



Ref. No. FAMD/FAPJ/ 399 /FY22

Date : 30.11.2021

**Additional Principal Chief Conservator of Forests (C),  
Ministry of Environment, Forest and Climate Change,  
Regional Office (EZ),  
A/3, Chandrasekharpur,  
Bhubaneswar -751023**

**Sub: Submission of six monthly compliance report on implementation of environmental safe guards of Ferro Alloys Plant, Joda for the period from Apr-2021 to Sept-2021.**

Ref. Ministry of Environment & Forests Letter No.J-11011/03/2012-IA.II (I) Dated 5<sup>th</sup> November, 2015.  
and Email from MoEFCC Eastern Regional Office Dated 28.05.2020 with File No: 106-12/EPE Dated 11.05.2020

Dear Sir,

As per EIA Notification, we are herewith submitting six monthly compliance report in respect of stipulated environmental clearance condition of Ferro Alloy Plant, Joda for the period from **Apr-2021 to Sept-2021**.

We are also sending you softcopy of the report to your good office on Email: [roez.bsr-mef@nic.in](mailto:roez.bsr-mef@nic.in) for your kind perusal.

We trust that measures taken towards environmental safe guards comply with the stipulated environmental clearance condition. We look forward to your further guidance which shall certainly help us in our endeavour for further improve upon our Environmental Management Practices.

Thanking You

Your's Faithfully  
For: TATA STEEL LTD.

Head,  
Ferro Manganese Plant

Encl: Six Monthly Compliance Report (with Annexures) for Oct-2020 to March-2021

Copy to MoEF, New Delhi

" " CPCB, Zonal Office Kolkata

" " OSPCB, Bhubaneswar

" " Regional Office, Keonjhar

**TATA STEEL LIMITED**

# **Half -Yearly Compliance Report**

**On**

**Name of the Project:** Ferro Alloys Plant, M/s TATA STEEL LIMITED

## **Environmental Clearance Conditions**

(MoEF Letter No. J-11011/03/2012-IA. II (I) Dated 5<sup>th</sup> November 2015)

**Period: April'2021 – September'2021**

**Submitted By:**

**Ferro Alloys Plant,  
M/s TATA STEEL LIMITED**

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

**A. SPECIFIC CONDITION:**

Sl. No.	Specific Condition	Compliance Status (Apr'21 to Sept'2021)
I	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.	<p align="center"><b>Complied.</b></p> <p>Presently four nos. ambient air monitoring stations have been installed for manually monitoring air emission and the reports are submitted on monthly basis to SPCB, Odisha.</p> <p><b>Monitoring results for last six months i.e. Apr'21 to Sept'2021 is enclosed as Annexure-I.</b></p>
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/Nm <sup>3</sup> and installing energy efficient technology.	<p align="center"><b>Complied.</b></p> <p>There are four nos. of stacks in existing plant and all having adequate height and diameter. Online stack monitoring system installation has been completed.</p> <p>At present four nos. of Gas cleaning plants are operational among two of them are in operation and two are kept for stand-by to ensure emission level within the norms prescribed by CPCB. Same facility will be provided to forthcoming project.</p> <p><b>Stack Monitoring results for last six months i.e Apr'21 to Sept'2021 is enclosed as Annexure-II.</b></p>
III	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.	<p align="center"><b>Complied.</b></p> <p>Existing plant emissions are within the specified limit prescribed by national ambient air quality emission standards; also, the same will be followed commissioning of forthcoming Plant.</p> <p><b>Ambient Air quality Monitoring results for last six months i.e. Apr'21 to Sept'2021 is enclosed as Annexure-I.</b></p>
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 30th May, 2008 should be followed.	<p align="center"><b>Complied.</b></p> <p>Existing plant emission level is within the permissible limit. Guidelines/codes of practice issued by CPCB are followed. Monthly reports are sent to SPCB, Bhubaneswar and Regional office, Keonjhar.</p> <p><b>Monitoring results of Gaseous emission levels including secondary fugitive emissions from all the sources for last six months i.e. Apr'21 to Sept'2021 is enclosed as Annexure-I.</b></p>
V	Water sprinkling arrangements as well as dry fog system to control fugitive emission shall be undertaken.	<p align="center"><b>Complied.</b></p> <p>For dry fogging one Mobile water sprinkler cum mist canon is in operation. 2 Nos. of mobile Water sprinkling system was installed &amp; 24 road sprinkler provided for existing plant same will be installed after project execution. <b>We have replaced the existing 3x3 MVA furnace transformer with 3x4 MVA transformer.</b></p>

Sl. No.	Specific Condition	[Photographs enclosed as Annexure III] Compliance Status (Apr'21 to Sept'2021)
VI	Tap hole emissions shall be taken to GCP system by providing proper hood and suction system.	<p align="center"><b>Complied.</b></p> <p>Two nos. of Fume extraction system are in place for existing plant and same system will be provided to forthcoming project.</p> <p><b>We have replaced the existing 3x3 MVA furnace transformer with 3x4 MVA transformer.</b> [Photographs enclosed as Annexure IV]</p>
VII	Efforts should further be made to use maximum water from the rain water 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 water requirement shall be modified accordingly.	<p align="center"><b>Being Complied.</b></p> <p>Rain water harvesting measures shall be implemented as required under the NOC from the Central Ground Water Authority wherein inputs from Regional Director, Central Ground Water Board have been incorporated.</p> <p>Presently, a fully functional roof top rain water harvesting project at the Administrative office in is in working stage.</p> <p>For Existing Plant, close circuit cooling system is in operation &amp; same will be followed for forthcoming plant.</p> <p><b>We have replaced the existing 3x3 MVA furnace transformer with 3x4 MVA transformer.</b> [Refer Annexure III]</p>
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.	<p align="center"><b>Complied.</b></p> <p>Now the existing plant is a zero-effluent discharge plant. STP is in operation for Sewage treatment, and the recycled water is being utilised for gardening purpose. [Photograph is included in Annexure V]</p>
IX	Regular monitoring of surface, sub-surface and ground water should be ensured and treated waste water 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.	<p align="center"><b>Being Complied.</b></p> <p>Monitoring of ground water and surface water is being carried out on regular basis. Leachate study for effluent generated will be carried out soon.</p> <p><b>[Details of monitoring results are given as Annexure VI]</b></p>
X	Slag produced in Ferro Manganese (Fe-Mn) production should be used in	<p align="center"><b>Complied.</b></p>

	manufacture of Silico Manganese (Si-Mn). All the other Ferro alloy slag should be used in the preparation of building materials.	Slag produced from existing FeMn plant are, partly used in the process as a raw material for FeMn production and rest are sold to the Ferro Alloys Industry.
<b>Sl. No.</b>	<b>Specific Condition</b>	<b>Compliance Status (Apr'21 to Sept'2021)</b>
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.	<b>Complied.</b> Risk and disaster management plan along with the mitigation measures was submitted vide a. Letter no. FAPJ/4249/2016, dated. 01.02.2016 to the central Pollution control board, New Delhi, b. Letter no. FAP(J)/4250/2016, dated. 01.02.2016, to the Ministry of Environment & Forest, Eastern Regional Office, Bhubaneswar c. Letter no. FAP(J)/4251/2016, dated. 01.02.2016 to State Pollution Control Board, Bhubaneswar. <b>[Copy of the letter is enclosed as Annexure-VII].</b>
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.	<b>Complied.</b> Plantation programme is regularly done. Plant species are selected as per CPCB guidelines. In the FY-20 total 1502 No. of Plantation done & 4265 No. of seeding distributed.
XIII	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Plants shall be implemented.	<b>Being Followed.</b> All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) are being followed.
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.	<b>Complied.</b> CSR is done by TSRDS wing of TATA Steel. The details of expenditure towards CSR activity done along with details are given in  <b>Annexure XI.</b>
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	<b>Complied.</b> It has been complied. There are no labour camps within the Site. However, employees are provided with all necessary infrastructure and facilities such as fuel for cooking mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc outside the plant premises.

