TSL/FAMD/FAPG/FY25/1391

Dt.23/09/2024

To,

The Member Secretary
State Pollution Control Board
A/118, Paribesh Bhawan,
Nilakantha Nagar, Bhubaneswar-751012

Sub: Submission of Environment Statement 2023-2024.

Ref: under Rule 14 of The Environment (Protection) Rules 1986

Dear Sir,

With reference to Rule 14 of the environment (Protection) Rules 1986, we are enclosing the herewith the environmental statement report for the financial year 2023-2024.

This is for your kind information.

Thanking You,

Yours Truly,
For Tata Steel Limited

A Rambabu

(A. Rambabu)
Plant Head & Factory Manager
Ferro Chrome Plant, Gopalpur

Copy to: Regional Officer, State Pollution Control Board,
Berhampur

25/9/24

No..... Dt.....
25 SEP 2024
S.P.C. BOARD
BHUBANESWAR

TATA STEEL LIMITED
Project Gopalpur Gajapati Nagar Main lane Berhampur 760010 Dist. Ganjam odisha India
Tel +91 680 2290212 2290046
Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity No. L27100MH1907PLC000260 Website ... .com

ENVIRONMENT STATEMENT

FOR THE FINANCIAL YEAR 2023-2024

Submitted to SPCB under Rule 14 of The Environment (Protection) Rules 1986

TATA STEEL LIMITED

FERRO CHROME PLANT, Gopalpur

FORM – V

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST MARCH 2024

PART – A

Name & address of the owner/ occupier of the industry, operation or process	T V Narendran CEO & Managing Director Tata Steel Limited Chamakhandi, Chatrapur Tehsil, Ganjam, Odisha
Industry categories	Large Scale Industry
Production Capacity	High Carbon Ferro Chrome (HCFC) 2X18 MVA Furnace – 55000 MTPA
Year of Establishment	2016-17
Date of last environmental statement submitted	29 September 2023

PART – B

WATER AND RAW MATERIAL CONSUMPTION

I. **Water Consumption (for 2X18 MVA):** 144456.3m^3(April-2023 - March 2024) = 395 m^3/day

Process : 303.74 **m^3/day**

Cooling : **45.35 m^3/day**

Domestic : **45.91 m^3/day**

SN	Name of Product	Process water consumption per unit of product output (Cum/Ton)	
1	High Carbon Ferro Chrome	During the previous financial year	During the current financial year
		Water is not used in the process	Water is not used in the process

II. Raw Material Consumption:

SN	Name of Product	Name of Raw Material	Consumption of raw material per unit of output	
			During the previous financial year 2022-23 (Tonnes)	During the current financial year 2023-24 (Tonnes)
1	High Carbon Ferro Chrome (HCFC)	Chrome Ore	133235.9	128410.175
		Coke	24290.5	30103.71
		Coal	5100	0
		Quartzite	8467	7792.25
		Bauxite	0.00	0.00
		Magnesite	142.36	223.62
		Molasses	6723.2	7994.25
		Lime	3211.20	5323.25
		Carbon Paste	640.5	689
		Fluorite	0.00	7.84

PART – C

POLLUTION DISCHARGED TO ENVIRONMENT PER UNIT OF OUTPUT

(Parameters as specified in the consent issued)

Brief description of the process producing FeCr:

During the smelting process; oxides of Chromium, Iron, Silicon, Sulphur and Phosphorous are reduced. The Sulphur goes into the Slag and also escapes to the atmosphere through the stack as SO2.

Sources of Pollution:

The sources of pollution can be in the form of:

1. Water Pollution
2. Air Pollution

1. Water Pollution:

We are treating water where chances of Hexavalent chromium contamination present through ETP and the treated water is used in metal cooling, watering on plantation, dust suppression etc.

