

**Rail Wheel Plant/Bela**  
(Ministry of Railways)  
Govt. of India



Office of the  
Chief Administrative Officer,  
Administrative Building,  
Village- Bela, Block- Dariapur,  
District- Saran(Chhapra), Bihar-841221

Date 01.04.2017

Following are the compliances to the conditions of Environmental Clearance granted by Ministry of Environment & Forest (MoEF/GOI) Govt. of India.(F.No J-11011/527/2010-IA-II (I))

Sl. no	SPECIFIC CONDITIONS	COMMENTS
<b>PART A - SPECIFIC CONDITIONS</b>		
i	The company shall install fume extraction system, wet scrubber and bag filters etc. to control the particulate emissions below 50 mg/Nm <sup>3</sup> .	RWP/Bela has installed Fume Extraction System (FES) with Bag House filter to control the particulate emission below 50 mg/Nm <sup>3</sup> .
ii	The National Ambient Air Quality Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 should be followed.	Service of CPCB approved agency is being taken for monitoring of Ambient Air quality.
iii	Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry vide G.S.R. 414(E) dated 30th May, 2008 and regularly monitored. Guidelines / Code of Practice issued by the CPCB should be followed.	RWP/Bela has installed fume extraction system, dust extraction system, dust suppression system and bag filters to control the gaseous as well as fugitive emissions from all the sources within the permissible limits issued by MoEF.  Service of CPCB approved agency is being taken for monitoring of Stack Emissions. Monthly report is being uploaded on website and half yearly report is being dispatched to BSPCB and regional office Bhubaneswar.
iv	The Company shall explore the feasibility of using producer gas as fuel in place of LPG.	RWP/Bela is a secondary steel manufacturing unit, where no by product is generated. Setting of producer gas plant requires more than 10 Acres additional space, which will reflect the project cost more due to additional land, plant and machinery requirements. Therefore setting-up of Producer gas plant is not viable solution. The use of LPG is most techno-economically & environment friendly

		option.
v	The total water requirement shall not exceed 250m <sup>3</sup> /day. Permission to draw ground water shall be obtained from the Competent Authority as may be applicable in this case. No effluent shall be discharged and 'zero' discharge shall be adopted.	Permission to draw Ground Water has been obtained from CGWA which was valid up to two year from date of issue i.e 01-02-2015.  Application for renewal of NOC of ground water withdrawal has been submitted. Extension is awaited. No effluent is being discharged and Zero discharge have adopted.
vi	Efforts shall be made to make use of rain water harvested. If needed, capacity of the reservoir should be enhanced to meet the maximum water requirement. Only balance water requirement shall be met from other sources.	Surrounding area of the plant gets submerged every year in the monsoon. Therefore ground water level in this area is high. Despite this rain water harvesting has been provided four nos. of ponds. Rain water is being collected in these ponds through underground storm water line and main hole with opening provided all over the main plant area. Size and depth of ponds is enough to accumulate the storm water and recharge the ground water.
vii	Risk and Disaster Management Plan along with the mitigation measures shall be prepared and a copy submitted to the Ministry's Regional Office at Bhubaneswar, BSPCB and CPCB within 3 months of issue of environment clearance letter.	Risk and Disaster Management Plan along with the mitigation measures has been submitted to the Ministry's Regional Office at Bhubaneswar vide letter No. MoEF/EC/10 dated 31.12.2012
viii	As proposed, green belt shall be developed in 33 % of the plant area with a minimum 15-20 m width all around. Plant layout shall be revised accordingly. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.	Greenery is developing in the newly set up Plant for improving the air quality. About 500 new samplings have been planted. Selection of plant species has been done as per the CPCB guidelines in consultation with the DFO.
ix	All the commitments made to the public during the Public Hearing / Public Consultation meeting held on 30th June, 2011 should be satisfactorily implemented and a separate budget for implementing the same should be allocated and information submitted to the Ministry's Regional Office at Bhubaneswar.	No commitments have been made during Public hearing which has been conducted under BSPCB supervision. RWP/Bela Plant is a central Govt. Organization under ministry of railway. There is no such type of separate budget allocated.

