



**The Member Secretary,  
Odisha State Pollution Control Board,  
A/118, Nilakanthanagar, Unit-VIII,  
Bhubaneswar – 751 012, Odisha.**

*TSK/Env/C-05/ 84 /2020  
Sept 28, 2020.*

Dear Sir,

**Sub: Environmental Statement for the Year 2019-20 for 6 MTPA Steel Plant  
at Kalinganagar Industrial Complex, Tata Steel Limited.**

We are enclosing the “Environmental Statement” duly filled in Form V, for the year 2019-2020 for 6 MTPA Steel Plant at Kalinganagar Industrial Complex by Tata Steel for your kind considerations.

Due to the prevailing COVID 19 situation, we are submitting the Environmental Statement through e-mail and request you to kindly accept the same.

We trust that you will find the above in order.

Thanking you and assuring you of our best attention.

Yours faithfully,

**For Tata Steel Limited**

  
Head, Environment  
Tata Steel Kalinganagar.

*Encl: a/a.*

Copy to: Regional Officer, OSPCB, KNIC

**TATA STEEL KALINGANAGAR**

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Corporate Identity Number L27100MH1907PLC000260 Website [www.tatasteel.com](http://www.tatasteel.com)

# **ENVIRONMENTAL STATEMENT FOR THE YEAR 2019-20**



## **6 MTPA STEEL PLANT OF TATA STEEL AT KALINGANAGAR INDUSTRIAL COMPLEX, ODISHA**

**ENVIRONMENTAL DEPARTMENT  
TATA STEEL KALINGANAGAR  
Kalinga Nagar Industrial Complex,  
Duburi- 755026, Dist- Jajpur, Odisha**

**ENVIRONMENTAL STATEMENT FORM-V**  
(See rule 14)

*Environmental Statement for the financial year 2019-20 ending with 31<sup>st</sup> March*

**Tata Steel Limited**  
**6.0 MTPA Steel Plant at Kalinganagar Industrial Complex, Odisha**  
**PART-A**

i)	Name and address of the owner/ occupier of the industry, operation or process	:	Rajiv Kumar VP, Operations Tata Steel Limited, Block-2, General Admin office Kalinga Nagar Industrial Complex Duburi-755026 Orissa
ii)	Industry Category Primary/(STC code) Secondary (STC code)	:	Large Metallurgical Industry —
iii)	Production Capacity	:	6.0 MTPA Crude Steel
iv)	Year of Establishment	:	2016
v)	Date of Last Environmental /Audit Report submitted	:	26.09.2019

**PART-B**

**WATER AND RAW MATERIAL CONSUMPTION**

- i) **Water Consumption in m<sup>3</sup>/day**  
 Process : 20371  
 Cooling : 16335  
 Domestic : 3717

Name of the products	Process water consumption per unit of products	
	During the previous Financial Year 2018-2019	During the Current Financial Year 2019-2020
<b>Crude Steel</b>	4.27 cum/ MT	4.15 cum/MT

ii) **Raw material consumption:**

Name of Raw Material	Name of the Products	Consumption of raw material per unit of output (MT/ TCS)	
		During the previous Financial Year 2018-2019	During the Current Financial Year 2019-2020
Coal	Crude Steel	0.43	0.68
Iron Ore		1.59	1.57
Lime stone		0.43	0.34
Dolomite		0.18	0.05
Metal & Ferro Alloys		0.01	0.01