2. Air Pollution:

2nos. 18 MVA Arc Furnace produces the following air pollutants which is released to atmosphere through Gas Cleaning Plant. SPM, SO2, NO2 & CO

SN	Pollutants	Quantity of pollutants discharged (Ton/Day)		Concentration of pollutants in discharges (mg/NM³)		Percentage of variation from prescribed standard with reason
A	Water	0.00		0.00		Zero discharge(analysis report attached as annexure-I)
B	Air: PM	0.084	0.098	31.92	37.13	SPM within standard(analysis report attached as annexure-I)
	SOx	-		-	-	-
	NOx	-		-	-	

PART – D

HAZARDOUS WASTES

AS SPECIFIED UNDER HAZARDOUS WASTES (MANAGEMENT, HANDLING AND TRANSBOUNDARY MOVEMENT) RULES, 2008 AND AMENDMENT THEREOF

Hazardous Wastes	Total Quantity	
	During the previous financial year 2022-23	During the current financial year 2023-24
a) From process	Used Oil / Spent Oil – 14.6 T/A Waste/ResiduesContainingOil– 0.73 T/A,	Used Oil / Spent Oil – 2.6 T/A Waste/Residues Containing Oil–0.65 T/A,
b) From pollution control facility	Flue dust from GCP of FerroAlloysFurnace– 1161MT(Recycled)	Flue Gas Cleaning Residue –1163MT/A

PART-E

SOLID WASTES

Sl. No.	Solid Waste	Total Quantity	
		During the previous financial year 2022 -	During the current financial year 2023-

		23 (Tonne)	24(Tonnes)
a)	From process	54038	55000
b)	From Pollution Control facility	NA	NA
c)	i. Quantity recycled or reutilized within the unit	56035 (Used in filling low lying areas inside plant premise)	55000 (Used in filling low lying areas inside plant premise, road making and as an aggregate)
	ii. Sold	No	No
	iii. Disposed	00	00

PART – F

PLEASE SPECIFY THE CHARACTERIZATION (IN TERMS OF COMPOSITION OF QUANTUM) OF HAZARDOUS WASTE AS WELL AS SOLID WASTE AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES

A. **Hazardous Waste:** As plant was not in operation for more than nine months of that financial year, no used oil and residue containing oil was generated. The GCP residue which is generated from the process is 100% recycled in briquette production.The procedure is to collect the waste oil generated at various sources in leak proof barrels and then are kept on an impervious floor. It is also ensured that the caps of the barrels remain intact. The storage area is properly fenced and caution board displayed. During transfer of waste oil to barrels, care is takenin order to prevent land contamination due to oil spillage. Then at a fixed interval, these barrels will be returned to stores for final disposal through auction to the authorized recycler.

B. **Characteristics (in terms of concentration and quantum) of solid waste**

Ferro chrome slag which is in lumpy form dumped in dump yard designated inside plant premises.

Characteristics of Ferro Chrome Slag	
Parameter	**Result (in %)**
Cr_2O_3	10-13
SiO_2	27-30
MgO	25-27
FeO	3-5
Al_2O_3	22-25
CaO	5-7

The slag is dumped for back filing with-in our premises. The necessary TCLP test of slag has been carried out.

PART – G

IMPACT ON THE POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION

- 1080 numbers of forest tree sapling planted.
- Water Sprinkler installed for 1.2 KM to supress dust
- Full-fledged Morden Dry Gas Cleaning Plant with Air Pulse Jet Bag Filter Technology (BFT) has been installed to clean process gas generated from furnace. Bag filters are also installed at briquetting plant to control dust emission during operation.
- Final dust of GCP is collected from silo in silo bags to control fugitive emission and the chrome dust is again reused 100% for briquette making.
- In plant control measures and, dust extraction system, fume extraction system, dry fog dust suppression system has been installed at vulnerable areas to reduce fugitive emission.
- Waste water utilization is continuing in regular activities like metal and slag cooling, road sprinkling, will be used in jigging plant, dust suppression and gardening.
- Maintenance of tree saplings is being carried out to ensure more than 90% survival rate.
- All internal roads inside the plant are made pucca to reduce dust emission.
- Side sheeting are given on sheds like bin building and briquetting plant to control cross wind and fugitive emission.
- Approx.55800 forest trees planted towards green at a survival rate more than 90%.
- Four numbers of ambient air quality monitoring stations installed to monitor air quality parameters and to take corrective action in-case of deviation from prescribed standard.
- Single use plastic is not used.

