

HALF YEARLY COMPLIANCE REPORT

(Period from 01.04.2017 to 30.09.2017)

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- 05th 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/ 5277 /2017

Date: 25-12-2017

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

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 April'17 to Sept'17.

We are also sending you softcopy of the report to your good office on mail: 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

Ferro Manganese Plant

Encl: as above

Copy to MoEF, New Delhi

- " CPCB, Zonal Office Kolkata
- " OSPCB, Bhubaneswar
- " Regional office, Keonjhar

Ferro Alloys & Minerals Division
Ferro Alloys Plant, Joda - 758034, Orissa, India Tel: 09238100945,e-mail-head office a tatasteel.com Regd. Office: Bombay House, 24 Homi Mody Street, Mumbai - 400 001 Corporate Identity Number L27100MH1907PLC000260. Website: www.tatastecl.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 monitoring air emission and the reports are submitted on monthly basis to SPCB, Odisha.
 - Monitoring results for last six months i.e April'2017 to Sept'2017 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/Nm3 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.
 A 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 April'2017 to Sept'2017 is enclosed as Annexure-II.
- The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826 (
 E) dated 16th November, 2009 shall be followed.
 - 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 April'2017 to Sept'2017 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 30th 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 April'2017 to
 Sept'2017 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 ciruit 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 been carry 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 Plooution 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 1000 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 will be 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 prepa5red 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 April'2017 to Sept'2017 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 19th May, 1993 and 31st December1993 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. April'2017 to Sept'2017 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 December'2016 and 453 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.

• It will be followed.

- 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.

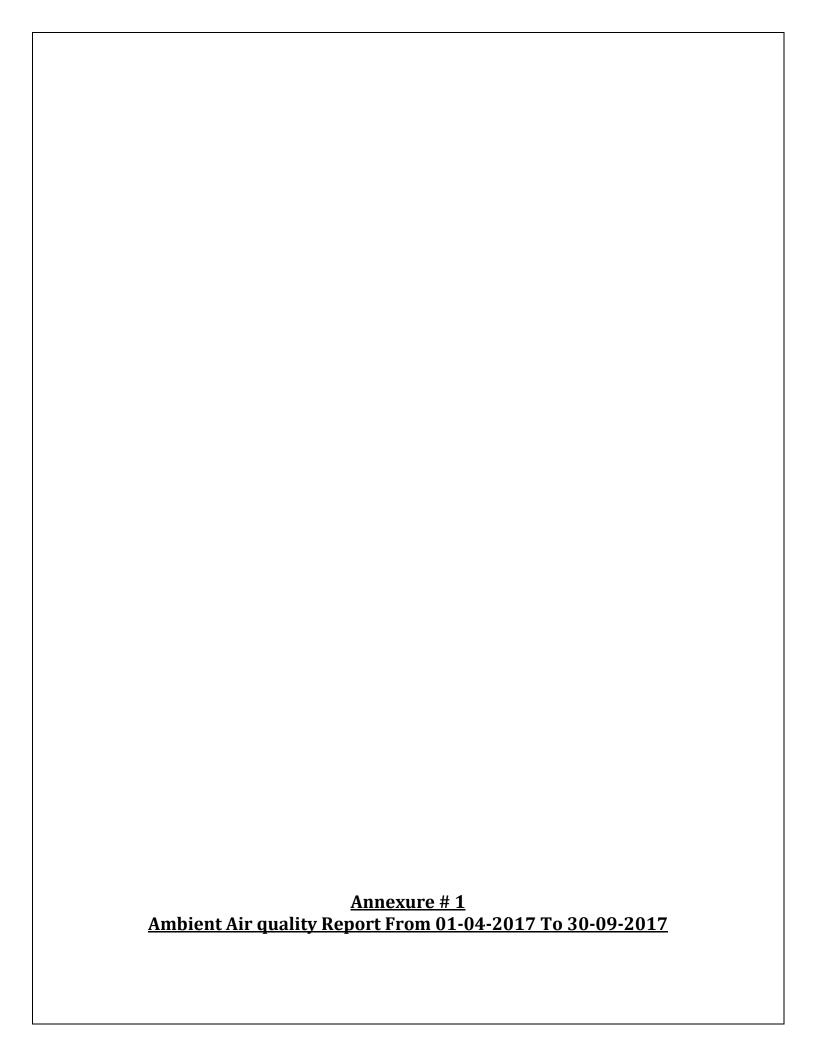
Status of compliance will be uploaded in the website along with the monitored data.It will be sent to regional office of MoEFCC at Bhubaneswar, SPCB, Bhubaneswar & regional office, Keonjhar.

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. Photgraph 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 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEFCC) at Bhubaneswar by e-mail.
 - The Environment statement in Form V was submitted for the year 2016-17 on 21st 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 clearance letter are available with the 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 with in seven days from the date of issue of the clearance letter, at least in two local newspapers 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 The Sambad Oriya newspaper of 13th November issue and in The Statesman English Newspaper of 12th November issue. Details of publication is given in 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.

FERRO MANGANESE PLANT





AMP O BARBIL Ward No-6 Dist Keorijhar, Odisha 758035 CIN-US1909WB1956PTC023037

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DATE: 02/05/2017

Ref. No.BBL/ENV/2083

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

ocal	tion:	OTE SCHER TATE	Area (Near Well Pull	-PJ		Cor	centration of Po	llutants					
SL.	Date of Monitoring	PM ₁₀ (μg/m³)	PM _{2,5} (µg/m ³)	$SO_{\chi}(\mu \mathbf{g}/m^3)$	NO ₂ (μg/m ²)	NH ₂ (μg/m³)	Ο ₃ (μg/m³)	CO (mg/m ³)	Pb (μg/m³)	Ni (ng/m³)	As (ng/m³)	Benzene (μg/m³)	Benzo(a) pyrene (ng/m³)
1	03/04.04.2017	69	39	5.9	20.8	<10.0	12.8	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.04.2017	58	31	5.5	18.8	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.04,2017	73	41	6.2	19.6	11.4	13.4	0.26	< 0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.04.2017	78	44	7.5	25.8	11.8	14.6	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
5	17/18.04,2017	75	42	6.2	23.6	12.2	13.8	0.27	<0.02	<4.0	<1.0	<2.08	<0,4
6	20/21.04.2017	59	33	5.8	19.3	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
7	24/25.04.2017	67	38	6.3	21.5	<10.0	<10.0	0.20	< 0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.04.2017	75	43	6.6	23.2	12.2	14.2	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	69.3	38.9	6.3	21.6	10.8	12.4	0.24	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New thi,18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	ampling and Analyxis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	ased on USEPA CFR	IS \$182 : 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 Reaft :2014

AMBIENT AIR QUALITY MONITORING REPORT

Checked by:

MSK TESTING INSPECTION

Mitra S. K. Private Limited

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AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/05/2017

BARBIL T Authorised Signator

Name of Client : Address : Location :

Ref. No.BBL/ENV/2084

TATA Steel Ltd. FAP Joda Plant Near Gate No-2

						Co	oncentration of P	Pollutants					
SL. No.	Date of Monitoring	PM ₁₀ (μg/m ³)	PM _{2.6} (μg/m ³)	SO ₂ (μg/m ³)	NO ₂ (µg/m ²)	NH ₃ (μg/m ⁸)	Ο ₃ (μg/m³)	CO (mg/m³)	Pb (μg/m³)	Ni (ng/m³)	As (ng/m³)	Benzene (µg/m³)	Benzo(a pyrene (ng/m²
1	03/04.04.2017	74	41	7.2	25.6	11.4	15,2	0.26	<0.02	5.2	<1.0	<2.08	< 0.4
2	06/07.04.2017	61	34	6.2	21.6	10.6	<10.0	0.20	< 0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.04.2017	69	39	6.6	22.6	<10.0	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.04.2017	73	41	6,6	23.5	11.2	<10.0	0.24	< 0.02	<4.0	<1.0	<2.08	<0.4
5	17/18.04.2017	78	43	7.3	25.2	10.6	18.4	0.27	< 0.02	<4,0	<1.0	<2.08	<0.4
6	20/21.04.2017	62	34	5.8	21.3	<10.0	<10.0	0.20	<0.02	<4.0	<1.0	<2.08	<0.4
7	24/25.04.2017	68	41	5.4	22.5	<10.0	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0,4
8	27/28.04.2017	79	44	7.5	26.4	12.6	15.6	0.28	<0.02	4.8	<1.0	<2.08	<0.4
	Avg. Monthly	70.5	39.6	6.7	23.6	10.8	12.4	0.24	0.02	4.2	1.0	2.08	0.4
Dell	Limit as per CPCB notification, New hi,18th Nov, 2009. for ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	mpling 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	2:2001	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-IO 3.2 - June,1 999	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 Reaf :2014



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AMBIENT AIR QUALITY MONITORING REPORT

)) MSK ESTING . INSPECTION

DATE: 02/05/2017

Rel No.BBL/ENV/2085 Name of Client:

TATA Steel Ltd. FAP Joda Plant

ess :					Conce	ntration of Pollu	tants	- I		As	Benzene	Benzo(a) pyrene
nou :				um tuntum ³)	NH- (ng/m³)	0,	00 (mg/m³)	Pb (µg/m³)	ii (ng/m³)	(ng/m³)	(μg/m³)	(ng/m ³)
Date of Monitoring	PM ₃₀ (μg/m ³)	PM _{2.5} (μg/m ³) S	O ₂ (μg/:m")	NO ₂ (pg/m)	MILISAPIS 7			-	c4.0	<1.0	<2.08	<0.4
	-	20	6.6	23.4	12.6	16.2	_	-		<1.0	<2.08	<0.4
03/04.04.2017	-		5.6	20.4	<10.0	<10.0	0.19		-	-10	<2.08	< 0.4
06/07.04.2017	61			21.8	<10.0	12.8	0.21		_		<2.08	<0.4
10/11.04.2017	65	36			11.4	13.4	0.23	< 0.02				<0.4
13/14.04,2017	68	38				16.4	0.27	< 0.02	<4.0			<0,4
	73	41	6.8			<10.0	0.18	< 0.02	<4.0	<1.0		
	50	28	5.4				0.22	< 0.02	<4.0	<1.0		<0.4
	-	35	5.8	22.3				< 0.02	<4.0	<1.0	<2.08	<0.4
24/25.04.2017		38	6.1	23.6	<10.0				4.1	1.0	2.08	0.4
27/28.04.2017	_		6.1	22.1	10.8	12.4	0.22	0.00				
Avg. Monthly	64.8	30.0				1000		1	20	6	5	1
Limit as per CPCB		60	80	80	400	180	-	. 5				
elhi, 18th Nov, 2009. for Ambient air quality Sampling and Analysis	or			-	Mathed of Air	Method of Air	16 5187 : Part			No.TPM/MSK/	IS:5182 (Part-	15:5182 (Part-12):
	is 185182: Part 23:2006	ased on USEPA CFR	2:2001	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	sampling, 3rd Edn. By James P. Lodge	sampling , 3rd Edn. By James P. Lodge	10:1999 (Reaff.2014) (NDIR)	EPA -103.2		on APHA 22nd Edition 2012, 3114 C	Reaff, 2012	2004 Reaf :2014
	Date of Monitoring 03/04.04.2017 06/07.04.2017 10/11.04.2017 13/14.04.2017 20/21.04.2017 24/25.04.2017 27/28.04.2017 Avg. Monthly Limit as per CPCB notification, New elbl. 18th Nov. 2009. f. Ambient air quality	Date of Monitoring PM _{3.0} (µg/m ³) 03/04.04.2017 70 06/07.04.2017 61 10/11.04.2017 65 13/14.04.2017 68 17/18.04.2017 73 20/21.04.2017 50 24/25.04.2017 67 Avg. Monthly 64.8 Limit as per CPCB notification, New elsh.18th New, 2009, for Ambient air quality Sampling and Analysis 15 5182: Part 23/2006	Date of Monitoring PM _{3.8} (µg/m²) PM _{2.6} (µg/m²) S 03/04.04.2017 70 39 06/07.04.2017 61 33 10/11.04.2017 65 36 13/14.04.2017 68 38 17/18.04.2017 73 41 20/21.04.2017 50 28 24/25.04.2017 64 35 27/28.04.2017 67 38 Avg. Monthly 64.8 36.0 Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil, 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil 18th New, 2.009, for Ambient air quality Limit as per CPCB notification. New ellil 18th New, 2.009, for Ambient air quality and 2.000 for Ambient	Date of Monitoring PM ₁₀ (µg/m²) PM _{2.5} (µg/m³) SO ₂ (µg/m²) 03/04.04.2017 70 39 6.6 06/07.04.2017 61 33 5.6 10/11.04.2017 65 36 6.1 13/14.04.2017 68 38 6.3 17/18.04.2017 73 41 6.8 20/21.04.2017 50 28 5.4 24/25.04.2017 64 35 5.8 27/28.04.2017 67 38 6.1 Avg. Monthly 64.8 36.0 6.1 Limit as per CPCB notification, New elbit.18th Nev, 2009, for Ambient air quality 100 60 80 Sampling and Analysis 15 5182: Part TPM/MSK/E//5/CB 128: 2184 23: 2006 23: 23: 2006 23: 23: 2006 23: 23: 2006 23: 23: 23: 23: 23: 23: 23: 23: 23: 23:	Date of Monitoring	Date of Monitoring PM ₃₆ (µg/m³) PM ₂₆ (µg/m³) SO ₂ (µg/m³) NO ₂ (µg/m²) NH ₃	Date of Monitoring PM ₃₆ (µg/m ²) PM ₂₅ (µg/m ³) SO ₂ (µg/m ³) NO ₂ (µg/m ³) NO ₂ (µg/m ³) NO ₃ (µg/m ³) NO ₄ (µg/m ³) O ₄ (µg/m ³) O ₄ (µg/m ³) O ₅ (µg/m ³) O ₆ (µg/m ³) O ₆ (µg/m ³) O ₆ (µg/m ³) O ₇ (µg/m ³) O ₈ (µg	Date of Monitoring PM ₃₆ (µg/m²) PM ₂₆ (µg/m²) SO ₂ (µg/m²) NO ₂ (µg/m²) NH ₃ (µg/m²) O ₆ O ₆ (µg/m²) O ₇ O ₈ O	Date of Monitoring PM _{3.6} (μg/m ²) PM _{2.5} (μg/m ²) SO ₂ (μg/m ²) NO ₂ (μg/m ²) NH ₃ (μg/m ²) O ₁ (μg/m ²) O ₂ (μg/m ²) O ₃ (μg/m ²) O ₄ (μg/m ²) O ₅ (μg/m ²) O ₆ (μg/m ²) O ₇ (μg/m ²) O ₇ (μg/m ²) O ₈ (μ	Date of Monitoring PM ₃₆ (µg/m³) PM ₂₅ (µg/m³) SO ₂ (µg/m³) NO ₂ (µg/m³) NO ₂ (µg/m³) NH ₃ (µg/m³) O ₆ O ₇ O ₇ O ₈	Date of Monitoring PM _{3.8} (µg/m³) PM _{3.8} (µg/m³) SO ₂ (µg/m³) SO ₂ (µg/m³) NU ₂ (µg/m³) NU ₂ (µg/m³) O ₁ (µg/m³) O ₂ (µg/m³) O ₃ (µg/m³) O ₄	Date of Monitoring PM _{3.6} (µg/m³) PM _{2.6} (µg/m³) SO ₂ (µg/m³) NO ₂ (µg/m³) NO ₂ (µg/m³) NI ₃ (µg/m³) NI ₆ (µg/m³) NI

