

Ref. No.: FAMD/FAPJ/592/FY24 Date: 24.05.2023

To,

The Additional Director,
Ministry of Environment and Forest & Climate Change,
Eastern Region Office,
A/3, Chandrasekharpur,
Bhubaneswar-751023

**Subject**: Submission of half-yearly compliance report on the stipulated environmental clearance terms and conditions in respect of Ferro Alloys Plant, Joda of M/s TATA Steel Ltd., for the period from October'2022 to March'2023.

#### **Reference:**

- 1) MoEF File No: J-11011/03/2012-IA II (I) DATED 5th Nov 2015.
- 2) MoEF&CC's notification vide S.O-5845 (E), dt. 28th Nov 2018.

#### Respected Sir,

We are herewith submitting the six-monthly compliance report on the status of the implementation of the conditions stipulated in environmental clearance awarded to us vide MoEF File No: **J-11011/03/2012-IA II** (I) DATED 5th Nov 2015 in respect of Ferro Alloys Plant, Joda of M/s TATA Steel Ltd. for the period from October'2022 to March'2023 for your kind perusal.

This is in reference to the MoEF&CC's notification vide S.O-5845, dt. 28<sup>th</sup> Nov 2018, the six-monthly compliance report is being submitted only in soft copy mode, shared with your good office at e-mail @roez.bsr-mef@nic.in.

We believe the above submission is in order.

Thanking you,

Yours faithfully, F: TATA STEEL LTD.

Head

Ferro Alloys Plant, Joda

Encl: As above.

#### Copy To:

- 1) The Member Secretary, State Pollution Control Board, A/118, Nilakantha Nagar, Bhubaneswar, Odisha-751012
- 2) The Regional Officer, State Pollution Control Board, Baniapat, DD College Road, Keonjhar, Odisha-758001.



## **Half-Yearly Compliance Report**

0n

## **Environmental Clearance Conditions**

(MoEF File No. J-11011/03/2012-IA. II (I) Dated 5th November 2015)

Period: October'2022 - March'2023

**Submitted By:** 

Ferro Alloys Plant, M/s TATA STEEL LIMITED

At/Po – Joda, District – Keonjhar, **Odisha – 758034** 

## **Table of Contents**

S.No	Title/Chapter	Page No.
Α	Compliance Status to EC	03-10
В	Annexure-1 (AAQ Abstract of Six-Month Monitoring results)	11
С	Annexure-2 (Detailed Monitoring Result)	12-17
D	Annexure-3 (Photographs of Pollution Control Measures)	18
Е	Annexure-4 (Detailed Monitoring Result)	19-21
F	Annexure-5 (Fugitive Dust Emission Monitoring Reports)	22
G	Annexure-6 (Photographs of RCC roads and Fixed Sprinkling)	23
Н	Annexure-7 (Photographs of Fume Extraction System)	24
I	Annexure-8 (Photographs of Rainwater Harvesting)	25
J	Annexure- 9 (Photographs of STP & ETP)	26-27
K	Annexure- 10 (Ground Water Analysis Report)	28-29
L	Annexure- 11 (Risk & Disaster Mitigation Plan)	30-31
М	Annexure- 12 (Photographs of Greenbelt developed)	32
N	Annexure- 13 (Details of CSR funds Expenditure)	33
Р	Annexure- 15 (Noise Monitoring Report)	34-35
Q	Annexure- 16 (Periodic Medical Examination Records)	36
R	Annexure- 17 (Expenses Incurred for Environment Management)	37
S	Annexure- 18 (Intimation Letter of EC to Zila Parishad)	38-39
Т	Annexure- 19 (upload of Six-Monthly Compliance Reports)	40
U	Annexure- 20 (Environment Statement FY21)	41
V	Annexure- 21 (Publication of EC in News Paper)	42-43

### A. SPECIFIC CONDITION:

Sl. No.	Specific Condition	Compliance Status (October'22 to Mar'2023)
Ι	The project proponent should install 24x7 air monitoring devices to monitor air emission, as provided by CPCB and submit report to Ministry and its Regional Office.	Complied.  Presently four nos. ambient air monitoring stations have been developed for the monitoring of Ambient Air Quality Parameters as per National Ambient Air Quality Standard 2009.  Monitoring and analysis is carried out by engaging an MoEF&CC as well as NABL Accredited laboratory. Reports are submitted to State Pollution Control Board Odisha on monthly basis.  Photographs of Monitoring Station as well as Abstract of monitoring results for the past six months are enclosed as Annexure-1.
		Detailed Monitoring Reports for the period from Oct'22 to March'23 is enclosed as <b>Annexure-2</b> .
II	Stack of adequate height & diameter with continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz, Electrostatic precipitator (ESP), bag house, bag filters etc. shall be provided to keep the emission levels below 50 mg/Nm3 and installing energy efficient technology.	Presently, the plant is operated with two semi closed electric arc furnaces, each provided with two Gas Cleaning Plants (one in working and one as standby) comprising wet scrubbing arrangements.  Thus, Total 04 Nos of Gas Cleaning Plants have been installed. Each Gas Cleaning Plant (GCP) has one stack of height around 36.57 mtr above ground level with internal diameter of 0.4 mtr.  The pollution control measures such as Gas Cleaning plant with venturi scrubbers are also provided with online Continuous Emission Monitoring System (CEMS) having SPECTROLYSERs for real time surveillance of Emission parameters such as Particulate Matter (PM), Carbon Monoxide (CO), Oxides of Sulphur (SO <sub>x</sub> ), Oxides of Nitrogen (NO <sub>x</sub> ). The Emission monitoring system has been integrated with the online server of Odisha Pollution Control Board (OSPCB).  The results for emission parameters in the flue gas are observed to be well within the OSPCB prescribe limits.  The stack emission parameter testing is also carried out by engaging an NABL Accredited laboratory on monthly basis. The report indicates that the emission parameters conform to the applicable permissible standards.  Photographs of Pollution Control Measures (GCP) and Continuous Emission Monitoring System is enclosed as Annexure-3.  Abstract of Stack Emission Monitoring Results (Detailed Reports) are enclosed as Annexure-4.

Sl. No.	Specific Condition	Compliance Status (October'22 to Mar'2023)			
Ш	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November 2009 shall be followed.	purpose, four (04) nos. of ambient air monitoring station have been developed for the monitoring of Ambient Al Quality Parameters as per NAAQS-2009 with a frequency of twice per week.  Pl. Refer to Annexure-1 & Annexure-2  Complied.  Following the standards notified by the Ministry vide G.S.F. 414 (E) dated 30th May 2008, fugitive dust emission is monitored at strategic locations such as Slag Crusher Area Raw Material Storage Yard, Feed hopper on quarterly basis for Particulate Matter. Sampling and Analysis is carried on by an MoEF&CC recognised laboratory.			
IV	Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines/Code of Practice issued by the CPCB should be followed. New standards for the sponge iron plant issued by the Ministry vide G.S.R. 414 (E) dated 30 <sup>th</sup> May, 2008 should be followed.				
V	Water sprinkling arrangements as well as dry fog system to control fugitive emission shall be undertaken.				
VI	Tap hole emissions shall be taken to GCP system by providing proper hood and suction system.	Complied.  New dedicated fume extraction system has been installed with bag filters to improve fume extraction system with proper hooding and suction facility. Photographs enclosed Annexure 7.			
VII	Efforts should further be made to use maximum water from the rainwater harvesting sources. If needed, capacity of the reservoir shall be enhanced to meet the maximum water requirement. Only balance water requirement shall be met from other sources. Use of air-cooled condensers shall be explored and closed-circuit cooling system should be provided to reduce water consumption and	Complied.  Presently, a fully functional roof top rainwater harvesting cum recharging project at the administrative office and furnace building is in working stage. The potential of rainwater harvesting is around 1500 cu.m/year.  A surface impoundment at the back side of the plant premises has been developed over around 1Acre area for harvesting of rainwater. This project has been dedicated to the community Page 4 of 42			

Sl. No.	Specific Condition	Compliance Status (October'22 to Mar'2023)			
	water requirement shall be modified accordingly.	in vicinity. The harvesting potential of the same is around 1200 cum/year.  To reduce water consumption, close circuit cooling system in operation.			
		Photographs of Rainwater Harvesting Project is enclosed as <b>Annexure-8</b> .			
VIII	All the effluent should be treated and used for ash handling, dust suppression and green belt development. No effluent shall be discharged, and 'zero' discharge shall be adopted. Sanitary sewage should be treated in septic tank followed by the soak pit.	Complied.  There are neither any potential sources for generation of ash nor any activity as such handling ash inside plant premises. The plant is maintained with "Zero Discharge Standard". The plant has two operational aspects with water usage demand i.e., Furnace Cooling system and Gas Cleaning plant. For furnace cooling system complete close circuit-based recirculation system has been provided however makeup water is required to cater to the same. Whereas the effluents generated from the cleaning of GCP plant is passed through Solid-Liquid Separation system and the underflow is recirculated via thickener. There is no wastewater getting generated from the processes.  The plant has an operational STP of 10KLD to take care of the domestic effluent generated from the office premises, canteen areas and others, etc. Treated effluent is reused for gardening and horticulture purposes. Effluent samples from the STP are getting analysed on monthly basis.  Photographs and Monitoring Reports are enclosed as Annexure-9.			
IX	Regular monitoring of surface, sub-surface and ground water should be ensured, and treated wastewater should meet the norms prescribed by the State Pollution Control Board or described under the E(P) Act 1986 whichever are more stringent. Leachate study for the effluent generated and analysis shall also be regularly carried out and report submitted to the Ministry's Regional Office at Bhubaneswar, SPEB and CPCB.	Complied.  Monitoring of surface water (from Kundra nala/Sona River) is carried out on monthly basis.  Similarly, ground water and subsurface water samples are also collected from the borewells as well as nearby peripheral areas on monthly basis.  Sampling and analysis is carried out by an MoEF&CC as well as NABL Accredited laboratory. The analysis reports are also submitted to the Odisha State Pollution Control Board on monthly basis. Abstract of water Quality (wastewater, ground water and surface water) for the period of Oct'22 to March'22 is enclosed as Annexure-10.			
X	Slag produced in Ferro Manganese (Fe-Mn) production should be used in manufacture of Silico Manganese (Si-Mn). All the other Ferro alloy slag should be used in the preparation of building materials.	Complied.  Slag produced from existing Fe-Mn plant are, partly used in the process as a raw material for Fe-Mn production and rest are sold to the Ferro Alloys Industry for making Si-Mn.  During FY 2022-23, Total, slag generated 33460 MT approx. and 30470 MT approx. is sold to the Ferro Alloys Industry for making Si-Mn and rest used inhouse.			

Sl. No.	Specific Condition	Compliance Status (October'22 to Mar'2023)			
XI	Risk and Disaster Management Plan along with the mitigation measures should be prepared and a copy submitted to the Ministry's Regional Office at Bhubaneswar, SPCB and CPCB within 3 months of issue of environment clearance letter.	Regional Office, Bhubaneswar c. Letter no. FAP(J)/4251/2016, dated. 01.02.2016 t State Pollution Control Board, Bhubaneswar. [Copy of the letters is enclosed as Annexure-11			
XII	Green belt shall be developed in 33% of plant area. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.	Complied.  The plant is established over an area of 47.135 Acre, out of which the existing project work (Fe-Mn Plant with Two Furnace units) is established over 33.4 Acres and 13. 735 Acres has been earmarked for the proposed expansion project (Si-Mn Plant & Sinter Plant) in respect of which the subject EC has been granted.  The said proposed expansion project has been initiated however it is envisaged that there would be significant delay to establish and commission the upcoming plants/projects for the purpose of which, an application for extension of the validity of prevailing Environmental Clearance is sought from the Ministry.  Accordingly, we are required to develop our greenbelt over 15.55 Acres (33% of 47.135Acres). Presently, greenbelt has been developed over an area of around 16 Acres with self-sustained plantation of around 16740 Nos.  Photographs of greenbelt developed inside plant premises is enclosed as Annexure-12.			
XIII	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Plants shall be implemented.	cer <u>Complied.</u>			
XIV	At least 5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment (ESC) based on locals need and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Chennai. Implementation of such program shall be ensured accordingly in a time bound manner.	Complied.  All the CSR measures are carried out by the CSR wing of the company under the banner of Tata Steel Foundation. During FY 22-23, the company has spent around Rs. 7.94 Crore on the strengthening of social welfare infrastructure of the area (Joda valley) from Ferro Alloys Division.  Details of expenditure is provided as Annexure- 13.			