Sl. No.	Specific Condition	Compliance Status (Apr'21 to Sept'2021)
I	The project authorities must strictly adhere to the stipulations made by the Odisha Pollution Control Board and the State Government.	<p align="center"><b>Complied.</b></p> 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 (MoEFCC).	<p align="center"><b>Complied.</b></p> No expansion or modifications in the plant is carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC).  <b>As per EC, We have replaced the existing 3x3 MVA furnace transformer with 3x4 MVA transformer for augmentation of one furnace.</b>
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.	<p align="center"><b>Complied.</b></p> At present four ambient air quality monitoring stations are installed at the downward direction in consultation with the SPCB. . Ambient air quality report and stack emission reports are submitted monthly to Ministry including its Regional Office at Bhubaneswar and SPCB, Bhubaneswar. <b>[Monitoring results for last six months i.e. Apr'21 to Sept'2021 is enclosed as Annexure-I]</b>
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 December 1993 or as amended from time to time. The treated waste water shall be utilized for plantation purpose.	<p align="center"><b>Complied.</b></p> It has been followed. Treated waste water is utilised for plantation/gardening 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 (day time) and 70 dBA (night time).	<p align="center"><b>Complied.</b></p> It has been strictly adhered. Acoustic enclosures are provided for DG sets. <b>[Monitoring results for last six months i.e. Apr'21 to Sept'2021 is enclosed as Annexure-VIII.]</b>

VI	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act	<p align="center"><b>Complied.</b></p> <p>Periodic medical check-ups were conducted yearly. Last medical check-up was done on Nov-Dec 2020 and 518 nos. of employees are examined including contractual employees. For this year the Periodic medical check-up is in-continuation. Records were maintained as per Orissa factory rule.</p> <p align="center"><b>[Record is enclosed as Annexure IX]</b></p>																																				
VII	The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	<p align="center"><b>Being Complied.</b></p> <p>Construction of Roof Rain water harvesting system is in progress. First Phase of construction has been completed and rest is in progress.</p> <table border="1" data-bbox="773 709 1321 1020"> <thead> <tr> <th>S. No.</th> <th>Facility Description</th> <th>Total (Area in Acres)</th> <th>Catchment type</th> <th>Runoff coefficient</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Admin &amp; other buildings</td> <td>0.500</td> <td rowspan="3">Roof-top catchment</td> <td rowspan="3">0.9</td> </tr> <tr> <td>2.</td> <td>Raw Material Storage</td> <td>7.533</td> </tr> <tr> <td>3.</td> <td>Product Storage</td> <td>0.230</td> </tr> <tr> <td></td> <td><b>Total</b></td> <td>8.263</td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Road &amp; drainage</td> <td>1.482</td> <td>Roads and pavements</td> <td>0.8</td> </tr> <tr> <td>5.</td> <td>Truck Parking Area</td> <td>0.33</td> <td>Open area</td> <td>0.75</td> </tr> <tr> <td>6.</td> <td>Green Belt</td> <td>15.6</td> <td>Green area</td> <td>0.7</td> </tr> </tbody> </table>	S. No.	Facility Description	Total (Area in Acres)	Catchment type	Runoff coefficient	1.	Admin & other buildings	0.500	Roof-top catchment	0.9	2.	Raw Material Storage	7.533	3.	Product Storage	0.230		<b>Total</b>	8.263			4	Road & drainage	1.482	Roads and pavements	0.8	5.	Truck Parking Area	0.33	Open area	0.75	6.	Green Belt	15.6	Green area	0.7
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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.	<p align="center"><b>Complied.</b></p> <p>Complied to environmental protection measures and safeguards recommended in the EIA/EMP report. Social-economic development activities in the surrounding villages were carried out with Tata Steel Rural Development Society.</p> <p align="center"><b>[Details of Expenditure made towards CSR activities are given in Annexure XI]</b></p>																																				
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 funds so provided shall not be diverted for any other purpose.	<p align="center"><b>Complied.</b></p> <p>It will be adhered.</p>																																				

X	A copy of clearance letter shall be sent by the proponent to concerned 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.	<p style="text-align: center;"><b>Complied.</b></p> <p>Already Complied. Intimation of obtaining Environmental Clearance is given to Zila Parishad vide letter No. FAPJ/4136/2015.</p> <p><b>[Copy of Letter is given in Annexure-X]</b></p>
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.	<p style="text-align: center;"><b>Complied.</b></p> <p>Status of compliance is uploaded in the website along with the monitored data. It will be sent to regional office of MoEFCC at Bhubaneswar, SPCB, Bhubaneswar &amp; regional office, Keonjhar.</p> <p>Last Six month EC compliance report is submitted on 26.05.2021 vide letter no FAMD/FAPJ/169/FY22 at APCCF office, MOEF, Bhubaneswar</p> <p>The criteria pollutant levels PM 10,PM 2.5, SO2, NOX , CO, Ambient air parameters along with stack emission parameters are displayed at the company's main gate.</p> <p><b>[Photograph is given in the Annexure XII]</b></p>
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.	<p style="text-align: center;"><b>Complied.</b></p> <p>It has been complied.</p>
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	<p style="text-align: center;"><b>Complied.</b></p> <p>The Environment statement in Form V was submitted for the year 2020-21 on 17<sup>th</sup> Sep, 2020 vide letter no.- Ref. No. FAMD/FAPJ/314/FY22 to SPCB, Bhubaneswar and Regional office, <b>Annexure-XIII</b> Keonjhar and the compliance of environmental conditions is uploaded on the website.</p>



	sent to the respective Regional Office of the MoEFCC) at Bhubaneswar by e-mail.	
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 (MoEPCC) at <a href="https://envfor.nic.in">https://envfor.nic.in</a> . This shall be advertise 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.	<p style="text-align: center;"><b>Complied.</b></p> <p>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 1th November issue.  <b>[Details of publication are given in Annexure XIV.]</b></p>
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	<p style="text-align: center;"><b>Being Followed.</b></p> <p>It will be strictly followed</p>

**ANNEXURE # 1**

**Ambient Air quality Report From 01.10.2020 To 31-03-2021**

**Ambient Air Quality Monitoring Report – Apr'21**



## Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

Laboratory Services

Environment Lab

Food Lab

Material Lab

Soil Lab

Mineral Lab

&

Microbiology Lab

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Ref : Envlab/21/ R-0148

Date : 03.05.2021

**AMBIENT AIR QUALITY MONITORING REPORT FOR APRIL-2021 ( CORE ZONE)**

1. Name of Industry : FAP, JODA ( M/s TATA Steel Limited)
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.
3. Sample collected by : VCSPL Representative in presence of TATA Representative

Monitoring Date	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	Bap	Pb	Ni	As
	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )
<b>AAQMS-1:Gate No 1</b>												
02.04.2021	72.60	43.6	17.4	18.8	0.64	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2021	75.60	45.4	15.2	19.6	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2021	76.80	46.1	15.6	19.8	0.71	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2021	73.40	44.0	16.1	20.6	0.68	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2021	73.80	44.3	16.2	20.2	0.64	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2021	74.60	44.8	16.47	19.4	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2021	72.80	43.7	17.2	18.9	0.72	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2021	74.10	44.5	17.30	19.20	0.74	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	74.2	44.5	16.4	19.6	0.68	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Monitoring Date	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	Bap	Pb	Ni	As
	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(ng/m <sup>3</sup> )
<b>AAQMS-2:General Office</b>												
02.04.2021	76.8	46.1	15.2	21.6	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2021	75.2	45.1	15.6	20.8	0.68	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2021	75.6	45.4	16.2	23.6	0.71	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2021	73.8	44.3	16.8	23.8	0.72	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2021	74.2	44.5	16.6	24.2	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2021	74.6	44.8	16.8	24.6	0.64	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2021	73.8	44.3	17.2	23.6	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2021	74.2	44.5	17.6	23.2	0.63	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	74.8	44.9	16.5	23.2	0.67	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochweiler (N-Arsenite)	NDR Spectroscopy	Chemical Method	Indio Phenol Blue Method	Absorption & Desorption followed by GC	Schivert Extraction followed by GC	AAS Method	AAS Method	AAS Method

**BDL Values:** SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As< 0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>.



Reviewed By

*M. Vinod*

*Pooja Mahapatra*



Verified By

**Ambient Air Quality Monitoring Report – Apr'21**



# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

Ref : Envlab/21/ R-0149

Date : 03.05.2021

### AMBIENT AIR QUALITY MONITORING REPORT FOR APRIL-2021 ( CORE ZONE)

1. Name of Industry : FAP, JODA ( M/s TATA Steel Limited)
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.
3. Sample collected by : VCSPL Representative in presence of TATA Representative

Monitoring Date	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	Bap	Pb	Ni	As
	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )
<b>AAQMS-3: Near Ore Yard</b>												
02.04.2021	72.8	43.7	19.2	21.8	0.91	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2021	70.6	42.4	19.6	22.4	0.94	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2021	70.8	42.5	19.8	23.6	0.96	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2021	71.6	43.0	19.6	23.2	0.94	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2021	71.8	43.1	20.6	22.8	0.89	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2021	72.6	43.6	20.4	21.9	0.92	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2021	73.1	43.9	20.2	21.6	0.94	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2021	72.4	43.4	19.80	22.80	0.93	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	72.0	43.2	19.9	22.5	0.93	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Monitoring Date	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	Bap	Pb	Ni	As
	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(ng/m <sup>3</sup> )
<b>AAQMS-4: Gate No 2</b>												
02.04.2021	71.6	40.8	13.4	16.2	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.04.2021	72.8	41.2	13.6	15.2	0.68	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2021	73.4	42.8	14.2	15.6	0.69	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.04.2021	72.6	43.6	14.6	15.8	0.71	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2021	72.4	43.8	14.8	16.6	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.04.2021	73.2	44.6	15.2	16.4	0.64	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2021	72.4	45.2	14.6	17.4	0.68	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.04.2021	72.6	44.8	13.9	16.8	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	72.6	43.4	14.3	16.3	0.67	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	NDIR Spectroscopy	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC	Solvent Extraction followed by GC	AAS Method	AAS Method	AAS Method

BDL Value: SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub>< 4 µg/m<sup>3</sup>, NH<sub>3</sub>< 20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, Bap<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>.