- Weather monitoring station is also installed for temperature, humidity, wind speed etc.
- Steel water bottles instead of plastic water s are in use to avoid plastic usage.

PART – H

Additional measures / investment proposal during 2023-24 for environmental protection including abatement of pollution and prevention of pollution

- Fixed water sprinkling at Raw Material area for fugitive dust suppression.
- Phase wise installation of LED lights in place of MH/HPSV lights for energy conservation.
- Green belt development over the year.
- Replacement in-case of old and damaged bags of GCP bag house with new ones to improve emission control.
- Waste water utilization in jigging plant.
- Continuing environmental monitoring.
- Celebrating World Environment Day
- Training on EMS to create awareness
- Effective solid wastes management
- 100% recycling of effluent water
- Proper handling and management of Hazardous Wastes

PART – I

Miscellaneous

Any other particulates in respect of environment protection and abatement of pollution

- Only PUC certified vehicles are engaged inside plant premise.
- World environment day celebrated.
- Monitoring of stack emission, weather, ambient air, upstream and downstream water quality, noise every month.
- Adoption of good housekeeping practices in which proper and systematic stacking and movement of materials is ensured.
- ETP and STP has been installed to treat domestic and industrial wastewater.

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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986 & NABL Accredited Laboratory

Annexure-I

Ref: CEMC-21092024A1 **Date: 21.09.2024**

AAQ MONITORING REPORT FOR(2023-2024)

1. Name of Industry	:	**M/s. TATA Steel Ltd, (Ferro Alloys Plant), Gopalpur**
2. Sampling Location	:	**AAQMS-1 :** MRSS Building Roof
3. Monitoring Instruments	:	RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by	:	CEMCPL Representative

Date	PARAMETERS											
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
APR-23	70.8	36.7	11.8	15.9	0.6	<10	<20	<5	<1	<0.6	<0.1	<0.44
MAY-23	72.9	38.6	12.7	17.0	0.6	<10	<20	<5	<1	<0.6	<0.1	<0.44
JUNE-23	73.7	38.4	13.5	17.1	0.6	<10	<20	<5	<1	<0.6	<0.1	<0.44
JULY-23	66.6	34.0	10.6	15.5	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
AUG-23	71.0	36.7	11.9	15.9	0.6	<10	<20	<5	<1	<0.6	<0.1	<0.44
SEPT-23	71.6	36.7	12.7	16.7	0.6	<10	<20	<5	<1	<0.6	<0.1	<0.44
OCT-23	71.51	35.86	12.77	16.7	0.56	<10	<20	<5	<1	<0.6	<0.1	<0.44
NOV-23	70.09	36.53	13.2	16.73	0.55	<10	<20	<5	<1	<0.6	<0.1	<0.44
DEC-23	68.26	35.74	12.02	16.82	0.45	<10	<20	<5	<1	<0.6	<0.1	<0.44
JAN-24	67.78	33.98	12.25	16.03	0.44	<10	<20	<5	<1	<0.6	<0.1	<0.44
FEB-24	69.49	34.96	12.42	16.76	0.41	<10	<20	<5	<1	<0.6	<0.1	<0.44
MAR-24	71.55	36.7	12.69	16.7	0.57	<10	<20	<5	<1	<0.6	<0.1	<0.44
Average	**70.44**	**36.24**	**12.38**	**16.49**	**0.54**	<10	<20	<5	<1	<0.6	<0.1	<0.44
NAAQ Standard	**100**	**60**	**80**	**80**	**180**	4	**400**	**5**	**1**	**20**	**1**	**6**

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Annexure-I

Ref: CEMC-21092024A2 **Date: 21.09.2024**

AAQ MONITORING REPORT FOR(2023-2024)

1. Name of Industry	:	**M/s. TATA Steel Ltd, (Ferro Alloys Plant), Gopalpur**
2. Sampling Location	:	**AAQMS-2 :** LBSS Building Roof
3. Monitoring Instruments	:	RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by	:	CEMCPL Representative