Sl. No.	Specific Condition	Compliance Status (October'22 to Mar'2023)
XV	Provisions shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project	Complied.  There are no labour camps within the Site. However, workers are provided with all necessary infrastructure and facilities such as fuel for cooking mobile toilets, STP, Safe drinking

## **B.** General Conditions

Sl. No.	General Condition	Compliance Status (October'22 to Mar'2023)			
I	The project authorities must strictly adhere to the stipulations made by the Odisha Pollution Control Board and the State Government.	Complied.  All the stipulations made by the Odisha Pollution Control Board and the State Government are strictly followed for existing facility.			
II	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	Noted.			
III	At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM10, PM2.5, SO2 and NOx are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the SPCB/CPCB once in six months.	Complied.  Presently four nos. ambient air monitoring stations have been developed for the monitoring of Ambient Air Quality Parameters as per National Ambient Air Quality Standard 2009.  Monitoring and analysis is carried out by engaging an MoEF&CC as well as NABL Accredited laboratory. Reports are submitted to State Pollution Control Board Odisha on monthly basis.			
IV	Industrial waste water shall be properly collected, treated so as to conform to the standard prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.	Complied.  It has been followed. Treated wastewater is utilised for plantation/gardening and road water sprinkling purpose.			
V	Overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (daytime) and 70 dBA (night-time).	Complied.  All the Noise generating sources have been provided with requisite acoustic enclosures. Ambient Noise level is also monitored at several places inside plant premises.  Abstract of the Ambient Noise level Monitoring Result is enclosed as Annexure-15.			

Sl. No.	General Condition	Compliance Status (October'22 to Mar'2023)
VI	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act	Complied.  Periodic medical check-ups were conducted yearly. Last medical check-up was done in November 2022 and 617 nos. of employees are examined including contractual employees. Records were maintained as per Orissa factory rule. Reports awaiting.  [Last PME record sample is enclosed as Annexure 16]
VII	The company shall develop rainwater harvesting structures to harvest the rainwater for utilization in the lean season besides recharging the ground water table.	Complied.  Presently, a fully functional roof top rainwater harvesting cum recharging project at the administrative office and furnace building is in working stage. The potential of rainwater harvesting is around 1500 cu.m/year.  A surface impoundment at the back side of the plant premises has been developed over around 1Acre area for harvesting of rainwater. This project has been dedicated to the community in vicinity. The harvesting potential of the same is around 1200 cum/year.  To reduce water consumption, close circuit cooling system is in operation.  Photographs of Rainwater Harvesting Projects are enclosed as Annexure-7.
VIII	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake social- economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	Complied.  Necessary Environmental Protection Measures are implemented in line with the provision of EIA/EMP report. During FY 2022-23, the company kept a budget of Rs. 169.2 lakh (recurring and capital expenses) for the Environmental Protection Measures.  Details of Environmental Expenditure for FY 2022-23 is enclosed as Annexure-17.  All the CSR measures are carried out by the CSR wing of the company under the banner of Tata Steel Foundation. During FY 22-23, the company has spent around Rs. 7.94 crore on the strengthening of social welfare infrastructure of the area (Joda valley) from Ferro Alloys Division.
IX	Requisite funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change (MoEFCC) as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Bhubaneswar. The	Details of expenditure is provided as Annexure- 13.  Complied.  During FY 2022-23, the company kept a budget of Rs. 169.2 lakh (recurring and capital expenses) for the Environmental Protection Measures  Details of Environmental Expenditure for FY 2022-23 is enclosed as Annexure-17.

Sl. No.	General Condition	Compliance Status (October'22 to Mar'2023)		
	funds so provided shall not be diverted for any other purpose.			
X	A copy of clearance letter shall be sent by the proponent to concern Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	Complied.  Already Complied. Intimation of obtaining Environmental Clearance is given to Zila Parishad vide letter No. FAPJ/4136/2015. Copy of Letter is given in Annexure-18		
XI	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEFCC at Bhubaneswar. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely, PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Complied. The six-monthly compliance reports along with the monitoring results are uploaded in Tata Steel's website www.tatasteel.com for public view and updated periodically.  Photograph is given in the Annexure - 19		
XII	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEFCC, the respective Zonal Office of CPCB and the SPCB. The Regional Office of the Ministry at Bhubaneswar/CPCB/SPVCB shall monitor the stipulated conditions.	Complied.  Six monthly compliance reports are being submitted regularly to the MoEF, its Regional Office Bhubaneswar, Central Pollution Control Board Kolkata and State Pollution Control Board. Last six-monthly compliance report was sent vide letter No FAMD/FAPJ/412/FY23 dt.29.11.2022 for the period from April-2022 to September-2022.		
XIII	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEFCC) at Bhubaneswar by email.	Complied.  The Environment statement in Form V was submitted for the year 2021-22 on 29 <sup>th</sup> Sep 2022 vide letter no Ref. No. FAMD/FAPJ/359/FY22 to SPCB, Bhubaneswar and Regional office, Keonjhar and the compliance of environmental conditions is uploaded on the website.  [Copy of Letter is given in Annexure-20]		

Sl.	General Condition	Compliance Status (October'22 to Mar'2023)
No.		
XIV	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearances letter are available with SPCB and may also be seen at website of the Ministry of Environment, Forests and Climate Change (MoEFCC) at <a href="https://envfor.nic.in">https://envfor.nic.in</a> . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspaper that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional Office at Bhubaneswar.	Complied.  Information regarding Environmental clearance issued is published on Sambad oriya newspaper on 13 <sup>th</sup> November issue and on the statesman English Newspaper of 13 <sup>th</sup> November issue.  [Details of publication are given in Annexure -21
XV	Project authorities shall inform the Regional Office as well as ministry. The date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work	Being Followed with.  It will be strictly followed

Head,

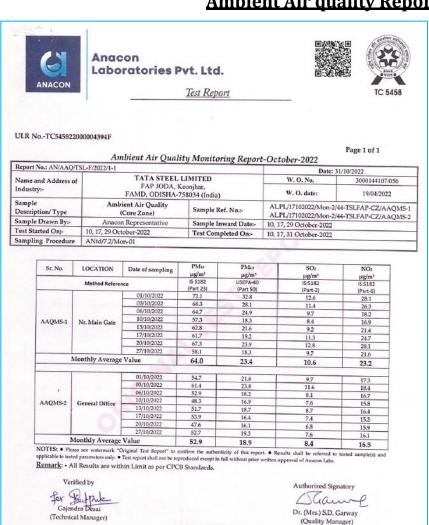
Ferro Alloys Plant, Joda Tata Steel Ltd.

# ANNEXURE-1 ENVIRONMENTAL MONITORING RESULTS (OCTOBER'22 to MARCH'22)



Location	Main gate						
Parameters	NAAQ Standard	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
PM10	$100(\mu g/m^3)$	64.0	63.0	61.3	59	60.1	60.5
PM2.5	$60  (\mu g/m^3)$	23.4	23.5	22.1	22	21.2	25
SO2	$80  (\mu g/m^3)$	10.6	9.9	9.3	9.7	9.7	10.1
NO2	$80(\mu g/m^3)$	23.2	21.3	20.2	21.3	22.8	21.8
Location	General Office						
Parameters	NAAQ Standard	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
PM10	$100(\mu g/m^3)$	52.9	51.0	52	52	57.5	53.3
PM2.5	$60  (\mu g/m^3)$	18.9	17.1	18	17.6	19	19.2
SO2	$80  (\mu g/m^3)$	8.4	7.6	8.3	7.9	9.5	9.5
NO2	$80(\mu g/m^3)$	16.5	16.3	17.8	17.6	19.7	19.6
Location	Near ETP						
Parameters	NAAQ Standard	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
PM10	$100(\mu g/m^3)$	50.4	50.0	51.3	51.8	49.7	60.5
PM2.5	$60  (\mu g/m^3)$	17.0	17.1	18	18.3	17.7	25
SO2	$80  (\mu g/m^3)$	8.0	7.7	7.5	9.1	9.1	10.1
NO2	$80(\mu g/m^3)$	17.6	17.4	16	17.3	18.1	21.8
Location	Back gate						
Parameters	NAAQ Standard	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
PM10	$100(\mu g/m^3)$	54.8	52.5	59.5	61.2	59.3	53.2
PM2.5	$60  (\mu g/m^3)$	20.4	17.7	20.3	21.9	20.6	18.6
SO2	$80  (\mu g/m^3)$	9.4	9.1	9.2	10.3	10.2	9.4
NO2	$80(\mu g/m^3)$	19.1	17.8	16.9	19.5	20.1	18.7

# Annexure - 2 Ambient Air quality Report From 01.10.2022 To 31-03-2023



----End of Report----





#### Anacon Laboratories Pvt. Ltd.





ULR No.-TC545822000004749F

Page 1 of 1 Amhient Air Quality Monitoring Report-November-2022

Report No.: AN/AAQ/TS	SL-F/2022/1-1	Date; 30/11/2022			
Name and Address of	TATA STEEL LIMITED FAP JODA, Keonjhar, FAMD, ODISHA-758034 (India)		W. O. No.	3000144107/056	
Industry:-			W. O. date:	19/04/2022	
Sample	Ambient Air Quality	Ambient Air Quality		ALPL/15112022/Mon-1/22-TSLFAP-CZ/AAQMS-	
Description/Type	(Core Zone)	Sample Ref. No.:-	ALPL/23112022/Mon-1/20-TSLFAP-CZ/AAQMS		
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-			
Test Started On:-	7, 14, 21, 28 November-2022.	Test Completed On:-	Test Completed On:- 7, 14, 21, 29 November-2022.		
Sampling Procedure	ANtd/7.2/Mon-01				

Sr. No.	LOCATION	Date of sampling	PM <sub>10</sub> µg/m <sup>2</sup>	PM2s µg/m³	SO <sub>2</sub> µg/m³	NO <sub>2</sub> µg/m³	CO mg/m <sup>3</sup>
	Method Reference		IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	(5:5182 (Part-6)	15:5182 (Part-10)
		01/11/2022	67.2	28.4	11.6	27.1	BDL (DL-0.5)
		04/11/2822	71.6	31.8	12.9	28.6	BDL (DL-0.5)
		07/11/2022	62.9	24.1	9,2	21.8	BDL (DL -0.5)
AAQMS-1 Nr. Main Gat	No Mala Cata	10/11/2022	64.7	26.3	11.3	23.4	BDL (DL-0.5)
	Nr. main Gate	14/11/2022	58.6	17.6	8.7	18.3	BDL (DL-0.5)
		17/11/2022	52.9	16.4	7.6	16.8	BDL (DL-0.5)
		21/11/2022	61.7	24.9	9,3	18.1	BDL (DL-0.5)
		24/11/2022	64.1	18.3	8.4	16.4	BDL (DL-0.5
	Monthly Average	Value	63.0	23.5	9,9	21.3	BDL (DL = 0.5
		01/11/2022	51.6	16.9	8.4	16.1	BDL (DL-0.5
		04/11/2022	47.3	15.8	7.6	16.3	BDL (DL-0.5
	25	07/11/2022	54.9	18.2	9.2	18.4	BDL (DL-0.5
AAOMS-2	General Office	10/11/2022	49.2	16.4	7.6	16.1	BDL (DL-05
rusgauez	ounce office	14/11/2022	51.7	17.3	8.4	15.9	BDL (DL-0.5
		17/11/2022	54,8	19.2	7.1	16.3	BDL (DL-0.5
		21/11/2022	51.2	16.8	6.4	15.7	BDL (DL-0.5
		24/11/2022	47.1	16.4	5.9	15.2	BDL (DL-0.5
	Monthly Average	Value	51.0	17.1	7.6	16.3	BDL (DL - 0.5

NOTES: • Please see writermark "Original Test Report" to confirm the authenticity of this report, • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. Remark: - All Results are within Limit as per CPCB Standards.

