



**HALF YEARLY COMPLIANCE REPORT**  
(Period from 01.010.2017 to 31.03.2018)

**OF**

**Ferro Alloys Plant, Joda**  
**Tata Steel Limited**

P.O- Joda, Dist. Keonjhar  
Odisha- 758034

**ENVIRONMENTAL CLEARANCE GRANTED**  
**VIDE LETTER NO. - J-11011/03/2012-IA.II(I) DATED- 05<sup>th</sup> November 2015**  
**ISSUED BY**  
**GOVT. OF INDIA, MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, NEW DELHI.**



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

Ref. No- FAPJ/ 1250 /2018

Date: 26-05-2018

**Sub- Submission of six monthly compliance report on implementation of environmental safe guards of Ferro Alloys Plant, Joda for the period from Oct'17 to Mar'18.**

**Ref- Ministry of Environment & Forests Letter No.J-11011/03/2012-IA .II (I) dated 5th November 2015.**

Dear Sir,

As per EIA Notification, We are herewith submitting six monthly compliance report in respect of stipulated environmental clearance condition of Ferro Alloys Plant, Joda for the period from Oct'17 to Mar'18.

We are also sending you softcopy of the report to your good office on mail: [roez.bsr-mef@nic.in](mailto:roez.bsr-mef@nic.in) for your 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 endeavor for further improve upon our Environmental Management Practices.

Thanking you,

Yours faithfully,  
For: TATA STEEL LTD

Head,  
Ferro Manganese Plant

Encl: as above  
Copy to MoEF, New Delhi  
“ “ CPCB, Zonal Office Kolkata  
“ “ OSPCB, Bhubaneswar  
“ “ Regional office, Keonjhar

Received  
31/5/18



**TATA STEEL**

Ferro Alloys & Minerals Division

Ferro Alloys Plant, Joda – 758034, Orissa, India

Tel : 09238100945, e-mail – [head.office@tatasteel.com](mailto:head.office@tatasteel.com)

Regd. Office : Bombay House, 24 Homi Mody Street, Mumbai – 400 001

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

## A. SPECIFIC CONDITIONS:

- 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.
  - **It will be strictly adhered after commissioning of plant. Presently we have been installed four nos. ambient air monitoring stations for manually monitoring air emission and the reports are submitted on monthly basis to SPCB, Odisha. Monitoring results for last six months i.e Oct'2017 to Mar'2018 is enclosed as Annexure-I**
- 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.
  - **There are four nos. of stacks in existing plant and all having adequate height and diameter. Online stack monitoring system installation has been completed. 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. Stack Monitoring results for last six months i.e Oct'2017 to Mar'2018 is enclosed as Annexure-II.**
- iii. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826 ( E ) dated 16<sup>th</sup> November, 2009 shall be followed.
  - **Existing plant emissions are within the specified limit prescribed by national ambient air quality emission standards; also the same will be followed after commissioning of forthcoming Plant. Ambient Air quality Monitoring results for last six months I.e Oct'2017 to Mar'2018 is enclosed as Annexure-I**
- iv. Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines/Code of Practice issued by the CPCB should be followed. New standards for the sponge iron plant issued by the Ministry vide G.S.R. 414 ( E ) dated 30<sup>th</sup> May, 2008 should be followed.
  - **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. Monitoring results of Gaseous emission levels including secondary fugitive emissions from all the sources for last six months i. e Oct'2017 to Mar'2018 is enclosed as Annexure-I**

- v. water sprinkling arrangements as well as dry fog system to control fugitive emission shall be undertaken.
- **For dry fogging one Mobile water sprinkler cum mist canon is in operation. 9 Nos. of Water sprinkling system was installed at all critical location for existing plant same will be installed after project execution. (Include photographs as Annexure III)**
- vi. Tap hole emissions shall be taken to GCP system by providing proper hood and suction system.
- **Two nos. of Fume extraction system is in place for existing plant and same system will be provided to forthcoming project. (Include photographs as Annexure IV)**
- 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.
- **It will be complied. For Existing Plant close circuit cooling system is in operation & same will be followed for forthcoming plant.**
- 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.
- **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)**
- 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.
- **Monitoring of ground water and surface water is being carried out on regular basis. Leachate study for effluent generated will be carried out soon. (details of monitoring results are given in Annexure VI)**

- x. Slag produced in Ferro Manganese (Fe-Mn) production should be used in manufacture of Silico Manganese (Si-Mn). All the other Ferro alloy slag should be used in the preparation of building materials.
- **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.**
- 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.
- **Risk and disaster management plan along with the mitigation measures was submitted vide Letter no. FAPJ/4249/2016, dtd. 01.02.2016 to the central Pollution control board, New Delhi, Vide letter no. FAP(J)/4250/2016, dtd. 01.02.2016, to the Ministry of Environment & Forest, Eastern Regional Office, Bhubaneswar and vide letter no. FAP(J)/4251/2016, dtd. 01.02.2016 to State Pollution Control Board, Bhubaneswar. Copy of the letter is enclosed as Annexure-VII.**
- 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.
- **Plantation programme is regularly done. Plant species are selected as per CPCB guidelines. In the Year 2017-18 till date total 1004 nos. of Plantation done & 2130 nos. 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.
- **It is 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.
- **It will be done. The details of expenditure towards CSR activity done along with details are given in Annexure XI.**
- 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
- **It has been complied. There is no labour camp within the Site.**

## B. GENERAL CONDITIONS :

- i. The project authorities must strictly adhere to the stipulations made by the Odisha Pollution Control Board and the State Government.
  - **It will be strictly followed. Once the expansion work starts conditions shall be adhered to.**
- 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).
  - **No expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC).**
- 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.
  - **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. Monitoring results for last six months i.e e Oct'2017 to Mar'2018 is enclosed as Annexure-I**
- iv. Industrial waste water shall be properly collected, treated so as to conform to the standard prescribed under GSR 422 ( E ) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December 1993 or as amended from time to time. The treated waste water shall be utilized for plantation purpose.
  - **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).
  - **It has been strictly adhered. Acoustic enclosures are provided for DG sets. Monitoring results for last six months i. e Oct'2017 to Mar'2018 is enclosed as Annexure-VIII**

- vi. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- **Periodic medical check-ups were conducted yearly. Last medical check-up was done on Nov- Dec 2017 and 513 nos. of employees are examined including contractual employees. Records were maintained as per Orissa factory rule it is shown in Annexure IX.**
- 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.
- **Construction of Roof Rain water harvesting system is in progress. First Phase of construction has been completed and rest will take 60 days.**
- viii. The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake social-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.
- **Complied 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. Details of Expenditure made towards CSR activities are given in Annexure XI.**
- 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.
- **It will be adhered.**
- 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.

**Already Complied. Intimation of obtaining Environmental Clearance is given to Zila Parishad vide letter No. FAPJ/4136/2015. Copy of Letter is given in Annexure-X.**

- 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.

**Status of compliance will be uploaded in the website along with the monitored data. It will be sent to regional office of MoEFCC at Bhubaneswar, SPCB, Bhubaneswar & regional office, Keonjhar.**

**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. Photograph is given in the Annexure XII.**

- 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.

- **It has been complied.**

- xiii. The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEFCC) at Bhubaneswar by e-mail.

- **The Environment statement in Form V was submitted for the year 2016-17 on 21<sup>st</sup> september'2017 vide letter no.- FAPJ/5181/2017 to SPCB, Bhubaneswar and Regional office, Keonjhar And the compliance of environmental conditions is uploaded on the website.**



xiv. The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearances letter are available with SPCB and may also be seen at website of the Ministry of Environment, Forests and climate Change (MoEFCC) at <http://envfor.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspaper that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional Office at Bhubaneswar.

- **Information regarding Environmental clearance issued is published on Sambad Oriya newspaper of 13<sup>th</sup> November issue and on the statesman English Newspaper of 12<sup>th</sup> November issue. Details of publication are given to Annexure XIV.**

xv. Project authorities shall inform the Regional Office as well as the 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.