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TING . INSPECTION

Mitra S. K. Private Limited

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DATE: 02/06/2017

(BARBII)

AMBIENT AIR QUALITY MONITORING REPORT

Ref. No.BBL/ENV/2140 Name of Client:

TATA Steel Ltd. FAP Joda Plant Near Main Gate

Concentration of Pollutants Benzo(a) Location: pyrene (ng/m³) Ni (ng/m³) CO (mg/m3) $(\mu g/m^3)$ (ng/m2) $NH_3 (\mu g/m^3)$ $(\mu g/m^3)$ $NO_2 (\mu g/m^3)$ Date of Monitoring $SO_2\{\mu g/m^3\}$ $PM_{2.5} (\mu g/m^3)$ $(\mu g/m^3)$ PM₁₀ (µg/m³) No <2.08 < 0.4 <1.0 0.16 < 0.02 <4.0 <10.0 <10.0 17.9 6.9 < 0.4 1 01/02.05.2017 70 <2.08 <4.0 0.23 < 0.02 15.2 20,2 10.2 6.3 33 65 <2.08 04/05/05/2017 <4.0 <1.0 < 0.02 <10.0 0.21 10.8 5.2 18.5 25 08/09.05.2017 50 <0.4 <1.0 3 < 0.02 <4.0 0.15 14.3 <10.0 27 4.6 16.3 11/12.05.2017 45 < 0.4 <2.08 <1.0 <4.0 4 0.13 < 0.02 11.6 16.9 15.2 41 20 5.1 < 0.4 < 2.08 15/16.05.2017 <1.0 <4.0 < 0.02 0.19 <1.0.0 14.7 11.3 5.4 38 < 0.4 18/19.05.2017 63 <2.08 <1.0 < 0.02 18.3 0.23 <10.0 4.3 20.3 23 43 <2.08 < 0.4 22/25.05.2017 <0.02 <4.0 <1.0 0.22 10.4 14.2 35 6.9 19.6 62 < 0.4 25/26.05.2017 < 2.08 <1.0 8 0.15 < 0.02 <4.0 <10.0 <10.0 18.7 32 6.5 60 0.4 9 29/30.05.2017 1.0 2.08 4.0 13.2 0.19 0.02 17.9 10.5 5.7 55.4 30.2 Avg. Monthly 1 5 6 Limit as per CPCB notification, New Delhi,18th Nov, 2009. for Ambient air quality 20 2 400 180 80 80 100 Lab Sop No.TPM/MSK /E/4/L Bassed on APHA 22nd Edition 2012, IS:5182 (Part-12): 2004 Reaff, Method of Air IS:5182 (Part-Method of Air 15 5182: Lab Sop No.
The MASK/E/5/CB | 15 5182 : Part | 15 5182 : Part | 2 :2001 | 6 :2006 |
CFR 40, Part 50 | (Reaff.2012) | (Reaff.2012) Lab Sop No Part-10:1999 EPA -103.2 EPA-103.2 - [NDIR] EPA-103.2 June, 1999 sampling, 3rd Edn. By James P. Lodge (Method-401) sampling, 3rd Edn. By James 11): 2006 Reaff, 2012 IS 5182: Part 23:2006 (Reaff. 2012) Sampling and Analysis done according to :2014 P. Lodge (Method-411) 3114 C

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DATE: 02/06/2017

Ref. No.BBL/ENV/2141

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client :	TATA Steel Ltd.
Name of Cheor .	FAP loda Plant
Address :	PAP Joda r tante
Lines and	Ora Stack Yard Area (Near Well Pump)

	Ore Stack Yard A	ea (Near Well Pump)			Conce	entration of Poll	utants					Benzo(a)
		6 -6-35	sn. (ug/m³)	NO ₂ (μg/m ³)	NH ₃ (μg/m ³)	O ₃	CO (mg/m ³)	Pb (μg/m³)	(i (ng/m³)	As (ng/m³)		pyrene (ng/m³)
Date of Monitoring	PM ₁₀ (μg/m')	РМ _{2.5} (µg/m)	ang (hay m.)			-	0.76	<0.02	<4.0	<1.0	<2.08	<0.4
04 402 DE 2017	73	40	6.5	22.7	<10.0			0.000	<4.0	<1.0	<2.08	< 0.4
		37	6.9	19.3	11.2	<10.0				<1.0	<2.08	<0.4
		30	5.3	16.5	10.3	11.2					<2.08	< 0.4
			4.6	14.7	<10.0	<10.0	0.25	7,440			<2.08	< 0.4
			4.3	14.1	10.9	12.3	0.24					< 0.4
15/16.05.2017				20.3	<10.0	<10.0	0.28	<0.02	-			<0.4
18/19.05.2017				16.5	12.3	<10.0	0.21	< 0.02				<0.4
22/25.05.2017	67				<10.0	12.9	0.16	< 0.02	<4.0			<0.4
25/26.05.2017	71				<10.0	<10.0	0.14	< 0.02	<4.0	<1.0		150.000
29/30.05.2017	76	42				10.7	0.22	0.02	4.0	1.0	2.08	0.4
Avg. Monthly	60.4	32.7	6.0	18.1	10.5	100						1
Limit as per CPCB notification, New	100	60	80	80	400	180	2	1	20	6	2	-
					areat of the	Method of Air				Lab Sop No.TPM/MSK/E/	15-5182 (Part	\$:5182 (Fart-12)
Sampling and Analysis done according to		40, Part 50	2:2001 (Reaff.2012)	6:2006	sampling, 3rd Edn. By James P. Lodge	sampling , 3rd Edn. By James P. Lodge	10:1999 (Reaff.2014)	EPA -103.2	EPA-103.2 - June,1999	4/L Bassed on APHA 22nd Edition 2012, 3114 C	11): 2006 Reaff, 2012	2004 Rea :2014
	Date of Monitoring 01/02.05.2017 04/05.05.2017 08/09.05.2017 11/12.05.2017 15/16.05.2017 18/19.05.2017 22/25.05.2017 25/26.05.2017 29/30.05.2017 Avg. Monthly Limit as per CPCB notification, New elhi, 18th Nov, 2009, for Ambient air quality Sampling and Analysis Sampling and Analysis	Date of Monitoring 01/02.05.2017 04/05.05.2017 08/09.05.2017 11/12.05.2017 15/16.05.2017 15/16.05.2017 18/19.05.2017 22/25.05.2017 25/26.05.2017 27/20.05.2017 Avg. Monthly Limit as per CPCB notification, New elhi, 18th Nov, 2009. for Ambient air quality Sampling and Analysis 55 182; Part 23.2006	Date of Monitoring PM ₁₀ (μg/m ³) PM _{3.5} (μg/m ³) 1 1 1 1 1 1 1 1 1	Date of Monitoring	Date of Monitoring PM ₁₀ (μg/m²) PM _{1.5} (μg/m²) SO ₂ (μg/m²) NO ₂	Date of Monitoring PM ₁₀ (μg/m³) PM _{2.5} (μg/m³) SO ₂ (μg/m³) NO ₂ (μg/m³) NH ₃ (μg/m³) NH	Date of Monitoring PM ₁₀ (μg/m²) PM _{2.5} (μg/m²) SO ₂ (μg/m²) NO ₂ (μg/m²) NH ₃ (μg/m²) NH ₃ (μg/m²) O ₃ (μg/m²) O ₄ (μg/m²) O ₄ (μg/m²) O ₅ (μg/m²) O ₄ (μg/m²) O ₅ (μg/m²) O ₅ (μg/m²) O ₆ (μg/m²) O ₇ (μg/m²) O ₈	Date of Monitoring PM ₁₁₀ (μg/m²) PM _{2.5} (μg/m²) SO ₂ (μg/m²) NO ₂ (μg/m²) NH ₃ (μg/m²) NH ₃ (μg/m²) O ₃ (μg/m²) O ₄ (μg/m²) O ₄ (μg/m²) O ₅ (μg/m²) O ₄ (μg/m²) O ₅ (μg/m²) O ₅ (μg/m²) O ₇ (μg/m²) O	Date of Monitoring	Pate of Monitoring PM ₁₁₁ (µg/m²) PM _{2.5} (µg/m²) SO ₂ (µg/m²) NO ₂ (µg/m²) NH ₃ (µg/m²) NH ₃ (µg/m²) O (mg/m²) PM _{2.6} (µg/m²) Ni (µg/m²) NH ₃ (Pate of Monitoring PM (µg/m²) PM (µg/m²) SO 2 (µg/m²) SO 2 (µg/m²) NO 2 (µg/m²) NH 1 (µg/m²) O (µg/m²) O (µg/m²) O (µg/m²) PP (µg/m²) Ni (µg/m²) As (µg/m²) O (µg/m²) PP (µg/m²) Ni (µg/m²) As (µg/m²) O (µg/m	Date of Monitoring PM PM PM PM PM SO Eqp(m²) NO Eqp(m²) NH Eqp(m²) O Eqp(m²) Eqp(m

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AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/06/2017