Authorized Signatory

Gaigndrasinha Desai (Technical Manager)

Dr. (Mrs.) S.D. Garway (Quality Manager)

Thanks For putting in your faith and trust in our services. We at Anacon Laboratories cherish our relationship.

We put in a lot of hard work to ensure that you have a seamless experience at every step of our relationship.

In order to ensure that your next experience will be significantly better, we welcome your feedback ever amail on feedback@enscon.in

Anacon Laboratories Pvt. Ltd. Nagpur Lab

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Test Report

ULR No.-TC545822000004749F

Page 1 of 1

Report No.: AN/AAQ/TS	L-F/2022/1-2	NO CONTRACTOR CONTRACT	Date:	80/11/2022	
Name and Address of	TATA STEEL L		W. O. No.	3000144307/056	
Industry:-	FAP JUDA, RE FAMD, ODISHA-75		W. O. date:	19/04/2022	
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-		22-TSLFAP-CZ/AAQMS-3 20-TSLFAP-CZ/AAOMS-4	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	7, 14, 21, 28 November-2022.		
Test Started On:-	7, 14, 21, 28 November-2022.	Test Completed On:-	7, 14, 21, 29 November-2022.		
Sampling Procedure	ANtd/7.2/Mon-01				

Sr. No.	LOCATION	Date of sampling	PMu µg/m³	PM2s µg/m³	SO <sub>2</sub> µg/m <sup>3</sup>	NO: µg/m³	CO mg/m²
	Method Reference		IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	15:5182 (Part-6)	ISS182 [Part-10)
		01/11/2022	48.2	16.1	7.5	17.8	85L (DL - 0.5)
		04/11/2022	46.1	15.9	6.4	16.2	BDL (DL - 0.5)
		07/11/2022	51.3	18.4	9.3	21.6	BDL (DL - 0.5
AAQMS-3	Near Well Zone	10/11/2022	54.7	19.3	8.1	18.7	BDL (DL - 0.5
		14/11/2022	48.2	16.9	7.6	16.4	BDL (DL - 0.5
	87	17/11/2022	51.8	17.2	8.4	16.9	BDL (DL - 0.5
		21/11/2022	47,3	16.4	7.2	15.8	BDL (DL - 0.5
		24/11/2022	52.7	16.0	6.8	16:1	BDL (DL=0.5
	Monthly Average Va	lue	50.0	17.1	7.7	17.4	BDL (DL-0.
		01/11/2022	63.1	-			
		The state of the s		24.3	12.6	21.9	BDL (DL - 0.5
		04/11/2022	58.3	18.1	11.4	18.3	BDL (DL - 0.5
		07/11/2022	51.9	16.7	9.3	17.2	BDL (DL - 0.5
AAQMS-4	Near Back Gate	10/11/2022	47.2	15.8	7.1	16.7	BDL (DL - 0.5
		14/11/2022	52.7	16.4	8.4	17.6	BDL (DL - 0.5
		17/11/2022	48.3	15.9	7.6	16.4	BDL (DL - 0.5
		21/11/2022	51.1	18.4	9.1	17.2	BDL (DL - 0.5
		24/11/2022	47.2	16.3	7.4	16.8	BDL (DL - 0.5
	Monthly Average Va	lue	52.5	17.7	9.1	17.8	BELLEVI OF

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Remark: - All Results are within Limit as per CPCB Standards.

Authorized Signatory

Gajardrasinia Desai (Technique Manages Enting in your faith and trust in our services, We at Anacon Laboratories charis Can Hispitokashiger)
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ULR No.-TC545822000004975F

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Ambient Air Quality Monitoring Report-December-2022

Page 1 of 1

Report No.: AN/AAQ/TSL-F	/2022/1-1	Date: 30/12/2022		
Name and Address of	TATA STEEL		W. O. No.	3000144107/056
Industry:-	FAP JODA, FAMD, ODISHA-		W. O. date:	19/04/2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/21122022/Mon-1/31-TSEFAP-CZ/AAQM ALPL/21122022/Mon-1/31-TSLFAP-CZ/AAOM	

Sample Drawn Bys-Anacon Representative Sample Inward Date: 12,19,29 December-2022. 12,19,29 December-2022. Test Completed On:-12,19,30 December-2022. Sampling Procedure ANtd/7.2/Mon-01

Sz. No.	LOCATION	Date of sampling	PMo µg/m³	PMes pig/m²	SO: µg/m²	NO <sub>2</sub> µg/m <sup>3</sup>	CO mg/m³
Method Reference		15 5182 (Part 23)	USEPA-40 (Part 50)	(5:5182 (Part-2)	(5:51.82 (Part-6)	(Far)-10)	
		08/12/2022	57.1	21.5	8,4	19.3	BDL (DL = 0.5)
	1	12/12/2022	62.7	24.3	9,1	21.6	BDL (DL = 0.5)
AAQMS-1 Near Main Gate	35/12/2022	64.9	26.7	9.3	24.2	BDL (DL=0.5)	
	19/12/2022	58.3	18.2	8.7	18.1	BDL (DL=0.5)	
		22/12/2022	61.7	21.9	11.3	19.7	BDL (DL - 0.5)
		26/12/2022	63.1	19.5	9.1	18,4	BDL (DL = 0.5)
	Monthly Average	Value	61.3	22.1	9.3	20.2	BDL (DL - 0.5
		08/12/2022	56.3	21.6	11.4	21.9	BDL (DL-0.5)
		12/12/2022	54.7	18.3	7.9	18.2	BDL (DL = 0.5)
AAOM5-2	General Office	15/12/2022	47.3	16.1	8.3	16.7	BDL (DL - 0.5)
integrate occurrent	District Direct	19/12/2022	51.2	17.6	7.4	16.1	BDL (DL-0.5)
		22/12/2022	53.9	18.4	8.7	17.3	BDL (DL-0.5)
		26/12/2022	48.3	15.8	6.4	16.7	BDL (DL = 0.5)
	Monthly Average	Value	52.0	18.0	8.3	17.8	BDL (DL - 9.5)

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Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Gajendrasinha Desai (Technical Manager) Authorized Signatory

Dr. (Mrs.) S.D. Garway (Quality Manager)

----End of Report----

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ULR No.-TC545822000004975F

Page 1 of 1

Ambient Air Quality Monitoring Report-December-2022

Report No.: AN/AAQ/TS	SL-F/2022/1-2		Date: 30/12/2022		
Name and Address of	TATA STEEL	LIMITED	W. O. No.	3000144107/056	
Industry:-	FAP JODA, F FAMD, ODISHA-		W. O. date:	19/04/2022	
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-		/31-TSLFAP-CZ/AAQMS-3 /31-TSLFAP-CZ/AAQMS-4	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	12,19,29 December-2022		
Test Started On:-	12,19,29 December-2022.	Test Completed On:-	12,19,30 December-2022.		
Sampling Procedure	ANtd/7.2/Mon-01				

Sr. No.	LOCATION	Date of sampling	PM10 µg/m³	PM25 µg/m³	SO <sub>2</sub> µg/m³	NO <sub>2</sub> μg/m <sup>3</sup>	CO mg/m³
	Method Reference		IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	15:5182 (Part-6)	IS:5182 (Part-10)
		08/12/2022	48.3	17.2	8.4	16.4	BDL (DL - 0.5)
	f	12/12/2022	51.9	16.8	7.6	16.1	BDL (DL - 0.5)
AAQMS-3	Near Well Zone	15/12/2022	56.3	21.6	8.7	15.9	BDL (DL - 0.5
AAQM5-3	Near Well Zone	19/12/2022	49.3	16.7	6.4	15.2	BDL (DL - 0.5
		22/12/2022	53.7	18.3	7.1	16.4	BDL (DL - 0.5
		26/12/2022	48.2	17.2	6.8	15.9	BDL (DL - 0.5
	Monthly Average Va	llue	51.3	18.0	7.5	16.0	BDL (DL - 0.
		08/12/2022	58.7	21.7	9.2	16.7	BDL (DL - 0.5
		12/12/2022	52.1	17.3	7.9	15.8	BDL (DL - 0.5
AAQMS-4	Near Back Gate	15/12/2022	61.7	21.4	11.3	18.2	BDL (DL - 0.5
AAQAI5-4	Iven back Gate	19/12/2022	63.4	23.6	9.1	17.6	BDL (DL - 0,5
		22/12/2022	59.3	19.2	8.4	16.8	BDL (DL - 0,5
	1,075	26/12/2022	6L7	18.3	9.1	16.4	BDL (DL - 0.5
	Monthly Average Va	due	59.5	20.3	9.2	16.9	BDL (DL - 0.1

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Remark: - All Results are within Limit as per CPCB Standards.

Gajendrasinha Desai (Technical Manager)

Dr. (Mrs.) S.D. Garway (Quality Manager)

----End of Report----

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Test Report

#### ULR No.- TC545823000000150F

Page 1 of 1

Ambient Air Quality Monitoring Report-Ignuary-2023

Report No.: AN/AAQ/TS		ity Monitoring Report		31/01/2023	
•	TATA STEEL	LIMITED	W. O. No.	3000144107/056	
Name and Address of Industry:-	FAP JODA, F FAMD, ODISHA-7		W. O. date:	19/04/2022	
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/25012023/Mon-1/34-TSLFAP-CZ/AAQMS- ALPL/25012023/Mon-1/34-TSLFAP-CZ/AAQMS-		
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	9,16,23 January-2023		
Test Started On:-	9,16,23 January-2023	Test Completed On:-	9,16,24 January-2023		
Sampling Procedure	ANtd/7.2/Mon-01		400 (40)		

Sr. No.	LOCATION	Date of sampling	PM10 µg/m³	PM25 µg/m³	SO <sub>2</sub> µg/m³	NO <sub>2</sub> μg/m <sup>3</sup>	CO mg/m³
Method Reference		IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)	
		02/01/2023	63.1	24.9	9.3	21.6	BDL (DL - 0.5)
		05/01/2023	57.3	21.6	8.4	18.7	BDL (DL - 0.5)
AAQMS-1 Ne		09/01/2023	61.9	23.8	11.2	24.6	BDL (DL - 0.5)
	Near Main Gate	12/01/2023	52.8	16.7	8.1	.17.3	BDL (DL - 0.5)
		16/01/2023	56.2	21.4	9.2	21.7	BDL (DL - 0.5)
		19/01/2023	62.4	23.6	11.7	23.9	BDL (DL - 0.5)
. 1	Monthly Average	Value	59.0	22.0	9.7	21.3	BDL (DL - 0.5
						18.3	BDL (DL - 0.5)
		02/01/2023	52.8	16.7	9.3	19.7	BDL (DL = 0.5)
		05/01/2023	56.1 48.3	21.6	6.8	17.2	BDL (DL = 0.5)
AAQMS-2 -	General Office	09/01/2023 12/01/2023	51.9	18.3	7.6	16.4	BDL (DL = 0.5
		16/01/2023	53.7	16.9	8.4	17.1	BDL (DL = 0.5
	-	- 19/01/2023	49.3	16.2	7.2	16.7	BDL (DL - 0.5
	Monthly Average		52.0	17.6	7.9	17.6	BDL (DL - 0.5

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Remark: - All Results are within Limit as per CPCB Standards.

