product output**	
	During the current financial year – 2022 – 23	During the current financial year – 2023 – 24
Hot Metal	1.41 m^3/T of Hot Metal	1.41 m^3/T of Hot Metal
Finished Pipe	1.49 m^3/T of Finished Pipe	1.42 m^3/T of Finished Pipe

ii. *Raw material consumption:*

Name of raw materials*	Name of Products	Consumption of raw material per unit of output (kg/ton of output)	
		During current financial year-2022-23	During current financial year-2023-24
For Pig Iron Division			
1. Iron Ore	Hot Metal	565	491
2. Mn Ore		0.5	1.6
3. Limestone		142	171
4. Dolomite		137	90
5. Quartzite		24	38
6. Coke		427	497
7. Iron Ore Fines		837	859
8. Coke Breeze		58	84
For Ductile Iron Pipe Division			
1. Hot metal (T/T)	Ductile Iron Pipe	0.938	0.920
2. Steel scrap (T/T)		Not used	Not used
3. Ferro silicon (T/T)		0.0033	0.0035
4. Calcium Carbide		Not used	Not used
5. Mg wire & ingot (T/T)		0.0011	0.0011
6. Silica Sand (T/T)		0.040	0.036
7. Resin (ml/T)		0.00054	0.00051
8. Hardener (ml/T)		0.00053	0.00050
9. Catalyst (ml/T)		0.00010	0.00010
10. Core Paint (ml/T)		0.00078	0.00072
11. Zinc wire (T/T)		0.00394	0.00354
12. Cement (T/T)		0.0763	0.0731
13. River Sand (T/T)		0.132	0.129
14. Black Bitumen (ml/T)		0.0032	0.0030
15. Black seal Coat		Not used	Not used

**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

Pollutant discharged to Environment / unit of output *(Parameter as specified in the consent issued)*

(a) Water

S.N.	Parameter	UoM	Waste water treatment plant Outlet at CPP-3 (reused in the process)	New ETP Outlet at Ductile Iron Pipe Plant (reused in the process)	ETP 450KLD Outlet at Hot Metal Division (reused in the process)
1.	pH	--	7.39	7.92	7.55
2.	Total Suspended Solids (TSS)	mg/l	8.33	20.26	2.04
3.	Chemical Oxygen Demand (COD)	mg/l	18.38	20.0	7.3
4.	Bio-chemical Oxygen Demand (BOD)	mg/l	2.27	2.28	<2.0
5.	Oil & Grease	mg/l	<2.0	<2.0	<2.0

Remarks:

1. No process wastewater is discharged outside the plant.
2. Treated wastewater is being reused for process make up for MBF & captive power plant & for dust suppression (high pressure fog & dry fog system) at work zone areas , road dust suppression by mobile tankers & Fog canon system.
3. Treated wastewater from ETP of DI pipe plant is recycled back in process as well as used for service water purpose.
4. Another effluent treatment plant of 450 m^3/d has been installed & under operation to reuse treated water as CPP-2 cooling tower makeup.

(b) Air:

S.N.	Pollutants	Quantity of Pollutants discharged (mass/day) (Kg/day)	Concentration of pollutants discharged (mass/volume) (mg/ Nm^3)	Percentage of variation from prescribed standards with reasons
	Particulate Matter			
1.	MBF Stove – I	16.04	7.21	Below than the prescribed standard.
2.	MBF Stove - II	12.13	7.72	-DO-
3.	MBF#1- Casthouse Fume extraction System	38.07	10.43	-DO-
4.	Boiler (Common) stack (BFG fired) CPP-2	10.76	6.80	-DO-
5.	Sinter Head ESP	230.28	47.79	-DO-
6.	Sinter Tail ESP	186.73	45.89	-DO-
7.	Annealing Furnace Sand Cleaning System stack	0.83	6.12	-DO-
8.	MGT & IF (Common) Stack.	2.41	14.03	-DO-
9.	Zn Coating Stack FL-1 (80-400 DN)	4.58	30.71	-DO-
10.	Barrel & Socket Grinders Stack	2.68	8.17	-DO-
11.	Zn Coating Stack FL-3	1.93	7.81	-DO-
12	Tri-Grinding Stack FL-3	1.20	8.06	-DO-
13.	Annealing Furnace	4.13	7.75	-DO-
14.	WHR Boiler 8 TPH	3.48	8.56	-DO-
15.	Induction furnace Stack (LDP)	2.64	6.58	-DO-
16.	Magnesium Converter (LDP)	8.38	9.41	-DO-
17.	Zn Coating Stack FL-4	9.07	7.94	-DO-
18.	Tri-grinding Bag filter FL4	3.19	6.20	-DO-
19.	Zn Coating Stack FL-5	4.69	7.73	-DO-
20.	Tri-grinding Bag filter FL5	2.90	6.99	-DO-
21.	Core Shop (LDP)	1.91	6.88	-DO-