- **It will be strictly followed**



Head

Ferro Alloys Plant, Joda  
Tata steel Limited

**Annexure # 1**  
**Ambient Air quality Report From 01-10-2017 To 31-03-2018**

Mitra S. K. Private Limited

AMP O BARBIL Ward No-6  
Dist. Keonjhar, Odisha - 758036  
CIN: U51909WB1966PTC023037  
T : +91 94370 09615 94370 09820 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2468

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/11/2017

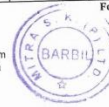
Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Main Gate

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	02/03.10.2017	58	31	5.4	24.8	11.2	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.10.2017	44	22	5.0	23.4	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
3	09/10.10.2017	41	20	4.6	21.5	<10.0	<10.0	0.20	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.10.2017	52	28	5.2	23.2	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
5	16/17.10.2017	63	34	5.6	25.8	11.8	10.2	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.10.2017	43	21	4.8	22.3	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
7	23/24.10.2017	54	29	5.4	24.6	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.10.2017	66	36	6.0	25.2	12.3	11.7	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	52.6	27.6	5.3	23.9	12.3	10.5	0.24	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA -103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff. 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com  
H. O. : Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700 016, West Bengal, India



Mitra S. K. Private Limited

AMP O BARBIL Ward No-6  
Dist. Keonjhar, Odisha - 758036  
CIN: U51909WB1966PTC023037  
T : +91 94370 09615 94370 09820 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2469

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/11/2017

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	02/03.10.2017	64	35	6.2	25.2	11.8	12.6	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.10.2017	50	28	5.8	23.6	<10.0	10.8	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
3	09/10.10.2017	47	26	5.4	22.4	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.10.2017	60	33	5.9	25.7	10.8	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
5	16/17.10.2017	69	38	6.4	26.4	12.4	13.2	0.32	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.10.2017	53	29	5.4	24.2	<10.0	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
7	23/24.10.2017	59	32	5.8	25.3	<10.0	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.10.2017	75	40	6.6	27.5	13.2	15.8	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	59.6	32.6	5.9	25.0	11.0	11.6	0.27	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA -103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff. 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com  
H. O. : Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700 016, West Bengal, India



Mitra S. K. Private Limited

AMP O- BARBIL Ward No-6  
Dist : Keonjhar, Odisha - 758035  
CIN: U61909WB1966PTC023037  
T : +91 94370 09615 94370 09620 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref.No.BBL/ENV/2470

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/11/2017

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	02/03.10.2017	68	37	6.3	26.6	13.4	15.4	0.34	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.10.2017	56	30	5.7	24.5	<10.0	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
3	09/10.10.2017	53	29	5.4	23.8	<10.0	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.10.2017	66	36	6.1	25.2	15.3	13.6	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
5	16/17.10.2017	74	40	7.2	27.4	<10.0	15.3	0.38	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.10.2017	58	32	5.8	25.2	<10.0	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
7	23/24.10.2017	64	35	6.3	26.5	14.2	12.8	0.30	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.10.2017	77	42	7.5	28.4	18.5	16.4	0.42	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	64.5	35.1	6.3	26.0	12.7	13.3	0.32	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK/E/4/L Bassed on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

AMP O- BARBIL Ward No-6  
Dist : Keonjhar, Odisha - 758035  
CIN: U61909WB1966PTC023037  
T : +91 94370 09615 94370 09620 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref.No.BBL/ENV/2471

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/11/2017

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near 132 KV

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	02/03.10.2017	63	34	5.5	25.2	11.8	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.10.2017	51	27	5.2	23.4	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
3	09/10.10.2017	48	25	4.8	22.8	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.10.2017	52	28	5.3	23.2	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
5	16/17.10.2017	68	37	6.4	25.4	14.3	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.10.2017	53	28	5.5	23.6	<10.0	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
7	23/24.10.2017	61	33	5.8	24.7	12.5	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.10.2017	69	38	6.1	26.2	13.5	12.6	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	58.1	31.3	5.6	24.3	11.5	10.3	0.25	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK/E/4/L Bassed on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

**Mitra S. K. Private Limited**

ALP O - BARBIL Ward No-6  
Dist. Keonjhar, Odisha - 758035  
CIN. U51909WB1956PTC023037  
T : +91 94370 08615, 94370 08620, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2533

**AMBIENT AIR QUALITY MONITORING REPORT**

DATE: 02/12/2017

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Main Gate

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	02/03.11.2017	50	25	4.4	20.3	<10.0	<10.0	0.38	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.11.2017	76	34	4.6	21.7	<10.0	<10.0	0.40	<0.02	<4.0	<1.0	<2.08	<0.4
3	09/10.11.2017	63	32	4.3	19.4	<10.0	<10.0	0.33	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.11.2017	57	28	4.9	21.4	<10.0	<10.0	0.45	<0.02	<4.0	<1.0	<2.08	<0.4
5	16/17.11.2017	64	33	5.2	22.6	<10.0	<10.0	0.41	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.11.2017	59	30	4.8	19.7	<10.0	<10.0	0.44	<0.02	<4.0	<1.0	<2.08	<0.4
7	23/24.11.2017	77	39	5.9	16.1	<10.0	<10.0	0.34	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.11.2017	63	30	5.6	17.2	<10.0	<10.0	0.47	<0.02	<4.0	<1.0	<2.08	<0.4
9	30/01-11/12-2017	53	28	5.2	18.6	<10.0	<10.0	0.38	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	62.4	31.0	5.0	19.7	10.0	10.0	0.40	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB based on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff. 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

**Mitra S. K. Private Limited**

ALP O - BARBIL Ward No-6  
Dist. Keonjhar, Odisha - 758035  
CIN. U51909WB1956PTC023037  
T : +91 94370 08615, 94370 08620, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2534

**AMBIENT AIR QUALITY MONITORING REPORT**

DATE: 02/12/2017

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	02/03.11.2017	66	33	5.3	21.2	<10.0	<10.0	0.35	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.11.2017	69	35	5.7	22.4	<10.0	<10.0	0.40	<0.02	<4.0	<1.0	<2.08	<0.4
3	09/10.11.2017	70	34	5.1	20.5	<10.0	<10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.11.2017	70	37	5.1	19.5	11.5	14.2	0.39	<0.02	<4.0	<1.0	<2.08	<0.4
5	16/17.11.2017	65	31	5.6	18.9	13.9	15.7	0.37	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.11.2017	72	38	5.0	20.2	12.6	15.1	0.42	<0.02	<4.0	<1.0	<2.08	<0.4
7	23/24.11.2017	68	33	6.5	24.2	20.5	18.2	0.41	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.11.2017	64	30	6.4	22.9	18.4	17.6	0.47	<0.02	<4.0	<1.0	<2.08	<0.4
9	30/01-11/12-2017	58	29	5.8	22.4	<10.0	<10.0	0.38	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	66.9	33.3	5.6	21.4	13.0	13.4	0.39	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB based on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff. 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

**Mitra S. K. Private Limited**

ADP O, BAREIL, Ward No.6  
Dist. Keonjhar, Odisha - 758035  
CIN. U51909WB1966PTC023037

T : +91 94370 08615, 94370 08620, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2535

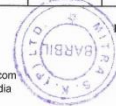
**AMBIENT AIR QUALITY MONITORING REPORT**

DATE: 02/12/2017

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	02/03.11.2017	68	34	5.9	25.7	<10.0	<10.0	0.35	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.11.2017	61	32	6.2	28.7	<10.0	<10.0	0.40	<0.02	<4.0	<1.0	<2.08	<0.4
3	09/10.11.2017	73	35	5.2	23.4	<10.0	<10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.11.2017	72	37	6.2	20.8	12.4	15.8	0.39	<0.02	<4.0	<1.0	<2.08	<0.4
5	16/17.11.2017	67	34	5.4	19.1	18.8	15.4	0.37	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.11.2017	76	40	5.6	21.6	13.4	16.5	0.42	<0.02	<4.0	<1.0	<2.08	<0.4
7	23/24.11.2017	79	40	6.7	23.7	<10.0	12.9	0.41	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.11.2017	83	44	6.9	25.6	<10.0	14.8	0.47	<0.02	<4.0	<1.0	<2.08	<0.4
9	30/01-11/12-2017	62	32	5.8	22.1	<10.0	<10.0	0.38	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	71.2	36.4	6.0	23.4	12.5	12.0	0.39	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182 : Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182 : Part 10 :1999 (Reaff.2014) (NDR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK /E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700 016, West Bengal, India

**Mitra S. K. Private Limited**

ADP O, BAREIL, Ward No.6  
Dist. Keonjhar, Odisha - 758035  
CIN. U51909WB1966PTC023037

T : +91 94370 08615, 94370 08620, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2536

**AMBIENT AIR QUALITY MONITORING REPORT**

DATE: 02/12/2017

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near 132 KV

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	02/03.11.2017	66	30	4.9	21.4	<10.0	<10.0	0.37	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.11.2017	73	34	4.5	20.7	<10.0	<10.0	0.34	<0.02	<4.0	<1.0	<2.08	<0.4
3	09/10.11.2017	51	28	4.3	19.8	<10.0	<10.0	0.30	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.11.2017	62	30	4.7	19.8	<10.0	<10.0	0.44	<0.02	<4.0	<1.0	<2.08	<0.4
5	16/17.11.2017	67	35	4.9	20.2	13.2	<10.0	0.40	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.11.2017	60	29	4.6	19.1	<10.0	<10.0	0.36	<0.02	<4.0	<1.0	<2.08	<0.4
7	23/24.11.2017	72	35	4.8	18.7	12.8	<10.0	0.39	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.11.2017	66	28	4.6	16.9	11.2	<10.0	0.34	<0.02	<4.0	<1.0	<2.08	<0.4
9	30/01-11/12-2017	62	29	4.5	17.2	<10.0	<10.0	0.32	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	64.3	30.9	4.6	19.6	11.0	11.6	0.27	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182 : Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182 : Part 10 :1999 (Reaff.2014) (NDR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK /E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700 016, West Bengal, India

Mitra S. K. Private Limited

AMP O BARBIL Ward No-6  
Dist: Keonjhar, Odisha - 758036  
CIN: U51909WB1965PTC023037

T : +91 94370 09615, 94370 09620, 94370 76269  
E : barbil@mitrask.com  
W : www.mitrask.com