Gajendrasinha Desai (Technical Manager) Authorized Signatory

(Gam) Dr. (Mrs.) S.D. Garway

(Quality Manager)

----End of Report----

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Test Report

ULR No.- TC545823000000150F

Page 1 of 1

Ambient Air Quality Monitoring Report-January-2023

	Minutelle Mil Quali	ing intomittoring recons	, juii y		
Report No.: AN/AAQ/TS	L-F/2022/1-2	Date: 31/01/2023			
	TATA STEEL	LIMITED	W. O. No.	3000144107/056	
Name and Address of Industry:-	FAP JODA, R FAMD, ODISHA-7		W. O. date:	19/04/2022	
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/25012023/Mon-1/34-TSLFAP-CZ/AAQMS-3 ALPL/25012023/Mon-1/34-TSLFAP-CZ/AAQMS-4		
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	9,16,23 January-2023		
Test Started On:-	9,16,23 January-2023	Test Completed On:-	9,16,24 January-2023		
Camalina Danasiana	A Nitd/7.2/Mon-01				

Sr. No.	LOCATION	Date of sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM25 μg/m³	SO <sub>2</sub> μg/m³ -	NO <sub>2</sub> μg/m <sup>3</sup>	CO mg/m³
	Method Reference		IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
		03/01/2023	53.7	16.9	9.2	17.1	BDL (DL - 0.5)
AAQMS-3		06/01/2023	56.3	23.6	11.4	18.9 -	BDL (DL - 0.5)
		10/01/2023	47.6	18.2	8.1	16.2	BDL (DL - 0.5)
	Near Well Zone	13/01/2023	51.1	16.8	9.3	16.4	BDL (DL - 0.5)
		17/01/2023	48.3	15.9	7.6	17.1	BDL (DL - 0.5)
		20/01/2023	53.8	18.2	8.7	18.3	BDL (DL - 0.5)
	Monthly Average Va	lue	51.8	18.3	9.1	17.3	BDL (DL - 0.5
		03/01/2023	62.1	23.6	11.4	18.3	BDL (DL - 0.5)
		06/01/2023	61.9	21.7	9.3	17.6	BDL (DL - 0.5)
		10/01/2023	58.3	16.4	7.6	17.2	BDL (DL - 0.5)
AAQMS-4	Near Back Gate	13/01/2023	62.7	23.6	11.2	21.7	BDL (DL - 0.5)
		17/01/2023*	64.8	26.1	12.7	23.9	BDL (DL - 0.5)
		20/01/2023	-57.3	19.7	9.3	18.2	BDL (DL - 0.5)
	Monthly Average Va	luo	61.2	21.9	10.3	19.5	BDL (DL - 0.5

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Gajendrasinha Desai (Technical Manager) Authorized Signatory

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Dr. (Mrs.) S.D. Garway

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Test Report

Page 1 of 1

#### ULR No.- TC545823000000357F

Sampling Procedure ANtd/7.2/Mon-01

Ambient Air Quality Monitoring Report-Febr

Report No.: AN/AAQ/TSL	E/2022/1-1	0 1		
Treport From Francisco		Date: 28/02/2023		
Name and Address of	TATA STEEL		W. O. No.	3000144107/056
Industry:-	FAP JODA, K FAMD, ODISHA-7		W. O. date:	19/04/2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/20022023/Mon-1/33-TSLFAP-CZ/AAQMS ALPL/20022023/Mon-1/33-TSLFAP-CZ/AAQMS	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	6, 13, 20,27 February-202	
Test Started On:-	6, 13, 20,27 February-2023	Test Completed On:-	6, 13, 20,28 February-2023	

Sr. No.	LOCATION	Date of sampling	PM <sub>10</sub> μg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> μg/m <sup>3</sup>	CO mg/m³
	Method Referer	ice	IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
		01/02/2023	58.3	21.6	8.7	23.9	BDL (DL - 0.5)
		03/02/2023	63.8	24.9	11.6	26.1	BDL (DL - 0.5)
		06/02/2023	54.1	18.3	7.2	19.7	BDL (DL - 0.5)
AAQMS-1	Near Main Gate	09/02/2023	58.6	21.4	9.3	23.6	BDL (DL - 0.5)
		13/02/2023	67.2	24.9	12.8	26.1	BDL (DL - 0.5)
		16/02/2023	62.9	19.2	9.7	21.8	BDL (DL - 0.5)
- 1		20/02/2023	56.1	18.4	8.4	18.3	BDL (DL - 0.5)
	Monthly Average	Value	60.1	21.2	9.7	22.8	BDL (DL - 0.5)
		04 100 10000	All Inches				
		01/02/2023	53.7	18.2	7.6	17.3	BDL (DL - 0.5)
		03/02/2023	57.2	21.7	8.4	21.6	BDL (DL - 0.5)
ÁAOMS-2	-	06/02/2023	61.9	19.3	11.7	23.8	BDL (DL - 0.5)
AAQMS-2	General Office	09/02/2023	54.3	17.6	9.2	18.3	BDL (DL - 0.5)
	100	13/02/2023	56.1	18.4	8.7	16.9	BDL (DL - 0.5)
		16/02/2023	61.3	21.1	11.3	21.4	BDL (DL - 0.5)
		20/02/2023	58.2	16.7	9.6	18.7	BDL (DL - 0.5)
	Monthly Average	Value	57.5	19.0	9.5	19.7	BDL (DL - 0.5)

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Gajendrasinha Desai (Technical Manager)

Dr. (Mrs.) S.D. Garway (Quality Manager)

----End of Report----

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Test Report

ULR No.- TC545823000000357F

Page 1 of 1

Ambient Air Quality Monitoring Report-February-2023

Report No.: AN/AAQ/TS	SL-F/2023/1-2		Date:	28/02/2023
Name and Address of	TATA STEEL	LIMITED	W. O. No.	3000144107/056
Industry:-	FAP JODA, K FAMD, ODISHA-7		W. O. date:	19/04/2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/20022023/Mon-1/33-TSLFAP-CZ/AAQ ALPL/20022023/Mon-1/33-TSLFAP-CZ/AAO	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	6, 13, 20,27 February-20	23
Test Started On:-	6, 13, 20,27 February-2023	Test Completed On:-	6, 13, 20,28 February-20	23
Sampling Procedure	ANtd/7.2/Mon-01		H.P.	

Sr. No.	LOCATION	Date of sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM25 µg/m³	SO <sub>2</sub> µg/m³	NO <sub>2</sub> µg/m <sup>3</sup>	CO mg/m³
0	Method Reference		IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
		02/02/2023	48.3	15.7	8.4	16.3	BDL (DL - 0.5)
		04/02/2023	52.9	16.4	9.3	17.6	BDL (DL - 0.5)
		07/02/2023	47.2	16.1	7.6	16.9	BDL (DL - 0.5)
AAQMS-3	Near Well Zone	10/02/2023	51.7	21.6	11.4	21.3	BDL (DL - 0.5)
		14/02/2023	48.3	18.2	. 9.2	18.6	BDL (DL - 0.5)
		17/02/2023	52.6	19.4	9.7	19.4	BDL (DL - 0.5)
	and the second s	21/02/2023	47.1	16.8	8.4	16.9	BDL (DL - 0.5)
	Monthly Average V	alue	49.7	17.7	9.1	18.1	BDL (DL - 0.5)
1		02/02/2023	67.3	26.1	12.8	21.6	BDL (DL - 0.5)
		04/02/2023	64.9	24.7	11.6	19.3	BDL (DL - 0.5)
		07/02/2023	57.2	18.3	9.2	18.1	BDL (DL - 0.5)
AAQMS-4	Near Back Gate	10/02/2023	51.7	16.4	8.4	16.9	BDL (DL - 0.5)
- 2		14/02/2023	61.3	21.6	11.7	24.7	BDL (DL - 0.5)
		17/02/2023	58.1	19.3	9.8	21.6	BDL (DL - 0.5)
	1990	21/02/2023	54.8	18.1	8.1	18.3	BDL (DL - 0.5)
	Monthly Average V	alue	59.3	20.6	10.2	20.1	BDL (DL - 0.5)

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Gajendrasinha Desai (Technical Manager)

Dr. (Mrs.) S.D. Garway (Quality Manager)

----End of Report----

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Test Report

Page 1 of 1

#### ULR No.- TC545823000000588F

Ambient Air Quality Monitoring Report-March-2023

Report No.: AN/AAQ/TS		Date: 31/03/2023		
Name and Address of	TATA STEEL		W. O. No.	3000144107/056
Industry:- FAP JODA, Keonjhar, FAMD, ODISHA-758034 (India)		W. O. date:	19/04/2022	
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/21032023/Mon-3, ALPL/21032023/Mon-3	/ 29-TSLFAP-CZ/AAQMS- 29-TSLFAP-CZ/AAQMS-
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	6, 13, 20,30 March-2023	25-13LFAF-CZ/AAQMS
Test Started On:-	6, 13, 20,30 March-2023	Test Completed On:-	6, 13, 20,31 March-2023	
Sampling Procedure	ANtd/7.2/Mon-01	Proton Om	0, 10, 20,01 Watch-2023	

Sr. No.	LOCATION	Date of sampling	PM10 µg/m³	PM25 µg/m³	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> μg/m <sup>3</sup>	CO mg/m³
	Method Referen	nce	IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
		02/03/2023	64.7	24.9	11.7	26.1	BDL (DL - 0.5)
		09/03/2023	58.3	21.4	9.3	23.6	BDL (DL = 0.5)
		11/03/2023	62.8	26.1	12.8	27.3	BDL (DL = 0.5)
AAQMS-1	Near Main Gate	13/03/2023	67.2	31.6	13.4	28.1	
Qo I	real Main Gate	16/03/2023	56.9	23.8	9.2	18.7	BDL (DL - 0.5)
		22/03/2023	52.8	21.4	8.7	16.3	BDL (DL = 0.5)
		24/03/2023	58.3	24.9	7.6	17.2	BDL (DL = 0.5) BDL (DL = 0.5)
		28/03/2023	62.8	26.1	8.4	16.8	BDL (DL = 0.5)
	Monthly Average	Value	60.5	25.0	10.1	21.8	BDL (DL - 0.5)
		9.7					
		02/03/2023	54.6	21.6	8.4	18.3	BDL (DL - 0.5)
		09/03/2023	57.2	23.9	9.1	19.7	BDL (DL - 0.5)
		11/03/2023	48.3	16.4	7.6	16.2	BDL (DL - 0.5)
AAQMS-2	General Office	13/03/2023	54.9	18.3	11.7	21.8	BDL (DL - 0.5)
		16/03/2023	51.2	17.1	9.3	18.4	BDL (DL = 0.5)
		22/03/2023	48.7	16.9	8.4	17.2	BDL (DL = 0.5)
		24/03/2023	56.3	21.4	11.6	23.8	BDL (DL = 0.5)
		28/03/2023	54.9	18.3	9.7	21.6	BDL (DL = 0.5)
	Monthly Average		53.3	19.2	9.5	19.6	BDL (DL - 0.5)

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Gajendrasinha Desai

Authorized Signatory

600 (Technical Manager)

Dr. (Mrs.) S.D. Garway (Quality Manager)

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Test Report

ULR No.- TC545823000000588F

Page 1 of 1

Ambient Air Quality Monitoring Report-March-2023

Report No.: AN/AAQ/TS	SL-F/2023/1-2	Date: 31/03/2023			
Name and Address of	TATA STEEL		W. O. No.	3000144107/056	
Industry:-		FAP JODA, Keonjhar, FAMD, ODISHA-758034 (India)		19/04/2022	
Sample Description/ Type	Ambient Air Quality (Core Zone)  Sample Ref. No.:-		ALPL/21032023/Mon-3/29-TSLFAP-CZ/AAQMS-		
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	6, 13, 20,30 March-2023		
Test Started On:-	6, 13, 20,30 March-2023	Test Completed On:-	6, 13, 20,31 March-2023		
Sampling Procedure	ANtd/7.2/Mon-01	1	-,,,		

Sr. No.	LOCATION	Date of sampling	PM <sub>10</sub> μg/m³	PM <sub>2.5</sub> μg/m <sup>3</sup>	SO <sub>2</sub> µg/m³	NO <sub>2</sub> μg/m³	CO mg/m³
	Method Reference		IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
		02/03/2023	53.8	16.4	9.2	17.9	BDL (DL - 0.5)
		09/03/2023	56.2	18.2	11.6	18.4	BDL (DL - 0.5)
		11/03/2023	49.1	16.1	8.4	16.8	BDL (DL - 0.5)
AAQMS-3	Near Back Gate	13/03/2023	54.7	21.8	11.3	21.4	BDL (DL - 0.5)
		16/03/2023	52.4	19.3	8.7	18.3	BDL (DL - 0.5)
		22/03/2023	48.3	17.1	7.6	16.2	BDL (DL - 0.5)
		24/03/2023	56.1	21.8	9.7	21.6	BDL (DL - 0.5)
		28/03/2023	54.9	18.3	8.4	19.2	BDL (DL - 0.5)
des de la companya de	Monthly Average V	alue	53.2	18.6	9.4	18.7	BDL (DL - 0.5

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Remark: - All Results are within Limit as per CPCB Standards.