PART – D

HAZARDOUS WASTES:

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

S.N.	Hazardous Wastes	Total Quantity (Kg)	
		During the current financial year (2022-23)	During the current financial year (2023-24)
1.	From Process	Used Oil - 7.506 MT (from PI Division) Waste Oil – 0.00 MT (from DI Pipe)	Used Oil – 8.345 MT (from PI Division) Waste Oil – 5.58 MT (from DI Pipe)
2.	From Pollution Control Facilities	30374 T (appx.) (Flue gas dust & GCP sludge) Zinc Dust – 469.74 MT Resin, Hardener – 6.116 MT Paint Drum – 3.66 MT	29086 T (appx.) (Flue gas dust & GCP sludge) Zinc Dust – 545.0 MT Resin, Hardener – 4.384MT Paint Drum – 6.394MT
3.	Spent Ion Exchange Resin	4.5 MT	2.85 MT

PART – E

SOLID WASTES:

S.N.	Solid Wastes	Total Quantity (Ton)	
		During the current financial year (2022-23)	During the current financial year (2023-24)
a.	From process	285597.31 Ton appx. (Iron sweepings, slag & iron scraps, DI pipe scrap). Waste core sand–12027 MT.	257350.37 Ton appx. (Iron sweepings, slag & iron scraps, DI pipe scrap) Waste core sand–14265 MT.
b.	From Pollution Control Facility	30374 Ton appx. (Flue dust from Dust Catcher & GCP sludge) Magnesium Oxide – 64 MT. Zinc Dust – 469.74 MT.	29086 Ton appx. (Flue dust from Dust Catcher & GCP sludge) Magnesium Oxide – 57 MT. Zinc Dust – 545.0 MT.
c. 1)	Quantity recycled or reutilized within the unit	2674.31 MT (pipe scrap)	6894.89 MT (pipe scrap)
2)	Sold	282923.00 Ton appx.	250455.48 Ton appx.
3)	Disposed	Nil	Nil
4)	Stored	Nil	Nil

PART – F

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

The waste oil/ used oil is being stored in the MS drum on the concrete floor with secondary containment facility & finally disposed off through authorized external agencies.

Other Solid Wastes	Composition/ Nature of waste	Disposal Practices
Iron Ore Dust	Fe (61.1%) Al_2O_3 (3%)	Reuse for Sinter making process
Scrap Iron (flashing and skulls)	Fe (90%)	Sale
Coke Dust	C (85%)	Reuse for Sinter making process
Dust from cyclone separator	Iron Ore (69%), coke, limestone dust and dust from other fluxes that are fed into blast furnace	Reuse for Sinter making process
Iron Scrap	Non Hazardous	Recycling or sell off as scrap
Magnesium Oxide Dust	Non Hazardous	Use in Sinter plant
Waste Core Sand	Non Hazardous	Land development within Plant premises
Cement Sand Dust	Non Hazardous	Land filling within Plant premises.
Zinc Dust	Hazardous	Sell off to WBPCB authorized agency
Used Oil	Hazardous	Sell off to WBPCB authorized agency
Resin, Hardener	Hazardous	Disposed off through CHW-TSDF

Tata Steel Ltd. Metaliks Division(TSLMD) has been accorded authorization for Hazardous Waste storage and disposal. Hazardous wastes (like zinc dust, used oil etc.) are mainly sold to WBPCB authorized agency or reused inside plant premise. All the required statutory documents and records are being maintained in prescribed format and submitted as per the statute (Form 10 & Form 4) within stipulated timeframe.

PART – G

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

1. Energy conservation initiatives including solid fuel, liquid fuel, electrical & thermal energy conservation were executed thereby minimizing greenhouse gas emission.
   a. Installed variable-frequency drives (VVFDs) in various HT (high tension) & LT (low tension) loads at Sinter Plant, MBF & CPP
   b. Flaring gas optimization initiative was taken to increase power generation through blast furnace gas (BFG), thereby reducing the grid power import resulting into carbon footprint.
   c. Replacement of conventional type lighting by LED Lights in different phases.

d. Installation of another 1.8 MWp roof top solar power plant at new ductile iron pipe unit shed
e. Installation of Coke Drying unit (25 TPH) to reduce coke moisture using hot exhaust air from sinter cooler zone 3&4, thereby reducing MBF-2 Coke Rate.
f. Install Hot Exhaust Air Based Boiler at Cooler Zone and Generate Steam to Use in New DI Plant (9TPH, 10 kg/cm2 pressure and 185 Deg C temperature).
g. Increasing Feed water temperature through a HP heater to reduce THR and BFG consumption at CPP-2 boiler.
h. Installation of fan less zero drift loss cooling tower for MBF1 and DIP-1 (Power saving 120 KW)
i. Use of alternate fuel (charcoal, briquette) in MBF is being explored.
j. CBM/LNG injection has been explored.
k. Optimization of BFG (blast furnace gas) done in Annealing Furnace thereby minimizing oil consumption
l. Installation of harmonic filters at different electrical loads of DIP division
m. Fuel rate reduction in blast furnace through Level 2 automation
n. Use of Carbon black generated from waste tyres through pyrolysis process for partial replacement of PCI in MBF.
o. HSD consumption reduction in annealing furnace & power plant by burner modification
p. Tower Crane installation is in progress in weigh bridge to reduce excavator engagement time & HSD consumption.
q. Furnace top camera in MBF-1 for continuous gas flow monitoring inside furnace for improving Fuel rate by stable F/C operation.