Ref. No.BBL/ENV/2601

DATE: 02/01/2018

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Main Gate

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.12.2017	63	30	4.7	20.1	<10.0	<10.0	0.35	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.12.2017	60	28	4.5	19.8	<10.0	<10.0	0.30	<0.02	<4.0	<1.0	<2.08	<0.4
3	07/08.12.2017	67	44	5.1	21.4	<10.0	<10.0	0.38	<0.02	<4.0	<1.0	<2.08	<0.4
4	11/12.12.2017	76	42	6.2	22.8	11.8	17.7	0.67	<0.02	<4.0	<1.0	<2.08	<0.4
5	14/15.12.2017	71	38	6.0	27.8	<10.0	<10.0	0.65	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.12.2017	87	43	6.8	23.7	<10.0	<10.0	0.73	<0.02	<4.0	<1.0	<2.08	<0.4
7	21/22.12.2017	64	33	5.6	21.2	<10.0	<10.0	0.45	<0.02	<4.0	<1.0	<2.08	<0.4
8	25/26.12.2017	68	35	5.4	20.4	<10.0	<10.0	0.50	<0.02	<4.0	<1.0	<2.08	<0.4
9	28/29.12.2017	60	28	5.3	23.7	<10.0	<10.0	0.40	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	68.4	35.7	5.5	22.3	10.2	10.9	0.49	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK /E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited

Authorised Signatory



T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

AMP O BARBIL Ward No-6  
Dist: Keonjhar, Odisha - 758036  
CIN: U51909WB1965PTC023037

T : +91 94370 09615, 94370 09620, 94370 76269  
E : barbil@mitrask.com  
W : www.mitrask.com



Ref. No.BBL/ENV/2602

DATE: 02/01/2018

AMBIENT AIR QUALITY MONITORING REPORT

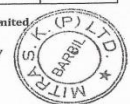
Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.12.2017	78	32	5.5	23.5	<10.0	<10.0	0.47	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.12.2017	70	33	5.3	22.7	<10.0	<10.0	0.42	<0.02	<4.0	<1.0	<2.08	<0.4
3	07/08.12.2017	84	55	5.1	21.9	<10.0	<10.0	0.44	<0.02	<4.0	<1.0	<2.08	<0.4
4	11/12.12.2017	76	42	6.2	25.9	<10.0	<10.0	0.76	<0.02	<4.0	<1.0	<2.08	<0.4
5	14/15.12.2017	79	43	7.0	25.8	<10.0	<10.0	0.57	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.12.2017	67	35	5.8	21.6	<10.0	<10.0	0.65	<0.02	<4.0	<1.0	<2.08	<0.4
7	21/22.12.2017	77	39	6.3	25.4	<10.0	<10.0	0.72	<0.02	<4.0	<1.0	<2.08	<0.4
8	25/26.12.2017	80	43	5.8	24.1	<10.0	<10.0	0.59	<0.02	<4.0	<1.0	<2.08	<0.4
9	28/29.12.2017	85	45	6.4	23.7	<10.0	<10.0	0.64	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	77.3	40.8	5.9	23.8	13.0	13.4	0.58	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited

Authorised Signatory



T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

A/P O BAREIL Ward No-6  
Dist - Keonjhar, Odisha - 758036  
CIN: U61909WB1966PTC023037  
T : +91 94370 09615, 94370 09620, 94370 75269  
E : baril@mitrask.co.in  
W : www.mitrask.com



DATE: 02/01/2018

Ref. No.BBL/ENV/2603

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo pyrene (ng/m <sup>3</sup> )
1	01/02.12.2017	80	40	6.1	31.4	<10.0	<10.0	0.63	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.12.2017	87	44	6.5	33.8	<10.0	<10.0	0.69	<0.02	<4.0	<1.0	<2.08	<0.4
3	07/08.12.2017	74	38	5.9	28.7	<10.0	<10.0	0.58	<0.02	<4.0	<1.0	<2.08	<0.4
4	11/12.12.2017	85	46	7.8	26.3	<10.0	<10.0	0.78	<0.02	<4.0	<1.0	<2.08	<0.4
5	14/15.12.2017	74	40	7.2	25.0	<10.0	<10.0	0.67	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.12.2017	89	48	8.2	27.5	<10.0	<10.0	0.86	<0.02	<4.0	<1.0	<2.08	<0.4
7	21/22.12.2017	88	47	6.8	25.9	<10.0	<10.0	0.55	<0.02	5.5	<1.0	<2.08	<0.4
8	25/26.12.2017	76	41	6.2	24.2	<10.0	<10.0	0.67	<0.02	<4.0	<1.0	<2.08	<0.4
9	28/29.12.2017	92	50	6.6	27.5	<10.0	<10.0	0.70	0.02	6.1	<1.0	<2.08	<0.4
	Avg. Monthly	82.8	43.8	6.8	27.8	12.5	12.0	0.68	0.02	4.4	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK /E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2012

Checked by:

For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700 016, West Bengal, India

Mitra S. K. Private Limited

A/P O BAREIL Ward No-6  
Dist - Keonjhar, Odisha - 758036  
CIN: U61909WB1966PTC023037  
T : +91 94370 09615, 94370 09620, 94370 75269  
E : baril@mitrask.co.in  
W : www.mitrask.com



DATE: 02/02/2018

Ref. No.BBL/ENV/2663

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Main Gate

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.01.2018	73	35	5.7	24.0	0.49	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.01.2018	55	29	4.6	21.0	0.39	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.01.2018	61	33	5.0	24.0	0.44	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	11/12.01.2018	57	36	5.3	22.7	0.34	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.01.2018	64	43	7.3	26.5	0.42	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.01.2018	58	38	5.8	21.5	0.35	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.01.2018	67	42	6.2	24.7	0.48	12.3	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	25/26.01.2018	75	48	7.4	28.3	0.52	14.4	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.01.2018	62	37	5.6	23.4	0.37	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	63.6	37.9	5.9	24.0	0.42	10.7	10.0	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK /E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:

For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700 016, West Bengal, India



**Mitra S. K. Private Limited**

AMP O, BARBIL Ward No-6  
Dist. Keonjhar, Odisha - 758035  
CIN: U61909WB1966PTCO23037  
T : +91 94370 09615 94370 09620, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref.No.BBL/ENV/2664

**AMBIENT AIR QUALITY MONITORING REPORT**

DATE: 02/02/2018

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.01.2018	91	53	7.1	35.0	0.77	<10.0	<10.0	0.03	7.1	<1.0	<2.08	<0.4
2	04/05.01.2018	81	44	6.2	26.0	0.67	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.01.2018	70	33	6.5	25.0	0.60	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	11/12.01.2018	67	36	6.7	24.7	0.44	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.01.2018	86	54	5.8	22.4	0.52	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.01.2018	69	46	6.5	20.8	0.38	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.01.2018	72	53	7.4	23.5	0.48	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	25/26.01.2018	84	57	6.8	26.3	0.37	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.01.2018	78	45	5.6	21.5	0.42	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
	<b>Avg. Monthly</b>	<b>77.6</b>	<b>46.8</b>	<b>6.5</b>	<b>25.0</b>	<b>0.52</b>	<b>10.0</b>	<b>10.0</b>	<b>0.02</b>	<b>4.3</b>	<b>1.0</b>	<b>2.08</b>	<b>&lt;0.4</b>
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:-



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

**Mitra S. K. Private Limited**

AMP O, BARBIL Ward No-6  
Dist. Keonjhar, Odisha - 758035  
CIN: U61909WB1966PTCO23037  
T : +91 94370 09615 94370 09620, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref.No.BBL/ENV/2665

**AMBIENT AIR QUALITY MONITORING REPORT**

DATE: 02/02/2018

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.01.2018	85	45	6.9	29.0	0.78	<10.0	<10.0	<0.02	5.9	<1.0	<2.08	<0.4
2	04/05.01.2018	74	40	5.8	26.0	0.62	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.01.2018	89	51	6.5	33.0	0.82	<10.0	<10.0	0.03	6.8	<1.0	<2.08	<0.4
4	11/12.01.2018	74	45	6.6	24.3	0.38	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.01.2018	95	56	7.6	27.8	0.48	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.01.2018	87	48	6.8	25.2	0.42	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.01.2018	78	42	5.6	22.7	0.38	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	25/26.01.2018	89	53	7.3	26.5	0.54	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.01.2018	68	45	6.4	23.4	0.37	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
	<b>Avg. Monthly</b>	<b>82.1</b>	<b>47.2</b>	<b>6.6</b>	<b>26.4</b>	<b>0.53</b>	<b>12.0</b>	<b>12.5</b>	<b>0.02</b>	<b>4.4</b>	<b>1.0</b>	<b>2.08</b>	<b>0.4</b>
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:-



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

AZP O BARBIL Ward No-6  
Dist : Keonjhar, Odisha - 758036  
CIN: U61909WB1956PTC023037

T : +91 94370 09615, 94370 09620, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2666

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near 132 KV

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/02/2018

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.01.2018	54	30	5.5	24.0	0.59	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.01.2018	69	36	6.5	28.0	0.65	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.01.2018	78	42	6.0	31.0	0.77	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	11/12.01.2018	68	49	6.7	25.2	0.47	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.01.2018	74	54	5.4	19.8	0.38	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.01.2018	63	44	6.4	23.7	0.42	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.01.2018	76	53	7.6	21.6	0.36	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	25/26.01.2018	59	48	5.7	24.3	0.43	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.01.2018	64	37	6.2	22.7	0.35	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
Avg. Monthly		67.2	43.7	6.2	24.5	0.49	10.0	10.0	0.02	4.8	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB based on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

AZP O BARBIL Ward No-6  
Dist : Keonjhar, Odisha - 758036  
CIN: U61909WB1956PTC023037  
T : +91 94370 09615, 94370 09620, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2704

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Main Gate

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/03/2018

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.02.2018	67	36	4.5	23.1	0.37	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.02.2018	56	30	4.1	22.9	0.31	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.02.2018	67	38	6.5	24.5	0.28	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.02.2018	59	32	5.8	19.3	0.24	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.02.2018	67	32	7.6	29.6	0.71	16.2	24.6	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.02.2018	77	39	5.6	23.6	0.45	14.6	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.02.2018	68	36	7.2	24.0	0.55	16.2	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.02.2018	62	30	6.2	28.6	0.62	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
Avg. Monthly		65.4	34.1	5.9	24.5	0.44	12.1	11.8	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB based on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com  
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

BARBIL, Odisha - 761008  
 Dist. Keonjhar, Odisha - 761008  
 Ph: 94370 09618, 94370 09620, 94370 75269  
 E: barbil@mitrask.com  
 W: www.mitrask.com



Ref. No. BBL/ENV/2705

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/03/2018

Name of Client : TATA Steel Ltd.