**PART-C**

**POLLUTION DISCHARGED TO ENVIRONMENT/ UNIT OF OUTPUT**  
**(PARAMETERS AS SPECIFIED IN THE CONSENT ISSUED)**

Pollutants	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons*
	Kg/day	mg/Nm <sup>3</sup>	
a) Water	No discharge of Process waste water. CETP is in operation.		
b) Air			
1	Coke Oven Battery No.1		
PM	253.03	34.5	-31.03
2	Coke Oven Battery No. 1 De-dusting Chimney		
PM	72.83	10.9	-78.23
3	Coke Oven Battery No. 2		
PM	251.77	34.1	-31.83
4	Coke Oven Battery No. 2 De-dusting Chimney		
PM	69.28	10.3	-79.32
5	CPP Boiler-1		
PM	122.88	8.3	-83.50
SO <sub>2</sub>	522.5	35.1	-94.15
NO <sub>x</sub>	584.6	39.3	-86.92
6	CPP Boiler-2		
PM	144.10	9.3	-81.40
SO <sub>2</sub>	710.18	45.8	-92.36
NO <sub>x</sub>	782.49	50.5	-83.17
7	BF Cast House-1		
PM	687.67	35.4	-29.27
8	BF Cast House-2		
PM	696.62	36.4	-27.13
9	BF Stock House		
PM	546.71	26.5	-47.07
10	Blast Furnace Stove		
PM	132.19	7.1	-85.90
11	Lime Calcination Kiln-1		
PM	23.14	6.9	-95.42
12	Lime Calcination Kiln-2		
PM	27.99	7.6	-94.94
13	Sinter Plant Waste gas Chimney		
PM	1855.77	36.4	-27.27
14	Sinter Plant De-dusting		
PM	615.24	32.2	-35.62
15	Stack attached to CDQ		
PM	134.72	25.5	-49.08
SO <sub>2</sub>	343.53	64.9	-89.18
NO <sub>x</sub>	282.68	53.4	-82.19
16	Stack attached to HSM Recuperator 1		
PM	56.66	8.7	-91.28
17	Stack attached to HSM Recuperator 2		
PM	60.62	9.2	-90.81
18	SMS		
PM	1660.68	28.7	-42.63

## PART-D

### HAZARDOUS WASTES

(AS SPECIFIED UNDER HAZARDOUS WASTES (MANAGEMENT, HANDLING AND TRANS BOUNDARY MOVEMENT RULES, 2016)

Hazardous Wastes	Total Quantity (Kg)	
	During the previous Financial Year 2018-2019	During the Current Financial Year 2019-2020
<b>1. From Process</b>		
Sludge and filters Contaminated with Oil (Schedules-I Stream-3.3)	Nil	Nil
Used or spent oil (Schedules-I Stream-5.1)	99550	54310
Wastes / Residues containing oil (Schedules-I Stream-5.2)	Nil	48230
Used grease / Greased sludge (Schedules-I Stream-5.2)	68930	41320
Oil soaked jute / cotton (Schedules-I Stream-5.2)	Approx. 8 MT by volume	~ 10 MT (by Volume)
Acid from used Batteries (Schedules-I Stream-9.3)	Nil	Nil
Acid & Alkaline residues, spent acid and Alkali (Schedules-I Stream-12.1 & 12.2)	Nil	Nil
Coal Tar sludge (Schedules-I Stream-13.4)	213000	206000
Tar tank, Storage sludge / residues (Schedules-I Stream-13.5)	Nil	Nil
CO gas pipe line waste & residue from CO gas tap (Schedules-I Stream-13.6)	Nil	Nil
Cleaning solvent sludge (Schedules-I Stream-20.4)	Nil	Nil
Empty containers of hazardous chemical (Schedules-I Stream-33.1)	#787 Nos.	# 675 Nos
Exhaust air or gas cleaning residue (Schedules-I Stream-35.1)	Nil	Nil
Spent Ion exchange resins (Schedules-I Stream-35.2)	Nil	Nil
<b>2.From Pollution control facilities</b>		
sludge from waste water treatment (Schedules-I Stream-35.3)	316590	176940
Oil and grease skimming residue Schedules-I Stream-35.4	Nil	Nil
Waste cartridge from CETP, WWTP Schedules-I Stream-36.2	Nil	Nil
Evaporation residue from CETP (Schedules-I Stream-37.3)	Nil	Nil

# Containers of oil/ grease - were used for storage of same material and the hazardous wastes (used oil/used grease/ waste oil etc.) were sold to authorised recyclers along with the containers.