2. Installation of MBF#2 Fume extraction system de-dusting system & stack at cast houset
3. Installed higher efficiency Electrostatic Precipitator (ESP) at Sinter Plant (Head ESP) to significantly reduce emissions.
4. Cyclone separator assembly was retrofitted to the existing de-dusting system of Ductile Iron Pipe unit & Sinter plant thereby reducing point source emission. Modification of Magnesium converter & Induction furnace to reduce fugitive dust concentration.
5. Biogas plant (150 Kg/day) for central canteen area for domestic waste management carried out for reducing LPG consumption in operation.
6. 9300 nos. of tree saplings are done for green belt development in FY'24.
7. Wind Shelter fencing has been installed for raw material yards to prevent fugitive dust emission.
8. Fixed type water sprinklers, mobile tankers & truck mounted Fog canon system are being used for dust suppression using recycled water.
9. Construction of covered shed has been made in coal yard area to reduce fugitive dust emission in surrounding area.
10. Rain water harvesting pond are being constructed/capacity enhanced.
11. Installed of 4 nos. Continuous Ambient Air Quality Monitoring System.
12. Another effluent treatment plant of 450 m3/d is under operation at Pig Iron unit.
13. Fume extraction system has been installed for LRS (Ladle Repairing Shop).
14. Installation of dedusting unit for Tri Grinding Finishing line 2

During FY'24 the environmental parameters stipulated by MoEF&CC, WBPCB have been monitored and was found to be within the permissible limit. The report has been submitted to RO, MoEF&CC and WBPCB, Haldia as well as Kolkata office along with the six monthly Environment Clearance compliance report.

PART – H

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

Environment protection measures in FY'24

S.N.	*Description of environment protection measure executed/ in advanced stage of completion in FY'24*	*Investment Amount (₹ in lakh) (order placed/ expenditure made)*
1.	Installation of 5 Nos. online dust monitor for Pig Iron division Stack.	27.6
2.	Installation of IOT device for new DIP stack for data transfer	10.0
3.	Construction of ZLD (Zero Liquid discharge) network	200.0
4.	Coke drying unit 25 TPH capacity at RMHS-2 bunker	900.0
5.	Hiring of truck mounted fog canon system to control fugitive dust for Raw material Stock	16.06
6.	Cyclone separator assembly for Magnesium converter, Zn coating m/c FL-1 , Zinc coating m/c FL-3 & Tri-grinding de-dusting unit at Ductile Iron Pipe plant	25.0
7.	CMC of CAAQMS	31.8
8.	AMC & Calibration of CEMS for PI & DI unit	14.9
9.	MBF#2 Fume extraction system & stack installation for Cast House	445.0
10.	Environmental monitoring through accredited agency	10.8
11.	Electrical Energy Conservation initiatives through power generation through microturbine with PRDS unit in CPP-2	180.0
12.	Install sinter cooler WHRB (9TPH) 10.5 Kg/cm2 to generate & supply stream for DIP -2 curing therefore save BFG & generate 1.6 MW power	700.0
13.	Hiring of Water tanker for water spraying on main road from Gokulpur village to Maheshpur Vill to mitigate air pollution and dust control.	3.0
14.	Green belt augmentation (9300 nos. of saplings) & for plantation at nearby community (15500 nos. of saplings)	10.0
15.	External Environment Audit	3.0
16.	Wind shelter fencing is constructed near Iron ore yard	5.0
17.	Installation of Fanless & finless cooling tower	150.0

PART – I

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.

With an aspiration of being water neutral by 2030, Tata Steel Metaliks Division has carried out a host of water conservation measures in the nearby community.

Industry had engaged NEERI (National Environment Engineering Research Institute) for carrying out air quality study within plant. Based on the recommendation, point source emission & fugitive emission control measures are being further upgraded, augmented & installed.

TSLMD (erstwhile TML) carried out detailed GHG emission inventorisation & third-party verification of the same. TML has also independently disclosed the Climate change information through CDP (not-for-profit organization that runs the global disclosure system). TML received 4.5 star and 2d runner up award for CII – ENCON Energy Excellence Award.

TSLMD (erstwhile TML) has been awarded for Gold rating in GreenCo assessment by CII-Sohrabji Godrej Green Business Centre. This is a performance-based assessment framework launched in 2013 by CII Godrej GBC (Green Business Centre) to define & assess how green a unit is.