Address : FAP Joda Plant

Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.02.2018	82	45	5.4	24.3	0.55	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.02.2018	90	51	6.1	25.6	0.61	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.02.2018	83	46	6.2	21.7	0.26	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.02.2018	75	42	5.8	19.5	0.24	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.02.2018	83	44	7.2	29.8	0.56	17.6	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.02.2018	71	37	5.2	19.6	0.42	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.02.2018	80	42	4.5	18.1	0.26	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.02.2018	77	40	5.2	17.6	0.62	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	80.1	43.4	5.7	22.0	0.44	11.0	10.0	0.02	4.3	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, §114 C	IS-5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:



For Mitra S. K. Private Limited  
 Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
 H. O.: Shraochi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

BARBIL, Odisha - 761008  
 Dist. Keonjhar, Odisha - 761008  
 Ph: 94370 09618, 94370 09620, 94370 75269  
 E: barbil@mitrask.com  
 W: www.mitrask.com



Ref. No. BBL/ENV/2706

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/03/2018

Name of Client : TATA Steel Ltd.

Address : FAP Joda Plant

Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.02.2018	96	59	6.9	28.2	0.69	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.02.2018	89	49	5.8	25.7	0.62	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.02.2018	84	45	7.3	22.3	0.36	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.02.2018	78	42	6.7	19.7	0.27	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.02.2018	80	42	6.7	27.8	0.62	17.2	24.5	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.02.2018	76	38	5.5	22.6	0.71	17.6	31.6	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.02.2018	82	45	7.6	27.0	0.41	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.02.2018	79	37	6.0	24.6	0.48	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	83.0	44.6	6.6	24.7	0.52	11.9	14.5	0.02	4.4	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No. TPM/MSK /E/4/L Based on APHA 22nd Edition 2012, §114 C	IS-5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:



For Mitra S. K. Private Limited  
 Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
 H. O.: Shraochi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

A/P O - BARBIL Ward No.6  
Dist. Keonjhar, Odisha - 753036  
CIN: U51909WB1955PTC023037  
T : +91 94370 09815 94370 09820 94370 78269  
E : info@mitrask.com  
W : www.mitrask.com



Ref.No.BBL/ENV/2707

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/03/2018

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near 132 KV

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a)pyrene (ng/m <sup>3</sup> )
1	01/02.02.2018	74	40	5.1	23.9	0.48	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.02.2018	86	47	5.6	24.7	0.44	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.02.2018	72	42	7.3	26.3	0.36	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.02.2018	67	36	6.5	22.4	0.28	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.02.2018	70	37	6.2	18.2	0.45	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.02.2018	68	30	4.6	18.6	0.44	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.02.2018	71	39	4.5	16.2	0.41	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.02.2018	70	34	5.1	13.6	0.33	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	72.3	38.1	5.6	20.5	0.40	10.0	10.0	0.02	4.8	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shraichi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

A/P O - BARBIL Ward No.6  
Dist. Keonjhar, Odisha - 758036  
CIN: U51909WB1955PTC023037  
T : +91 94370 09815 94370 09820 94370 75269  
E : barbil@mitrask.com  
W : www.mitrask.com



Ref.No.BBL/ENV/0001

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/04/2018

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Main Gate

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a)pyrene (ng/m <sup>3</sup> )
1	01/02.03.2018	60	36	5.2	16.8	0.33	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.03.2018	62	35	5.5	18.2	0.36	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.03.2018	70	38	6.0	21.6	0.42	<10.0	<10.0	<0.02	9.7	1.78	2.66	<0.4
4	12/13.03.2018	68	37	5.8	19.7	0.38	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.03.2018	72	43	6.7	23.5	0.34	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.03.2018	64	35	5.3	20.4	0.30	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.03.2018	59	32	4.9	18.7	0.28	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.03.2018	73	43	6.2	22.5	0.34	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.03.2018	58	33	5.6	19.3	0.27	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	65.1	36.9	5.7	20.1	0.34	10.0	10.0	0.02	4.6	1.1	2.14	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	2	180	400	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com  
H. O.: Shraichi Centre (5th Floor) 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

A/P O BARBIL Ward No-6  
Dist - Keonjhar, Odisha - 758036  
CIN. U61909WB1966PTC023037

T : +91 94370 09615 94370 09620, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/0002

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/04/2018

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.03.2018	78	43	5.3	18.6	0.38	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.03.2018	63	36	5.2	17.6	0.32	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.03.2018	71	39	5.5	21.2	0.35	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.03.2018	82	45	6.2	23.4	0.42	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.03.2018	74	39	5.3	19.7	0.49	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.03.2018	69	37	4.8	22.5	0.35	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.03.2018	73	47	5.6	18.8	0.47	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.03.2018	67	38	4.9	20.7	0.38	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.03.2018	76	42	5.3	19.5	0.45	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	72.6	40.7	5.3	20.2	0.40	10.0	10.0	0.02	4.3	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	2	180	400	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114.C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com  
U. O.: Shraichi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



For Mitra S. K. Private Limited  
Authorised Signatory

Mitra S. K. Private Limited

A/P O BARBIL Ward No-6  
Dist - Keonjhar, Odisha - 758036  
CIN. U61909WB1966PTC023037

T : +91 94370 09615 94370 09620, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/0003

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/04/2018

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.03.2018	75	42	6.7	23.8	0.42	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.03.2018	82	46	7.2	24.6	0.56	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.03.2018	75	45	6.5	22.8	0.67	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.03.2018	84	47	7.6	26.5	0.52	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.03.2018	76	42	6.3	22.7	0.48	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.03.2018	65	38	5.7	19.5	0.37	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.03.2018	73	40	6.2	21.8	0.45	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.03.2018	83	45	5.8	24.7	0.58	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.03.2018	78	42	5.3	21.4	0.52	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	76.8	43.0	6.4	23.1	0.51	10.0	10.0	0.02	4.4	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	2	180	400	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	IS 5182 : Part 6 :2006 (Reaff.2012)	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114.C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com  
H. O.: Shraichi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



For Mitra S. K. Private Limited  
Authorised Signatory

Mitra S. K. Private Limited

A/P O BARBIL Ward No-6  
Dist. Keonjhar, Odisha - 758036  
CIN: U51909WB1956PTC023037  
T : +91 94370 09815, 94370 09820, 94370 76269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/0004

DATE: 02/04/2018

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant  
Location : Near 132 KV

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	01/02.03.2018	67	36	6.2	17.5	0.38	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	05/06.03.2018	71	38	5.4	19.5	0.47	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.03.2018	65	35	5.2	20.8	0.37	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	12/13.03.2018	74	42	6.7	23.7	0.35	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.03.2018	63	38	5.8	18.6	0.33	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
6	19/20.03.2018	72	44	6.5	21.5	0.36	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/23.03.2018	68	37	5.6	19.3	0.32	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
8	26/27.03.2018	73	42	6.3	22.7	0.35	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.03.2018	58	32	5.5	18.5	0.33	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
Avg. Monthly		67.9	38.2	5.9	20.2	0.36	10.0	10.0	0.02	4.8	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	2	180	400	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	IS 5182: Part 10:1999 (Reaff.2014) (NDR)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11):2006 Reaff.2012	IS:5182 (Part-12):2004 Reaff. :2014

Checked by:-

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com



For Mitra S. K. Private Limited  
Authorised Signatory

Mitra S. K. Private Limited

A/P O BARBIL Ward No-6  
Dist. Keonjhar, Odisha - 758036  
CIN: U51909WB1956PTC023037  
T : +91 94370 09815, 94370 09820, 94370 76269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/0005

DATE: 02/04/2018

AMBIENT AIR QUALITY MONITORING REPORT

(Buffer Zone)