**PART-E**  
**SOLID WASTE**

Sl. No.	Solid waste	Total Quantity (Kg)	
		During the previous financial year 2018-19	During the current financial year 2019-20
a.	From process	1237826 MT of BF Slag	1296766 MT of BF slag
b.	From Pollution Control facilities	31720 MT Flue dust	31628 MT of Flue dust
c.	1)Quantity recycled/reutilised within the unit	213 MT of Coal tar sludge utilised in house	206 MT of Coal Tar sludge utilised in house
		29958 MT of Flue Dusts utilised in house	32894 MT of Flue Dust Utilised inhouse
	2) Sold	1086818 MT of BF slag	11,73,038 MT of BF slags
	3) Disposed	Nil	Nil

**PART-F**

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

Hazardous/ Solid Wastes	Characteristics	Method of disposal
Waste Water Sludge / Filter cake from CETP	Cr(T)- 99.69; Pb (T)- 10.44, Ni (T)-60.20; Zn(T)- 46.59, Cu(T)- 29.38 (unit- mg/Kg)	Disposed through CHWTSDF Sukinda
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 and used in coke plant.
LD Slag	CaO- 49.00; Fe <sub>2</sub> O <sub>3</sub> -32.95; SiO <sub>2</sub> -10.44; MgO-2.09; P <sub>2</sub> O <sub>5</sub> -1.95; MnO-1.20; TiO <sub>2</sub> -1.09; Al <sub>2</sub> O <sub>3</sub> -7.3; Cr <sub>2</sub> O <sub>3</sub> -0.17; V <sub>2</sub> O <sub>5</sub> -0.16; SO <sub>3</sub> -0.13; SrO-0.03; Nb <sub>2</sub> O <sub>5</sub> -0.02; K <sub>2</sub> O-0.02; Na <sub>2</sub> O- 0.02	<ul style="list-style-type: none"> <li>• Metal recovery</li> <li>• Utilised in sinter plant</li> <li>• Non-metallic portion used in construction and low lying area filling inside premises.</li> </ul>
BF Slag (Solid Waste)	SiO <sub>2</sub> -33.71; CaO-25.09; Fe <sub>2</sub> O <sub>3</sub> - 5.06; Al <sub>2</sub> O <sub>3</sub> -14.84; MgO-6.60; TiO <sub>2</sub> -1.18; K <sub>2</sub> O-1.02; SO <sub>3</sub> -0.79; MnO-0.75; Na <sub>2</sub> O-0.33; Cr <sub>2</sub> O <sub>3</sub> -0.17; BaO-0.15; P <sub>2</sub> O <sub>5</sub> -0.11; ZrO <sub>2</sub> -0.07; SrO-0.06; ZnO-0.02; PbO-0.01; Cl-0.01; Y <sub>2</sub> O <sub>3</sub> -0.01; NiO-0.01; Nb <sub>2</sub> O <sub>5</sub> -0.01; Rb <sub>2</sub> O-0.01; CuO-0.01	Sold to cement industries

## **PART-G**

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

- Pollution control equipment are effective and efficiently operated at all units.
- By-product gases generated in Coke plant, Blast Furnace and Steel melting shop are recovered and clean gas is used as fuel in power generation and other units, thus reducing coal consumption.
- For collection of surface runs off during monsoon through different drains and recovery of water through pumps, a reservoir of 39,000 m<sup>3</sup> capacity has been constructed.
- Centralised effluent treatment Plant (CETP) in operation to maximize reuse and recovery of treated waste water from different plant units.
- 2 Nos. of Mechanised road sweeping machine are deployed to maintain housekeeping of plant roads.
- To suppress fugitive dusts on roads and other areas, truck mounted water tankers are used for water sprinkling.
- Tree plantation is being undertaken in & around site. Till Financial Year 2019-20, 4.78 Lakh of trees planted in and around the site
- Investment of more than Rs. 2000 Crores has been made for pollution control equipment and other environmental protection measures

## **PART-H**

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

- Environmental Laboratory facilities being upgraded.
- Investment for remote calibration system of OCEMS for gaseous pollutants
- Greenery development programme will continue in the year 2020-21.