*M. P. Singh*

*Pooja Anand*



**Ambient Air Quality Monitoring Report – May'21**



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- Mine Planning & Design
- Water Resource Management
- Quality Control & Project Management
- Information Technology
- Mineral/Sub-Soil Exploration
- Environmental & Social Study
- Renewable Energy
- Public Health Engineering
- Waste Management Services

Ref : Envlab/21/ R-1402

Date : 04.06.2021

**AMBIENT AIR QUALITY MONITORING REPORT FOR MAY-2021 ( CORE ZONE)**

1. Name of Industry : FAP, JODA ( M/s TATA Steel Limited)
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.
3. Instrument serial No & Calibration Validity : 2180-DTE-2017(APM 460) 538-DTI-2017(APM 550 MINI)  
2236-DTJ-2017 (APM 460) 498-DTD-2017(APM 550 MINI)  
Validity : 02.07.2022
4. Sample collected by : VCSPL Representative in presence of TATA Representative

Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
AAQMS-1:Gate No 1												
04.05.2021	62.80	37.7	16.2	17.2	0.59	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2021	66.80	40.1	16.1	17.1	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2021	69.20	41.5	15.4	16.6	0.51	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2021	70.20	42.1	15.1	16.0	0.44	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2021	70.80	42.5	14.6	15.6	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2021	70.10	42.1	14.2	15.8	0.44	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2021	69.80	41.9	14.1	15.9	0.38	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2021	70.20	42.1	13.80	14.20	0.32	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	68.7	41.2	14.9	16.1	0.47	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
AAQMS-2-General Office												
04.05.2021	66.8	40.1	15.6	16.2	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2021	65.2	39.1	15.2	16.8	0.63	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2021	65.9	39.5	16.1	17.2	0.60	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2021	70.8	42.5	15.9	16.2	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2021	70.2	42.1	15.6	16.1	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2021	72.0	43.2	14.8	15.6	0.51	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2021	64.8	38.9	14.2	15.2	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2021	62.2	37.3	13.8	14.8	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	67.2	40.3	15.2	16.0	0.54	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	NDIR Spectroscopy	Chemical Method	Indio Phenol Blue Method	Absorption & Desorption followed by GC	Solvent Extraction followed by GC	AAS Method	AAS Method	AAS Method

BDL Values: SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, Bap<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>.

Reviewed By

Verified By

**Ambient Air Quality Monitoring Report – May'21**



# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

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- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

Ref : Envlab/21/ R-1403

Date : 04.06.2021

**AMBIENT AIR QUALITY MONITORING REPORT FOR MAY-2021 (CORE ZONE)**

1. Name of Industry : **FAP, JODA ( M/s TATA Steel Limited)**
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.
3. Instrument serial No & Calibration Validity : 2225-DTI-2017(APM 460) 535-DTI-2017(APM 550 MINI)  
2346-DTB-2012 (APM 460) 500-DTD-2017(APM 550 MINI)  
Validity : 02.07.2022
3. Sample collected by : VCSPL Representative in presence of TATA Representative


Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
<b>AAQMS-3: Near Ore Yard</b>												
04.05.2021	62.8	37.7	18.9	20.2	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2021	60.6	36.4	18.2	20.6	0.64	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2021	60.9	36.5	17.4	21.2	0.61	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2021	63.8	38.3	17.1	19.6	0.59	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2021	66.2	39.7	16.6	18.4	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2021	65.2	39.1	15.9	18.2	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2021	60.8	36.5	15.2	16.8	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2021	60.1	36.1	14.80	16.20	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	62.6	37.5	16.8	18.9	0.57	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
<b>AAQMS-4: Gate No 2</b>												
Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
04.05.2021	60.8	40.8	13.2	14.1	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2021	60.1	41.2	13.1	14.6	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2021	62.2	42.8	12.8	13.2	0.61	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2021	64.2	43.6	12.69	13.6	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2021	64.8	43.8	13.9	13.8	0.69	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2021	60.9	44.6	13.6	14.2	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2021	56.8	45.2	13.2	14	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2021	52.4	44.8	13.4	14.2	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	60.3	43.4	13.2	14.0	0.60	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	NDIR Spectroscopy	Chemical Method	Indio Phenol Blue Method	Absorption & Description followed by GC	Solvent Extraction Followed by GC	AAS Method	AAS Method	AAS Method

**BDL Values:** SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As <0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, Bap<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>

**Reviewed By**  
M. S. I.

**Certified By**  
P. S. Mohanty

**Ambient Air Quality Monitoring Report - June'21**



## VIONTEK Consultancy Services Pvt. Ltd.

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Food Lab

Material Lab

Soil Lab

Mineral Lab

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Microbiology Lab

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- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services


Ref : Envlab/21/ R-1402 Date : 04.06.2021

**AMBIENT AIR QUALITY MONITORING REPORT FOR MAY-2021 ( CORE ZONE)**


1. Name of Industry : **FAP, JODA ( M/s TATA Steel Limited)**
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.
3. Instrument serial No & Calibration Validity : 2180-DTE-2017(APM 460) 538-DTI-2017(APM 550 MINI)  
2236-DTJ-2017 (APM 460) 498-DTD-2017(APM 550 MINI)  
Validity : 02.07.2022
4. Sample collected by : VCSPL Representative in presence of TATA Representative

Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
<b>AAQMS-1:Gate No 1</b>												
04.05.2021	62.80	37.7	16.2	17.2	0.59	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2021	66.80	40.1	16.1	17.1	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2021	69.20	41.5	15.4	16.6	0.51	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2021	70.20	42.1	15.1	16.0	0.44	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2021	70.80	42.5	14.6	15.6	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2021	70.10	42.1	14.2	15.8	0.44	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2021	69.80	41.9	14.1	15.9	0.38	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2021	70.20	42.1	13.80	14.20	0.32	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	68.7	41.2	14.9	16.1	0.47	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
<b>AAQMS-2:General Office</b>												
04.05.2021	66.8	40.1	15.6	16.2	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2021	65.2	39.1	15.2	16.8	0.63	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2021	65.9	39.5	16.1	17.2	0.60	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2021	70.8	42.5	15.9	16.2	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2021	70.2	42.1	15.6	16.1	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2021	72.0	43.2	14.8	15.6	0.51	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2021	64.8	38.9	14.2	15.2	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2021	62.2	37.3	13.8	14.8	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	67.2	40.3	15.2	16.0	0.54	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	NDIR Spectroscopy	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC	Solvent Extraction followed by GC	AAS Method	AAS Method	AAS Method

**BDL Values:** SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>.




Reviewed By *M. P. Singh*



Verified By *Pooja Mishra*

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**Ambient Air Quality Monitoring Report - June'21**



**VISIONTEK CONSULTANCY SERVICES PVT. LTD.**  
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- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Ref : Envlab/21/ R-1403 Date : 04.06.2021

**AMBIENT AIR QUALITY MONITORING REPORT FOR MAY-2021 (CORE ZONE)**

1. Name of Industry : FAP, JODA ( M/s TATA Steel Limited)

2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.  
2225-DTI-2017(APM 460) 535-DTI-2017(APM 550 MINI)

3. Instrument serial No & Calibration Validity : 2346-DTB-2012 (APM 460) 500-DTD-2017(APM 550 MINI)  
Validity : 02.07.2022

3. Sample collected by : VCSPL Representative in presence of TATA Representative


Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (ng/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
	AAQMS-3: Near Ore Yard											
04.05.2021	62.8	37.7	18.9	20.2	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2021	60.6	36.4	18.2	20.6	0.64	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2021	60.9	36.5	17.4	21.2	0.61	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2021	63.8	38.3	17.1	19.6	0.59	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2021	66.2	39.7	16.6	18.4	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2021	65.2	39.1	15.9	18.2	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2021	60.8	36.5	15.2	16.8	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2021	60.1	36.1	14.80	16.20	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	62.6	37.5	16.8	18.9	0.57	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06


Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
	AAQMS-4: Gate No 2											
04.05.2021	60.8	40.8	13.2	14.1	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2021	60.1	41.2	13.1	14.6	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.05.2021	62.2	42.8	12.8	13.2	0.61	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2021	64.2	43.6	12.69	13.6	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.05.2021	64.8	43.8	13.9	13.8	0.69	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2021	60.9	44.6	13.6	14.2	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.05.2021	56.8	45.2	13.2	14	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2021	52.4	44.8	13.4	14.2	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	60.3	43.4	13.2	14.0	0.60	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06

Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Rochelmer (Na-Arsenite)	NDIR Spectroscopy	Chemical Method	Indo Phenol Blue Method	Absorption & Description followed by GC	Solvent Extraction Followed by GC	AAS Method	AAS Method	AAS Method
BDL Values: SO <sub>2</sub> < 4 µg/m <sup>3</sup> , NO <sub>x</sub> < 9 µg/m <sup>3</sup> , O <sub>3</sub> < 4 µg/m <sup>3</sup> , NH <sub>3</sub> <20 µg/m <sup>3</sup> , Ni<0.01 ng/m <sup>3</sup> , As <0.001 ng/m <sup>3</sup> , C <sub>6</sub> H <sub>6</sub> <0.001 µg/m <sup>3</sup> , Bap<0.002 ng/m <sup>3</sup> , Pb<0.001 µg/m <sup>3</sup> , CO<0.1 mg/m <sup>3</sup> .												