Name of Client : TATA Steel Ltd.  
Address : FAP Joda Plant

Sl. No.	Date of Monitoring	Location	Concentration of Pollutants											
			PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo(a) pyrene (ng/m <sup>3</sup> )
1	02-03.03.2018	Joda Village	48	27	4.8	17.6	0.28	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
2	02-03.03.2018	Joda West Township	77	43	6.2	23.4	0.48	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
3	03-04.03.2018	Banaikela Village	67	38	5.8	22.5	0.32	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
4	03-04.03.2018	Kumarjoda Village	78	43	5.3	18.9	0.37	<10.0	<10.0	<0.02	<4.0	<1.0	<2.08	<0.4
Avg.			67.5	37.8	5.5	20.6	0.36	10.0	10.9	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality			100	60	80	80	2	180	400	1	20	6	5	1
Sampling and Analysis done according to			IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	IS 5182: Part 10:1999 (Reaff.2014) (NDR)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11):2006 Reaff.2012	IS:5182 (Part-12):2004 Reaff. 2014

Checked by:-



For Mitra S. K. Private Limited  
Authorised Signatory

**Annexure- II**

**Stack Emission Monitoring Report from 01-01-2017 To 31-03-2018**

# Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6  
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815, 94370 09820, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com

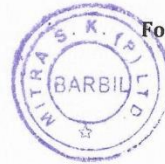


Ref. No. BBL/ENV/2540

Date: 02/12/2017

<b>ANALYSIS REPORT OF FLUE GAS</b>				
<b>Name of the industry:</b>		Ferro Alloys Plant - Joda. Tata Steel Ltd		
Date of Monitoring :		20.11.2017		
Date of Analysis :		22.11.2017		
Stack Connected		Reduction Arc Furnace - I & II		
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	65	70
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	15.71	17.37
3.	Concentration of Sulphur dioxide (mg/Nm <sup>3</sup> )	USEPA Part 6 - 25/09/1996	96.5	102.4
4.	Concentration of Nitrogen dioxide (mg/Nm <sup>3</sup> )	USEPA Part 7, Issue dt. 12/03/1996	78.2	84.3
5.	Concentration of particulate Matters (mg/Nm <sup>3</sup> )	USEPA Part 5 - 16/08/1996	37	40

Checked by:



For Mitra S. K. Private Limited  
  
Authorized Signatory



# Mitra S. K. Private Limited

A/P.O.:BARBIL Ward No-6  
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815,94370 09820,94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2609

Date: 02/01/2018

<b>ANALYSIS REPORT OF FLUE GAS</b>				
<b>Name of the industry:</b>		<b>Ferro Alloys Plant - Joda. Tata Steel Ltd</b>		
<b>Date of Monitoring :</b>		20.12.2017		
<b>Date of Analysis :</b>		22.12.2017		
<b>Stack Connected</b>		Reduction Arc Furnace - I & II		
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	64	70
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	15.58	16.87
3.	Concentration of Sulphur dioxide (mg/Nm <sup>3</sup> )	USEPA Part 6 - 25/09/1996	25.7	34.3
4.	Concentration of Nitrogen dioxide (mg/Nm <sup>3</sup> )	USEPA Part 7, Issue dt. 12/03/1996	34.5	55.8
5.	Concentration of particulate Matters (mg/Nm <sup>3</sup> )	USEPA Part 5 - 16/08/1996	27	24

Checked by:-



For Mitra S.K. Private Limited

Authorised Signatory

# Mitra S. K. Private Limited

A/P.O.: BARBIL Ward No-6  
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815, 94370 09820, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No. BBL/ENV/2670

Date: 02/02/2018

<b>ANALYSIS REPORT OF FLUE GAS</b>				
<b>Name of the industry:</b>		Ferro Alloys Plant - Joda. Tata Steel Ltd		
<b>Date of Monitoring :</b>		25.01.2018		
<b>Date of Analysis :</b>		27.01.2018		
<b>Stack Connected</b>		Reduction Arc Furnace - I & II		
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	66	70
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	16.19	17.44
3.	Concentration of Sulphur dioxide (mg/Nm <sup>3</sup> )	USEPA Part 6 - 25/09/1996	192.8	209.3
4.	Concentration of Nitrogen dioxide (mg/Nm <sup>3</sup> )	USEPA Part 7, Issue dt. 12/03/1996	118.2	137.5
5.	Concentration of particulate Matters (mg/Nm <sup>3</sup> )	USEPA Part 5 - 16/08/1996	21	26

Checked by:



For Mitra S. K. Private Limited  
Authorised Signatory

# Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6  
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815, 94370 09820, 94370 75269

E : barbil@mitrask.co.in

W : www.mitrask.com



Ref. No. BBL/ENV/2711

Date: 02/03/2018

<b>ANALYSIS REPORT OF FLUE GAS</b>				
Name of the industry:		Ferro Alloys Plant - Joda. Tata Steel Ltd		
Date of Monitoring :		20.02.2018		
Date of Analysis :		22.02.2018		
Stack Connected		Reduction Arc Furnace - I & II		
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	64	71
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	16.0	17.2
3.	Concentration of Sulphur dioxide (mg/Nm <sup>3</sup> )	USEPA Part 6 - 25/09/1996	164.5	150.4
4.	Concentration of Nitrogen dioxide (mg/Nm <sup>3</sup> )	USEPA Part 7, Issue dt. 12/03/1996	130.7	109.6
5.	Concentration of particulate Matters (mg/Nm <sup>3</sup> )	USEPA Part 5 - 16/08/1996	53	33

Checked by:-



For Mitra S. K. Private Limited

Authorised Signatory

# Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6  
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815, 94370 09820, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No. BBL/ENV/0007

Date: 02/04/2018

<b>ANALYSIS REPORT OF FLUE GAS</b>				
<b>Name of the industry:</b>		Ferro Alloys Plant - Joda. Tata Steel Ltd		
<b>Date of Monitoring :</b>		23.03.2018		
<b>Date of Analysis :</b>		26.03.2018		
<b>Stack Connected</b>		Reduction Arc Furnace - I & II		
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	58	64
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	16.27	16.89
3.	Concentration of Sulphur dioxide (mg/Nm <sup>3</sup> )	USEPA Part 6 - 25/09/1996	67.9	64.4
4.	Concentration of Nitrogen dioxide (mg/Nm <sup>3</sup> )	USEPA Part 7, Issue dt. 12/03/1996	136.5	128.6
5.	Concentration of particulate Matters (mg/Nm <sup>3</sup> )	USEPA Part 5 - 16/08/1996	20	17

Checked by:-

For Mitra S. K. Private Limited

Authorised Signatory



### Annexure-III



Mobile High Velocity Water Sprinkler cum Mist Canon



Dry Fogging System for Fugitive dust suppression

## **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**

Mitra S. K. Private Limited

A/P.O. BARBIL Ward No-6  
Dist. Keonjhar, Odisha - 758035  
CIN: U51909WB1956PTC023037

T : +91 94370 09815, 94370 09820, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2477

DATE: 02/11/2017

**CERTIFICATE OF ANALYSIS**

This is to certify that a sample of "Ground Water Level Monitoring" reading taken by our representative at M/s. FAP Joda Plant; P.O: Joda, Dist: Keonjhar, Odisha, in the Presence of a representative of and on account of M/s.Tata Steel Ltd.,has been analysed with the following results:-

Date of Monitoring	Location	Water Level (Below Ground level, in mtrs)
11.10.2017	Bore Well at Canteen	4.5
11.10.2017	Bore Well at Furnace	3.7

Checked by:-



For Mitra S. K. Private Limited

Authorised Signatory

H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700 016, West Bengal, India  
T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com



Mitra S. K. Private Limited

ATP O: BARBIL Ward No-5  
Dist: Keonjhar, Odisha 758035  
CIN: U51909WB1955PTC023037

T: +91 9437009816, 9437009620, 9437076289  
E: barbil@mitrask.co.in  
W: www.mitrask.com



Ref. No. BBL/ENV/2476

DATE: 02/11/2017

**CERTIFICATE OF ANALYSIS**

This is to certify that a sample of "Ground Water" drawn by our representative on 11/10/2017 at M/s. FAP Joda Plant ; P.O: Joda, Dist: Keonjhar, Odisha in the Presence of a representative of and on account of M/s. Tata Steel Ltd., has been analyzed with the following results:-

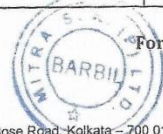
**MICROBIOLOGICAL ANALYSIS OF WATER AS PER IS: 10500 - 1991**

Sl No.	Test Parameters	Norms as per IS:10500-1991	Results
1	Total Coliform Organism MPN/100ml	10 (MAX)	<2
2	Faecal Coliforms	Absent	Absent
3	E. Coli	Absent	Absent