Gajendrasinha Desai 600 (Technical Manager) Authorized Signatory

Dr. (Mrs.) S.D. Garway (Quality Manager)

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## Annexure -3









**Continious Emission Monitoring System** 

### STACK EMISSION MONITORING RESULTS (OCTOBER'22 to MARCH'23)

Location	ARC FURANCE-1						
Parameters	UNIT	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
PM	(mg/Nm3)	58	53	48			
SOX	(mg/Nm3)	273	261	259	Plant was under major shutdown		
NOX	(mg/Nm3)	116	124	116			
	·		•				
Location	ARC FURNACE-2						
Parameters	NAAQ Standard	Oct-22	Nov-22	Dec-22			
PM	(mg/Nm3)	53	48	46	Dlant		
SOX	(mg/Nm3)	309	287	281	Plant was under major shutdown		
NOX	(mg/Nm3)	121	109	113		Silutuowii	

### Annexure - 4

### **Stack Monitoring Report**



#### Anacon Laboratories Pvt. Ltd.



Test Report

#### ULR No.-TC545822000004394F

D 131 17 Dr. 19440	Stack Emission M	onnoring Repor	[
Report No.: ALPL/3110	2022/1-8		Date: 31/10/2022
Issued to	TATA STEEL LI FAP JODA, Kee		P. O. No.
155464 10	FAMD, ODISHA-75	3000144107/056-19.04.2022	
Sample Description/Type	Stack Emission Monitoring	Sample Collected by	Anacon Laboratory
Sampling Location	Furnace-1	Sample Quantity/Packing	Thimble: 1 X 1 No. SO:: 30 mL X 1No. PVC Bottle NOx: 30 mL X 1No. PVC Bottle
Sample Ref. No.:	ALPL/17102022/Mon-2/44-S1	Date of Sampling	13/10/2022
Sampling Procedure	ANtd/7.2/Mon-01	Date of Receipt of Sample	17/10/2022
Date of Start of Analysis	17/10/2022	Date of Completion of Analysis	18/10/2022

Stack Details		4 64%	
Stack Name		Ft	ırnace
Ambient Temperature		26	°C
Ambient Relative Humidity		83	%
Stack height above ground level		10	Meter
Stack diametér		0.35	Meter
Type of Fuel		Coal	
Parameter	Unit	Results	Method Reference
Flue gas temperature	°C	81	IS:11255 (Part 3)
Flue gas velocity	m/s	9.64	IS:11255 (Part 3)
Total gas quantity at STP	m³/h	3338.02	IS:11255 (Part 3)
Total gas quantity at NTP	Nm³/h	2809.97	IS:11255 (Part 3)
Particulate Matter (PM)	mg/Nm <sup>3</sup>	58	IS:11255 (Part 1)
Sulphur Dioxide (SO2)	mg/Nm³	273	IS 11255 (Part 2)
Oxide of Nitrogen (NOx)	mg/Nm³	116	IS 11255 (Part 7)

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> for Soutput Gajendra Desai (Technical Manager)

Authorized Signatory Samo

Dr. (Mrs.) S.D. Garway (Quality Manager)

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#### ULR No.-TC545822000004394F

Stack Emission Monitoring Report

Test Report

Report No.: ALPL/3110	2022/1-9		Date: 31/10/2022
Issued to	TATA STEEL L	P. O. No.	
Issued to FAP JODA, Keonjhar, FAMD, ODISHA-758034 (India)		3000144107/056-19.04.2022	
Sample Description/Type	Stack Emission Monitoring	Sample Collected by	Anacon Laboratory
Sampling Location	Furnace-2	Sample Quantity/Packing	Thimble: 1 X 1 No. SO:: 30 mL X 1No. PVC Bottle NOx: 30 mL X 1No. PVC Bottle
Sample Ref. No.:	ALPL/17102022/Mon-2/44-S2	Date of Sampling	13/10/2022
Sampling Procedure	ANtd/7.2/Mon-01	Date of Receipt of Sample	17/10/2022
Date of Start of Analysis	17/10/2022	Date of Completion of Analysis	18/10/2022

Stack Details		16.79	
Stack Name		Fur	rnace-2
Ambient Temperature		26	
Ambient Relative Humidity		83	°C
Stack height above ground level		10	%
Stack diameter		0.35	Meter
Type of Fuel		Coal	Meter
Parameter	Unit	Results	Mark Inc
Flue gas temperature	°C	4000	Method Reference
Flue gas velocity	m/s	76	IS:11255 (Part 3)
Total gas quantity at STP	m³/h	8.71	IS:11255 (Part 3)
Total gas quantity at NTP	Nm³/h	3016.93	IS:11255 (Part 3)
Particulate Matter (PM)		2576.06	IS:11255 (Part 3)
	mg/Nm³	53	IS:11255 (Part 1)
Sulphur Dioxide (SO <sub>2</sub> )	mg/Nm³	309	IS 11255 (Part 2)
Oxide of Nitrogen (NOx)	mg/Nm³	121	IS 11255 (Part 7) Results shall be referred to tested sample

applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs.



Authorized Signatory Scanne Dr. (Mrs.) S.D. Garway (Quality Manager)

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ULR No.-TC545822000004751F

Stack Emission Monitoring Report

Report No.: ALPL/3011	Date: 30/11/2022		
Issued to	TATA STEEL LI	P. O. No.	
issued to	FAP JODA, Keonjhar, FAMD, ODISHA-758034 (India)		3000144107/056-19.04.2022
Sample Description/Type	Stack Emission Monitoring	Stack Emission Monitoring Sample Collected by	
Sampling Location	Furnace-1	Sample Quantity/Packing	Thimble: 1 X 1 No. SOz: 30 mL X 1No. PVC Bottle NOx: 30 mL X 1No. PVC Bottle
Sample Ref. No.:	ALPL/23112022/Mon-1/18-S1	Date of Sampling	29/11/2022
Sampling Procedure	ANtd/7.2/Mon-01	Date of Receipt of Sample	30/11/2022
Date of Start of Analysis	30/11/2022	Date of Completion of Analysis	30/11/2022

Stack Details			
Stack Name		Furnace	
Ambient Temperature		26	°C
Ambient Relative Humidity		61	%
Stack height above ground level		10	Meter
Stack diameter		0.35	Meter
Type of Fuel		, Coal	
Parameter	Unit	Results	Method Reference
Flue gas temperature	°C	- 84	IS:11255 (Part 3)
Flue gas velocity	m/s	9.26	IS:11255 (Part 3)
Total gas quantity at STP	m³/h	3205.25	I5:11255 (Part 3)
Total gas quantity at NTP	Nm³/h	2675.53	IS:11255 (Part 3)
Particulate Matter (PM)	mg/Nm³	53	IS:11255 (Part 1)
Sulphur Dioxide (SO <sub>2</sub> )	mg/Nm³	261	IS 11255 (Part 2)
Oxide of Nitrogen (NOx)	mg/Nm³	124	IS 11255 (Part 7)

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Authorized Signatory

Gajendrasinha Desai (Technical Manager)

Dr. (Mrs.) S.D. Garway (Quality Manager)

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Stack Emission Monitoring Penort

	Stack Elitission IVI	omnoring Report	
Report No.: ALPL/3011		Date: 30/11/2022	
* *.	P. O. No.		
Issued to	FAP JODA, Keonjhar, FAMD, ODISHA-758034 (India)		3000144107/056-19.04.2022
Sample Description/Type	Stack Emission Monitoring	Stack Emission Monitoring Sample Collected by	
Sampling Location	Furnace-1	Sample Quantity/Packing	Thimble: 1 X 1 No. SO2: 30 mL X 1No. PVC Bottle NOx: 30 mL X 1No. PVC Bottle
Sample Ref. No.:	ALPL/23112022/Mon-1/18-S1	Date of Sampling	29/11/2022
Sampling Procedure	ANtd/7.2/Mon-01	Date of Receipt of Sample	30/11/2022
Date of Start of Analysis	30/11/2022	Date of Completion of Analysis	30/11/2022

Stack Details			
Stack Name		Fu	rnace
Ambient Temperature		* 26	°C
Ambient Relative Humidity		. 61	%
Stack height above ground level		10	Meter
Stack diameter		0.35	Meter
Type of Fuel		Coal	
Parameter	Unit	Results	Method Reference
Flue gas temperature	°C	84	IS:11255 (Part 3)
Flue gas velocity m/s		9.26	IS:11255 (Part 3)
Total gas quantity at STP m³/h		3205.25	IS:11255 (Part 3)
Total gas quantity at NTP Nm³/h		2675.53	IS:11255 (Part 3)
Carbon monoxide (CO)	ppm	15.1	Gas Analyser

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

> Verifiedthy Gajendrasinha Desai (Technical Manager)

Authorized Signatory

Dr. (Mrs.) S.D. Garway (Quality Manager)

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Test Report

ULR No.-TC545822000004975F

Stack	Emission	Monitoring	Report
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Report No.: ALPL/30122	Date: 30/12/2022		
	TATA STEEL LI		P. O. No.
Issued to	FAP JODA, Kee FAMD, ODISHA-758	3000144107/056-19.04.202	
Sample Description/Type	Stack Emission Monitoring	Stack Emission Monitoring Sample Collected by	
Sampling Location	Furnace-1	Sample Quantity/Packing	Thimble: 1 X 1 No. SOz: 30 mL X 1No. PVC Bottle NOx: 30 mL X 1No. PVC Bottle
Sample Ref. No.:	ALPL/21122022/Mon-1/31-S1	Date of Sampling	22/12/2022
Sampling Procedure	ANtd/7.2/Mon-01	Date of Receipt of Sample	26/12/2022
Date of Start of Analysis	26/12/2022	Date of Completion of Analysis	27/12/2022

Stack Details		2.00	
Stack Name		Furnace	
Ambient Temperature		26	°C
Ambient Relative Humidity		61	%
Stack height above ground level		10	Meter
Stack diameter	200	0.35	Meter
Type of Fuel		Coal	
Parameter	Unit	Results	Method Reference
Flue gas temperature	∘c	* 87	IS:11255 (Part 3)
Flue gas velocity	m/s	9.51	IS:11255 (Part 3)
Total gas quantity at STP	m³/h	3293.26	IS:11255 (Part 3)
Total gas quantity at NTP	Nm³/h	2726.09	IS:11255 (Part 3)
Particulate Matter (PM)	mg/Nm³	48	IS:11255 (Part 1)
Sulphur Dioxide (SO2)	mg/Nm³	259	IS 11255 (Part 2)
Oxide of Nitrogen (NOx)	mg/Nm³	116	IS 11255 (Part 7)

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Verified by

Gajendrasinha Desai
(Technical Manager)

Authorized Signatory

Dr. (Mrs.) S.D. Garway (Quality Manager)