Ref. No.BBL/ENV/2142

TATA Steel Ltd. FAP Joda Plant Near Cate No-2

	155 -	FAP Joda Plant Near Gate No-2				Conce	ntration of Poll	utants					Benza(a)
SI.	Onte of Monitoring			iO ₂ (μg/m ³)	NO ₂ (μg/m³)	NH ₃ (μg/m ³)			Pb (μg/m³)	li (ng/m³)	As (ng/m³)	Benzene (μg/m³)	pyrene (ng/m³)
10.	Date of Monitoring	PM ₁₀ (μg/m ³)	PM _{2.5} (µg/m ³)	102 (14g) iii 7			-	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
	01/02.05.2017	60	34	8.1	26.2	<10.0	14.3		<0.02	<4.0	<1.0	<2.08	<0.4
1		72	39	7.5	25.3	<10.0	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.05.2017	65	31	5.2	21.6	<10.0	<10.0	0.16		<4.0	<1.0	<2.08	<0.4
3	08/09.05.2017		26	4.9	18.5	12.3	16.2	0.13	<0.02		<1.0	<2.08	<0.4
4	11/12.05.2017	52		4.4	16.3	11.2	19.6	0.09	< 0.02	<4.0		<2.08	<0.4
5	15/16.05.2017	45	21	5.1	20.5	10.6	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.05.2017	60	32		24.3	<10.0	12.5	0.23	< 0.02	<4.0	<1.0		<0.4
7	22/25.05.2017	65	37	6.2		12.6	<10.0	0.21	< 0.02	<4.0	<1.0	<2.08	0.00
8	25/26.05.2017	72	40	7.1	23.5		<10.0	0.29	< 0.02	<4.0	<1.0	<2.08	<0.4
9		63	36	5.6	20.3	<10.0		0.21	0.02	4.0	1.0	2.08	0.4
-	Avg. Monthly	61.6	32.9	6.0	21.8	10.7	12.5	0.21	-				-
-	Limit as per CPCB notification, New	100	60	80	80	400	180	2	1	20	6	5	1
D	elhi,18th Nov, 2009. for Ambient air quality	100				Method of Air	Method of Air	IS 5182 : Part			Lab Sop No.TPM/MSK	15:5182 (Part	IS:5382 (Part-12)
1	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaft 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	(Reaff.2012)	0:2000	sampling, 3rd Edn. By James	sampling, 3rd Edn. By James P. Lodge (Method-411)	10:1999 (Reaff.2014) (NDIR)	EPA -103.2	EPA-103.2 - June, 1999	/E/4/L Bassed on APHA 22nd Edition 2012, 3114 C	11): 2006 Reaff, 2012	2004 Beal :2014

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AMBIENT AIR QUALITY MONITORING REPORT Ref. No.BBL/ENV/2143

DATE: 02/06/2017

		FAP Joda Plant Near 132 KV					centration of Poll	utante					
SL.	Date of Monitoring	PM ₁₀ (μg/m ³)	PM _{2.5} (μg/m³)	SO ₂ (µg/m³)	NO ₂ (μg/m ³)	NH ₃ (µg/m ³)			Pb (μg/m³)	Ni (ng/m³)	As (ng/m³)	Benzene (μg/m³)	Benzo(a) pyrene (ng/m³)
					21.6	<10.0	14.7	0.26	<0.02	<4.0	<1.0	<2.08	< 0.4
1	01/02.05.2017	68	35	6.9		<10.0	15.2	0.13	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.05.2017	63	30	6.5	23.2		11.7	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.05.2017	57	28	5.1	20.5	11.3		0.25	<0.02	<4.0	<1.0	<2.08	< 0.4
4	11/12.05.2017	52	25	5,3	19.4	12.3	<10.0		<0.02	<4.0	<1.0	<2.08	< 0.4
5	15/16.05.2017	49	19	4.8	16.3	<10.0	12.6	0.19		<4.0	<1.0	<2.08	< 0.4
6	18/19.05.2017	54	29	5.6	14.5	<10.0	<10.0	0.23	<0.02		<1.0	<2.08	< 0.4
7	22/25.05.2017	63	37	6.3	21.5	11.9	<10.0	0.16	< 0.02	<4.0		<2.08	<0.4
_	25/26.05.2017	59	29	5.2	25.7	<10.0	<10.0	0.22	<0.02	<4.0	<1.0		<0.4
8		60	33	5.9	18.7	<10.0	13.7	0.17	< 0.02	<4.0	<1.0	<2.08	
9	29/30.05.2017	-	29.4	5.7	20.2	10.6	12.0	0.21	0.02	4.0	1.0	2.08	0.4
	Avg. Monthly Limit as per CPCB notification, New thi, 18th Nov., 2009. for	58.3	60	80	80	400	180	2	1	20	6	5	1
	Ambient air quality 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 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)		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	2004 Res :2014

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Ref. No.BBL/ENV/2263

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/07/2017

ocatio	on:	Near Main Gate				Co	ncentration of P	ollutants				w= = 1	
SL Na.	Date of Monitoring	PM ₁₀ (μg/m ³)	PM _{2.5} (μg/m ³)	SO ₂ (μg/m³)	NO ₂ (μg/m ³)	NH ₂ (μg/m ²)	Ο ₃ (μg/m³)	CO (mg/m³)	Pb (μg/m³)	Ni (ng/m²)	As (ng/m²)	Benzene (μg/m³)	Benzo(a) pyrene (ng/m³)
1	05/06.06.2017	78	40	4.7	26.4	18.2	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	< 0.4
2	08/09.06.2017	85	42	5.2	27.4	24.2	16.7	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
3	12/13.06.2017	81	41	4.9	28.3	19.4	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
4	15/16.06.2017	78	37	5.0	25.9	17.6	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	< 0.4
5	19/20.06.2017	48	26	4.8	21.2	13.4	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
6	22/23.06.2017	45	24	4.5	19.4	<10.0	<10.0	0.29	<0.02	<4.0	<1.0	<2.08	< 0.4
7	26/27.06.2017	42	23	4.4	18.2	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
а	29/30.06.2017	39	21	4.2	17.6	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	62.0	31.8	4.7	23.1	15.4	10.8	0.26	0.02	4.0	1.0	2.08	0.4
natif	Limit as per CPCB ication, New Delhi, 18th , 2009. for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	impling 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	2:2001	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	15:5182 (Part-12) 2004 Read :2014

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DATE: 02/07/2017

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client :

Ref. No.BBL/ENV/2264

TATA Steel Ltd.

ess :	FAP Joda Plant											
tion:	Ore Stack Yard	Area (Near Well Pun	ip)		Co	ncentration of Po	ollutants	3				
Date of Monitoring	PM ₁₀ (μg/m ³)	PM _{2.5} (μg/m³)	SO ₂ (μg/m ³)	NO ₂ (μg/m ³)	NH ₂ (μg/m ³)	Ο ₃ (μg/m³)	CO (mg/m³)	Pb (μg/m³)	Ni (ng/m³)	As (ng/m³)	Benzene (μg/m³)	Benzo(a) pyrene (ng/m³)
05/06.06.2017	92	47	5.6	24.1	18.7	<10.0	0.27	< 0.02	<4.0	<1.0	<2.08	<0.4
08/09.06.2017	94	50	5.4	27.1	26.4	<10.0	0.29	<0.02	<4.0	<1.0	<2.08	<0.4
12/13.06.2017	90	48	5.9	28.5	21.9	<10.0	0.33	< 0.02	<4.0	<1.0	<2.08	<0.4
15/16.06.2017	91	45	5.0	26.4	27.4	<10.0	0.31	< 0.02	<4.0	<1.0	<2.08	< 0.4
19/20.06.2017	56	30	4.8	23.2	16.5	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	< 0.4
22/23.06.2017	52	28	4.9	21.6	<10.0	<10.0	0.24	< 0.02	<4.0	<1.0	<2.08	<0.4
26/27.06.2017	49	26	4.6	19.8	<10.0	<10.0	0.22	< 0.02	<4.0	<1.0	<2.08	<0.4
29/30.06.2017	44	23	4.2	18.7	<10.0	<10.0	0.18	< 0.02	<4.0	<1.0	<2.08	<0.4
Avg. Monthly	71.0	37.1	5.1	23.7	17.6	10.0	0.26	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New lhi,18th Nov, 2009. for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
ampling 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	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 Real :2014
	Date of Monitoring 05/06.06.2017 08/09.06.2017 12/13.06.2017 15/16.06.2017 19/20.06.2017 22/23.06.2017 22/23.06.2017 29/30.06.2017 Avg. Monthly Limit as per CPCB motification, New bil, 18th Nov. 2009, for Ambient air quality ampling and Analysis	Date of Monitoring	Date of Monitoring	Date of Monitoring	Date of Monitoring	Date of Monitoring	Date of Monitoring PM ₁₈ (μg/m²) PM _{2.5} (μg/m²) SO ₂ (μg/m²) NO ₂ (μg/m²) NH ₃ (μg/m²) O ₄ (μg/m²) O ₅ (μg/m²) NO ₂ (μg/m²) NH ₃ (μg/m²) O ₄ (μg/m²) O ₆ (μg/m²) O ₇ (μg/m²) O ₈ (μg/m²) O	Date of Monitoring PM ₁₁ (μg/m²) PM _{2.5} (μg/m²) SO ₂ (μg/m²) NO ₂ (μg/m²) NH ₃ (μg/m²) O ₄ (μg/m²) O ₄ (μg/m²) O ₆	Date of Monitoring PM ₁₁ (μg/m ²) PM _{2.5} (μg/m ²) SO ₂ (μg/m ²) NO ₂ (μg/m ²) NH ₂ (μg/m ²) O ₄ (μg/m ²) PM _{2.5} (μg/m ²) O ₄ (μg/m ²) O ₄ (μg/m ²) O ₆	Date of Monitoring PM ₁₈ (μg/m²) PM _{2.5} (μg/m²) SO ₂ (μg/m²) SO ₂ (μg/m²) NO ₂ (μg/m²) NH ₃ (μg/m²) O ₁	Date of Monitoring PM1s (Hg/m²) PM2s (Hg/m²) SO2(Hg/m²) SO2(Hg/m²) NO2(Hg/m²) NH2(Hg/m²) CO (Mg/m²) CO (Mg/m²) PM1s (Hg/m²) NH2(Hg/m²) NH	Date of Monitoring PM11 (Mg/m²) PM2.5 (Mg/m³) SO2 (Mg/m³) SO2 (Mg/m³) NH2 (Mg/m²) NH2

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TATA Steel Ltd.

)) MSK

Ref. No.BBL/ENV/2265 Name of Client:

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/07/2017

	ess:	FAP Joda Plant Near Gate No-2											
						Co	ncentration of Po	llutants					
SI No.	Date of Monitoring	PM ₁₀ (μg/m³)	$PM_{2,5}\left(\mu g/m^3\right)$	SO ₂ (μg/m ³)	NO ₂ (μg/m ³)	NH ₂ (µg/m ³)	Ο ₃ (μg/m³)	CO (mg/m³)	Pb (μg/m³)	Ni (ng/m³)	As (ng/m ³)	Benzene (µg/m³)	Benzo(a) pyrene (ng/m³)
1	05/06.06.2017	92	47	5.7	24.3	23.7	<10.0	0.36	<0.02	<4.0	<1.0	<2.08	< 0.4
2	08/09.06.2017	85	44	6.8	28.1	25.7	18.4	0.43	<0.02	<4.0	<1.0	<2.08	<0.4
3	12/13.06.2017	95	50	5.7	27.1	21.3	<10.0	0.38	< 0.02	<4.0	<1.0	<2.08	<0.4
4	15/16.06.2017	91	47	5.9	26.5	21.8	<10.0	0.35	<0.02	<4.0	<1.0	<2.08	<0.4
5	19/20.06.2017	54	28	5,4	22.2	18.2	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	< 0.4
6	22/23.06.2017	51	26	5.2	21.6	16.2	<10.0	0.23	< 0.02	<4.0	<1.0	<2.08	< 0.4
7	26/27.06.2017	48	24	5.6	22.4	<10.0	<10.0	0.22	< 0.02	<4.0	<1.0	<2.08	<0.4
8	29/30.06.2017	46	23	5.1	20.6	<10.0	<10.0	0.19	< 0.02	<4.0	<1.0	<2.08	< 0.4
	Avg. Monthly	70.3	36.1	5.7	24.1	18.4	11.5	0.30	0.02	4.0	1.0	2.08	0.4
Del	Limit as per CPCB notification, New hi,18th Nov, 2009. for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	impling 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 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-I03.2 - 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 Reaf :2014

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For Mitra S. K. Private Limite (BARBIL) 5

AND D BARBIL Ward No.6 Dist. Keonihar, Odisha - 758036 CIN. US1809WB1950P1C023037

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AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/07/2017

ING . INSPECTION

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

Ref. No.BBL/ENV/2266

SL				_	_		Concentration of F	ollutants					
No.	Date of Monitoring	PM ₁₀ (μg/m°)	PM _{2.5} (μg/m ³)	SO ₂ (μg/m ³)	NO ₂ (μg/m³)	NH ₃ (μg/m ³)	Ο ₃ (μg/m ³)	CO (mg/m ³)	Pb (µg/m³)	Ni (ng/m³)	As (ng/m³)	Benzene (μg/m³)	Benzo(a) pyrene
1	05/06.06.2017	68	36	5.4	23.9	18.3	<10.0	0.29	<0.02	<4.0		0 1000000000000000000000000000000000000	(ng/m³)
2	08/09.06.2017	74	38	5.3	24.8	20.1	<10.0	0.31		-	<1.0	<2.08	<0.4
3	12/13.06.2017	82	43	5,6	27.5	23.3	<10.0		<0.02	<4.0	<1.0	<2.08	<0.4
4	15/16.06.2017	77	38	5.2	24.9			0.32	<0.02	<4.0	<1.0	<2.08	< 0.4
5	19/20.06,2017	46	24		-	<10.0	<10.0	0.28	< 0.02	<4.0	<1.0	<2.08	< 0.4
6	22/23.06.2017	41		4.8	19.6	<10.0	<10.0	0.22	< 0.02	<4.0	<1.0	<2.08	< 0.4
7			22	4.6	18.4	<10.0	<10.0	0.21	< 0.02	<4.0	<1.0	<2.08	< 0.4
-	26/27.06.2017	38	20	4.2	16.2	<10.0	<10.0	0.18	<0.02	<4.0	<1.0	<2.08	<0.4
8	29/30.06.2017	38	19	4.4	15.8	<10.0	<10.0	0.17	< 0.02	<4.0	<1.0	-	
	Avg. Monthly	58.0	30.0	4.9	21.4	13.0	12.0	0.25	0.02			<2.08	<0.4
De.lh	imit as per CPCB notification, New i,18th Nov, 2009, for nbient air quality	100	60	80	80	400	180	2	1	4.0	6	2.08	1
	empling and Analysis	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-I03.2 - 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

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Mitra S. K. Private Limited

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DATE: 02/08/2017

AMBIENT AIR QUALITY MONITORING REPORT

Ref. No.BBL/ENV/2329 Name of Client : Address : Location :

TATA Steel Ltd.