**CHEMICAL ANALYSIS OF WATER AS PER IS: 10500 - 1991**

Sl No.	Test Parameters	Norms as per IS: 10500-1991		Results
		Desirable Limit	Permissible Limit	
1	Colour (Hazen Unit)	5	25	<1.0
2	Odour	Unobjectionable	--	Unobjectionable
3	Taste	Agreeable	--	Agreeable
4	Turbidity in NTU	5	10	3
5	pH value (26°C)	6.5 - 8.5	No Relaxation	6.66
6	Total Hardness(as CaCO <sub>3</sub> ) in mg/l	300	600	133.3
7	Iron (as Fe) in mg/l	0.3	1	1.22
8	Chloride (as Cl) in mg/l	250	1000	37.99
9	Fluoride (as F) in mg/l	1	1.5	<0.1
10	Residual Free Chlorine in mg/l	0.2(Min.)	---	<0.1
11	Total Dissolved Solids in mg/l	500	2000	240
12	Calcium (as Ca) in mg/l	75	200	32.32
13	Magnesium (as Mg) in mg/l	30	100	12.6
14	Copper (asCu) in mg/l	0.05	1.5	<0.02
15	Manganese (as Mn) in mg/l	0.1	0.3	<0.02
16	Sulphate (as SO <sub>4</sub> ) in mg/l	200	400	22.68
17	Nitrate (as NO <sub>3</sub> ) in mg/l	45	100	6.49
18	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) in mg/l	0.001	0.002	<0.001
19	Mercury (as Hg) in mg/l	0.001	No Relaxation	<0.001
20	Cadmium (as Cd) in mg/l	0.01	No Relaxation	<0.001
21	Selenium (as Se) in mg/l	0.01	No Relaxation	<0.005
22	Arsenic (as As) in mg/l	0.05	No Relaxation	<0.01
23	Cyanide (as CN) in mg/l	0.05	No Relaxation	<0.01
24	Lead (as Pb) in mg/l	0.05	No Relaxation	<0.005
25	Zinc (as Zn) in mg/l	5	15	<0.02
26	Anionic Detergents (as MBAS) in mg/l	0.2	1	<0.02
27	Chromium (as Cr <sup>+6</sup> ) in mg/l	0.1	No Relaxation	<0.01
28	Mineral Oil	---	---	<0.01
29	Alkalinity (as CaCO <sub>3</sub> ) in mg/l	200	600	128.15
30	Aluminum (as Al) in mg/l	0.03	0.2	<0.01
31	Boron (as B) in mg/l	1	5	<0.5
32	PAH	---	---	<0.0001
33	Pesticide	---	---	<0.00001

SAMPLING LOCATION :- Bore well at Furnace



For Mitra S. K Private Limited

Checked by:-

Authorised Signatory

H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India  
T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com

# Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6  
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815, 94370 09820, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No. BBL/ENV/2480

Date: 02/11/2017

## CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water" drawn by our representative on 11/10/2017 at FAP Joda Plant ; P.O: Joda, Dist: Keonjhar, Odishain the Presence of a representative of and on account of M/s. Tata Steel Ltd., has been analyzed with the following results:-

Sl. No.	Test Parameters	Data Recorded from Current Analysis	Limit as per CPCB Inland Surface water
1	Colour (Hazen Unit)	<1.0	5
2	Odour	Unobjectionable	Unobjectionable
3	Suspended solids in mg/l	31.0	100
4	Particulate Size of Suspended solids mg/l	Passes through 850 µm IS Sieve	850 µm IS Sieve
5	pH (at 26°C)	6.72	5.5 - 9.0
6	Temperature °C	26.0	---
7	Oil & Grease in mg/l	<1.4	10
8	Total residual Chlorine in mg/l	<0.1	1.0
9	Ammonical Nitrogen (as N) in mg/l	<0.1	50
10	Total kjeldahl nitrogen (as N) in mg/l	<0.3	100
11	Free Ammonia (as NH <sub>3</sub> ) in mg/l	<0.1	5
12	BOD 3 days at 27 °C in mg/l	2.2	30
13	COD in mg/l	16.0	250
14	Arsenic (as As) in mg/l	<0.01	0.2
15	Mercury (as Hg) in mg/l	<0.001	0.01
16	Lead (as Pb) in mg/l	<0.005	0.1
17	Cadmium (as Cd) in mg/l	<0.001	2.0
18	Total Chromium (as Cr) in mg/l	<0.01	2.0
19	Hexavalent Chromium (as Cr <sup>6+</sup> ) in mg/l	<0.01	0.1
20	Copper (as Cu) in mg/l	<0.02	3.0
21	Zinc (as Zn) in mg/l	<0.02	5.0
22	Selenium (as Se) in mg/l	<0.005	0.05
23	Nickel (as Ni) in mg/l	<0.02	3.0
24	Cyanides (as CN) in mg/l	<0.01	0.2
25	Fluorides (as F) in mg/l	0.46	2.0
26	Dissolved Oxygen in mg/l	6.0	---
27	Dissolved phosphates (as PO <sub>4</sub> ) in mg/l	<0.05	5.0
28	Sulphide (as S) in mg/l	<0.1	2.0
29	Phenolic Compounds in mg/l	<0.001	1.0
30	Manganese (as Mn) in mg/l	0.38	2.0
31	Iron (as Fe) in mg/l	1.6	3.0
32	Vanadium (as V) in mg/l	<0.2	0.2
33	Nitrates (as NO <sub>3</sub> ) in mg/l	3.8	10.0
34	Bio-assay	All fish survival after 96 hours in 100% effluent	90% survival in 100% effluent

Sampling Location: - TW2-Test Well at Downstream of Sludge Pit

Checked by:-



For Mitra S. K. Private Limited

Authorised Signatory

# Mitra S. K. Private Limited

A/P.O.: BARBIL Ward No-6  
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815, 94370 09820, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No. BBL/ENV/2479

Date: 02/11/2017

## CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water" drawn by our representative on 11/10/2017 at **FAP Joda Plant**; P.O: Joda, Dist: Keonjhar, Odisha in the Presence of a representative of and on account of **M/s. Tata Steel Ltd.**, has been analyzed with the following results:-

Sl. No.	Test Parameters	Data Recorded from Current Analysis	Limit as per CPCB Inland Surface water
1	Colour (Hazen Unit)	<1.0	5
2	Odour	Unobjectionable	Unobjectionable
3	Suspended solids in mg/l	30.0	100
4	Particulate Size of Suspended solids mg/l	Passes through 850 µm IS Sieve	850 µm IS Sieve
5	pH (at 26°C)	6.57	5.5 - 9.0
6	Temperature °C	26.0	---
7	Oil & Grease in mg/l	<1.4	10
8	Total residual Chlorine in mg/l	<0.1	1.0
9	Ammonical Nitrogen (as N) in mg/l	<0.1	50
10	Total kjeldahl nitrogen (as N) in mg/l	<0.3	100
11	Free Ammonia (as NH <sub>3</sub> ) in mg/l	<0.1	5
12	BOD 3 days at 27 °C in mg/l	<2.0	30
13	COD in mg/l	8.0	250
14	Arsenic (as As) in mg/l	<0.01	0.2
15	Mercury (as Hg) in mg/l	<0.001	0.01
16	Lead (as Pb) in mg/l	<0.005	0.1
17	Cadmium (as Cd) in mg/l	<0.001	2.0
18	Total Chromium (as Cr) in mg/l	<0.01	2.0
19	Hexavalent Chromium (as Cr <sup>6+</sup> ) in mg/l	<0.01	0.1
20	Copper (as Cu) in mg/l	<0.02	3.0
21	Zinc (as Zn) in mg/l	0.06	5.0
22	Selenium (as Se) in mg/l	<0.005	0.05
23	Nickel (as Ni) in mg/l	<0.02	3.0
24	Cyanides (as CN) in mg/l	<0.01	0.2
25	Fluorides (as F) in mg/l	0.32	2.0
26	Dissolved Oxygen in mg/l	6.2	---
27	Dissolved phosphates (as PO <sub>4</sub> ) in mg/l	<0.05	5.0
28	Sulphide (as S) in mg/l	<0.1	2.0
29	Phenolic Compounds in mg/l	<0.001	1.0
30	Manganese (as Mn) in mg/l	0.42	2.0
31	Iron (as Fe) in mg/l	2.1	3.0
32	Vanadium (as V) in mg/l	<0.2	0.2
33	Nitrates (as NO <sub>3</sub> ) in mg/l	4.0	10.0
34	Bio-assay	All fish survival after 96 hours in 100% effluent	90% survival in 100% effluent

Sampling Location: - TW1-Test Well at Upstream of Sludge Pit

Checked by:-



For Mitra S. K. Private Limited

Authorised Signatory

# Mitra S. K. Private Limited

A/P.O.: BARBIL Ward No-6  
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815, 94370 09820, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No. BBL/ENV/2675

Date: 02/02/2018

## CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water" drawn by our representative on 25/01/2018 at FAP Joda Plant ; P.O: Joda, Dist: Keonjhar, Odisha in the Presence of a representative of and on account of M/s. Tata Steel Ltd., has been analyzed with the following results:-