## PART-I

### **MISCELLANEOUS:**

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

- Tree plantation is undertaken in and around the site. Details of tree saplings planted: -

<b>FY</b>	<b>Plantation (Nos.)</b>	<b>FY</b>	<b>Plantation (Nos.)</b>
2009-10:	792	2015-16:	78730
2010-11:	1130	2016-17:	77335
2011-12:	4800	2017-18:	100701
2012-13:	12622	2018-19:	33116
2013-14:	29888	2019-20:	103212
2014-15:	35437		

Avenue plantation is being taken up at Jajpur town, Kalinganagar and Bhubaneswar

- To maintain housekeeping of plant roads, mechanised road sweeping machines is operated.
- Regular Environmental Monitoring is carried out. Please refer to **Annexure-I**.
- Seven Nos. of Online AAQM stations commissioned along with Environmental Display Board and data linkage provided for continuous display of data.
- 18 nos. of CEMS and 2 nos. of WQMS have been installed and connected to the server of the OSPC Board.
- Consent to Operate (CTO) for integrated steel plant granted by OSPCB on 27.03.2020, which is valid till 31.03.2021.
- About 33543 Sq. meter of Garden has been developed in FY 20.
- 1.8 Lakh sq. meter of garden landscape are being maintained in & around KLNLR
- In FY 2020, 100 Kgs of plastic wastes collected, segregated and disposed through Co-processing in cement kiln of ACC, Bargarh.
- In FY 2020, Total 1116 Nos. of e- wastes were collected and deposited to authorised e- waste collection centre of M/s Sani clean Pvt Ltd., Bhubaneswar.
- In FY 2020, 15.5 Kgs of Biomedical wastes generated in plant's First Aid centre were segregated, collected and disposed through Authorised Biomedical waste disposal facility of M/s Sani clean Pvt Ltd, Bhubaneswar.

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**Ambient Air Quality Monitoring at TSK**

Location	PM10 (or size <10 µm) µg/m <sup>3</sup>	PM2.5 (or size <2.5µm) µg/m <sup>3</sup>	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )
Gate No. 1	73.5	35.2	13.7	16.7	0.28
Coke Plant	75.2	36.0	17.2	20.6	0.34
SMS	73.9	35.6	10.9	13.3	0.28
HSM	75.0	35.2	10.6	13.5	0.27
Gate No. 4	72.4	34.0	14.9	17.6	0.32
Power Plant	71.9	34.7	14.0	16.8	0.30
CDQ Area	76.9	37.1	18.1	22.7	0.27
Standard	≤ 100	≤ 60	≤ 80	≤ 80	≤ 4.0

**TREATED EFFLUENT QUALITY**

Frequency:		Daily Average							
Outlet No.	Description of Outlet	pH	TSS (mg/l)	Phenol (mg/l)	BOD (mg/l)	COD (mg/l)	Cyanide (mg/l)	Ammoniacal Nitrogen (mg/l)	O&G (mg/l)
OSPCB Standard		6.0-8.0	100	1	30	250	0.2	50	10
1	BOD Plant Outlet	7.5	39.7	0.62	15.8	133.3	0.16	8.4	2.2

## Some Photographs of Tata Steel Kalinganagar



**Vertical Garden Development at Plant Entrance**



**Ambient Air Quality Monitoring inside Plant**



**Water sprinkling through Tankers**



**Garden development inside plant premises**



**Mechanised road sweeping machine**



**Hazardous Waste collection by CHWTSDF**

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