FAP Joda Plant Near Main Gate

on:	Near main Gate				Con	centration of Pol	lutants				900000000000000000000000000000000000000	Benzo(a)
Date of Monitoring	PM., (ug/m²)	PM·· (ug/m³)	SO ₂ (µg/m ³)	NO ₂ (μg/m ³)	NH ₂ (μg/m ³)	0 ₃	CO (mg/m³)	Pb (μg/m³)	Ni (ng/m³)	As (ng/m³)		pyrene (ng/m³)
	1 1110 (1487 III J		10.0	37.7		-			<4.0	<1.0	<2.08	<0.4
03/04.07.2017	52	27	4.5	25.2	<10.0					<1.0	<2.08	< 0.4
06/07.07.2017	58	31	5.9	27.8	<10.0	<10.0				<1.0	<2.08	<0.4
10/11.07.2017	64	35	6.2	29.6	14.7	11.7			_		<2.08	< 0.4
13/14.07.2017	48	25	4.9	21.4	<10.0	<10.0	0.19				<2.08	< 0.4
17/18 07 2017	53	28	4.8	23.7	21.5	<10.0	0.22	< 0.02	_			< 0.4
	1000	23	4.5	21.2	<10.0	<10.0	0.21	< 0.02				<0.4
	3.000	1000	44	18.6	<10.0	<10.0	0.18	<0.02	<4.0			<0.4
			5,000		12.3	<10.0	0.31	<0.02	<4.0			0.4
27/28.07.2017						10.2	0.25	0.02	4.0	1.0	2.08	0.4
The second secon	51.9	27.1	5.1	45.8	12.5							1
ication, New Delhi,18th , 2009. for Ambient air	100	60	80	80	400	180	2	1	20	6	5	
quality impling 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	2:2001	6:2006	Edn. By James	Method of Air sampling , 3rd Edn. By James P. Lodge (Method-411)	(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 G	11): 2006 Reaff, 2012	2004 Real :2014
	03/04.07.2017 06/07.07.2017 10/31.07.2017 13/34.07.2017 17/38.07.2017 20/21.07.2017 24/25.07.2017 24/25.07.2017 Avg. Monthly Limit as per CPCB (cation, New Delhi, 18th, 2009, for Ambient air quality umpling and Analysis	Date of Monitoring 03/04.07.2017 52 06/07.07.2017 58 10/11.07.2017 48 17/18.07.2017 48 17/18.07.2017 46 24/25.07.2017 35 27/28.07.2017 35 27/28.07.2017 59 Avg. Monthly Limit as per CPCB ication, New Delhi, 18th 2009, for Ambient air quality impling and Analysis impling and Analysis 15.5182: Part 23:2006	Date of Monitoring PM ₃₀ (μg/m²) PM _{2.5} (μg/m²) 03/04.07.2017 52 27 06/07.07.2017 58 31 10/11.07.2017 64 35 13/14.07.2017 48 25 17/18.07.2017 53 28 20/21.07.2017 46 23 24/25.07.2017 35 17 27/28.07.2017 59 31 Avg. Monthly 51.9 27.1 Limit as per CPCB cation, New Delhi,18th, 2009, for Ambient air quality 100 60 smpling and Analysis done according to (BRE, 2012) Reff. 2012) Reff. 2012 Reff. 2012 Reff. 2012 Reff. 2012 Reff. 2012	Date of Monitoring PM ₁₀ (μg/m²) PM _{2.5} (μg/m²) SO ₂ (μg/m²) 03/04.07.2017 52 27 4.5 06/07.07.2017 58 31 5.9 10/11.07.2017 64 35 6.2 13/14.07.2017 48 25 4.9 17/18.07.2017 53 28 4.8 20/21.07.2017 46 23 4.5 24/25.07.2017 35 17 4.4 27/28.07.2017 59 31 5.2 Avg. Monthly 51.9 27.1 5.1 Limit as per CPCB cation, New Delhi,18th, 2009, for Ambient air quality 100 60 80 umpling and Analysis done according to Reff. 2012 [Reff. 2012] Reff. 2012 [Reff. 2012] Reff. 2012 [Reff. 2012] Reff. 2012 [Reff. 2012]	Date of Monitoring PM ₁₀ (μg/m²) PM _{2.5} (μg/m²) SO _z (μg/m²) NO _z (μg/m³) 03/04.07.2017 52 27 4.5 25.2 06/07.07.2017 58 31 5.9 27.8 10/11.07.2017 64 35 6.2 29.6 13/14.07.2017 48 25 4.9 21.4 17/18.07.2017 53 28 4.8 23.7 20/21.07.2017 46 23 4.5 21.2 24/25.07.2017 35 17 4.4 18.6 27/28.07.2017 59 31 5.2 22.5 Avg. Monthly 51.9 27.1 5.1 23.8 Limit as per CPCB (cation, New Delhi,18th, 2009, for Ambient air quality 100 60 80 80 suppling and Analysis done according to (Reaff, 2012) Reaff, 2012) Reaff, 2012 Reaff, 2012 Reaff, 2012 Reaff, 2012	Date of Monitoring PM ₂₆ (μg/m³) PM _{2.5} (μg/m³) SO ₂ (μg/m³) NO ₂ (μg/m³) NH ₁ (μg/m³) 03/04.07.2017 52 27 4.5 25.2 <10.0	Date of Monitoring	Date of Monitoring	Date of Monitoring PM ₁₆ (μg/m²) PM _{2.5} (μg/m²) PM _{2.5} (μg/m²) PO _{2.6} (μg/m²) NO ₂ (μg/m²) NO ₂ (μg/m²) NO ₃ (μg/m²)	Date of Monitoring	Date of Monitoring	Date of Monitoring PM ₁₆ (µg/m²) PM ₂₅ (µg/m²)

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Ref. No.BBL/ENV/2330

DATE: 02/08/2017

AMBIENT AIR QUALITY MONITORING REPORT

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

ocal	tion:	Ore Stack Faro	Area [Near Well Pun	iip)		Co	ncentration of Po	ollutants					
SL. No.	Date of Monitoring	PM ₁₀ (μg/m ³)	PM _{2.5} (μg/m ³)	SO ₂ (µg/m ³)	NO ₂ (μg/m ³)	NH ₃ (μg/m³)	О ₃ (µg/m³)	CO (mg/m³)	Pb (μg/m³)	Ni (ng/m³)	As (ng/m³)	Benzene (μg/m³)	Benzo(a) pyrene (ng/m³)
1	03/04.07.2017	57	30	5.8	24.1	<10.0	<10.0	0.26	< 0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.07.2017	66	34	6.2	25.4	12.4	<10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.07.2017	71	38	6.9	27.8	15.2	<10.0	0.34	< 0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.07.2017	54	29	5.4	24.6	<10.0	<10.0	0.27	< 0.02	<4.0	<1.0	<2.08	< 0.4
5	17/18.07.2017	58	31	6.1	25.3	<10.0	<10.0	0.29	< 0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.07.2017	51	27	5.5	23.2	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	< 0.4
7	24/25.07.2017	46	24	4.8	19.4	<10.0	<10.0	0.19	< 0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.07.2017	56	30	4.5	23.9	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	57.4	30.4	5.7	24.2	10.9	10.0	0.27	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Ihi,18th Nov, 2009. for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	i
	nimpling 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		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 Reaf :2014

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Mitra S. K. Private Limited

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Ref. No.BBL/ENV/2331

Addı	e of Client : ress : tion :	TATA Steel L FAP Joda Pla Near Gate No	nt		AMBI	ENT AIR QUAL	ITY MONITORIN	G REPORT		DATE: 02/	08/2017		
5L	Date of Monitoring			1		_	Concentration of	Pollutants					
Na.	owe or someornig	РМ ₁₀ (µg/m ²	PM _{2.5} (µg/m ³)	SO ₂ (μg/m ³	NO ₂ (μg/m ³)	NH ₃ (μg/m ³)	0 ₁	CO (mg/m ³	Pb	Ni (ng/m²	As	Benzene	Benzo(
1	03/04.07.2017	61	33	6.2	25.6		(µg/m³)	-	(µg/m³]	w (ng/m	(ng/m ³)	(µg/m³)	pyrend (ng/m ³
2	06/07.07.2017	67	36	6.8		<10.0	<10.0	0.34	< 0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.07.2017	74	40	7.2	27,4	12.7	<10.0	0.38	< 0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.07.2017	59	32		28.3	16.4	<10.0	0.42	< 0.02	<4.0	<1.0	<2.08	
5	17/18.07.2017	66	35	5.8	25.8	<10.0	<10.0	0.31	<0.02	<4.0	<1.0		<0,4
6	20/21.07.2017			6.4	23,9	13.2	<10.0	0.36	< 0.02	<4.0		<2.08	<0.4
7	24/25.07.2017	58	31	5.5	23.2	<10.0	<10.0	0.25	<0.02		<1.0	<2.08	< 0.4
8		49	26	5.2	21.6	<10.0	<10.0	0,23		<4.0	<1.0	<2.08	<0.4
•	27/28.07.2017	63	34	5.6	24.8	<10.0	<10.0	1,0000	<0.02	<4.0	<1.0	<2.08	< 0.4
4	Avg. Monthly	62.1	33.4	6.1	25.1	11.5	-	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
n	imit as per CPCB otification, New					11.0	10.0	0.32	0.02	4.0	1.0	2.08	0.4
An An	,18th Nov, 2009. for ablent air quality	100	60	80	80	400	180	2	1	20	6	5	1
Samp	Imblent air quality mpling 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	2:2001	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,	IS:5182 (Part- 11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

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For Mitra S. K. Private Limited

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Ref. No.BBL/ENV/2332

TING . INSPECTION

Ade	ne of Client : lress ; ation :	TATA Steel I FAP Joda Pla Near 132 KV	nt		AME	BENT AIR QUA	LITY MONITORI	NG REPORT		DATE: 02	2/08/2017		
SL Mo.	Date of Monitoring						Concentration of	Pollutants					
190.		PM ₁₀ (µg/m	PM _{2.5} (µg/m ³)	SO ₂ (μg/m ³	NO ₂ (μg/m ³) NH ₃ (µg/m ³	03	CO (mg/m ³	Pb	1	As	Benzene	Benzo(
1	03/04.07.2017	54	28	5.2	23.2		(µg/m³)	or (mg/m	(μg/m ³)	Ni (ng/m	(ng/m³)	(μg/m³)	ругев
2	06/07.07.2017	61	32	5.8		<10.0	<10.0	0.26	< 0.02	<4.0	<1.0	.0.00	(ng/m
3	10/11.07.2017	66	35		24.6	13.2	<10.0	0.29	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.07.2017	52	27	6.2	25.5	15.6	<10.0	0.3	<0.02	<4.0	-	<2.08	< 0.4
5	17/18.07.2017	57		4.8	22.8	<10.0	<1.0.0	0.26	<0.02		<1.0	<2.08	< 0.4
6	20/21.07.2017		31	5.4	23.6	10.8	<10.0	0.28		<4.0	<1.0	<2.08	< 0.4
7		49	25	4.8	20.4	<10.0	<10.0		<0.02	<4.0	<1.0	<2.08	< 0.4
-	24/25.07.2017	43	22	4.4	19.8	<10.0		0.24	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.07.2017	50	26	4.8	22.2	<10.0	<10.0	0.22	< 0.02	<4.0	<1.0	<2.08	<0.4
1	Avg. Monthly	54.0	28.3	5.2	22,8	-	<10.0	0.24	< 0.02	<4.0	<1.0	<2.08	<0.4
n	mit as per CPCB otification, New				44,0	11.2	10.0	0.26	0.02	4.0	1.0	2.08	
elhi,	18th Nov. 2009. for	100	60	80	80	400	180	2	1	20	6	5	0.4
do	mbient air quality pling and Analysis one according to	(Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I., 2016	2:2001	t5 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,	IS:5182 (Part- 11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff :2014

ph: 82

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For Mitra S. K. Private Limited