Date	PARAMETERS											
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
APR-23	61.1	35.0	10.2	15.0	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
MAY-23	63.5	34.58	10.73	15.23	0.52	<10	<20	<5	<1	<0.6	<0.1	<0.44
JUNE-23	65.0	35.4	12.5	16.3	0.6	<10	<20	<5	<1	<0.6	<0.1	<0.44
JULY-23	60.3	31.1	10.6	15.2	0.4	<10	<20	<5	<1	<0.6	<0.1	<0.44
AUG-23	61.1	35.0	10.2	15.0	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
SEPT-23	63.6	33.7	11.5	15.5	0.6	<10	<20	<5	<1	<0.6	<0.1	<0.44
OCT-23	63.96	32.43	10.8	15.52	0.51	<10	<20	<5	<1	<0.6	<0.1	<0.44
NOV-23	65.4	32.69	11.19	15.5	0.53	<10	<20	<5	<1	<0.6	<0.1	<0.44
DEC-23	65.41	33.25	10.27	15.17	0.42	<10	<20	<5	<1	<0.6	<0.1	<0.44
JAN-24	64.21	32.36	11.05	15.14	0.41	<10	<20	<5	<1	<0.6	<0.1	<0.44
FEB-24	65.88	34.66	11.14	16.41	0.38	<10	<20	<5	<1	<0.6	<0.1	<0.44
MAR-24	63.56	33.68	11.46	15.54	0.55	<10	<20	<5	<1	<0.6	<0.1	<0.44
Average	**63.59**	**33.65**	**10.97**	**15.46**	**0.49**	<10	<20	<5	<1	<0.6	<0.1	<0.44
NAAQ Standard	**100**	**60**	**80**	**80**	**180**	4	**400**	**5**	**1**	**20**	**1**	**6**

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Annexure-I

Ref: CEMC-21092024A3 **Date: 21.09.2024**

AAQ MONITORING REPORT FOR(2023-2024)

1. Name of Industry	:	**M/s. TATA Steel Ltd, (Ferro Alloys Plant), Gopalpur**
2. Sampling Location	:	**AAQMS-3 :** Canteen Building Roof
3. Monitoring Instruments	:	RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by	:	CEMCPL Representative

Date	PARAMETERS											
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
APR-23	59.9	34.4	9.6	14.0	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
MAY-23	62.1	34.0	10.5	14.7	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
JUNE-23	63.8	33.8	10.4	13.0	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
JULY-23	58.4	30.0	7.8	11.9	0.4	<10	<20	<5	<1	<0.6	<0.1	<0.44
AUG-23	60.0	34.4	9.6	14.0	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
SEPT-23	62.9	32.5	10.6	14.6	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
OCT-23	65.09	33.09	10.92	14.8	0.48	<10	<20	<5	<1	<0.6	<0.1	<0.44
NOV-23	65.74	33.66	11.52	14.93	0.49	<10	<20	<5	<1	<0.6	<0.1	<0.44
DEC-23	64.96	33.15	11.26	14.8	0.48	<10	<20	<5	<1	<0.6	<0.1	<0.44
JAN-24	64.35	32.95	11.7	15.61	0.48	<10	<20	<5	<1	<0.6	<0.1	<0.44
FEB-24	65.74	33.6	11.82	16.5	0.46	<10	<20	<5	<1	<0.6	<0.1	<0.44
MAR-24	62.9	32.54	10.63	14.61	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
Average	**62.99**	**33.17**	**10.53**	**14.45**	**0.48**	<10	<20	<5	<1	<0.6	<0.1	<0.44
NAAQ Standard	**100**	**60**	**80**	**80**	**180**	4	**400**	**5**	**1**	**20**	**1**	**6**

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Annexure-I

Ref: CEMC-21092024A4 **Date: 21.09.2024**

AAQ MONITORING REPORT (2023-2024)

1. Name of Industry	:	**M/s. TATA Steel Ltd, (Ferro Alloys Plant), Gopalpur**
2. Sampling Location	:	**AAQMS-4 :** ETP Building Roof
3. Monitoring Instruments	:	RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by	:	CEMCPL Representative