Sl. No.	Test Parameters	Data Recorded from Current Analysis	Limit as per CPCB Inland Surface water
1	Colour (Hazen Unit)	<1.0	5
2	Odour	Unobjectionable	Unobjectionable
3	Suspended solids in mg/l	29.0	100
4	Particulate Size of Suspended solids mg/l	Passes through 850 µm IS Sieve	850 µm IS Sieve
5	pH (at 26°C)	6.96	5.5 - 9.0
6	Temperature °C	25.0	---
7	Oil & Grease in mg/l	<1.4	10
8	Total residual Chlorine in mg/l	<0.1	1.0
9	Ammonical Nitrogen (as N) in mg/l	<0.1	50
10	Total kjeldahl nitrogen (as N) in mg/l	<0.3	100
11	Free Ammonia (as NH <sub>3</sub> ) in mg/l	<0.1	5
12	BOD 3 days at 27 °C in mg/l	<2.0	30
13	COD in mg/l	7.7	250
14	Arsenic (as As) in mg/l	<0.01	0.2
15	Mercury (as Hg) in mg/l	<0.001	0.01
16	Lead (as Pb) in mg/l	<0.005	0.1
17	Cadmium (as Cd) in mg/l	<0.001	2.0
18	Total Chromium (as Cr) in mg/l	<0.01	2.0
19	Hexavalent Chromium (as Cr <sup>6+</sup> ) in mg/l	<0.01	0.1
20	Copper (as Cu) in mg/l	<0.02	3.0
21	Zinc (as Zn) in mg/l	<0.02	5.0
22	Selenium (as Se) in mg/l	<0.005	0.05
23	Nickel (as Ni) in mg/l	<0.02	3.0
24	Cyanides (as CN) in mg/l	<0.01	0.2
25	Fluorides (as F) in mg/l	0.11	2.0
26	Dissolved Oxygen in mg/l	6.3	---
27	Dissolved phosphates (as PO <sub>4</sub> ) in mg/l	<0.05	5.0
28	Sulphide (as S) in mg/l	<0.1	2.0
29	Phenolic Compounds in mg/l	<0.001	1.0
30	Manganese (as Mn) in mg/l	<0.02	2.0
31	Iron (as Fe) in mg/l	2.7	3.0
32	Vanadium (as V) in mg/l	<0.2	0.2
33	Nitrates (as NO <sub>3</sub> ) in mg/l	<0.5	10.0
34	Bio-assay	All fish survival after 96 hours in 100% effluent	90% survival in 100% effluent

Sampling Location: - TW1-Test Well at Upstream of Sludge Pit

Checked by:-



For Mitra S. K. Private Limited

Authorised Signatory

# Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6  
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815, 94370 09820, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No. BBL/ENV/2676

Date: 02/02/2018

## CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water" drawn by our representative on 25/01/2018 at FAP Joda Plant ; P.O: Joda, Dist: Keonjhar, Odishain the Presence of a representative of and on account of M/s. Tata Steel Ltd., has been analyzed with the following results:-

Sl. No.	Test Parameters	Data Recorded from Current Analysis	Limit as per CPCB Inland Surface water
1	Colour (Hazen Unit)	<1.0	5
2	Odour	Unobjectionable	Unobjectionable
3	Suspended solids in mg/l	29.0	100
4	Particulate Size of Suspended solids mg/l	Passes through 850 µm IS Sieve	850 µm IS Sieve
5	pH (at 26°C)	7.14	5.5 - 9.0
6	Temperature °C	25.0	---
7	Oil & Grease in mg/l	<1.4	10
8	Total residual Chlorine in mg/l	<0.1	1.0
9	Ammonical Nitrogen (as N) in mg/l	<0.1	50
10	Total kjeldahl nitrogen (as N) in mg/l	<0.3	100
11	Free Ammonia (as NH <sub>3</sub> ) in mg/l	<0.1	5
12	BOD 3 days at 27 °C in mg/l	2.1	30
13	COD in mg/l	12.0	250
14	Arsenic (as As) in mg/l	<0.01	0.2
15	Mercury (as Hg) in mg/l	<0.001	0.01
16	Lead (as Pb) in mg/l	<0.005	0.1
17	Cadmium (as Cd) in mg/l	<0.001	2.0
18	Total Chromium (as Cr) in mg/l	<0.01	2.0
19	Hexavalent Chromium (as Cr <sup>6+</sup> ) in mg/l	<0.01	0.1
20	Copper (as Cu) in mg/l	<0.02	3.0
21	Zinc (as Zn) in mg/l	<0.02	5.0
22	Selenium (as Se) in mg/l	<0.005	0.05
23	Nickel (as Ni) in mg/l	<0.02	3.0
24	Cyanides (as CN) in mg/l	<0.01	0.2
25	Fluorides (as F) in mg/l	0.12	2.0
26	Dissolved Oxygen in mg/l	6.1	---
27	Dissolved phosphates (as PO <sub>4</sub> ) in mg/l	<0.05	5.0
28	Sulphide (as S) in mg/l	<0.1	2.0
29	Phenolic Compounds in mg/l	<0.001	1.0
30	Manganese (as Mn) in mg/l	<0.02	2.0
31	Iron (as Fe) in mg/l	2.9	3.0
32	Vanadium (as V) in mg/l	<0.2	0.2
33	Nitrates (as NO <sub>3</sub> ) in mg/l	<0.5	10.0
34	Bio-assay	All fish survival after 96 hours in 100% effluent	90% survival in 100% effluent

Sampling Location: - TW2-Test Well at Downstream of Sludge Pit

Checked by:



For Mitra S. K. Private Limited

Authorized Signatory

## Mitra S. K. Private Limited

AM/P.O. BARBIL Ward No-6  
Dist. Keonjhar, Odisha - 758035  
CIN: U51909WB1956PTC023037

T : +91 94370 09815, 94370 09820, 94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2674

DATE: 02/02/2018

### CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water Level Monitoring" reading taken by our representative at M/s. FAP Joda Plant; P.O: Joda, Dist: Keonjhar, Odisha, in the Presence of a representative of and on account of M/s.Tata Steel Ltd.,has been analysed with the following results:-

Date of Monitoring	Location	Water Level (Below Ground level, in mtrs)
25.01.2018	Bore Well at Canteen	6.2
25.01.2018	Bore Well at Furnace	5.4

Checked by:-




For Mitra S. K. Private Limited

Authorised Signatory

H. O.: Shracchi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700 016, West Bengal, India  
T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com

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

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



Ref. No. FAPJ/ 6251 /2016 Dated : 01.02.2016

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

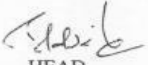
Sub : Submission of Risk & Disaster Management Plan along with the mitigation measures  
for expansion of Ferro Manganese Plant, Joda.

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*  
*24/2/16*



**TATA STEEL LIMITED**  
Ferro Alloys Plant, Joda-756034, 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

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



Ref. No. FAPJ/ 4250 /2016

Dated : 01.02.2016

To  
The Additional Principal Chief Conservator of Forests(C)  
Ministry of Environment & Forests  
Regional office (EZ)  
A/3, Chandersekharpur,  
Bhubaneswar - 751023

Sub : Submission of Risk & Disaster Management 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, Homi 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 01-10-2017 to 31-03-2018**

Mitra S. K. Private Limited

A/P.O.: BARBIL Ward No-6  
 Dist.: Keonjhar, Odisha - 758035  
 T : +91 94370 09815, 94370 09820, 94370 75269  
 E : barbil@mitrask.co.in  
 W : www.mitrask.com



Ref. No. BBL/ENV/2481

Date: 02/11/2017

**NOISE LEVEL MONITORING REPORT**

This is to certify that a sample of "Noise Level" reading taken by our representative on 12/10/2017 at **FAP Joda Plant**; P.O: Joda, Dist: Keonjhar, Odisha in the Presence of a representative of and on account of **M/s. Tata Steel Ltd.**, has been analyzed with the following results:-

SL. NO.	Sampling Location	Results dB (A)	
		Maximum	Minimum
1.	In front of Store	65.8	49.7
2.	JCB 40X 1 mtr distance	73.6	64.1
3.	Near Weight Bridge	74.3	54.2
4.	Loader 2 mtr distance	92.2	81.5
5.	Crusher Area	89.6	82.3
6.	Near Back Gate	72.4	43.1
7.	Breaking Yard(During Work)	69.5	52.2
8.	Plot No. 4B	64.8	46.5
9.	Area Furnace Ground Floor	91.2	62.4
10.	Area Furnace Floor	92.3	67.8
11.	Pit Site Area	59.7	47.9
12.	Near Cooling Tower	78.1	64.5
13.	Pump House (Inside)	94.2	86.8
14.	Telphar Floor	81.6	59.4
15.	GCP Floor(1mtr away from blower)	79.5	71.2
16.	ACS Area	74.6	66.4
17.	CMDS Area	78.4	73.5
18.	Office Area	60.6	40.7
19.	Quality Control Analysis Lab	58.2	42.8
20.	Laboratory Crusher Room(During Work)	67.9	63.2
21.	Canteen Kitchen	66.3	42.5
22.	Near Main Gate	71.4	47.2
23.	D.G. Room	80.2	66.3
24.	Locomotive During Operation	73.3	64.1
<b>Noise Standard For Auto Mobiles, Equipment's &amp; Work Zone</b>		<b>In dBA</b>	
i.	Passenger or commercial vehicles up to 4tonns	72.2	
ii.	Passenger or commercial vehicles above 4tonns and up to 12 tons	83.3	
iii.	Passenger or commercial vehicles exceeding 12tonns	84.1	
iv.	Work Zone Standard	78.4	

Checked by:



For Mitra S. K. Private Limited  
 Authorised Signatory

# Mitra S. K. Private Limited

At/P.O.:BARBIL Ward No-6  
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815,94370 09820,94370 75269  
E : barbil@mitrask.co.in  
W : www.mitrask.com



Ref. No.BBL/ENV/2344

Date: 02/08/2017

## **NOISE LEVEL MONITORING REPORT**

This is to certify that a sample of "Noise Level" reading taken by our representative on 25/07/2017 at **FAP Joda Plant**; P.O: Joda, Dist: Keonjhar, Odisha in the Presence of a representative of and on account of **M/s. Tata Steel Ltd.**, has been analyzed with the following results:-