Reviewed By *M. Prakash*



Verified By *Puja Mishra*

**Ambient Air Quality Monitoring Report – July'21**



**Visiontek Consultancy Services Pvt. Ltd.**

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Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

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- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Ref : Envlab/21/R-3054

Date : 02.08.2021

**AMBIENT AIR QUALITY MONITORING REPORT FOR JULY-2021 ( CORE ZONE)**

- Name of Industry : FAP, JODA ( M/s TATA Steel Limited)
- Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.
- Instrument Serial No & Calibration Validity : 2180-DTE-2017(APM 460) 538-DTI-2017 (APM 550 MINI)  
2236-DTJ-2017(APM 460) 498-DTD-2017 (APM 550 MINI)  
Validity : 02.07.2022
- Sample collected by : VCSPL Representative in presence of TATA Representative

Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
<b>AAQMS-1-Gate No 1</b>												
02.07.2021	58.60	35.2	10.8	14.8	0.42	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
06.07.2021	56.20	33.7	10.2	14.6	0.44	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
09.07.2021	52.80	31.7	10.6	15.1	0.48	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
13.07.2021	52.80	31.7	10.4	14.2	0.46	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
16.07.2021	50.60	30.4	10.2	14.1	0.44	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
20.07.2021	51.20	30.7	9.8	13.8	0.41	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
23.07.2021	50.60	30.4	9.1	13.6	0.44	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
27.07.2021	51.20	30.7	9.40	13.20	0.41	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
30.07.2021	50.80	28.8	9.20	13.20	0.38	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
Monthly Average	52.8	31.8	10.0	14.1	0.43	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
<b>AAQMS-2-General Office</b>												
02.07.2021	56.8	34.1	12.6	14.6	0.42	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
06.07.2021	55.2	33.1	12.8	14.8	0.44	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
09.07.2021	55.8	33.5	13.1	15.2	0.41	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
13.07.2021	52.6	31.6	12.4	15.6	0.38	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
16.07.2021	50.8	30.5	12.6	15.1	0.32	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
20.07.2021	51.4	30.8	12.2	14.2	0.33	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
23.07.2021	51.8	31.1	11.6	14.1	0.31	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
27.07.2021	52.2	31.3	11.8	13.8	0.3	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
30.07.2021	51.6	30.8	11.2	12.9	0.32	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
Monthly Average	53.1	32.0	12.3	14.5	0.36	<4	<20	<0.001	<0.002	<0.001	<0.01	<0.001
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	NOIR Spectroscopy	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC	Solvent Extraction Followed by GC	AAS Method	AAS Method	AAS Method

BDL Values: SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>.



Reviewed By

*M. S. J.*



Verified By

*P. S. S.*



**Ambient Air Quality Monitoring Report – Aug 2021**



**Visiontek Consultancy Services Pvt. Ltd.**

*(Committed For Better Environment)*

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

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- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services  
 Environment Lab  
 Food Lab  
 Material Lab  
 Soil Lab  
 Mineral Lab  
 &  
 Microbiology Lab

Ref : Envlab/21/R-4114

Date : 01.09.2021

**AMBIENT AIR QUALITY MONITORING REPORT FOR AUGUST -2021 ( CORE ZONE)**

1. Name of Industry : **FAP, JODA ( M/s TATA Steel Limited)**
2. Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.**
3. Instrument Serial No & Calibration Validity : **2180-DTE-2017(APM 460) 538-DTI-2017 (APM 550 MINI) 2236-DTJ-2017(APM 460) 498-DTD-2017 (APM 550 MINI) Validity : 02.07.2022**
4. Sample collected by : **VCSPL Representative in presence of TATA Representative**

Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
<b>AAQMS-1:Gate No 1</b>												
03.08.2021	68.8	41.3	10.6	14.6	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.08.2021	67.4	40.4	11.8	14.8	0.51	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.08.2021	68.8	41.3	12.2	14.6	0.49	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.08.2021	62.0	37.2	11.6	15.1	0.44	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.08.2021	55.8	33.5	10.8	13.6	0.38	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.08.2021	51.6	31.0	10.2	13.2	0.36	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.08.2021	58.8	35.3	11.2	14.4	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.08.2021	51.2	30.7	10.10	13.10	0.34	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	60.6	36.3	11.1	14.2	0.43	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
<b>AAQMS-2:General Office</b>												
03.08.2021	60.9	36.5	12.2	14.8	0.44	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.08.2021	61.4	36.8	12.8	15.5	0.46	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.08.2021	62.2	37.3	13.8	15.6	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.08.2021	60.2	36.1	13.1	14.2	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.08.2021	55.4	33.2	12.2	13.2	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.08.2021	52.2	31.3	12.1	12.8	0.38	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.08.2021	58.8	35.3	12.8	14.6	0.46	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.08.2021	64.6	38.8	13.4	14.8	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	59.5	35.7	12.8	14.4	0.45	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (No-Arsenite)	NDIR Spectroscopy	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC	Solvent Extraction Followed by GC	AAS Method	AAS Method	AAS Method

BDL Values: SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, CO<=0.1 mg/m<sup>3</sup>.



Reviewed By


*M. Parth*



Verified By

*Pooja Anand*

**Ambient Air Quality Monitoring Report – Jan, 2021**



## Visiontek Consultancy Services Pvt. Ltd.

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Environment Lab

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- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Ref : Envlab/20/R- 7524 Date : 01.02.2021

**AMBIENT AIR QUALITY MONITORING REPORT FOR JANUARY-2021 ( CORE ZONE)**


1. Name of Industry : FAP, JODA ( M/s TATA Steel Limited)

2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.

3. Sample collected by : VCSPL Representative in presence of TATA Representative


Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
AAQMS-3-Near Ore Yard												
04.01.2021	80.6	48.4	17.8	19.8	0.82	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.01.2021	83.8	50.3	17.6	20.6	0.88	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.01.2021	84.2	50.5	18.4	20.4	0.78	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.01.2021	83.6	50.2	18.8	20.2	0.72	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.01.2021	84.1	50.5	19.2	19.2	0.74	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.01.2021	81.6	49.0	18.6	19.4	0.76	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.01.2021	82.8	49.7	18.2	20.8	0.72	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.01.2021	83.1	49.9	17.6	21.5	0.71	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	83.0	49.8	18.3	20.2	0.77	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
AAQMS-4-Gate No 2												
04.01.2021	73.8	40.8	11.6	13.8	0.54	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.01.2021	74.6	41.2	12.2	14.2	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.01.2021	74.8	42.8	12.4	14.6	0.66	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.01.2021	75.2	43.6	12.8	15.2	0.64	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.01.2021	73.6	43.8	13.6	16.2	0.61	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.01.2021	74.2	44.6	13.2	16.8	0.58	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.01.2021	73.8	45.2	12.8	17.2	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.01.2021	74.1	44.8	12.2	16.4	0.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	74.3	43.4	12.6	15.6	0.61	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (No-Arsenite)	NDIR Spectroscopy	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC	Solvent Extraction Followed by GC	AAS Method	AAS Method	AAS Method

BDL Values: SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub>< 4 µg/m<sup>3</sup>, NH<sub>3</sub>< 20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As <0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, Bap<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>.