Date	PARAMETERS											
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)
APR-23	62.5	34.0	10.1	14.6	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
MAY-23	64.4	33.8	10.3	14.4	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
JUNE-23	64.5	34.1	11.0	15.0	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
JULY-23	54.9	28.1	8.3	12.6	0.4	<10	<20	<5	<1	<0.6	<0.1	<0.44
AUG-23	63.4	34.0	10.1	14.6	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
SEPT-23	64.9	33.7	9.9	14.3	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
OCT-23	64.84	32.99	10.24	14.42	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
NOV-23	65.69	33.99	10.96	15.75	0.5	<10	<20	<5	<1	<0.6	<0.1	<0.44
DEC-23	65.84	33.74	10.74	15.17	0.49	<10	<20	<5	<1	<0.6	<0.1	<0.44
JAN-24	64.73	33.48	11.19	15.78	0.49	<10	<20	<5	<1	<0.6	<0.1	<0.44
FEB-24	66.09	34.31	11.15	15.87	0.45	<10	<20	<5	<1	<0.6	<0.1	<0.44
MAR-24	64.88	33.69	9.93	14.25	0.52	<10	<20	<5	<1	<0.6	<0.1	<0.44
Average	**63.89**	**33.33**	**10.33**	**14.73**	**0.49**	<10	<20	<5	<1	<0.6	<0.1	<0.44
NAAQ Standard	**100**	**60**	**80**	**80**	**180**	4	**400**	**5**	**1**	**20**	**1**	**6**

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Annexure-I

Ref: CEMC-21092024St **Date: 21.09.2024**

STATIONARY EMISSION MONITORING REPORT (2023-2024)

1. Name of Industry : M/s TATA STEEL LTD, (Ferro Alloys Plant), Gopalpur
2. Monitoring Instrument : Vayubodhan Stack Sampler VSS 2
3. Stack attached to : GCP-I

MONTH	TEMP(k)	VEL(m/sec)	PM(mg/Nm3)	SO2(mg/Nm3)	NOX(mg/Nm3)
Apr-23	351	11.8	30.5	32.2	24.8
May-23	357	11.5	32.4	36.2	25.6
Jun-23	363	15.2	34.8	40	28.8
Jul-23	273	0	0	0	0
Aug-23	352	11.8	34.8	31.2	25.8
Sep-23	355	12.2	33.6	32.8	26.2
Oct-23	358	13.8	34.2	33.8	27.4
Nov-23	362	14.1	36.5	32.5	26.9
Dec-23	362	14.2	38.6	28.8	22.4
Jan-24	368	15.9	37.5	29.4	21.1
Feb-24	371	14.8	34.9	27.5	20.6
Mar-24	355	12.2	35.2	30.6	24.8
Avg.	**352.25**	**12.29**	**31.92**	**29.58**	**22.87**

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Seal of Laboratory

CENTRE FOR ENVOTECH AND MANAGEMENT CONSULTANCY PVT. LTD.

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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986 & NABL Accredited Laboratory

STATIONARY EMISSION MONITORING REPORT (2023-2024)

1. Name of Industry : M/s TATA STEEL LTD, (Ferro Alloys Plant), Gopalpur
2. Monitoring Instrument : Vayubodhan Stach Sampler VSS 2
3. Stack Attached to : GCP-II

MONTH	TEMP(k)	VEL(m/sec)	PM(mg/Nm3)	SO2(mg/Nm3)	NOX(mg/Nm3)
Apr-23	362	11.4	35.4	40	30.2
May-23	368	12.1	34.4	41.8	29.6
Jun-23	374	11.5	36.6	42.8	30.2
Jul-23	370	12.2	32.2	43.8	32.6
Aug-23	368	11.6	36.2	41	30.8
Sep-23	370	11.2	37	42.8	32.4
Oct-23	366	11	36.8	41.6	33.2
Nov-23	369	11.1	37.9	42.6	34.7
Dec-23	370	10.48	39.8	30.4	26.2
Jan-24	377	11.54	40.65	28.9	27.1
Feb-24	387	12.15	38.96	27.6	32.4
Mar-24	370	11.2	39.6	36.4	30.2
Avg.	**370.92**	**11.46**	**37.13**	**38.31**	**30.80**