SL. NO.	Sampling Location	Results dB (A)	
		Maximum	Minimum
1.	In front of Store	66.2	50.1
2.	JCB 40X 1 mtr distance	74.1	64.7
3.	Near Weight Bridge	73.8	53.6
4.	Loader 2 mtr distance	91.9	80.8
5.	Crusher Area	89.2	81.7
6.	Near Back Gate	72.8	43.6
7.	Breaking Yard(During Work)	68.9	53.3
8.	Plot No. 4B	65.1	45.9
9.	Area Furnace Ground Floor	90.6	62.8
10.	Area Furnace Floor	91.8	66.7
11.	Pit Site Area	58.6	47.2
12.	Near Cooling Tower	78.7	63.6
13.	Pump House (Inside)	93.9	85.7
14.	Telphar Floor	82.4	58.8
15.	GCP Floor(1mtr away from blower)	78.4	70.6
16.	ACS Area	73.7	65.9
17.	CMDS Area	77.8	74.1
18.	Office Area	61.5	41.2
19.	Quality Control Analysis Lab	59.4	43.2
20.	Laboratory Crusher Room(During Work)	68.8	62.8
21.	Canteen Kitchen	66.7	42.1
22.	Near Main Gate	72.3	48.1
23.	D.G. Room	79.4	67.2
24.	Locomotive During Operation	72.8	65.2
<b>Noise Standard For Auto Mobiles, Equipment's &amp; Work Zone</b>		<b>In dBA</b>	
i.	Passenger or commercial vehicles up to 4tonns	71.4	
ii.	Passenger or commercial vehicles above 4tonns and up to 12 tons	82.8	
iii.	Passenger or commercial vehicles exceeding 12tonns	83.7	
iv.	Work Zone Standard	79.3	

Checked by:-

For Mitra S. K. Private Limited



Authorised Signatory

# Annexure IX

## Periodic Medical Examination Records

**Form No.31-A, Health Record (Pre-employment/Periodical, Prescribed under Rule 62-J)**

Date : 05/12/17.

Sl. No. 435

170/2/1007/18

Dt. 26/02/18

1. Name of the factory : P A P.

2. Name of the employee : Gagari birhar Garboyak

3. Employee Distinguishing No : 2180

4. Age of the employee : 26 yrs.

Identification Mark : 4 3/1007 Rt. Mark.

Nature of the Job : Driver

5. Date of Employment : .

6. Length of the service in years : .

7. General Survey : .

Health : Good / Fair / Poor

Height (Cms) : 171

Weight (Kg) : 61

8. Blood Group : O +ve

9. Eye Vision : Normal / Abnormal

Use of Glass : Yes / (No)

10. Hearing : Normal / Abnormal

11. Respiratory System and Chest Measurement :  
 Inspiration : 97.  
 Expiration : 92  
 Respiration Rate : 18  
 Remarks, if any :

12. Cardio Vascular System :  
 Pulse Rate : 72/1.  
 B.P. : 110/80  
 Heart Sound : S1 S2 (N)  
 Remarks, if any :

13. Abdomen Tenderness : Yes / (No)

14. Nervous System : Yes / (No)

History of Fits :  
 Epilepsy : Yes / (No)

Remarks on Mental Health

15. Locomotor System : Normal / Abnormal

16. Skin Condition : Normal / Abnormal

Remarks on any skin Disease Noticed :

17. Hernias : Present / Absent

18. Hydrocele : Present / Absent

19. Present Complain, if any :  
 Heart disease : NH  
 Hypertension : NH  
 Diabetes : (R) 89  
 T.B. :  
 Epilepsy :  
 Poisoning : NH  
 Others :  
 Occupational disease, if any : No

20. Summary of findings :  
 Heart disease : NH  
 Hypertension : NH  
 Diabetes : (R) 89  
 T.B. :  
 Epilepsy :  
 Poisoning : NH  
 Others :  
 Occupational disease, if any : No

21. Recommendation, if any for any further investigation

Signature of the Employee

Signature of the Medical Officer

## 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  
Environmental  
clearance*

*Rh  
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 ( 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  
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/ 4135 /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

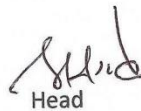
### **TATA STEEL LIMITED**

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

## Annexure XI

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

Details of CSR funds allocated and released Expenditure against CSR Activities				
Period	Year wise expenditure Planning in (Rs Cr.)	Actual Expenditure for C.S.R in Rs Cr.	Name Of the CSR activities	Wheather Completed or Not
2011-12	26.00 Cr	26.07 Cr.	Health,Education,Livelihood,Rural Infastructure,Major Project:Keonjhar Bus stand	Completed
2012-13	21.00 Cr	21.17 Cr.	Health,Education,Livelihood,Rural Infastructure,Major Project:Construction of khandband Joribar Road	Completed
2013-14	15.00 Cr	15.21 Cr.	Health,Education,Livelihood,Rural Infastructure,Major Project:Road resurfacing inside Joda municipality	Completed
2014-15	24.00 Cr	24.98 Cr.	Health,Education,Livelihood,Rural Infastructure,Major Project:Municipalty Drinking water Project	Completed
2015-16	19.00 Cr	18.97 Cr	Health,Education,Livelihood,Rural Infastructure,Major Project:Kalyan Mandap at Joda	Completed
2016-17	18.86 Cr	13.20 Cr	Health,Education,Livelihood,Rural Infastructure,Major Project:Sona river bank protection near Women's college.	Completed
1017-18	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

  
Head

Ferro alloys Plant,Joda

**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. FAPJ/ 2781 /2017

Dated : 21/09/2017

The Member Secretary  
Odisha Pollution Control Board  
A/118, Nilakantha Nagar  
Bhubaneswar

Sub: Submission of Environmental Statement.

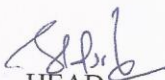
Sir,

We are submitting one set of Annual Environmental Statement in respect of M/s Ferro Manganese Plant, Joda for the year ending 31<sup>st</sup> March, 2017.

This is for your kind perusal.

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.

**TATA STEEL LTD.**  
Ferro Alloys & Minerals Division  
Ferro Manganese Plant, Joda  
Joda - 758034, Odisha, India  
Tel : 09238100945, e-mail - head.office@tatasteel.com  
Regd. Office : Bombay House, 24 Homi Mody Street, Mumbai - 400 001





## Annexure XIV

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



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



ନେଇ ସାଧାରଣରେ ତୃତୀ ଚାଲିଛି । ପଢ଼ନ୍ତୁର ପ୍ରଥମେ ବ୍ୟାପକ କରି ୧୫.୯  
 ଟିକେଟ୍ ହରାଇ ୧୩୯ ରନ୍ କରିଥିଲା ।

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

**TATA  
 TATA STEEL**

**ସର୍ବସାଧାରଣ ବିଜ୍ଞପ୍ତି**

ଭାରତ ସରକାରଙ୍କ ପରିବେଶ, ଜଙ୍ଗଲ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ମନ୍ତ୍ରାଳୟ (ଏମ୍ପିଆଇଏସ୍  
 ଆଣ୍ଡ୍ ସିସି), (ଆରଏ ଟିଭିଜନ), ନୂଆଦିଲ୍ଲୀ ପକ୍ଷରୁ ଜାରି କରାଯାଇଥିବା ବିଟି ସଂଖ୍ୟା  
 J-11011/03/2012-IA II(I), ତା ୫.୧୧.୨୦୧୫ତୀକ୍ଷ ଅନୁସାରେ ଓଡ଼ିଶାର  
 କେନ୍ଦୁଝର ଜିଲ୍ଲାର ଯୋଡ଼ାଠାରେ ଅବସ୍ଥିତ ଟାଟା ଷ୍ଟିଲ ଲିମିଟେଡ୍‌ର ଫେରୋ ଆଲୟେଜ୍  
 ପ୍ଲାଟ୍ ମନ୍ତ୍ରାଳୟ ଫେରୋ ମାଙ୍ଗାନିଜ୍ ରପ୍ତାନ ଅନୁମତି ବାସ୍ତିକ ୦.୦୫୦୪ ନିୟୁତ  
 ଟନରୁ ୦.୦୬ ଟନକୁ ବୃଦ୍ଧି ଓ ଏହାସହିତ ଯୋଡ଼ାଠାରେ ଥିବା ଫେରୋ ଆଲୟେଜ୍  
 ପ୍ଲାଟ୍‌ରେ ବାସ୍ତିକ ୦.୦୬ ନିୟୁତ ଟନ ଅନୁମତି ଓମ୍ପରୁ ସିଲିକୋ-ମାଙ୍ଗାନିଜ୍ ପ୍ଲାଟ୍ ଓ ବାସ୍ତିକ  
 ୦.୦୫ ନିୟୁତ ଟନ ଅନୁମତି ସମ୍ପନ୍ନ ମାଙ୍ଗାନିଜ୍ ସିଣ୍ଡର ପ୍ଲାଟ୍ ପାଇଁ ପରିବେଶ ମନ୍ତ୍ରାଳୟ  
 ପ୍ରମାଣ କରିଛନ୍ତି ।

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

ପଙ୍କଜ କୁମାର ସଚିକା,  
 ମହା ପ୍ରବନ୍ଧକ (ଅପରେସନ୍ସ)  
 ଏମ୍ପିଆଇଏସ୍, ଟାଟା ଷ୍ଟିଲ ଲିମିଟେଡ୍

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

\*\*\*\*\*