Reviewed By

*M. Manish*



Verified By

*Pooja Mishra*

**Ambient Air Quality Monitoring Report – Sept, 2021**



**Visiontek Consultancy Services Pvt. Ltd.**

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

Laboratory Services  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Ref : Envlab/21/R-4901

Date : 01.10.2021

**AMBIENT AIR QUALITY MONITORING REPORT FOR SEPTEMBER-2021 ( CORE ZONE)**

- Name of Industry : **FAP, JODA ( M/s TATA Steel Limited)**
- Monitoring Instruments : **RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.**
- Instrument Serial No & Calibration Validity : **2180-DTE-2017(APM 460) 538-DTI-2017 (APM 550 MINI) 2236-DTJ-2017(APM 460) 498-DTD-2017 (APM 550 MINI)**  
Validity : 02.07.2022
- Sample collected by : **VCSPL Representative in presence of TATA Representative**

Monitoring Date	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>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
<b>AAQMS-1:Gate No 1</b>												
03.09.2021	62.6	37.6	10.2	13.8	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.09.2021	63.8	38.3	10.6	13.6	0.44	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.09.2021	62.6	37.6	11.2	14.1	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.09.2021	56.0	33.6	11.1	14.6	0.39	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.09.2021	53.6	32.2	10.4	13.1	0.36	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.09.2021	50.8	30.5	9.6	12.8	0.32	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.09.2021	58.1	34.9	9.8	13.6	0.36	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.09.2021	50.4	30.2	9.20	12.80	0.31	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	57.2	34.3	10.3	13.6	0.38	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
<b>AAQMS-2:General Office</b>												
03.09.2021	58.8	35.3	11.6	14.1	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.09.2021	60.2	36.1	11.2	14.6	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.09.2021	61.6	37.0	11.9	15.1	0.44	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.09.2021	59.6	35.8	12.6	14	0.46	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.09.2021	54.8	32.9	12.1	13.8	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.09.2021	50.6	30.4	11.8	12.2	0.32	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.09.2021	52.2	31.3	11.9	13.9	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.09.2021	62.2	37.3	12.2	14.1	0.39	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Monthly Average	57.5	34.5	11.9	14.0	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	100	400	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (No-Arsenite)	NDIR Spectroscopy	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC	Solvent Extraction Followed by GC	AAS Method	AAS Method	AAS Method

BDL Values: SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>.



Review By *M. Panda*

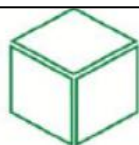


Verified By *Puja Anand*

## Annexure- II

### Stack Emission Monitoring Report from 01.04.2021 To 30-09-2021

Stack Emission Monitoring Report - Apr'21



## Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services

Environment Lab

Food Lab

Material Lab

Soil Lab

Mineral Lab

&

Microbiology Lab

Ref : Envlab/21/ R-0153

Date : 03.05.2021

#### STACK ANALYSIS REPORT FOR THE MONTH OF APRIL 2021

1. Name of Industry : FAP, JODA ( M/s TATA Steel Limited)
2. Sampling Location : ST-1: Furnance-1  
ST-2: Furnance-2
3. Date of Analysis : 23.04.2021
4. Sample Collected by : VCSPL Representative in presence of TATA Representative

<u>Date of Sampling</u>	23.04.2021 at 11.15 AM	23.04.2021 at 12.10 PM	
<b>A</b> <u>General Information about Stack</u>	-		
1 Stack Connected to	Furnance-1		Furnance-2
<b>B</b> <u>Results of Sampling &amp; Analysis of Gaseous Emission</u>	<u>Analysis Results</u>	<u>CPCB Limit</u>	<u>Analysis Results</u>
1 Temperature of Emission (°C)	86		88
2 Barometric Pressure (mm of Hg)	714		714
3 Velocity of Gas (m/sec.)	20.6		19.2
4 Quantity of Gas Flow (Nm <sup>3</sup> /hr.)	6628.14		6348.82
5 Concentration of Carbon monoxide (mg/Nm <sup>3</sup> )	59.6	150	54.21
6 Concentration of Sulphur Dioxide (mg/Nm <sup>3</sup> )	92		86
7 Concentration of Nitrogen Dioxide (mg/Nm <sup>3</sup> )	136	2255(1100 ppmv)	124
8 Concentration of Particulate Matters (mg/Nm <sup>3</sup> )	52.2	75	55.2
<b>C</b> <u>Pollution control Device</u>	-		
Details of pollution control	Nil		Nil
Device attached with the stack			



Manda



Pooja Mishra

**Stack Emission Monitoring Report – May'21**



# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services



Ref : Envlab/21/ R-1407

Date : 04.06.2021

## STACK ANALYSIS REPORT FOR THE MONTH OF MAY- 2021

1. Name of Industry : **FAP, JODA (M/s TATA Steel Limited)**
2. Sampling Location : **ST-1: Furnance-1  
ST-2: Furnance-2**
3. Date of Analysis : 31.05.2021
4. Instrument serial No & Calibration Validity : VB551- 121919, Validity :06.12.20201
5. Sample Collected by : VCSPL Representative in presence of TATA Representative

<u>Date of Sampling</u>		31.05.2021 at 10.10 AM		31.05.2021 at 12.20 PM	
<b>A</b>	<b>General Information about Stack</b>	Furnance-1		Furnance-2	
1	Stack Connected to				
<b>B</b>	<b>Results of Sampling &amp; Analysis of Gaseous Emission</b>	<u>Analysis Results</u>	<u>CPCB Limit</u>	<u>Analysis Results</u>	<u>CPCB Limit</u>
1	Temperature of Emission (°C)	82		84	
2	Barometric Pressure (mm of Hg)	714		714	
3	Velocity of Gas (m/sec.)	21.2		20.8	
4	Quantity of Gas Flow (Nm <sup>3</sup> /hr.)	6712.6		6442.2	
5	Concentration of Carbon monoxide (mg/Nm <sup>3</sup> )	58.2	150	53.6	150
6	Concentration of Sulphur Dioxide (mg/Nm <sup>3</sup> )	88		82	
7	Concentration of Nitrogen Dioxide (mg/Nm <sup>3</sup> )	132	2255(1100 ppmv)	120	2255(1100 ppmv)
8	Concentration of Particulate Matters (mg/Nm <sup>3</sup> )	50.6	75	52.4	75
<b>C</b>	<b>Pollution control Device</b>	Nil		Nil	
	Details of pollution control				
	Device attached with the stack				



*M. Panda*



*Pooja Mishra*

**Stack Emission Monitoring Report –July'21**



## Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

**Laboratory Services**  
 Environment Lab  
 Food Lab  
 Material Lab  
 Soil Lab  
 Mineral Lab  
 &  
 Microbiology Lab

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Ref : Envlab/21/R-3059

Date : 02.08.2021

### STACK ANALYSIS REPORT FOR THE MONTH OF JULY-2021

1. Name of Industry : **FAP, JODA (M/s TATA Steel Limited)**
2. Sampling Location : **ST-1: Furnance-1**  
**ST-2: Furnance-2**
3. Date of Analysis : 27.07.2021
4. Instrument Serial No & Calibration Validity : VBSSI-121919, Validity 06.12.2021
5. Sample Collected by : VCSPL Representative in presence of TATA Representative

Date of Sampling	27.07.2021 at 10.26AM	27.07.2021 at 11.30AM	
<b>A General Information about Stack</b>			
1 Stack Connected to	Furnance-1	Furnance-2	
<b>B Results of Sampling &amp; Analysis of Gaseous Emission</b>	<u>Analysis Results</u>	<u>CPCB Limit</u>	<u>Analysis Results</u>
			<u>CPCB Limit</u>
1 Temperature of Emission (°C)	72		78
2 Barometric Pressure (mm of Hg)	714		714
3 Velocity of Gas (m/sec.)	19.6		19.4
4 Quantity of Gas Flow (Nm <sup>3</sup> /hr.)	6884.12		6512.26
5 Concentration of Carbon monoxide (mg/Nm <sup>3</sup> )	61.2	150	53.6
6 Concentration of Sulphur Dioxide (mg/Nm <sup>3</sup> )	91.4		83.8
7 Concentration of Nitrogen Dioxide (mg/Nm <sup>3</sup> )	126.8	2255(1100 ppmv)	124.6
8 Concentration of Particulate Matters (mg/Nm <sup>3</sup> )	51.2	75	51.8
<b>C Pollution control Device</b>			
Details of pollution control	Nil		Nil
Device attached with the stack			



*M. Prasad*



*Pooja Mishra*

**Stack Emission Monitoring Report –Aug, 2021**



**Visiontek Consultancy Services Pvt. Ltd.**

*(Committed For Better Environment)*

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services  
 Environment Lab  
 Food Lab  
 Material Lab  
 Soil Lab  
 Mineral Lab  
 &  
 Microbiology Lab

Ref : Envlab/21/R-4119

Date : 01.09.2021

**STACK ANALYSIS REPORT FOR THE MONTH OF AUGUST -2021**

1. Name of Industry : **FAP, JODA (M/s TATA Steel Limited)**
2. Sampling Location : **ST-1: Furnance-1  
ST-2: Furnance-2**
3. Date of Analysis : **30.08.2021**
4. Instrument Serial No & Calibration Validity : **VB551-121919, Validity 06.12.2021**
5. Sample Collected by : **VCSPL Representative in presence of TATA Representative**