TESTING INSPECTION

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Ref. No.BBL/ENV/2362

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/09/2017

me o	Chent:	FATA Steel Ltd. FAP Joda Plant				Cone	entration of Pol	utants					Benzo(a)
catio		Near Main Gate					03 (1		Pb μg/m³) N	(ng/m³)			pyrene (ng/m ³)
šL io.	Date of Monitoring	PM ₁₀ (μg/m ³)	PM _{2.5} (μg/m ³) S	O ₂ (μg/m³)	1O ₂ (μg/m³)	NH ₃ (μg/m ³)	(μg/m³)			<4.0	<1.0	<2.08	<0.4
ю.			-	5.8	23.4	12.6	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0,4
1	01/02.08.2017	58	30	4.8	19.2	<10.0	<10.0	0.20	<0.02	<4.0	<1.0	<2.08	< 0.4
2	04/05.08.2017	39	19		21.6	10.4	<10.0	0.23	<0.02		<1.0	<2.08	<0.4
3	07/08.08.2017	51	27	5.2	20,8	<10.0	<10.0	0.20	<0.02	<4.0	<1.0	<2.08	<0.4
4	10/11.08.2017	47	23	5.0		<10.0	<10.0	0.19	<0.02	<4.0		<2.08	<0.4
5	14/15.08.2017	42	21	4.8	19.4	<10.0	<10.0	0.18	<0.02	<4.0	<1.0	<2.08	<0.4
-	17/18.08.2017	36	17	4.5	18.6	-	<10.0	0.23	<0.02	<4.0	<1.0		<0.4
6		54	29	5.4	22,5	11.2	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
7	21/22.08.2017	38	18	4.6	19.2	<10.0		0.20	< 0.02	<4.0	<1.0	<2.08	
8	24/25.08.2017	44	21	4.8	21.2	<10.0	<10.0	0.21	0.02	4.0	1.0	2.08	0.4
9	28/29.08.2017	-	22.8	5.0	20.7	10.5	10.0	0.21			15	5	1
	Avg, Monthly	45.4	22.0				180	2	1	20	6		
no Ni	Limit as per CPCB dification, New Delhi, 181 ov, 2009, for Ambient al	h 100	60	80	80	400	180				Lab Sop		
-	quality Sampling and Analysis done according to	15 5182: Par	Lab Sop No. TPM/MSK/E/5/C ased on USEPA CFR 40, Part 50 Appendix L, 201:	(Reaff.201:	rt IS 5182 : Par 6 ;2006 2) (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,1959	EPA-103.2 - June,1999	No.TPM/MSK /E/4/L Bassed on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part 11): 2006 Reaff, 2012	12): 2004 Reaff, :201

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AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/09/2017

Ref. No.BBL/ENV/2363

dre	295 -	FAP Joda Plant	ea (Near Well Pump)			Conce	ntration of Polls	tants				Benzene	enzo(a) pyrenc
cat	ion:	Ore stack rure				((m ³)	O ₃ CO	(mg/m³)	Pb μg/m ⁸)	(ng/m³)	(ng/m ³)	(μg/m ³)	ng/m³)
il.	Date of Monitoring	PM ₁₀ (μg/m ³)	PM _{2.5} (μg/m ³) S	O ₂ (μg/m ³)	O ₂ (μg/m³) N	(H ₃ (μg/m ³)	(μg/m³)		-	<4.0	<1.0	<2.08	<0.4
io.		1000000			24.2	13.2	<10.0	0,28	<0.02	<4.0	<1.0	<2.08	<0.4
1	01/02.08.2017	64	34	6.2	19.8	<10.0	<10.0	0.24	<0.02		<1.0	<2.08	<0.4
2	04/05.08.2017	42	21	5.0		11.8	<10.0	0.26	<0.02	<4.0		<2.08	<0.4
-	07/08.08.2017	57	30	5.4	23.2		<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
3		51	26	5.2	22.4	10.8	<10.0	0.23	<0.02	<4.0	<1.0		<0.4
4	10/11.08.2017	-	19	4.8	20.3	<10.0		0,22	<0.02	<4.0	<1.0	<2.08	
5	14/15.08.2017	40	18	4.6	19.4	<10.0	<10.0		<0.02	<4.0	<1.0	<2.08	<0.4
6	17/18.08.2017	38		5.2	21.5	<10.0	<10.0	0.25	< 0.02	<4.0	<1.0	<2.08	<0.4
7	21/22.08.2017	49	26	5.6	22.3	11.4	<10.0	0.26		<4.0	<1.0	<2.08	<0.4
8	24/25.08.2017	54	28		22.8	12.2	<10.0	0.27	<0.02	10000	1.0	2.08	0.4
9	28/29.08.2017	56	29	5.8		11.0	10.0	0.25	0.02	4.0	4.00		
F	Avg. Monthly	50.1	25.7	5.3	21.8					20	6	5	1
H	Limit as per CPCB			80	80	400	180	2	1	-			-
١.	notification, New	100	60	80	1000	1000					Lab Sop No.TPM/MSK/E/	IS:5182 (Part	IS:5182
1	Delhi,18th Nov, 2009, for Ambient air quality					Method of Air	Method of Air	IS 5182 : Par	EPA -103.2	EPA-103.2 -	4/L Bassed on	11): 2006	(Part-12) 2004 Reaf
	Ambient air quality Sampling and Analysis	IS 5182: Part	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFF 40, Part 50		6:2006 (Reaff.2012	mann -y r	sampling, 3rd Edn. By James P. Lodge (Method-411)	(Reaff.2014 (NDIR)		June,1999	APHA 22nd Edition 2012, 3114 C	Reaff, 2012	:2014

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Ref. No. BBL/ENV/2364

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/09/2017

	of Chenc:	TATA Steel Ltd. FAP Joda Plant				Concer	ntration of Pollut	ants	-		As		enzo(a) syrene
	ian :	Near Gate No-2					0, 00	120	Pb [μg/m³)	i (ng/m³)	(ng/m³)	(μg/m³) (ng/m³)
L	Date of Monitoring	PM ₁₀ (μg/m³)	PM _{2.5} (μg/m ³) SO	2 (μg/m ³) N	O ₂ (μg/m ³)	tH ₃ (μg/m³)	(µg/m³)	(-11		5.2	<1.0	<2.08	<0.4
0.	Date of the	РМ10 (рБ/ш)		6.8	27.2	13.2	<10.0	0.32	<0.02	<4.0	<1.0	<2.08	<0.4
1	01/02.08.2017	67	35		22.4	<10.0	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.08.2017	48	25	5.4	25.5	12.4	<10.0	0.28	<0.02	-	<1.0	<2.08	< 0.4
3	07/08.08.2017	61	32	6.6		11.8	<10.0	0.27	<0.0Z	<4.0	<1.0	<2.08	<0.4
-	10/11.08.2017	57	31	5.8	23.3	<10.0	<10.0	0.25	<0.02	<4.0		<2.08	<0.4
4	12.0027	48	25	5.5	21.8	<10.0	<10.0	0.23	< 0.02	<4.0	<1.0	<2.08	<0.4
5		45	23	5.2	21.4	-	<10.0	0.24	< 0.02	<4.0	<1,0	<2.08	<0.4
6		56	24	5.8	22.2	11.4	<10.0	0.25	<0.02	4.8	<1.0	<2.08	<0.4
7		60	32	6.4	2.4.8	12.6	<10.0	0.28	< 0.02	<4.0	<1.0		0.4
В		64	34	6.7	26.5	12.8		0.26	0.02	4.0	1.0	2.08	0.1
9	28/29.08.2017	_	29.0	6.0	23.9	11.6	10.0	0.20				5	1
	Avg, Monthly	56.2	27.0			400	180	2	1	20	6		
	Limit as per CPGB notification, New Delhi 18th Nov. 2009. 1	100	60	80	80		-				Lab Sop No.TPM/MSK	15:5182 (Part-	
-	notification, New elhi, 18th Nov, 2009. for Ambient air quality Sampling and Analysis done according to	IS 5182: Part	ased on USEPA CFF	IS 5182 : Pau 2 :2001 [Reaff.2012	1	Method of Air sampling, 3rd Edn. By James P, Lodge (Method-401)	P, Lodge	(Reaff.2014 (NDIR)	EPA -1032	EPA-103.2 - June,1999	/E/4/L Bassed on APHA 22nd Edition 2012, 3114 C	11): 2006 Reaff, 2012	2004 Rea ;2014

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Ref. No.BBL/ENV/2365

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/09/2017

	ess:	TATA Steel Ltd. FAP Joda Plant				Conce	ntration of Pollut	ants			As		enzo(a) pyrene
cal	tion:	Near 132 KV					0, 0	-	Pb μg/m³) Ni	i (ng/m³)			ng/m³)
l. 0.	Date of Monitoring	PM ₁₀ (μg/m³)	PM _{2.5} (μg/m ³)	iO ₂ (μg/m ³) N	O ₂ (μg/m ²)	NH ₃ (μg/m ³)	(µg/m³)		<0.02	<4.0	<1.0	<2.08	<0.4
о.			32	6.1	25.4	10.8	<10.0	0.22		<4.0	<1.0	<2.08	<0.4
	01/02.08.2017	60		4.9	19.8	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2,08	<0.4
2	04/05.08.2017	41	22	5.8	23.2	10,4	<10.0	0.25	<0.02		<1.0	<2.08	<0.4
3	07/08.08.2017	54	28	-	21.3	<10.0	<10.0	0.20	<0.02	4.2	<1.0	<2.08	<0.4
4	10/11.08.2017	49	25	5.4		<10.0	<10.0	0.22	<0.02	<4.0		<2.08	<0.4
5	14/15.08.2017	44	23	5.2	19.6	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
6		38	19	4.8	19.8		<10.0	0.21	<0.02	<4.0	<1.0		<0.4
_	-	56	29	5.8	24.8	10.8	<10.0	0.22	< 0.02	<4.0	<1.0	<2.08	<0.4
7		40	20	4.7	20.4	<10.0		0.24	< 0.02	4.6	<1.0	<2.08	1000
8		47	24	5.6	22.2	<10.0	<10.0	0.22	0.0	4.1	1.0	2.08	0.4
5	28/29.08.2017		24.7	5.4	21.8	10.2	10.0	U.L.					1
	Avg. Monthly	47.7	24.7				180	2	1	20	6	5	
,	Limit as per CPCB notification, New Jeihi, 18th Nov. 2009.	for 100	60	80	80	400					Lab Sop No.TPM/MSK/	IS:5182 (Part-	(S:5182 (Part-12)
-	Ambient air quality Sampling and Analy done according to	is 5182: P	ased on USEPA CF	R 2:2001 (Reaff.2012)	IS 5182 : Par 6:2006 [Reaff.2012	Edition by Inc.	Method of Air sampling, 3rd Edn. By James P. Lodge (Method- 411)	15 5182 : Part 10 :1999 (Reaff.2014) (NDIR)	EPA -103.2	EPA-103.2 - June,1999	E/4/L Bassed on APHA 22nd Edition 2012, 3114 C	11): 2006 Reaff, 2012	2004 Reaf :2014

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Ref. No.BBL/ENV/2399

Name Addre Locati		TATA Steel FAP Joda Pl Near Main (ant		AME	HENT AIR QUA	LITY MONITOR	ING REPORT		DATE: 03/10	0/2017		
SI. No.	Date of Monitoring			1		_	Concentration	n of Pollutants					
rece,		PM ₁₀ (μg/m	³) PM _{2,5} (μg/m ³)	SO ₂ (μg/m ³	NO ₂ (μg/m ³	NH ₃ (μg/m ³	0,	CO (mg/m	Pb		As	1.	Benzo(a
1	04/05.09.2017	48	24	4.5	25.2		(µg/m³)	CO (mg/m) (µg/m ³)	Ni (ng/m²)	(ng/m ³)	Benzene (μg/m³)	pyrene
2	07/08.09.2017	54	28	5.9		<10.0	<10.0	0.23	< 0.02	<4.0	<1.0	<2.08	(ng/m ³)
3	11/12.09.2017	60	32	6.2	26.8	<10.0	<10.0	0.28	< 0.02	<4.0	<1.0	<2.08	<0.4
4	14/15.09.2017	44	22		27.6	14.7	11.7	0.29	<0.02	<4.0	<1.0		<0.4
5	18/19.09.2017	49		4.9	21,4	<10.0	<10.0	0.19	<0.02	<4.0		<2.08	<0.4
6	21/22.09.2017	-	25	4.8	23.7	21.5	<10.0	0.22			<1.0	<2.08	< 0.4
-		42	21	4.5	21.2	<10.0	<10.0		<0.02	<4.0	<1.0	<2.08	< 0.4
7	25/26.09,2017	35	17	4.4	18.6	<10.0	-	0.21	< 0.02	<4.0	<1.0	<2.08	< 0.4
8	28/29.09,2017	52	27	5.2	22.5	5.55.07	<10.0	0.18	< 0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	48.0	24.5	5.1		12.3	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	
Li otifica	mit as per CPCB tion, New Delhi, 18th			3.1	23.4	12.3	10.2	0.23	0.02	4.0	1.0	2.08	<0.4
Nov, 20	009. for Ambient air quality	100	60	80	80	400	180	2	1	20	6		0.4
a			Lab Sop No.									5	1
Samp	and daily to	(Reaff. 2012)	TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182 : Part 2 :2001 (Reaff.2012)	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,	IS:5182 (Part 11): 2006 Reaff, 2012	IS:5182 (Part 12): 2004 Reaff, :2014

ked by:

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Ref. No.BBL/ENV/2400

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 03/10/2017

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

St. No. Date of Monitoria		Corne well											
	Date of Monitoring	g par .	.1				Concentration	of Pollutants					
-		PM ₁₀ (µg/п	1 ³) PM _{2.5} (μg/m ³)	SO ₂ (µg/m	³) NO ₂ (μg/m	NH ₃ (μg/m ³	03	60.6	a. Pb	1			-
1	04/05.09.2017	54	29	5.8	24.1		(µg/m³)	CO (mg/m	(µg/m³	Ni (ng/m	As (ng/m ³)	Benzene (μg/m²)	Benzo
2	07/08.09.2017	63	34	6.2		<10.0	<10.0	0.26	< 0.02	<4.0	<1.0		(ng/m
3	11/12.09.2017	67	36		25,4	12.4	10.8	0.31	<0.02	<4.0		<2.08	<0.4
4	14/15.09.2017	51	28	6.9	27,8	15.2	<10.0	0.32	<0.02		<1.0	<2.08	<0.4
5	18/19.09.2017	55		5.4	24.6	<10.0	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0,4
6	21/22.09.2017	48	30	6.1	25.3	<10.0	<10.0	0.29	-	<4.0	<1.0	<2.08	< 0.4
7	25/26.09.2017		25	5.5	23.2	<10.0	<10.0		< 0.02	<4.0	<1.0	<2.08	<0.4
8	28/29.09.2017	44	22	4.8	19.4	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
+		52	27	4.5	23.9	<10.0		0.19	<0.02	<4.0	<1.0	<2.08	<0.4
Lit	Avg. Monthly nit as per CPCB	54.3	28,9	5.7	24.2	10.9	<10.0	0.23	< 0.02	<4.0	<1.0	<2.08	
no	tification, New		1			10.9	10.1	0.26	0.02	4.0	1.0	2.08	<0.4
Ami	8th Nov, 2009. for Hent air quality	100	60	80	80	400	180	2	1			2.08	0.4
20.00			Lab Sop No.						1	20	6	5	1
don	one according to	(Reaff. 2012)		2:2001	6:2006 (Reaff.2012)	P. Lodge	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,	IS:5182 (Part- 11): 2006 Reaff, 2012	I5:5182 (Part-12): 2004 Reaff,

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For Mitra S. K. Private Limited
Authorised Sernatory

Mitra S. K. Private Limited

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Ref. No.BBL/ENV/2401

BARBIL

Add	ne of Client : ress : tion :	FAP Joda Pi Near Gate N	lant		All	BIENT AIR QU	ALITY MONITO	RING REPORT	2	DATE: 03/	10/2017		
SI. No.	Date of Monitoring				_		Concentration	of Pollutants					
		PM ₁₀ (µg/n	n³) PM _{2.5} (μg/m³) SO ₂ (µg/m	NO ₂ (μg/π	1 ³) NH ₃ (µg/m			1	T			
1	04/05.09.2017	64	34	-	-	10-8/10	(µg/m³)	CO (mg/m	Pb (μg/m ³)	Ni (ng/m	As As	Benzene	
2	07/08.09.2017	72	38	6.1	26.3	<10.0	<10.0	0.31	<0.02		(ng/m³)	(µg/m³)	(ng/n
3	11/12.09.2017	75		6.9	27.2	13,3	<10.0	0.36	1000	<4.0	<1.0	<2.08	< 0.4
4	14/15.09.2017	61	40	7.4	27.8	15,4	<10.0		<0.02	<4.0	<1.0	<2.08	<0.4
5	18/19.09.2017		32	5.6	25.6	<10.0	<10.0	0.40	<0.02	<4.0	<1.0	<2.08	<0.4
6	21/22.09.2017	66	35	6.6	26.8	11.2		0.30	<0.02	<4.0	<1.0	<2.08	
-		57	31	5.7	24.5	<10.0	<10.0	0.33	< 0.02	<4.0	<1.0		<0.4
7	25/26.09.2017	52	27	5.4	23.7		<10.0	0.3	< 0.02	<4.0	<1.0	<2.08	<0,4
8	28/29.09.2017	62	33	6.2		<10.0	<10.0	0.24	<0.02	<4.0		<2.08	<0.4
	Avg. Monthly	63.6	33.8		25.3	<10.0	<10.0	0.31	<0.02		<1.0	<2.08	< 0.4
Lin	mit as per CPCB etification, New		20.0	6.2	25.9	11.2	10.0	0.31	0,02	<4.0	<1.0	<2.08	< 0.4
elhi,	18th Nov. 2009. for	100	60	80		0225		0.01	0.02	4.0	1.0	2.08	0.4
	blest air quality		Lab Sop No.		80	400	180	2	1	20	6	5	1
don	one according to	IS 5182: Part 23:2006 (Reaff. 2012)	TPM/MSK/E/5/CB ased on USEPA CFR	2:2001	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)	10:1999	EPA -103.2 June, 1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK /E/4/L Bassed on APHA 22nd Edition 2012.	IS:5182 (Part- 11): 2006 Reaff, 2012	



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Ref. No.BBL/ENV/2402



AMBIENT AIR QUALITY MONITORING REPORT

DATE: 03/10/2017

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

ate of Monitoring												
	PM _{to} (µg/m	2,				Concentration	of Pollutants	_				
	1 же (ну/п	1°) PM _{z,5} (µg/m ³	SO ₂ (μg/m	²] NO ₂ (μg/m	³) NH ₃ (μg/m	a) 0,		a. Pb	1			
	55	28	5.3	24.2	+	(µg/m³)	CO (mg/n		Ni (ng/n	1 ³) As (ng/m ³)		
07/08/09.2017	65	34	5.6	-		<10.0	0.24	<0.02	<4.0	-	(µg/m)	(ng/m
11/12.09.2017	68	36	_		11.8	<10.0	0.28	<0.02			<2.08	< 0.4
14/15.09.2017	54			25.8	14.2	<10.0	0.30			<1.0	<2.08	< 0.4
18/19.09.2017	59		_	23.6	<10.0	<10.0	-		<4.0	<1.0	<2.08	< 0.4
1/22.09.2017			5.5	24.8	<10.0	<10.0			<4.0	<1.0	<2.08	<0.4
5/26.09.2012			5.0	22.2	<10.0			<0.02	<4.0	<1.0	<2.08	<0.4
		23	4.6	20,3	<10.0			<0.02	<4.0	<1.0	<2.08	1
	54	28	4.9	23.2			0.21	<0.02	<4.0	<1.0		<0.4
	56.3	29.3	5.3	23.7		<10.0	0.23	< 0.02	<4.0			<0.4
ration, New				2007	10.8	10.0	0.25	0.02	4.0			<0.4
	100	60	80	80	400				7.0	1.0	2.08	0.4
				1000	700	180	2	1	20	6		
lone according to	S 5182: Part	Lab Sop No. TPM/MSK/E/5/CB	ISSION D		Method of Air	Mothert - c					5	1
	Reaff, 2012)	40, Part 50	2:2001	6:2006 (Reaff.2012)	Sampling, 3rd Edn. By James P. Lodge	sampling, 3rd Edn. By James P. Lodge (Method-	(Reaff.2014)	EPA -103.2	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/ E/4/L Bassed on APHA 22nd	11): 2006	IS:5182 (Part-12): 2004 Reaff
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4/15.09.2017 8/19.09.2017 8/19.09.2017 1/22.09.2017 1/26.09.2017 1/29.	7/08.09.2017 65 1/12.09.2017 68 4/15.09.2017 54 4/15.09.2017 59 1/22.09.2017 51 1/22.09.2017 54 1/22.09.2017 54 1/20.09.2017 54 1/20.09.2017 56.3 1/20.09.2017 100 100 101 101 102 103 103 104 105 105 105 105 105 106 107 107 108 108 108 108 108 108 108 108 108 108	7/08/09/2017 65 34 1/12/09/2017 68 36 1/12/09/2017 54 28 8/19/19/2017 59 31 1/22/09/2017 51 26 1/22/09/2017 54 28 1/22/09/2017 54 28 1/26/09/2017	7/08/09/2017 65 34 5.6 1/12/09/2017 68 36 6.0 1/12/09/2017 54 28 5.2 3/19/09/2017 59 31 5.5 1/22/09/2017 51 26 5.0 1/22/09/2017 54 23 4.6 1/29/09/2017 54 28 4.9 1/26/0	14/05.09.2017 55 28 5.3 24.2 7/08.09.2017 65 34 5.6 25.2 1/12.09.2017 68 36 6.0 25.8 4/15.09.2017 54 28 5.2 23.6 3/19.09.2017 59 31 5.5 24.8 1/22.09.2017 51 26 5.0 22.2 1/26.09.2017 44 23 4.6 20.3 2/2.09.2017 54 28 4.9 23.2 28. Monthly 56.3 29.3 5.3 23.7 28. Monthly 56.3 29.3 5.3 23.7 29.00 air quality 100 60 80 80 80 air quality 100 </td <td> 14/05.09.2017 55 28 5.3 24.2 <10.0 17/12.09.2017 65 34 5.6 25.2 11.8 17/12.09.2017 68 36 6.0 25.8 14.2 17/12.09.2017 54 28 5.2 23.6 <10.0 18/13.09.2017 59 31 5.5 24.8 <10.0 19/13.09.2017 51 26 5.0 22.2 <10.0 19/13.09.2017 44 23 4.6 20.3 <10.0 19/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 28 28 28 28 28 28 20/13.09.2017 54 28 28 28 28 28 28 28 2</td> <td> </td> <td> 14/05.09.2017 55 28 5.3 24.2 <10.0 <10.0 0.24 17/12.09.2017 65 34 5.6 25.2 11.8 <10.0 0.28 17/12.09.2017 68 36 6.0 25.8 14.2 <10.0 0.30 17/12.09.2017 54 28 5.2 23.6 <10.0 <10.0 0.24 17/12.09.2017 59 31 5.5 24.8 <10.0 <10.0 0.25 17/12.09.2017 51 26 5.0 22.2 <10.0 <10.0 0.25 17/12.09.2017 54 28 4.6 20.3 <10.0 <10.0 0.23 17/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.21 18/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.21 18/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.23 18/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.25 19/12.09.2017 54 28 28 28 28 28 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410.0 410.0 0.24 40.02 4.0 </td> <td> March Marc</td>	14/05.09.2017 55 28 5.3 24.2 <10.0 17/12.09.2017 65 34 5.6 25.2 11.8 17/12.09.2017 68 36 6.0 25.8 14.2 17/12.09.2017 54 28 5.2 23.6 <10.0 18/13.09.2017 59 31 5.5 24.8 <10.0 19/13.09.2017 51 26 5.0 22.2 <10.0 19/13.09.2017 44 23 4.6 20.3 <10.0 19/13.09.2017 54 28 4.9 23.2 <10.0 19/13.09.2017 54 28 4.9 23.2 <10.0 19/13.09.2017 54 28 4.9 23.2 <10.0 19/13.09.2017 54 28 4.9 23.2 <10.0 19/13.09.2017 54 28 4.9 23.2 <10.0 19/13.09.2017 54 28 4.9 23.2 <10.0 19/13.09.2017 54 28 4.9 23.2 <10.0 19/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 4.9 23.2 <10.0 20/13.09.2017 54 28 28 28 28 28 28 28 20/13.09.2017 54 28 28 28 28 28 28 28 2		14/05.09.2017 55 28 5.3 24.2 <10.0 <10.0 0.24 17/12.09.2017 65 34 5.6 25.2 11.8 <10.0 0.28 17/12.09.2017 68 36 6.0 25.8 14.2 <10.0 0.30 17/12.09.2017 54 28 5.2 23.6 <10.0 <10.0 0.24 17/12.09.2017 59 31 5.5 24.8 <10.0 <10.0 0.25 17/12.09.2017 51 26 5.0 22.2 <10.0 <10.0 0.25 17/12.09.2017 54 28 4.6 20.3 <10.0 <10.0 0.23 17/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.21 18/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.21 18/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.23 18/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.25 19/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.25 19/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.25 19/12.09.2017 54 28 4.9 23.2 <10.0 <10.0 0.25 19/12.09.2017 54 28 4.9 23.2 <10.0 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<10.0 <10.0 0.25 0.02 19/19/2017 54 28 4.9 23.2 <10.0 10.0 0.25 0.02 19/19/2017 54 28 4.9 23.2 <10.0 <10.0 0.25 0.02 19/19/2017 54 28 28 28 28 28 28 28 2	14/05.09.2017 55 28 5.3 24.2 <10.0 <10.0 0.24 <0.02 <4.0	14/05/09/2017 55 28 5.3 24.2 410.0 410.0 0.24 40.02 4.0	March Marc