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Annexure-I

Ref: CEMC-21092024FE **Date: 21.09.2024**

FUGITIVE EMISSION MONITORING REPORT (2023-2024)

1.	Name of Industry	:	**M/s. TATA Steel Mining Ltd, (Ferro Alloys Plant), Gopalpur**
2.	Monitoring Instruments		RDS (APM 460 BL)
3.	Sample Collected By	:	CEMCPL Representative

Sampling Location	RMHS (Raw Material Handling Site)	FPHS (Fine Product Handling Site)	Bin Building
	SPM (µg/m^3)	**SPM (µg/m^3)**	**SPM (µg/m^3)**
Apr-23	744	666	642
May-23	762	670	654
Jun-23	792	706	668
Jul-23	764	678	641
Aug-23	748	668	652
Sep-23	756	672	661
Oct-23	778	684	692
Nov-23	788	674	701
Dec-23	766	689	712
Jan-24	784	698	701
Feb-24	775	674	705
Mar-24	755	670	660
AVG	**767.67**	**679.08**	**674.08**

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Environmental Laboratory

Seal of Laboratory

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Annexure-I

Ref: CEMC-21092024EW **Date: 21.09.2024**

EFFLUENT WATER QUALITY MONITORING TEST REPORT(2023-2024)

Name & Address of the Client : **M/s. TATA Steel Ltd, (Ferro Alloys Plant), Gopalpur**
Sampling Period : April-2023 to March-2024
Sampling by : CEMCPL Representative
Sample Location : Stage-III– Treated Water

ANALYSIS RESULT

PARAMETERS	APR-23	MAY-23	JUN-23	JUL-23	AUG-23	SEP-23	OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	AVG
Colour in Hazen	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Odour	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless
pH	6.4	6	12.8	13.6	9.4	10.8	11.2	9.3	13.8	14.1	13.6	12.4	11.12
TSS in mg/l	27.6	27.8	30.8	28.8	29.8	30.4	31.1	32.2	31.1	25.6	26.8	30.4	29.37
Cu in mg/l	7.71	7.74	7.62	8.14	7.62	8.44	8.32	8.36	8.12	8.05	8.11	8.41	8.05
F in mg/l	0.36	0.4	0.5	0.26	0.32	0.3	0.5	0.6	0.6	0.2	0.2	0.3	0.38
Total Residual Chlorine in mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Fe in mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Mn in mg/l	0.26	0.24	0.22	0.18	0.28	0.22	0.28	0.31	0.24	0.26	0.24	0.22	0.25
NO3 in mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
C6H5OH in mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Se in mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cd in mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
CN in mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pb in mg/l	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Hg in mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ni in mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
As in mg/l	5.8	6.2	6	5.8	5.7	5.4	5.1	5.5	5	4.9	4.5	5	5.41
Cr in mg/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zn in mg/l	3.4	3	4.2	4	3.6	3.4	4.2	4.6	5	6	12	16	5.78
Cr+ in mg/l	10	12	18	20	12	10	15	20	20	18	40	50	20.4
V in mg/l	3.1	3	4.2	3.6	3.1	3.6	3.8	3.5	4.4	4.6	4.3	3.6	3.73
Temp in °C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DO in mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BOD in mg/l	0.16	0.12	0.14	0.14	0.16	0.18	0.22	0.24	0.32	0.41	0.4	0.18	0.22
COD in mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O & G in mg/l	<850	<850	<850	<850	<850	<850	<850	<850	<850	<850	<850	<850	<850
N in mg/l	95%	95%	95%	95%	95%	95%	95%	92%	95%	95%	95%	95%	95%
TKN in mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
S in mg/l	4.2	4	4.8	3.8	4.2	4.8	4.4	4.6	5.2	5.6	5.1	4.8	4.63
Bio-assay Test in %	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Free Ammonia in mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dissolved Phosphate in mg/l	0.15	0.12	0.18	0.14	0.15	0.12	0.14	0.21	0.16	0.18	0.16	0.12	0.15
Particle Size of SS in mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

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