Date of Sampling	30.08.2021 at 10.30AM		30.08.2021 at 12.20PM	
<b>A General Information about Stack</b>				
1 Stack Connected to	Furnance-1		Furnance-2	
<b>B Results of Sampling &amp; Analysis of Gaseous Emission</b>	<u>Analysis Result</u>	<u>CPCB Limit</u>	<u>Analysis Results</u>	<u>CPCB Limit</u>
1 Temperature of Emission (°C)	74		80	
2 Barometric Pressure (mm of Hg)	714		714	
3 Velocity of Gas (m/sec.)	20.8		19.8	
4 Quantity of Gas Flow (Nm <sup>3</sup> /hr.)	6891.62		6526.81	
5 Concentration of Carbon monoxide (mg/Nm <sup>3</sup> )	62.2		58.8	150
6 Concentration of Sulphur Dioxide (mg/Nm <sup>3</sup> )	90.6		88.2	
7 Concentration of Nitrogen Dioxide (mg/Nm <sup>3</sup> )	128.8	2255(1100 ppmv)	126.2	2255(1100 ppmv)
8 Concentration of Particulate Matters (mg/Nm <sup>3</sup> )	54.6	75	55.2	75
<b>C Pollution control Device</b>	Nil		Nil	
Details of pollution control				
Device attached with the stack				



*M. Jindal*



*Puja Mishra*

**Stack Emission Monitoring Report –Sept, 2021**



## Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

Laboratory Services

Environment Lab

Food Lab

Material Lab

Soil Lab

Mineral Lab

&

Microbiology Lab

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Ref : Envlab/21/R-4906

Date : 01.10.2021

**STACK ANALYSIS REPORT FOR THE MONTH OF SEPTEMBER -2021**

1. Name of Industry : FAP, JODA (M/s TATA Steel Limited)
2. Sampling Location : ST-1: Furnance-1  
ST-2: Furnance-2
3. Date of Analysis : 21.09.2021
4. Instrument Serial No & Calibration Validity : VBSS1-121919, Validity 06.12.2021
5. Sample Collected by : VCSPL Representative in presence of TATA Representative

<u>Date of Sampling</u>	21.09.2021 at 10.30AM	21.09.2021 at 12.06 PM	
<b>A</b> <u>General Information about Stack</u>	-		
1 Stack Connected to	Furnance-1	Furnance-2	
<b>B</b> <u>Results of Sampling &amp; Analysis of Gaseous Emission</u>	Analysis Results	CPCB Limit	Analysis Results
1 Temperature of Emission (°C)	72		76
2 Barometric Pressure (mm of Hg)	714		714
3 Velocity of Gas (m/sec.)	19.8		19.2
4 Quantity of Gas Flow (Nm <sup>3</sup> /hr.)	6786.92		6531.81
5 Concentration of Carbon monoxide (mg/Nm <sup>3</sup> )	60.2		56.8
6 Concentration of Sulphur Dioxide (mg/Nm <sup>3</sup> )	88.6		84.2
7 Concentration of Nitrogen Dioxide (mg/Nm <sup>3</sup> )	124	2255(1100 ppmv)	121.2
8 Concentration of Particulate Matters (mg/Nm <sup>3</sup> )	53.8	75	54.6
<b>C</b> <u>Pollution control Device</u>	-		
Details of pollution control	Nil		
Device attached with the stack	Nil		



*M. Panda*



*Pooja Mishra*



### **Annexure-III**



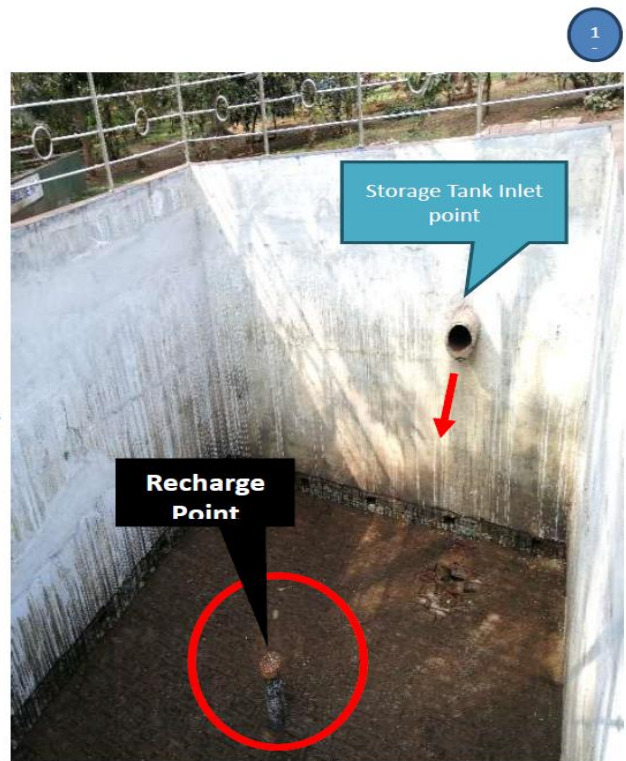
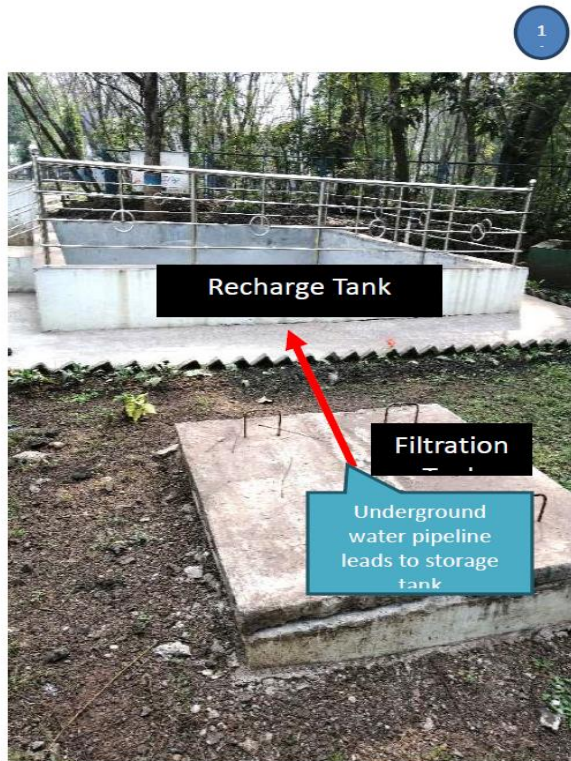
**Mobile High Velocity Water Sprinkler cum Mist Canon**



**Dry Fogging System for Fugitive dust suppression**

## RAIN WATER HARVESTING

S. No.	Facility Description	Total (Area in Acres)	Catchment type	Runoff coefficient
1.	Admin & other buildings	0.500	Roof-top catchment	0.9
2.	Raw Material Storage	7.533		
3.	Product Storage	0.230		
	<b>Total</b>	<b>8.263</b>		
4	Road & drainage	1.482	Roads and pavements	0.8
5.	Truck Parking Area	0.33	Open area	0.75
6.	Green Belt	15.6	Green area	0.7



Location – General Office



**Annexure-IV**

**Fume Extraction System**



**Fume Extraction System For existing Plant**

**Annexure - V**



**Sewage Treatment Plant Installed at FAP, Joda**

**Annexure – VI****Ground water Analysis Report****Ground Water Quality Analysis – Apr, 2021****Visiontek Consultancy Services Pvt. Ltd.***(Committed For Better Environment)*

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&amp;S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF &amp; CC/CPCB &amp; SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

Ref : Envlab/21/ R-0151

Date : 03.05.2021

**WATER QUALITY ANALYSIS REPORT FOR THE MONTH OF APRIL 2021**

1. Name of Industry : **FAP, JODA ( M/s TATA Steel Limited)**
2. Sampling location : **DW-1: Near Canteen**
3. Date of sampling : **07.04.2021**
4. Date of analysis : **08.04.2021 TO 14.04.2021**
5. Sample collected by : **VC SPL Representative in presence of TATA Representative**

Sl. No	Parameter	Testing Methods	Unit	Standard as per IS-10500:2012 Amended on 2015 & 2018		Analysis Results DW-1
				Acceptable Limit	Permissible Limit	
<b>Essential Characteristics</b>						
1	Colour	APHA 2120 B, C	Hazen	5	15	<5
2	Odour	APHA 2150 B	--	Agreeable	Agreeable	Agreeable
3	Taste	APHA 2160 C	--	Agreeable	Agreeable	Agreeable
4	Turbidity	APHA 2130 B	NTU	1	5	<1
5	pH at 25°C	APHA 4500H* B	--	6.5-8.5	No Relaxation	7.89
6	Total Hardness (as CaCO <sub>3</sub> )	APHA 2340 C	mg/l	200	600	68.0
7	Iron (as Fe)	APHA 3500Fe, B	mg/l	1	No relaxation	0.16
8	Chloride (as Cl)	APHA 4500Cl B	mg/l	250	1000	60.0
9	Residual, free Chlorine	APHA 4500Cl, B	mg/l	0.2	1	ND
<b>Desirable Characteristics</b>						
10	Dissolved Solids	APHA 2540 D	mg/l	500	2000	182.0
11	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	200	50.0
12	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	100	24.0
13	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	1.5	<0.05
14	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	0.3	<0.05
15	Sulphate (as SO <sub>4</sub> )	APHA 4500 SO <sub>4</sub> - E	mg/l	200	400	6.5
16	Nitrate (as NO <sub>3</sub> )	APHA 4500 NO <sub>3</sub> - E	mg/l	45	No Relaxation	6.2
17	Fluoride (as F)	APHA 4500F- C	mg/l	1.0	1.5	0.031
18	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	APHA 5530 B,D	mg/l	0.001	0.002	<0.001
19	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	No Relaxation	<0.001
20	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	No Relaxation	<0.001
21	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
22	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
23	Cyanide (as CN)	APHA 4500 CN- C,D	mg/l	0.05	No Relaxation	ND
24	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	No Relaxation	<0.01
25	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	15	<0.05
26	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	0.2	1.0	<0.2
27	Chromium (as Cr <sup>6+</sup> )	APHA 3500Cr B	mg/l	--	--	<0.05
28	Mineral Oil	APHA 5220 B	mg/l	0.5	No Relaxation	<0.001
29	Alkalinity	APHA 2320 B	mg/l	200	600	70
30	Aluminium as( Al)	APHA 3500Al B	mg/l	0.03	0.2	<0.001
31	Boron (as B)	APHA 4500B, B	mg/l	2.4	No relaxation	<0.01