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For Mitra S. R. Brivate Limited

Authorises signatory

Annexure-II

Stack Emission Monitoring Report from 01-04-2017 To 30-09-2017

Mitra S. K. Private Limited

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

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Ref. No. BBL/ENV/2097

DATE: 02/05/2017

	Ā	NALYSIS RE	PORT OF FLUE GAS	5	
Name o	of the industry:	Ferro Alloys	Plant – Joda. Tata Steel Ltd		
Date of	Monitoring :	08.04.2017			
Date of	Analysis :	09.04.2017			
Stack (Connected	Reduction A	arc Furnace – l & ll		
Sl.No.	Parame	eters	Method of Testing	Furnace - 1	Furnace - ll
1.	Temperature of emiss	sion (°C)	USEPA Part 2 - 25/09/1996	62	63
2.	Velocity of gas (m/se	:.)	USEPA Part 2 - 25/09/1996	14.64	14.89
3.	Concentration of Sulp (mg/Nm³)	hur dioxide	USEPA Part 6 - 25/09/1996	128.8	133.5
4.	Concentration of Nitr (mg/Nm³)	ogen dioxide	USEPA Part 7 , Issue dt. 12/03/1996	84.3	87.6
5.	Concentration of part (mg/Nm³)	iculate Matters	USEPA Part 5 - 16/08/1996	25	31

Checked by :

For Mitra S. K. Private Limited

Authorised Signatory

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

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Ref. No. BBL/ENV/2145

DATE:02/06/2017

	1	NALYSIS R	EPORT OF FLUE GAS	5			
Name	of the industry:	Ferro Allo	ys Plant – Joda. Tata Steel Ltd				
Date of	Monitoring :	29.05.2017					
Date of	Analysis :		30.05.2017				
	Connected	Reduction	n Arc Furnace – I & II				
SI.No.		neters	Method of Testing	Furnace - 1	Furnace - II		
1	Temperature of emi:	2201010	USEPA Part 2 -	67	70		

SI.No.	Parameters	Method of Testing	Furnace - 1	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	67	70
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	16.2	16.97
3.	Concentration of Sulphur dioxide (mg/Nm³)	USEPA Part 6 - 25/09/1996	109.7	119.3
4.	Concentration of Nitrogen dioxide (mg/Nm³)	USEPA Part 7 , Issue dt. 12/03/1996	75.6	81.2
5.	Concentration of particulate Matters (mg/Nm³)	USEPA Part 5 - 16/08/1996	27	33

Checked by:

cked by: Amante Leuman Rath

For Mitra S. K. Private Limited Authorised Signatory



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

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Ref. No. BBL/ENV/2271

DATE:02/07/2017

					2/07/2017
	A	NALYSIS R	EPORT OF FLUE GA	c	10 W 15A
	or the industry,	Ferro Alloy	s Plant - Joda. Tata Steel Ltd	3	
Date o	f Monitoring :	21.06.2017		•	
Date o	f Analysis :	23.06.2017			
Stack (Connected	200000000000000000000000000000000000000	Arc Furnace - 1 & II		
Sl.No.	Parame				
1.	Temperature of emiss	in- (00)	Method of Testing	Furnace - 1	Furnace - 1
2.			USEPA Part 2 - 25/09/1996	70	73
2000	Velocity of gas (m/sec		USEPA Part 2 - 25/09/1996	12.28	16.00
3,	Concentration of Sulph (mg/Nm³)	ur dioxide	USEPA Part 6 -	102.5	
4.	Concentration of Nitro (mg/Nm ³)	gen dioxide	25/09/1996 USEPA Part 7 , Issue dt.		121.3
5.	Concentration of partic (mg/Nm³)	ulate Matters	12/03/1996 USEPA Part 5 - 16/08/1996	71.4	84.6 36

Checked by:

For Mitra S. K. Private Amited

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Ref. No. BBL/ENV/2342

Name	-64	ANALYSIS I	REPORT OF FLUE GA	~	02/08/201
	of the industry:	Ferro Allo	ys Plant - Joda. Tata Steel Ltd	S	
	of Monitoring :	10.07.2017	, Journal of Steel Ltd	1	
Date o	f Analysis :	12.07.2017			
Stack	Connected				
SLNo.		Reduction	Arc Furnace - 1 & 11		
	raram		Mathod of m		
1.	Temperature of emiss	sion (°C)	Method of Testing	Furnace - 1	Furnace - 1
2.	Velocity of gas (m/sec	330-757	USEPA Part 2 - 25/09/1996	59	61
3.	Concentration of Sulpi		USEPA Part 2 - 25/09/1996	12.29	16.20
	(mg/Nm³)	iur dioxide	USEPA Part 6 -		10.20
4.	Concentration of Nitro	gen dioxide	25/09/1996	106.5	125.5
5.	(mg/Nm ³) Concentration of partic		USEPA Part 7 , Issue dt. 12/03/1996	85.6	91.7
	(mg/Nm³)	ulate Matters	USEPA Part 5 - 16/08/1996	33	37

For Mitra S. K. Private Kimited

Authorised Signatory



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Ref. No.BBL/ENV/2369



Date: 02/09/2017

	ANALYSIS REPORT OF FLUE GA	<u>s</u>	
Name of the industry:			
Date of Monitoring :	28.08.2017		
Date of Analysis :	30.08.2017		
Stack Connected	Reduction Arc Furnace - 1 & II	Furnace - 1	Furnace - Il

Stack Co	onnected	Reduction	Method of Testing	Furnace - 1	Furnace - II
Sl.No.	Parame	ters	USEPA Part 2 -	60	62
	Temperature of emis	sion (°C)	25/09/1996		15.87
1.			USEPA Part 2 -	15.80	15.07
2,	Velocity of gas (m/se	ec.)	25/09/1996 USEPA Part 6 -	86.2	97.6
3.	Concentration of Sul (mg/Nm³)		25/09/1996 USEPA Part 7 , Issue dt.	81.3	90.5
4.	(mg/Nm³) Concentration of Nit (mg/Nm³)		12/03/1996	35	32
5.	Concentration of pa (mg/Nm³)	rticulate Matters	16/08/1996		

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For Mitra S. K. Private Limited Authorised Signatory



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Ref. No.BBL/ENV/2407



Date: 03/10/2017

Name	of the last	ANALYS	S REPORT OF FLUE GA	C	
			s Plant - Joda. Tata Steel Ltd	5	
	f Monitoring :	25.09.2017	, and rate steel Ltd		
Date of	f Analysis :	27.09.2017			
Stack (Connected		Arc Furnace – I & II		
Sl.No.	Paran	neters			
-		2000	Method of Testing	Furnace - 1	15
1.	Temperature of em	ission (°C)	USEPA Part 2 -	- unace - I	Furnace - 1
2.	Velocity of gas (m/s		25/09/1996	63	71
	Conserved gas (m/s	sec.)	USEPA Part 2 - 25/09/1996	16.70	
3.	Concentration of Su (mg/Nm³)	lphur dioxide	USEPA Part 6 -	10.70	17.89
4.	Concentration of Nit	rogan diamit	25/09/1996	81.5	95.8
	(mg/ will)		USEPA Part 7, Issue dt.		23.0
 Concentration of part (mg/Nm3) 		ticulate Mattere	12/03/1996	77.2	89.3
	(mg/Nm³)	are mariets	USEPA Part 5 - 16/08/1996	33	

Checked by: 89

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

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

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Ref. No.BBL/ENV/2092

TESTING • INSPECTION

Date: 02/05/2017

CERTIFICATE OF ANALYSIS

This is to certify that a sample of "**Ground Water**" drawn by our representative on 12/04/2017 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
	Colour (Hazen Unit)	<1.0	5
1		Unobjectionable	Unobjectionable
2	Odour	13.3	100
3 4	Suspended solids in mg/l Particulate Size of Suspended solids mg/l	Passes through 850 µm IS Sieve	850 μm IS Sieve
_	pH (at 26°C)	6.63	5.5 - 9.0
5	Temperature °C	27.0	
7	Oil & Grease in mg/l	<1.4	10
	Total residual Chlorine in mg/l	<0.1	1.0
8	Ammonical Nitrogen (as N) in mg/l	<0.1	50
9	Total kjeldahl nitrogen (as N) in mg/l	<0.3	100
10		<0.1	5
11	Free Ammonia (as NH ₃) in mg/l BOD 3 days at 27 °C in mg/l	<2.0	30
12		<4.0	250
13	COD in mg/l	<0.01	0.2
14	Arsenic (as As) in mg/l	<0.001	0.01
15	Mercury (as Hg) in mg/l	<0.005	0.1
16	Lead (as Pb) in mg/l	<0.001	2.0
17	Cadmium (as Cd) in mg/l	<0.01	2.0
18	Total Chromium (as Cr) in mg/l	<0.01	0.1
19	Hexavalent Chromium (as Cr ⁶⁺) in mg/l	<0.02	3.0
20	Copper (as Cu) in mg/l	0.06	5.0
21	Zinc (as Zn) in mg/l	<0.005	0.05
22	Selenium (as Se) in mg/l	<0.003	3.0
23	Nickel (as Ni) in mg/l	<0.02	0.2
24	Cyanides (as CN) in mg/l	0.12	2.0
25	Fluorides (as F) in mg/l	6.2	
26	Dissolved Oxygen in mg/l	<0.05	5.0
27	Dissolved phosphates(as PO ₄) in mg/l	<0.1	2.0
28	Sulphide (as S) in mg/l	<0.001	1.0
29	Phenolic Compounds in mg/l	0.16	2.0
30	Manganese (as Mn) in mg/l	1.92	3.0
31	Iron (as Fe) in mg/l	<0.2	0.2
32	Vanadium (as V) in mg/l	<0.2	10.0
33	Nitrates (as NO ₃) in mg/l 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.A. Private Limited

Authorised Signatory

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DATE: 02/05/2017

Ref. No.BBL/ENV/2091 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)
12.04.2017	Bore Well at Canteen	6.7
12.04.2017	Bore Well at Furnace	7.1

Checked by:-

For Mitra S/R 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 0008 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: waw.mitrask.com

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Ref. No.BBL/ENV/2089

DATE: 02/05/2017

TESTING . INSPECTION

CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water" drawn by our representative on 12/04/2017 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

	MICROBIOLOGICAL ANALYSIS OF WAT	Norms as per IS:10500-1991	Results
Sl No.	Test Parameters	10 (MAX)	<2.0
1	Total Coliform Organism MPN/100ml	Absent	Absent
2	Faecal Coliforms	Absent	Absent
3	E. Coli	ADJER 10500 - 1991	

3				
0	E. Coli CHEMICAL ANALYSIS OF WATER AS PI	ER IS: 10500 - 1991		
		Norms as per	IS: 10500-1991	Results
il No.	Test Parameters	Desirable Limit	Permissible Limit 25	<1.0
1	Colour (Hazen Unit)	5		Unobjectionable
	Odour	Unobjectionable		Agreeable
	Taste	Agreeable	10	<1.0
	Turbidity in NTU	5	No Relaxation	7.52
	pH value (26 ⁰ C)	6.5 - 8.5		60.0
6	Total Hardness(as CaCO ₃) in mg/l	300	600	<0.05
7	Iron (as Fe) in mg/l	0.3	1 1000	8.2
8	Chloride (as Cl) in mg/l	250	1.5	<0.1
9	Fluoride (as F) in mg/l	1	1.5	<0.1
10	Residual Free Chlorine in mg/l	0.2(Min.)	2000	100
11	Total Dissolved Solids in mg/l	500	2000	16.2
12	Calcium (as Ca) in mg/l	75	100	2.74
13	Magnesium (as Mg) in mg/l	30	1.5	<0.02
14	Copper (asCu) in mg/l	0.05	0.3	<0.02
15	Manganese (as Mn) in mg/l	0.1	400	<1.0
16	Sulphate (as SO ₄) in mg/l	200		<0.4
17	Nitrate (as NO ₃) in mg/l	45	100	<0.001
18	Phenolic Compounds (as C_6H_5OH) in mg/l	0.001	0.002	<0.001
	Mercury (as Hg) in mg/l	0.001	No Relaxation	<0.001
19	Cadmium (as Cd) in mg/l	0.01	No Relaxation	<0.001
20	Selenium (as Se) in mg/l	0.01	No Relaxation	<0.01
21	Arsenic (as As) in mg/l	0.05	No Relaxation	<0.01
23	Cyanide (as CN) in mg/l	0.05	No Relaxation	<0.005
24	Lead (as Pb) in mg/l	0.05	No Relaxation	<0.02
	Zinc (as Zn) in mg/l	5	15	<0.02
25	Anionic Detergents (as MBAS) in mg/l	0.2	1	<0.02
26	Chromium (as Cr ⁺⁶) in mg/l	0.1	No Relaxation	
27	Mineral Oil mg/l			<0.01
28	Alkalinity (as CaCO ₃) in mg/l	200	600	28.32
29		0.03	0.2	<0.01
30		1	5	< 0.5
31	DOLOH (do b) III			<0.0001
	PAH mg/l			< 0.00001