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Test Report

Stack Emission Monitoring Report

Report No.: ALPL/3012	Date: 30/12/2022			
TATA STEEL LIMITED			P. O. No.	
Issued to	FAP JODA, Keonjhar, FAMD, ODISHA-758034 (India)		3000144107/056-19.04.2022	
Sample Description/Type	Stack Emission Monitoring	Sample Collected by	Anacon Laboratory	
Sampling Location	Furnace-1	Sample Quantity/Packing	Thimble: 1 X 1 No. SOz: 30 mL, X 1 No. PVC Bottle NOx: 30 mL X 1 No. PVC Bottle	
Sample Ref. No.;	ALPL/21122022/Mon-1/31-S1	Date of Sampling	22/12/2022	
Sampling Procedure	ANtd/7.2/Mon-01	Date of Receipt of Sample	26/12/2022	
Date of Start of Analysis	26/12/2022	Date of Completion of Analysis	27/12/2022	

Stack Details				
Stack Name		Furnace		
Ambient Temperature		26	°C	
Ambient Relative Humidity		61	%	
Stack height above ground level		10	Meter	
Stack diameter		0.35	Meter	
Type of Fuel		Coal	***	
Parameter	Unit	Results	Method Reference	
Flue gas temperature	°C		IS:11255 (Part 3)	
Flue gas velocity	m/s	9.51	IS:11255 (Part 3)	
Total gas quantity at STP	m³/h	3293.26	IS:11255 (Part 3)	
Total gas quantity at NTP	Nm³/h	2726.09	IS:11255 (Part 3)	
Carbon monoxide (CO)	ppm	146	Gas Analyser	

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Gajendrasinha Desai , (Technical Manager) Authorized Signatory

Dr. (Mrs.) S.D. Garway (Quality Manager)

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#### Annexure - 5

## **Fugitive dust emission monitoring Report**



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Test Report

Fugitive Emission Monitoring Report-October-2022

Report No.: AN/FE/TS-JEIM	Date: 31/10/2022		
Name and Address of	TATA STEEL LIMITED FAP JODA, Keonjhar, FAMD, ODISHA-758034 (India)  Fugitive Emission Sample Ref. No.:-		W. O. No.
Industry:-			3000144107/056-19/04/2022
Sample Description/Type			ALPL/17102022/ENV- 173/TSLFAP/FE-1 to 2
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	17/10/2022
Test Started On:-	18/10/2022	Test Completed On:-	18/10/2022
Sampling Procedure	ANtd/7.2/Mon-01		

Sl. No.	Location Name	Date of sampling	TSPM µg/m³
		Method Reference	IS 5182 (Part 23)
FE-1	Near Main Gate	12/10/2022	837
FE-2	Near Back Gate	12/10/2022	521
	MoEF & CC Norms:	1200 ug/m³	

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. Remark: - All Results are within Limit as per Norms.

Verified by

for Bostpuk Gajendra Desai (Technical Manager) Authorized Signatory

Dr. (Mrs.) S.D. Garway

----End of Report----

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(Quality Manager)

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Fugitive Emission Monitoring Report-Ianuary-2023

Report No.: AN/FE/TS-JEIM	Date: 31/01/2023			
Name and Address of	TATA STEE		W. O. No.	
Industry:-		FAP JODA, Keonjhar, FAMD, ODISHA-758034 (India)		
Sample Description/Type	Fugitive Emission Sample Ref. No.:-		ALPL/25012023/ENV- 06/TSLFAP/FE-1 to 2	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	30/01/2023	
Test Started On:-	30/01/2023	Test Completed On:-	30/01/2023	
Sampling Procedure	ANtd/7.2/Mon-01			

S1. No.	Location Name	Date of sampling	TSPM μg/m³
		Method Reference	IS 5182 (Part 23)
FE-1	Near Main Gate	25/01/2023	853
FE-2	Near Back Gate	25/01/2023	631
	MoEF & CC Norms:	1200 μg/m	,

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. Remark: - All Results are within Limit as per Norms.

Verified by

Law Gajendrasinha Desai ర్థీ<sup>ల</sup> (Technical Manager) Authorized Signatory Main

Dr. (Mrs.) S.D. Garway (Quality Manager)

----End of Report----

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# Annexure-6 Photographs of RCC roads and Fixed Sprinkling arrangements



Mobile High Velocity Water Sprinkler cum Mist Canon



Dry Fogging System for Fugitive dust suppression



Newly constructed RCC roads and water sprinklers



Newly constructed RCC roads

## **Annexure-7**



New Fume extraction system with bag filter

# Annexure-8 RAINWATER HARVESTING





# Annexure- 9 INSTALLATION OF 10 KLD SEWAGE TREATMENT PLANT (STP)

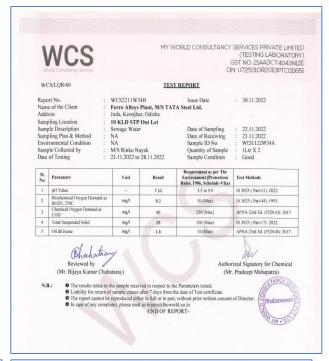


## EFFLUENT TREATMENT PLANT (ETP)-30 M3/HR



### STP WATER QUALITY REPORT









## Annexure - 10 (Water Sample Collections from Different Location)







## **Ground Water Analysis Report**



#### Angcon Laboratories Pvt. Ltd.

Test	

Sample Collected By			Sampling Location Test Well (Up Stream)	
Sample Source Sludge Pit				Quantity Received 5 L & 250ml
Inward Date Reference		W.O 3000144107/056-19.04.2022		
Sample Inward N	o. ALPL/17102022	ENV-173-GW-4	Analysis Start	18/10/2022
	Inward Date Reference  Sample Source Sludge Pit By	Inward Date   17/10/2022     Reference   W.O30001441	Inward Date   17/10/2022	Inward Date

			TEST RESULTS				
S.N.	Test Parameter	Measurement Unit			Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		
				Acceptable Limit	Permissible Limit #		
1	Biological Testing 1. Water						
1	Total Coliform	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent	
2	Escherichia Coli	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent	
II	Chemical Testing 1. Water			u.			
3	pH		IS 3025 (Part 11): 2022	6.5 to 8.5	No relaxation	6.58 at 25°C	
4	Turbidity	NTU	IS 3025 (Part 10): 1984	1	5	0.7	
5	Total Dissolved Solids (TDS)	mg/l	IS 3025 (Part 16): 1984	500	2000	321	
6	Total Alkalinity (as CaCO <sub>3</sub> )	mg/l	IS 3025 (Part 23): 1986	200	600	181.68	
7	Total Hardness (as CaCO <sub>3</sub> )	mg/l	IS 3025 (Part 21): 2009	200	600	231.14	
8	Calcium (as Ca)	mg/l	IS 3025 (Part 40): 1991	75	200	67.29	
9	Magnesium (as Mg)	mg/l	IS 3025 (Part 46): 1994	30	100	15.32	
10	Sulphate (as SO <sub>4</sub> )	mg/l	IS 3025 (Part 24): 2022	200	400	21.94	
11	Nitrate (as NO <sub>3</sub> )	mg/l	APHA Method 23rd Edition	45	No relaxation	BDL (DL-2)	
12	Chloride (as Cl)	mg/l	IS 3025 (Part 32):1988	250	1000	23.96	
13	Fluoride (as F)	mg/l	IS 3025 (Part 60): 2008	1.0	1.5	0.38	
14	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	IS 3025 (Part 43): 1992	0.001	0.002	BDL (DL - 0.001)	
15	Electrical Conductivity at 25°C	μs/cm	IS 3025 (Part 14) 2013			357.3	
16	Total Suspended Solids	mg/l	IS 3025 (Part 17) -2022			DDL/DL 10)	

NOTES: \*\* Please fairs externed: \*\*Option\*\* Ten Report to confirm the althorousy of this report \*\*Results shall be referred to tended sample(s) and applicable to tended parameters only \*\*Test report with on the reconstruction often in all units of the reconstruction of the ST days and 15 days and 15 days respectively from the late of result of Test Report, urises appoinded otherwise. \*\*Implif is equipment to go \*\*Test Report and \*\*Test Report, urises appoinded otherwise. \*\*Implif is equipment to go \*\*Test Report and \*\*Test Repor





Dan Dr. (Mrs.) S.D. Garway Quality Manager

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Test Report

Test Report No. : ALPL31			ated 31/10/2022	_		Page 2 of 2	
Issued To:	Sample Inwa	ard No.	ALPL/17102022/ENV-173-GW-	4 Analys	is Start	18/10/2022	
TATA STEEL LIMITED	Inward Date		17/10/2022 W.O 3000144107/056- 19.04.2022		is End	22/10/2022	
TATA STEEL CIMITED	Reference				• 1500	*******	
FAP JODA, Keonjhar,	Reference				Issue Date	31/10/2022	
FAMD, ODISHA-758034 (India)				Sample	Category	Water	
Sample Name Ground Water	Sample Source Sludge Pit		Sample Particulars GW-4 Ground Water		Quantity Received 5 L & 250ml		
Sample Collecte Anacon Represer	ed By	Sampling Date 14/10/2022 Sampling Time 12.40 pm		Т	Sampling Location Test Well (Up Stream)		

S.N.	Test Parameter	Test Parameter Measurement Unit Test Method		Require IS 105 (Drink Specif Including Ar	Test Result	
			Acc			Permissible Limit #
п	Chemical Testing 2. Residues In Water		180			
17	Aluminium (as Al)	mg/I	IS 3025 (Part 2) : 2019 / IS 3025 (Part 55): 2003	0.03	0.2	BDL (DL - 0.01)
18	Boron (as B)	mg/l	IS 3025 (Part 2): 2019	0.5	2.4	BDL (DL - 0.1)
19	Mercury (as Hg)	mg/l	IS 3025 (Part 48): 1994	0.001	No relaxation	BDL (DL - 0.0005
20	Iron (as Fe)	mg/l	IS 3025 (Part 2): 2019	1.0	No relaxation	0.38
21	Copper (as Cu)	mg/l	IS 3025 (Part 2): 2019	0.05	1.5	BDL(DL-0.03)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2): 2019	0.1	0.3	BDL(DL-0.05)
23	Lead (as Pb)	mg/l	IS 3025 (Part 2): 2019	0.01	No relaxation	BDL(DL-0.001)
24	Zinc (as Zn)	mg/l	IS 3025 (Part 2): 2019	5	15	BDL(DL-0.1)
25	Nickel (as Ni)	mg/l	IS:13428 : 2005(Annexure L)	0.02	No relaxation	BDL(DL-0.01)
26	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2): 2019	0.05	No relaxation	BDL(DL-0.03)

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Test Report

ssued To:	Sample Inward N	No.	ALPL/17102022/ENV-173-GW-5	Analysis S	tart	Page 1 of 2 18/10/2022
TATA STEEL LIMITED	Inward Date		17/10/2022	Analysis End		22/10/2022
FAP JODA, Keonjhar, FAMD, ODISHA-758034 (India)	Reference		W.O 3000144107/056-19.04.2022	Report Issue Date Sample Category		31/10/2022 Water
Sample Name Ground Water	Sample Source Sludge Pit					antity Received 5 L & 250ml
			Sampling Date 14/10/2022 Sampling Time 12.40 pm		Sampling Location Test Well (Down Stream)	