## Ground Water Quality Analysis – May, 2021



# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

Laboratory Services  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

● Infrastructure Engineering  
● Water Resource Management  
● Environmental & Social Study

● Surface & Sub-Surface Investigation  
● Quality Control & Project Management  
● Renewable Energy

● Agricultural Development  
● Information Technology  
● Public Health Engineering

● Mine Planning & Design  
● Mineral/Sub-Soil Exploration  
● Waste Management Services

Ref : Envlab/21/ R-1405


Date : 04.06.2021

### WATER QUALITY ANALYSIS REPORT FOR THE MONTH OF MAY- 2021

1. Name of Industry : **FAP, JODA (M/s TATA Steel Limited)**
2. Sampling location : **DW-1: Near Canteen**
3. Date of sampling : 20.05.2021
4. Calibration Validity : 02.06.2022
5. Date of analysis : 21.05.2021 TO 26.05.2021
6. Sample collected by : **VC SPL Representative in presence of TATA Representative**

Sl. No	Parameter	Testing Methods	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Results
				Acceptable Limit	Permissible Limit	DW-1
<b>Essential Characteristics</b>						
1	Colour	APHA 2120 B, C	Hazm	5	15	<5
2	Odour	APHA 2150 B	–	Agreeable	Agreeable	Agreeable
3	Taste	APHA 2160 C	–	Agreeable	Agreeable	Agreeable
4	Turbidity	APHA 2130 B	NTU	1	5	<1
5	pH at 25°C	APHA 4500H <sup>+</sup> B	–	6.5-8.5	No Relaxation	7.82
6	Total Hardness (as CaCO <sub>3</sub> )	APHA 2340 C	mg/l	200	600	64.0
7	Iron (as Fe)	APHA 3500Fe, B	mg/l	1	No relaxation	0.12
8	Chloride (as Cl <sup>-</sup> )	APHA 4500Cl B	mg/l	250	1000	58.0
9	Residual, free Chlorine	APHA 4500Cl, B	mg/l	0.2	1	ND
<b>Desirable Characteristics</b>						
10	Dissolved Solids	APHA 2540 D	mg/l	500	2000	172.0
11	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	200	46.0
12	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	100	20.8
13	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	1.5	<0.05
14	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	0.3	<0.05
15	Sulphate (as SO <sub>4</sub> )	APHA 4500 SO <sub>4</sub> - E	mg/l	200	400	6.2
16	Nitrate (as NO <sub>3</sub> )	APHA 4500 NO <sub>3</sub> - E	mg/l	45	No Relaxation	7.4
17	Fluoride (as F)	APHA 4500F- C	mg/l	1.0	1.5	0.032
18	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	APHA 5530 B,D	mg/l	0.001	0.002	<0.001
19	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	No Relaxation	<0.001
20	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	No Relaxation	<0.001
21	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
22	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
23	Cyanide (as CN)	APHA 4500 CN- C,D	mg/l	0.05	No Relaxation	ND
24	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	No Relaxation	<0.01
25	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	15	<0.05
26	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	0.2	1.0	<0.2
27	Chromium (as Cr <sup>VI</sup> )	APHA 3500Cr B	mg/l	–	–	<0.05
28	Mineral Oil	APHA 5220 B	mg/l	0.5	No Relaxation	<0.001
29	Alkalinity	APHA 2320 B	mg/l	200	600	74
30	Aluminium as( Al)	APHA 3500Al B	mg/l	0.05	0.2	<0.001
31	Boron (as B)	APHA 4500B, B	mg/l	2.4	No relaxation	<0.01

**Annexure – VII**  
**Risk & Disaster Mitigation Plan submission covering Letter**



Ref. No. FAPJ/ 4251 /2016 Dated : 01.02.2016

To  
The Chairman  
Orissa Pollution Control Board  
Paribesh Bhawan  
A/118, Nilkantha Nagar  
Unit-VIII, Bhubaneswar - 751012

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

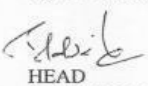
Sir,

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.

*Received*  
*02/02/16*



**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, Horni Mody Street, Fort, Mumbai-400001, India  
Tel. 91 22 66658282, Fax 91 22 66657724  
Corporate Identity Number L27100MH1907PLC000260, Website : www.tatasteel.com

**Risk & Disaster Management Plan Submitted to OSCPCB, 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 Plan 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.



**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, Horni Mody Street, Fort, Mumbai-400001, India  
Tel. 91 22 66658282, Fax 91 22 66657724  
Corporate Identity Number L27100MH1907PLC000260, Website : www.tatasteel.com



**Annexure VIII**  
**Noise Monitoring Report from 01.04.2021 to 30.09.2021**



**Visiontek Consultancy Services Pvt. Ltd.**

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services



Ref : Envlab/21/ R-0159

Date : 03.05.2021

**NOISE QUALITY ANALYSIS REPORT FOR THE MONTH OF APRIL 2021**

1. Name of Industry : **FAP, JODA ( M/s TATA Steel Limited)**
2. Date of sampling : 21.04.2021
3. Sample collected by : VCSPL Representative in presence of TATA Representative

Sl.No	Sampling Location	Day	Night
1	Infront of Store	70.60	53.6
2	JCB 40X 1MTR Distance	75.80	69.8
3	Near Weight Bridge	73.81	54.6
4	Loader 2mtr distance	92.61	80.6
5	Crusher Area	89.44	81.8
6	Near Back Gate	77.26	45.6
7	Breaking Yard (During Work)	72.61	54.2
8	Plot No 4 B	66.80	49.6
9	Area Furnance Ground Floor	89.92	71.4
10	Area Furnance Floor	92.61	71.8
11	Pit Site Area	64.84	46.6
12	Near Cooling Tower	78.60	68.9
13	Pump House (Inside)	90.60	84.8
14	Telphar Floor	83.80	61.6
15	GCP Floor (1 mtr away from blower )	82.46	74.8
16	ACS Area	78.81	69.6
17	CMDS Area	78.26	70.2
18	Office Area	63.60	43.8
19	Quality Control Analysis Lab	61.80	40.6
20	Laboratory Crusher Room (During Work)	65.40	49.2
21	Canteen Kitchin	65.61	43.6
22	Near Main gate	73.80	43.1
23	D.G Room	82.60	74.2
24	Locomotive During Operation	77.81	69.6
Noise Standard For Auto Mobiles, Equipments & Work Zone		In dBA	
i	Pasenger or Commercial Vehicles upto 4 tonnes	72.6	
ii	Pasenger or Commercial Vehicles upto 4 tonnes & upto 12 tonnes	82.8	
iii	Pasenger or Commercial Vehicles exceeding 12 tonnes	85.2	
iv	Work Zone Standard	76.8	