SAMPLING LOCATION :- :- Bore well at Canteen

For Mitra S. K. Rrivate Limited

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

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Ref. No.BBL/ENV/2337



DATE: 02/08/2017

CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water" drawn by our representative on 28/07/2017 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

SI No.	Test Parameters	1771		
1		Norms as per IS:10500-1991	Results	
2	Total Coliform Organism MPN/100ml	10 (MAX)	<2.0	
2	Faecal Coliforms	Absent	Absent	
3	E. Coli	Absent		
	CHEMICAL ANALYSIS OF WATER AS DE	TIDUCITE	Absent	

	CHEMICAL ANALYSIS OF WATER AS PER IS: 10500 - 1991			
SI No.	Test Parameters		Norms as per IS: 10500-1991	
1		Desirable Limit	Permissible Limit	Results
2	Colour (Hazen Unit)	5	25	<1.0
3	Odour Taste	Unobjectionable		Unobjectionable
4		Agreeable		Agreeable
5	Turbidity in NTU	5	10	<1.0
	pH value (26 ⁰ C)	6.5 - 8.5	No Relaxation	6.55
6 7	Total Hardness(as CaCO ₃) in mg/l	300	600	64.0
8	Iron (as Fe) in mg/l	0.3	1	< 0.05
9	Chloride (as Cl) in mg/l	250	1000	16.4
10	Fluoride (as F) in mg/l	1	1.5	<0.1
11	Residual Free Chlorine in mg/l	0.2(Min.)		<0.1
12	Total Dissolved Solids in mg/l	500	2000	120
	Calcium (as Ca) in mg/l	75	200	12.2
13	Magnesium (as Mg) in mg/l	30	100	3.67
14	Copper (asCu) in mg/l	0.05	1.5	
15	Manganese (as Mn) in mg/l	0.1	0.3	<0.02
16	Sulphate (as SO ₄) in mg/l	200	400	<0.02
17	Nitrate (as NO ₃) in mg/l	45		<1.0
18	Phenolic Compounds (as C ₆ H ₅ OH) in mg/l	0.001	100	<0.4
19	Mercury (as Hg) in mg/l	0.001	0.002	< 0.001
20	Cadmium (as Cd) in mg/l	0.001	No Relaxation	< 0.001
21	Selenium (as Se) in mg/l	0.01	No Relaxation	< 0.001
	Arsenic (as As) in mg/l	0.05	No Relaxation	<0.005
23	Cyanide (as CN) in mg/l		No Relaxation	< 0.01
	Lead (as Pb) in mg/l	0.05	No Relaxation	< 0.01
	Zinc (as Zn) in mg/l	0.05	No Relaxation	< 0.005
	Anionic Detergents (as MBAS) in mg/l	5	15	0.14
27 (Chromium (as Cr ⁺⁶) in mg/l	0.2	1	< 0.02
	W. 100	0.1	No Relaxation	< 0.01
	Mineral Oil mg/l Alkalinity (as CaCO ₃) in mg/l			< 0.01
	11	200	600	35.8
-	6 70	0.03	0.2	<0.01
	31	1	5	<0.5
	8/ 1			<0.0001
	'esticide mg/l LOCATION :- :- Bore well at Furnace			<0.00001

SAMPLING LOCATION :- :- Bore well at Furnace

For Mitra S. K. Private Limited

Checked by:- (

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Authorised Signatory

Mitra S. K. Private Limited



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Ref. No.BBL/ENV/2338

DATE: 02/08/2017

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)	
28.07.2017	Bore Well at Canteen	4.4	
28.07.2017	Bore Well at Furnace	5.2	

Checked by:-



For Mitra S. K. Priyate 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

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Ref. No.BBL/ENV/2339

Date: 02/08/2017

CERTIFICATE OF ANALYSIS

This is to certify that a sample of "**Ground Water**" drawn by our representative on 28/07/2017 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.	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	22.7	100	
4	Particulate Size of Suspended solids mg/l	Passes through 850 μm IS Sieve	850 μm IS Sieve	
5	pH (at 26°C)	7.10	5.5 - 9.0	
6	Temperature ⁰ 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 ₃) in mg/l	<0.1	5	
12	BOD 3 days at 27 °C in mg/l	<2.0	30	
13	COD in mg/l	<4.0	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 Cr6+) 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	0.09	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	0.18	2.0	
26	Dissolved Oxygen in mg/l	6.4		
27	Dissolved phosphates(as PO ₄) 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	0.27	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 ₃) in mg/l	< 0.05	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

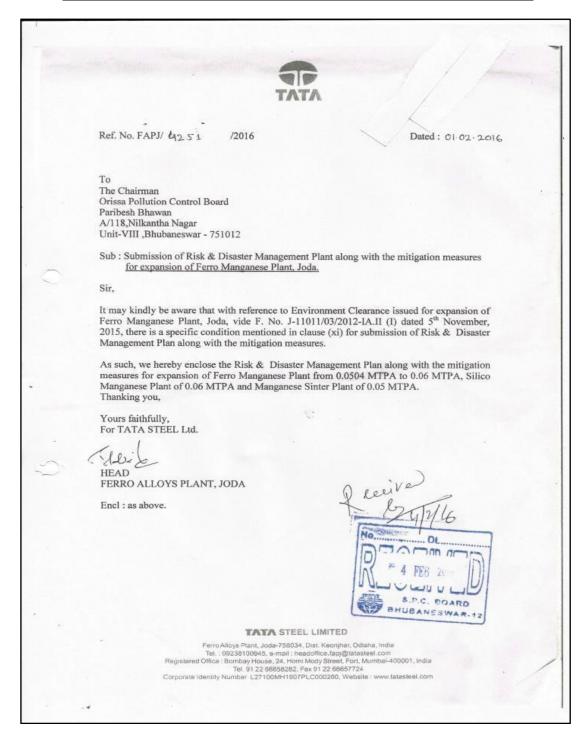
Authorised Signatory

H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkala – 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

BARBIL

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

Risk & Disaster Management Plan Submitted to OSCPCB, Bhubaneswar



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



Ref. No. FAPJ/ 4250

/2016

Dated: 01-02-2016

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

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

Sir,

It may kindly be aware that with reference to Environment Clearance issued for expansion of Ferro Manganese Plant, Joda, vide F. No. J-11011/03/2012-IA.II (I) dated 5th 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 01-10-2016 to 31-10-2017

Mitra S. K. Private Limited

At/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/2095



Date: 02/05/2017

NOISE LEVEL MONITORING REPORT

This is to certify that a sample of "Noise Level" reading taken by our representative on 14/04/2017 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:-

Santa analas		Results dB (A)		
SL. NO.	SL. NO. Sampling Location		Minimum	
1.	In front of Store	64.3	48.2	
2.	ICB 40X 1 mtr distance		63.2	
3.	Near Weight Bridge		52.1	
4.	Loader 2 mtr distance		82.4	
5.	Crusher Area	88.5	83.2	
6.	Near Back Gate	71.3	42.4	
7.	Breaking Yard(During Work)	73.2	51.2	
8.	Plot No. 4B	65.6	41.3	
9.	Area Furnace Ground Floor	91.8	61.2	
10.	Area Furnace Floor		68.2	
11.	Pit Site Area		50.1	
12.	Near Cooling Tower		63.8	
13.	Pump House (Inside)	95.2	87.5	
14.	Telphar Floor	80.2	58.9	
15.	GCP Floor(1mtr away from blower)	78.4	70.7	
16.	ACS Area	75.3	67.4	
17.	CMDS Area		75.2	
18.	Office Area	61.2	42.6	
19.	Quality Control Analysis Lab	60.1	45.3	
20.	Laboratory Crusher Room(During Work)		62.1	
21.	Canteen Kitchen	65.6	43.2	
22.	2. Near Main Gate		48.5	
23.	D.G. Room	79.4	63.4	
24	Locomotive During Operation	70.5	61.2	
Noise Sta	ndard For Auto Mobiles, Equipment's & Work Zone	In	dBA	
i.	Passenger or commercial vehicles up to 4tonns	7	71.3	
ii.	Passenger or commercial vehicles above 4tonns and up to 12 tons	8	82.1	
iii.	Passenger or commercial vehicles exceeding 12tonns	8	84.6	
iv.	Work Zone Standard	7	9.8	

Checked by:-

Mitra S. K. Private Limited

Authorised Signatory

Annexure IX

Periodic Medical Examination Records

	[FORM NO. 31-A Health Record
	(Pre-employement/ Periodical) [Prescribed under Rule 62-J]
Dat	e: Y/U/S Refun JC0/7/4/61/16
1.	Name of the Factory: Ferro Alloys Plant. Joda Tata steel
2.	Name of the employee: sakundala poutra
3.	Employee Distinguishing No: House Keeping
 4. 5. 	Age of the employee: 44 years Identification Mark: Black on ole top of sight eye Nature of the Job: Czvil Date of Employement: 03-02-2004
6.	Longth of the annies is the second of the se
7.	Length of the service in years: General Survey:
8.	Health: 147 Good / Fair / Poor Height: 147 Cms Weight: 19 Kg. Blood Group:
9.	Eye Vision : Normal / Abnormal Use of glass : Yes / No
10.	Hearing: Normal/ Abnormal
11.	Respiratory system and Chest Measurement : Inspiration:
	Respriration Rate:
	Remarks, if any
12.	Cardio Vascular System :
	Pulse rate: 70/mm B.P: 175/80
	Heart Sound: 1700 Remarks, if any
13.	Abdomen Tenderness: Yes /No
14.	
,	History of Fits: Yes /No Epilepsy: Yes /No Remarks on Mental Health
15.	
16.	Skin Condition : (Normal)/ Abnormal

17. Hearnias: Present / Absent 18. Hydrocele: Present / Absent 19. Present Complain, if any 20. Summery of findings: Heart disease : Wm Hypertension: MODE MO no zy Diabetes: T.B: S Epilespy No Poisoning: M Others m Occupational disease, if any 21. Recommendation, if any for any further investigation राके टाला ताप Signature of the Employee Signature of the Medical Officer FISCO HOSPITAL, JODA

Annexure X

Intimation Letter of EC to Zila Parishad



Ref: FAPJ/ **U136** /2015 Date: 9th Nov, 2015

To President Zilla Parisad Keonjhar

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

Dear Sir/ Madam,

We would like to inform you that Ministry of Environment Forests & Climate Change (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

Zilla Parishad

HEAD FERRO ALLOYS PLANT, JODA

Enclosed:

1. Xerox copy of Environmental Clearance

TATA STEEL LIMITED

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

Intimation Letter of EC to Chairman, Joda Municipalty



Ref: FAPJ/ **U135** /2015 Date: 9th Nov, 2015

To Chairman Joda Municipality Joda.

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

Dear Sir/ Madam,

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

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

Yours Faithfully F: Tata Steel Limited

M 42c

FERRO ALLOYS PLANT, JODA

Enclosed:

1. Xerox copy of Environmental Clearance

TATA STEEL LIMITED

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

Annexure XI

<u>Details of CSR funds allocated and released Expenditure against CSR</u> <u>Activities</u>

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
2010-11	8.50 Cr	8.40 Cr.	Health,Education,Livelihood,Rural Infastructure,Major Project:Road resurfacing inside Joda municipality from ransal ghati to Banspani	Completed
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

HEAD MANGANESE PLANT TATA STEET LTD

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/ \$781 /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 31st March, 2017. This is for your kind perusal.

Thanking you,

Yours faithfully,

For: TATA STEEL LTD.

FERRO MANGANESE PLANT,

JODA

enclosure.

Encl: as above.

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

TATA STEEL LTD.

Ferro Alloys & Minerals Division Ferro Managanese 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

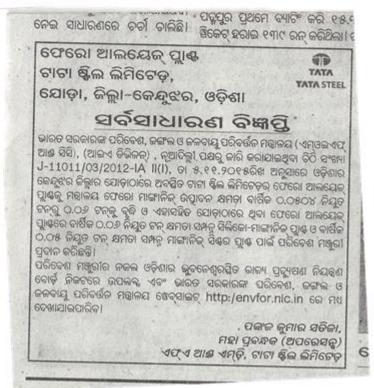
Details of Publication on the Newspapers





Published on The Statesman of 12th November 2015 Issue





Published on Sambad of 13th November 2015 Issue