			TEST RESULTS		C. D.	
S.N.	Test Parameter	Measurement Unit	Test Method	Require IS 10 (Drinking Wa Including A	Test Result	
				Acceptable Limit	Permissible Limit #	
1	Biological Testing 1. Water					
1	Total Coliform	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
2	Escherichia Coli	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
II	Chemical Testing 1. Water					
3	pH		IS 3025 (Part 11): 2022	6.5 to 8.5	No relaxation	6.71 at 25°C
4	Turbidity	NTU	IS 3025 (Part 10): 1984	1	5	0.6
5	Total Dissolved Solids (TDS)	mg/l	IS 3025 (Part 16): 1984	500	2000	319
6	Total Alkalinity (as CaCO <sub>3</sub> )	mg/l	IS 3025 (Part 23): 1986	200	600	187.21
7	Total Hardness (as CaCO <sub>3</sub> )	mg/l	IS 3025 (Part 21): 2009	200	600	249.94
8	Calcium (as Ca)	mg/l	IS 3025 (Part 40): 1991	75	200	72.84
9	Magnesium (as Mg)	mg/l	IS 3025 (Part 46): 1994	30	100	16.52
10	Sulphate (as SO <sub>4</sub> )	mg/l	IS 3025 (Part 24): 2022	200	400	23.94
11	Nitrate (as NO <sub>3</sub> )	mg/l	APHA Method 23rd Edition	45	No relaxation	BDL (DL-2)
12	Chloride (as Cl)	mg/l	IS 3025 (Part 32):1988	250	1000	26.81
13	Fluoride (as F)	mg/l	IS 3025 (Part 60): 2008	1.0	1.5	0.42
14	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	IS 3025 (Part 43): 1992	0.001	0.002	BDL (DL = 0.001)
15	Electrical Conductivity at 25°C	μs/cm	IS 3025 (Part 14) 2013		0.002	361.7
16	Total Suspended Solids	mg/I	IS 3025 (Part 17) :2022			RDI (DI -10)

Samo Dr. (Mrs.) S.D. Garway Quality Manager

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Test Report

Sample Name Ground Water Sample Collecte	Sample Source Sludge Pit	Sample Particulars GW-5 Ground Water Sampling Date 14/10/2022		Quantity Received 5 L & 250ml Sampling Location		& 250ml
FAMD, ODISHA-758034 (India)				Sample	Category	Water
FAP JODA, Keonjhar,	Reference		W.O 3000144107/056- 19.04.2022		ssue Date	31/10/2022
TATA STEEL LIMITED	Inward Date		17/10/2022		End	22/10/2022
Issued To:	Sample Inwa	rd No. A	LPL/17102022/ENV-173-GW-5	Analysis	Start	18/10/2022

S.N.	Test Parameter	Test Parameter Measurement Unit Test Method		Require IS 105 (Drink Speci Including A	Test Result	
			69	Acceptable Limit	Permissible Limit #	1
II	Chemical Testing 2. Residues In Water		10			
17	Aluminium (as Al)	mg/l	IS 3025 (Part 2): 2019 / IS 3025 (Part 55): 2003	0.03	0.2	BDL (DL - 0.01)
18	Boron (as B)	mg/l	IS 3025 (Part 2): 2019	0.5	2.4	BDL (DL - 0.1)
19	Mercury (as Hg)	mg/l	IS 3025 (Part 48): 1994	0.001	No relaxation	BDL (DL - 0.0005
20	Iron (as Fe)	mg/l	IS 3025 (Part 2): 2019	1.0	No relaxation	0.27
21	Copper (as Cu)	mg/l	IS 3025 (Part 2): 2019	0.05	1.5	BDL(DL-0.03)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2): 2019	0.1	0.3	BDL(DL-0.05)
23	Lead (as Pb)	mg/l	IS 3025 (Part 2): 2019	0.01	No relaxation	BDL(DL-0.001)
24	Zinc (as Zn)	mg/l	IS 3025 (Part 2): 2019	5	15	BDL(DL-0.001)
25	Nickel (as Ni)	mg/l	IS:13428 : 2005(Annexure L)	0.02	No relaxation	BDL(DL-0.1)
26	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2): 2019	0.05	No relaxation	BDL(DL-0.01)

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considered as 'absent'
REMARKS: As requested by the client, sample was tested for above parameters only.

Authorized Signatory

Dr. (Mrs.) S.D. Garway

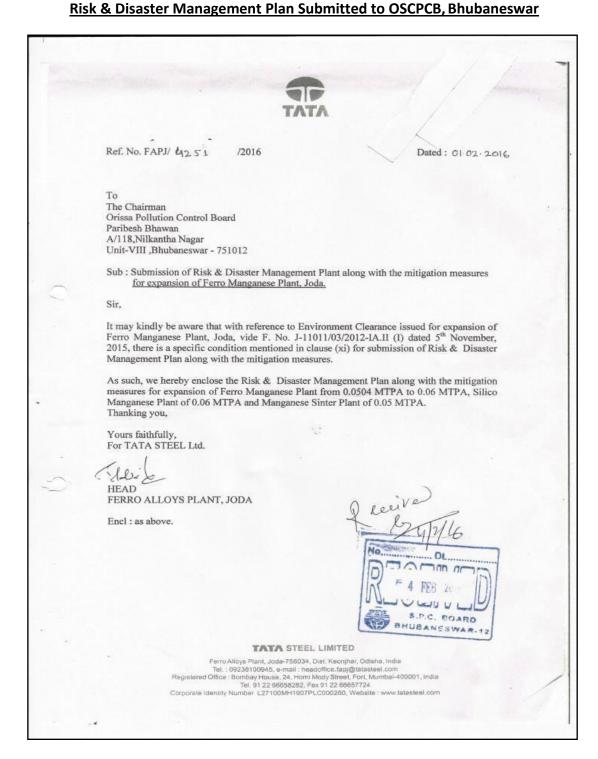
Quality Manager

-End of Report-

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## <u>Annexure - 11</u> <u>Risk & Disaster Mitigation Plan submission covering Letter</u>



#### Risk & Disaster Management Plan Submitted to MOEF, Regional Office, Bhubaneswar



Ref. No. FAPJ/ 4250

/2016

Dated: 01.02.2016

To The Additional Principal Chief Conservator of Forests(C) Ministry of Environment & Forests

Regional office (EZ) A/3, Chandersekharpur, Bhubaneswar - 751023

Sub: Submission of Risk & Disaster Management Plant along with the mitigation measures for expansion of Ferro Manganese Plant, Joda.

Sir,

It may kindly be aware that with reference to Environment Clearance issued for expansion of Ferro Manganese Plant, Joda, vide F. No. J-11011/03/2012-IA.II (I) dated 5<sup>th</sup> November, 2015, there is a specific condition mentioned in clause (xi) for submission of Risk & Disaster Management Plan along with the mitigation measures.

As such, we hereby enclose the Risk & Disaster Management Plan along with the mitigation measures for expansion of Ferro Manganese Plant from 0.0504 MTPA to 0.06 MTPA, Silico Manganese Plant of 0.06 MTPA and Manganese Sinter Plant of 0.05 MTPA. Thanking you,

Yours faithfully, For TATA STEEL Ltd.

**HEAD** 

FERRO ALLOYS PLANT, JODA

Encl: as above.

GOVT. OF INDIA
MeEF & CC, Eastern R.O.
Bhubaileswar-751023

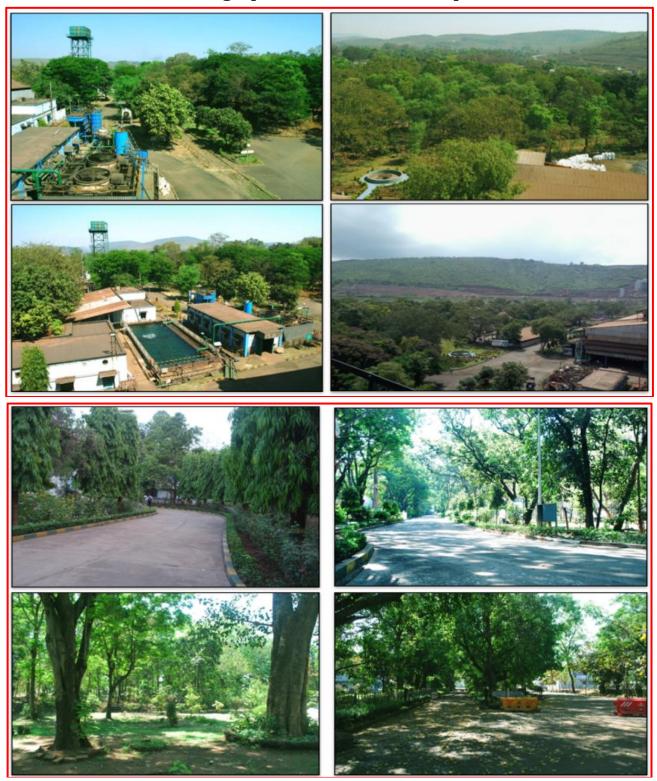
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TATA STEEL LIMITED

Ferro Alloys Plant, Joda-758034, Dist. Keonjhar, Odisha, India Tel.: 09238100945, e-mail: headoffice.fapj@talasteel.com Registered Office: Bombay House, 24, Homi Mody Street, Fort, Mumbai-400001, India Tel. 91 22 66658282, Fax 91 22 66657724 Corporate Identity Number L27100MH1907PLC000260, Website: www.talasteel.com

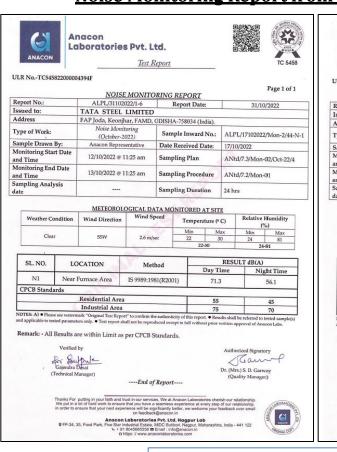
Annexure - 12
Photographs of Greenbelt developed

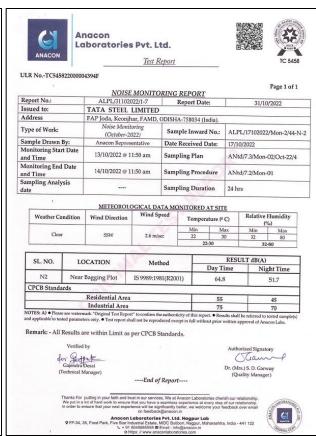


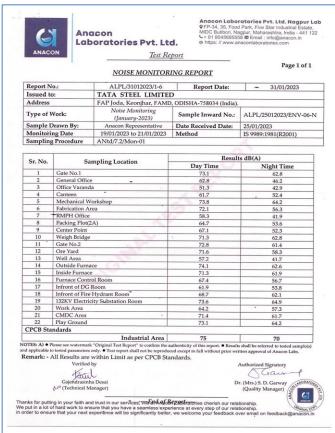
# Annexure- 13 Details of CSR funds allocated and released Expenditure against CSR Activities

Period	Year-wise expenditure Planning in (Rs. Cr.)	Actual Expenditur e for C.S.R. in Rs. Cr.	Name of CSR activities (Joda region)
2018-19	10.21 Cr.	9.50 Cr.	Health, Drinking Water, Education, Rural Infra, Roads & Drains, Livelihood (Agriculture & Enterprise Dev.), Skill Development, Disability Screening Camp- 82 patients were provided with Prosthetics and orthopaedic aids and appliances, Support of School Infrastructure- SSVM, Joda, Support of School Infrastructure- Joda Valley Girls School, Construction of drain at Kundrunala, Awareness on flora and fauna
2019-20	13.02 Cr	12.8 Cr	Health, Education, Livelihood, Rural Infrastructure, Major Project Like Kalyan Mandap in Joda
2020-21	18.84 Cr.	16.61 Cr.	Construction of Three bathing Ghat & two change room, Construction & renovation of Community Resource Centre (CRC) for their cultural & community needs, 115 toilets constructed in Kundrupani village, mobile medical units and ambulances, waiver for free treatment at Tata Steel Hospital, Joda, School improvement project (1000 Schools project), Women Empowerment Programmes.
2021-22	17.59 Cr.	14.53 Cr	Health, Drinking Water, Education, Rural Infra, Roads & Drains, Livelihood (Agriculture & Enterprise Dev.), Skill Development, Support of School Infrastructure- SSVM, Joda, Construction of total 111 nos. of IHHL at Palsa Kha & Ka village, mobile medical units and ambulances, waiver for free treatment at Tata Steel Hospital, Joda, School improvement project (1000 Schools project), Community Resource Centre (CRC) for their cultural & community needs.
2022-23 (Apr'22- Sep'22)		5.83 Cr	Health, Drinking Water, Education, Rural Infra, Roads & Drains, Livelihood (Agriculture & Enterprise Dev.), Skill Development, Support of School Infrastructure- SSVM, Joda, Construction of total 111 nos. of IHHL at Palsa Kha & Ka village, mobile medical units and ambulances, waiver for free treatment at Tata Steel Hospital, Joda, School improvement project (1000 Schools project), Community Resource Centre (CRC) for their cultural & community needs.
2022-23 (Oct'22- Mar'23)	13.80 Cr	7.94 Cr	Health, Drinking Water, Education, Rural Infra, Roads & Drains, Livelihood (Agriculture & Enterprise Dev.), Skill Development, Support of School Infrastructure- SSVM, Joda, Sports & Sports Infra Development, Agriculture equipment support, mobile medical units and ambulances, waiver for free treatment at Tata Steel Hospital, Joda, School improvement project (1000 Schools project), Community Resource Centre (CRC) for their cultural & community needs.