*M. Parash*

*Pooja Mahapatra*



## Annexure IX

### Periodic Medical Examination Records

Form No. 31 - A HEALTH RECORD (Pre-employment /Periodical) (Prescribed under Rule 62-J)		Date: <u>19-11-20</u>
Aadhaar No.	PO No.	Sl. No. <u>133</u>
1. Name of the Factory	: <u>Tata Steel (for JOD)</u>	
2. Name of the Employee	: <u>Sushants Kumar Dabney</u> <span style="float: right;">Photo</span>	
3. Name of the Agency	: <u>MITRA SK</u>	
4. Employee Distinguishing Number:		
5. Age of the Employee	: <u>28 yrs.</u>	
Identification mark	: <u>mark on left leg</u>	
Nature of Job	: <u>Sampling</u>	
6. Date of Employment	: <u>01-08-2020</u>	
7. Length of service in years	: <u>2 months</u>	
8. General Survey	: <u>NG</u>	
Health	: <u>Good / Fair / Poor</u>	
Height	: <u>164 cm</u>	
Weight	: <u>52 Kg.</u>	
9. Blood Group	: <u>B+VE</u>	
10. Eye Vision	: <u>Normal / Abnormal</u>	
use glass	: <u>Yes / No</u>	
11. Hearing	: <u>Normal / Abnormal</u>	
12. Respiratory system & Chest Measurement		
Inspiration	: <u>86cm</u>	
Expiration	: <u>84cm</u>	
Respiration rate / min	: <u>16 / min</u>	
Remarks, if any	: <u>NG</u>	
13. Cardiovascular system		
Pulse rate	: <u>88 / min</u>	
B.P.	: <u>140 / 90 mmHg</u>	
Heart Sound	: <u>S1 S2 @ M</u>	
14. Abdominal Tenderness	: <u>NG</u>	
15. Nervous System		
History of Fits	: <u>Yes / No</u>	
Epilepsy	: <u>Yes / No</u>	
Remarks on Mental Health:	: <u>NG</u>	
16. Locomotor System	: <u>Normal / Abnormal</u>	
17. Skin condition	: <u>Normal / Abnormal</u>	
Remarks on any skin condition noticed	: <u>NG</u>	
18. Hernias	: <u>Present / Absent</u>	
19. Hydrocoel	: <u>Present / Absent</u>	
20. Present Complain, if any	: <u>No fresh complain</u>	
21. Summary of Findings		
Heart Disease	: <u>NG till date except</u>	
Hypertension	: <u>Pre-hypertensive</u>	
Diabetes	: <u>NG</u>	
T.B.	: <u>NG</u>	
Epilepsy	: <u>NG</u>	
Poisoning	: <u>NG</u>	
Others	: <u>NG</u>	
Occupational disease, if any	: <u>NG</u>	
22. Recommendation, if any further investigation	: <u>NG till 10 days</u>	
Signature of the Employee	: <u>Sushants Kumar Dabney</u>	
Signature of the Medical Officer	: <u>Dr. Anshu Singhania</u> MBBS, DPM, DM, DMG H Regd. No. -12805 / BCMR / 75	

**Annexure X**

**Intimation Letter of EC to Zila Parishad**



Ref: FAPJ/ 4136 /2015  
Date : 9<sup>th</sup> Nov, 2015

To  
President  
Zilla Parishad  
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,

*Received  
xerox copy  
of business  
clearance*

*Rhm  
12-11-15  
P.A. to President  
Zilla Parishad  
Keonjhar*

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 ( 1) 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@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

**Intimation Letter of EC to Chairman, Joda Municipality**



Ref: FAPJ/ ୩୩୫ /2015  
Date : 9<sup>th</sup> 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

  
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@tatasteel.com  
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Tel. 91 22 66658282, Fax 91 22 66657724  
Corporate Identity Number L27100MH1907PLC000260, Website : www.tatasteel.com

**Annexure XI**

<b>Details of CSR funds allocated and released Expenditure against CSR Activities</b>				
<b>Period</b>	<b>Year-wise expenditure Planning in (Rs. Cr.)</b>	<b>Actual Expenditure for C.S.R. in Rs. Cr.</b>	<b>Name of CSR activities</b>	<b>Whether Completed or Not</b>
2017-18	14.00 Cr.	14.27 Cr.	Construction of PCC Pathway. Boundary, toilet and painting, procuring 2 mobile medical units and ambulances, waiver for free treatment at Tata Steel Hospital, Joda, Installation of piped drinking water supply system in Gurutuan, Kamalpur, Bandhuabeda, Deoghar & Kusumdi, School improvement project (1000 Schools and Hans Foundation), 30 Model School project at Keonjhar, Women Empowerment Programmes	Completed
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 orthopedic 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	Completed
2019-20	13.02 Cr	12.8 Cr	Health, Education, Livelihood, Rural Infrastructure, Major Project Like Kalyan Mandap in Joda	Completed
2020-21	18.6 Cr	17.12 Cr.	Health, Education, Livelihood, Rural Infrastructure, 102 patients were provided with Prosthetics and orthopedic aids and appliances, Support of School Infrastructure- SSVM, Joda , Support of School Infrastructure, Construction of drain at Kundrunala, Awareness on flora and fauna	Completed
2021-22	19.2 Cr	8.45 Cr	Health, Education, Livelihood, Rural Infrastructure, Support of School Infrastructure- SSVM, Joda , Support of School Infrastructure, Construction of drain at Kundrunala, Awareness on flora and fauna	In progress

**Details of CSR funds allocated and released Expenditure against CSR Activities**

**Annexure XII**  
**Environmental Parameter Display board at Main Gate**



**Annexure XIII**

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



**TATA STEEL LTD.**  
**FERRO MANGANESE PLANT, JODA**

Ref. No. FAMD/FAPJ/ 214 /FY 22

Dated: 22.9.2021

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 2020-21.**

Dear Sir,

We are submitting one set of Annual Environmental Statement in FORM-V dully filled in for the year 2020-2021 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  
FERRO MANGANESE PLANT,  
JODA

Encl : as above.

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



### **Annexure XIV**

#### **Details of Publication on the Newspapers**



**Published on The Statesman of 12<sup>th</sup> November 2015 Issue**





ନେଇ ସାଧାରଣରେ ତର୍କା ଚାଲିଛି । ପଦ୍ମପୁର ପ୍ରଥମେ ବ୍ୟାପି କରି ୧୫.୯  
 ଶିଳ୍ପକର୍ମ ହରାଇ ୧୩୯ ଚନ୍ଦ୍ର କରିଥିଲା ।

**ଫେରୋ ଆଲୟେଜ୍ ପ୍ଲାଣ୍ଟ  
 ଟାଟା ଷ୍ଟିଲ ଲିମିଟେଡ୍,  
 ଯୋଡ଼ା, ଜିଲ୍ଲା-କେନ୍ଦୁଝର, ଓଡ଼ିଶା**

**TATA  
 TATA STEEL**

**ସର୍ବସାଧାରଣ ବିଜ୍ଞପ୍ତି**

ଭାରତ ସରକାରଙ୍କ ପରିବେଶ, ଜଙ୍ଗଲ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ମନ୍ତ୍ରାଳୟ (ଏମ୍.ଏଚ୍.ଏସ୍. ଆଣ୍ଡ୍ ସିସି), (ଆରଏ ଚିଭିଜର୍), , ନୂଆଦିଲ୍ଲୀ ପକ୍ଷରୁ ଜାରି କରାଯାଇଥିବା ବିଟି ସଂଖ୍ୟା J-11011/03/2012-IA II(I), ତା ୫.୧୧.୨୦୧୫ତରିଖ ଅନୁସାରେ ଓଡ଼ିଶାର କେନ୍ଦୁଝର ଜିଲ୍ଲାର ଯୋଡ଼ାଠାରେ ଅବସ୍ଥିତ ଟାଟା ଷ୍ଟିଲ ଲିମିଟେଡ୍‌ର ଫେରୋ ଆଲୟେଜ୍ ପ୍ଲାଣ୍ଟରୁ ମହାଲକ୍ଷ୍ୟ ଫେରୋ ମାଙ୍ଗାନିଜ୍ ରପ୍ତାନ ଅନୁମତି ବାସ୍ତିକ ୦.୦୫୦୪ ନିୟୁତ ଚନ୍ଦ୍ର ୦.୦୬ ଚନ୍ଦ୍ର ବୁଦ୍ଧି ଓ ଏହାସହିତ ଯୋଡ଼ାଠାରେ ଥିବା ଫେରୋ ଆଲୟେଜ୍ ପ୍ଲାଣ୍ଟରେ ବାସ୍ତିକ ୦.୦୬ ନିୟୁତ ଚନ୍ଦ୍ର ଅନୁମତି ଓମ୍ବୁ ସିଲିକୋନ-ମାଙ୍ଗାନିଜ୍ ପ୍ଲାଣ୍ଟ ଓ ବାସ୍ତିକ ୦.୦୫ ନିୟୁତ ଚନ୍ଦ୍ର ଅନୁମତି ସମ୍ପନ୍ନ ମାଙ୍ଗାନିଜ୍ ସିଣ୍ଡର ପ୍ଲାଣ୍ଟ ପାଇଁ ପରିବେଶ ମନ୍ତ୍ରାଳୟ ପ୍ରଦାନ କରିଛନ୍ତି ।

ପରିବେଶ ମନ୍ତ୍ରାଳୟ ନଜଲ ଓଡ଼ିଶାର ଭୁବନେଶ୍ୱରସ୍ଥିତ ରାଜ୍ୟ ପ୍ରଦ୍ୟୁଷଣ ନିୟନ୍ତ୍ରଣ ବୋର୍ଡ୍ ନିକଟରେ ଉପଲବ୍ଧ ଏବଂ ଭାରତ ସରକାରଙ୍କ ପରିବେଶ, ଜଙ୍ଗଲ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ମନ୍ତ୍ରାଳୟ ଷ୍ଟେଟ୍‌ସାଇଟ୍ <http://envfor.nic.in> ରେ ମଧ୍ୟ ଦେଖାଯାଇପାରିବ ।

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