# Annexure- 15 Noise Monitoring Report from 01.10.2022 to 31.03.2023







## **Annexure-16**

## Sample Periodic Medical Examination Record

[ Form No. 31- A ] Health Record

i neuro etist etille illili etillil		nealth Re			
Emp. Code : 09768	2	Pre-Employment/			
1) Name of the Factory	, TOL FAR	[Prescribed Under	Rule 62 - J]	Date: 15/11/22	Page 1 of 2
2) Name of Employee 3) Employee distinguishi 4) Age of the Employee . Identification Mark . Nature of Job 5) Date of Employment	: KARTABYA ing No:  : 41 Yrs.  : CUTMAR  : CRANE O	NANDA K ON FOREHEAD PERATOR 3	12) Cardiovascula . Pulse rate . B.P Heart Sound . E.C.G. Remarks if any	: 82 : 116/78 : NORMAL	/min mmHg
6) Length of Service in Ye	ears : 09 YEARS	3	Tenderness	: NO ,	
7) General Survey  . Health . Height . Weight . BMI  8) Blood Group . Rh Typing  9) Eye vision . Use of glass Distance Vision Near Vision Colour Vision  10) Hearing . Audiometry Right Ear	: GOOD : 170 : 82 : 28.3 : "B" : POSITIVE : NORMAL : NO : RE: 6/6 : RE: N/6 : NORMAL : NORMAL : NORMAL	cm Kg Kg/m^2 LE: 6/6 LE: N/6	Liver Spleen  14) Nervous system . History of fits . Epilepsy Remarks on Mental Hea  15) Locomotor syst  16) Skin condition  17) Hernia  18) Hydrocele  19) Present complaitif any	: NORMAL : NORMAL : NO : NO : NO : NO : NO : Hth: GOOD : MORMAL : NORMAL : ABSENT : ABSENT	
Left Ear  11) Respiratory system ar chest measurement . Inspiration	: NORMAL	dB	a a Velü		
. Expiration	: 110	cm			State of the
	: 106	cm			
. Respirate rate/min . P.F.T . FVC . FEVI/FVC . X-Ray	: 16 : NORMAL : NORMAL : NORMAL :	/min % %			50 ) 10

## Annexure-17

Budget for Environment Management in FY-23			
Sl. No	Activity	A. Capital (Rs. In Lakhs)	B. Recurring (Rs. In Lakhs)
1.	Annual Operation & maintenance of all four the Gas Cleaning Plant		15
2.	Annual Operation & maintenance of High velocity mobile type rotary water sprinkler		6
3.	Maintenance of existing fixed water sprinkler		5
4.	Annual Maintenance of Fume Extraction System		4
5.	Extensive Plantation in and around the Plant		1
6.	Operation and Maintenance of dry fog system		2
7.	Operation and Maintenance of STP		3.6
8.	Maintenance of CAAQMS and spares		5
9.	Environmental Monitoring by third party		10.6
10.	RCC Road Construction	90	
11.	New Fume Extraction System with Bag Filters	19	
12.	Gas Cleaning Plant project cost for renovation	08	
	Total	117	52.2
	Total (A+B): In Lakhs	169.2	

#### Annexure -18

### **Intimation Letter of EC to Zila Parishad**



Ref: FAPJ/ **4136** /2015 Date: 9th Nov, 2015

To President Zilla Parisad Keonjhar

Sub: Intimation of obtaining Environmental Clearance under EIA Notification-2006 for the expansion of Ferro Alloys Plant of TATA STEEL Ltd., Joda, Keonjhar District.

Dear Sir/ Madam,

We would like to inform you that Ministry of Environment Forests & Climate Change of the expansion of the expansion of capacity of our existing Ferro Manganese Plant from 0.0504 MTPA to 0.06 MTPA with 0.05 MTPA Sinter Plant & addition of 2\*18 MVA SAF for 0.06 MTPA Slico Manganese production at our Ferro Alloys Plant, Joda, Odisha vide letter No. F. No. J-11011/03/2012- IA II ( I) dt 05.11.2015.

We therefore request your good-self to kindly acknowledge the receipt of above letter.

Yours Faithfully F: Tata Steel Limited

HEAD

FERRO ALLOYS PLANT, JODA

#### Enclosed:

1. Xerox copy of Environmental Clearance

#### TATA STEEL LIMITED

Ferro Alloys Plant, Joda-758034, Dist. Keonjhar, Odisha, India Tel.: 09238100945, e-mail: headoffice. fapj@latasteel.com Registered Office: Bombay House, 24, Homi Mody Street, Fort, Mumbai-400001, India Tel. 91 22 66658282, Fax 91 22 66657724 Corporate Identity Number L27100MH1907PLC000260, Website: www.tatasteel.com

## Intimation Letter of EC to Chairman. Ioda Municipality



Ref: FAPI/ U135 /2015 Date: 9th Nov, 2015

To Chairman Joda Municipality Joda.

Sub: Intimation of obtaining Environmental Clearance under EIA Notification-2006 for the expansion of Ferro Alloys Plant of TATA STEEL Ltd., Joda, Keonjhar District.

Dear Sir/ Madam,

We would like to inform you that Ministry of Environment Forests & Climate Change (MOEF&CC), Govt. Of India has granted Environmental Clearance for the expansion of capacity of our existing Ferro Manganese Plant from 0.0504 MTPA to 0.06 MTPA with 0.05 MTPA Sinter Plant & addition of 2\*18 MVA SAF for 0.06 MTPA Slico Manganese production at our Ferro Alloys Plant, Joda, Odisha vide letter No. F. No. J-11011/03/2012- IA II ( I) dt 05.11.2015.

We therefore request your good-self to kindly acknowledge the receipt of above letter.

Yours Faithfully F: Tata Steel Limited

FERRO ALLOYS PLANT, JODA



#### Enclosed:

1. Xerox copy of Environmental Clearance

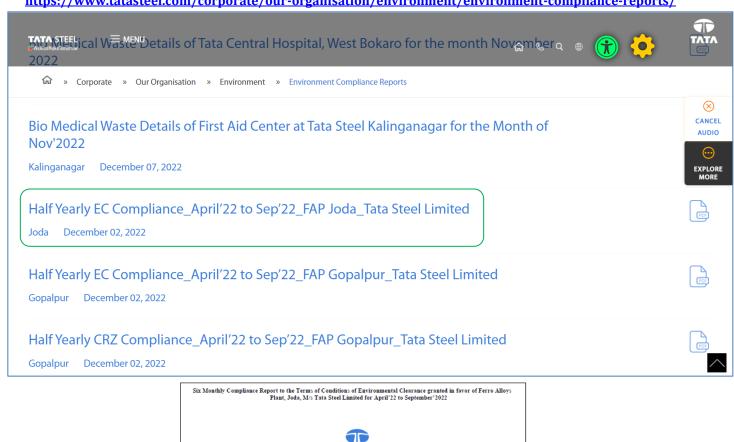
#### TATA STEEL LIMITED

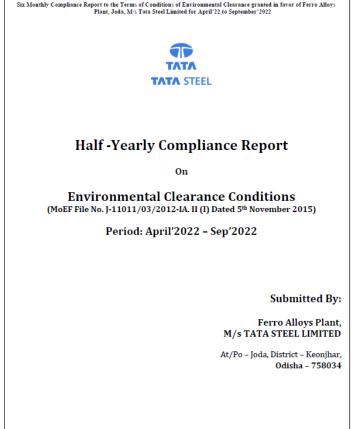
Ferro Alloys Plant, Joda-758034, Dist. Keonjhar, Odisha, India Tel.: 09238100945, e-mail: headoffice.fapj@tatasteel.com Registered Office: Bombay House, 24, Homi Mody Street, Fort, Mumbai-400001, India Tel. 91 22 66658282, Fax 91 22 66657724 Corporate Identity Number L27100MH1907PLC000260, Website: www.tatasteel.com

#### Annexure -19

## Six-Monthly Compliance Reports Uploaded in Tata Steel's Website

https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/





Page **39** of **42** 

Page 1 of 43

#### **Annexure -20**

## **Covering Letter of Form V. Environment statement submission**



# TATA STEEL LTD. FERRO MANGANESE PLANT, JODA

Dated: 29/09/2022

Ref. No. FAMD/FAPJ/359/FY 22

The Member Secretary State Pollution Control Board, Odisha Paribesh Bhavan A/118, Nilakantha Nagar, Unit-VIII Bhubaneswar-751012

Sub: Submission of Environmental Statement of Ferro Manganese Plant, Joda for the period of 2021-22.

Dear Sir,

We are submitting one set of Annual Environmental Statement in FORM-V dully filled in for the year 2021-2022 in respect of M/s Ferro Manganese Plant, Joda by Tata steel for your kind consideration.

We wish to maintain that necessary control measures have been installed and adopted to minimize the impact on environment.

We look forward to further your guidance which shall certainly help us in endeavoring further improvements in our Environmental Management Practices.

Thanking you,

Yours faithfully,

For: TATA STEEL LTD.

HEAD & FACTORY MANAGER FERRO MANGANESE PLANT,

JODA

Encl: as above.

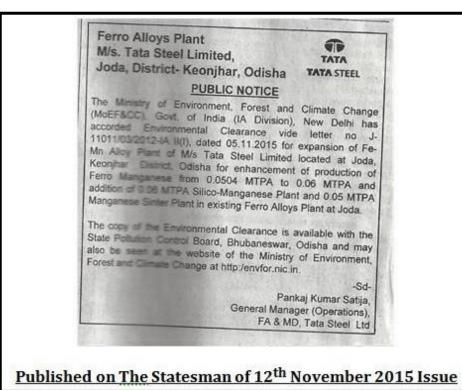
Copy to -Regional Officer, OPCB, At-Baniapatt, College Road, Keonjhar - with enclosure.

TATA STEEL LTD.
Ferro Alloys & Minerals Division
Ferro Managanese Plant, Joda
Joda – 758034, Odisha, India
Tel: 09238100945,e-mail --head.office@tatasteel.com

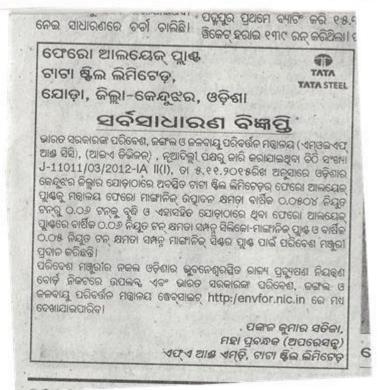
Tel: 09238100945,e-mail --head.office@tatasteel.com Regd. Office: Bombay House, 24 Homi Mody Street, Mumbai -- 400 001

#### Annexure-21









Published on Sambad of 13<sup>th</sup> November 2015 Issue

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