x	<p>At least 5 % of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues &amp; locals need and item-wise details along with time bound action plan should be prepared and submitted to the Ministry's Regional Office at Bhubaneswar.</p> <p>Implementation of such program should be ensured accordingly in a time bound manner.</p>	<p>The total one time and first three years of recurring expenses was about 88 Crore(app) details of which are as follows:-</p> <ol style="list-style-type: none"> <li>1.Road from Naya Gaon to Plant site(6.5 km)-15Crore (Already made)</li> <li>2.Health Unit- 1.6 Crore (Already made &amp; will be functional shortly)</li> <li>3.Kendriya Vidyalaya- 4.0 Crore (Already made &amp; functional)</li> <li>4.Shopping Complex- 1.8 Crore (Made &amp; will be functional shortly)</li> <li>5. Plantation of 91.54 Acres Land-2.0 Crore (Being done)</li> <li>6. Fire Fighting equipments-30.0 lakhs (Within 6 months)</li> <li>7. Indirect employment for the outsourcing of non-core activities for local people- 9.3 Crore (Continuous process for next 3 years)</li> <li>8. Annual expenditure by the 1000 Employees( 50% of their salary)-54 Crore (Continuous process for next 3 years)</li> </ol> <p>This was submitted to CPCB and regional office Bhubaneswar.</p>
xi	<p>The company shall provide housing for construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, 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.</p>	<p>Reply was complied during Project work.</p>
xii	<p>The Company shall submit within three months their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/ procedure to being into focus any infringement/ deviation/ violation of environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance to the environmental clearance conditions and (iii) System of reporting of non compliance/violation environmental norms to the Board of Directors of the company and/or stakeholders or shareholders.</p>	<p>Submitted vide letter No. MoEF/EC/10 dated 25.03.2013 to the director, MoEF, Regional office, Bhubaneswar.</p>

Sl. no	<b>PART-B GENERAL CONDITIONS</b>	COMMENTS
i	The project authorities must strictly adhere to the stipulations made by the Bihar State Pollution Control Board and the State Government.	Agreed.
ii	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests	Agreed.
iii	The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location.	The gaseous emissions from various process units is being conform to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time .Gaseous emissions are being monitored by CPCB approved agency . Monthly report is being uploaded on website and half yearly report is being dispatched to BSPCB and regional office Bhubaneswar.
iv	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, 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.	Four stations for Ambient air quality has been installed. Monthly analysis of sample of air is being done by CPCB approved agency and its report is being uploaded on website and half yearly report is being dispatched to BSPCB and regional office, Bhubaneswar.
v	Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended form time to time. The treated wastewater shall be utilized for plantation purpose.	No Industrial waste water is generated from the Plant as water is used for cooling purpose in closed circuit. Moreover a STP of 500m3/day capacity is installed for treatment of any type of waste water generated in the plant premises. Domestic waste water is treated in septic tank followed by Up-flow anaerobic filter. The treated wastewater shall be utilized for plantation purpose.
vi	The 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 overall noise level in the Plant is being monitored by CPCB approved agency on monthly basis and monthly report is being uploaded on website and half yearly report is being dispatched to BSPCB and regional office Bhubaneswar.

	The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	
vii	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied
viii	The company shall develop surface water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	Surface water level in this area is high. Despite this rain water harvesting has been provided four nos. of ponds. Rain water is collected in these ponds through underground storm water line and main hole with opening provided all over the main plant area. Size and depth of ponds is enough to accumulate the storm water and recharge the ground water.
ix	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP and public hearing reports. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	RWP/Bela had taken following measures. The total one time and first three years of recurring expenses was about 88 Crore(app).Details were as follows:- 1.Road from Naya Gaon to Plant site(6.5 km)-15Crore 2.Health Unit- 1.6 Crore 3.Kendriya Vidyalaya- 4.0 Crore 4.Shopping Complex- 1.8 Crore 5. Plantation of 91.54 Acres Land-2.0 Crore 6.Fire Fighting equipments-30.0 lakhs 7.Indirect employment for the outsourcing of non-core activities for local people- 9.3 Crore 8. Annual expenditure by the 1000 Employees( 50% of their salary)-18 Crore
x	Requisite amount 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 and Forests 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.	Service of CPCB approved agency is being taken for monitoring of Environmental issues such as Ambient Air, Noise, Stack Emissions and ground water. All the mentioned works report has been submitted to the Regional Office of the Ministry at Bhubaneswar.  Appropriate funds are being utilized for operation of STP, Incinerator, solid waste and development of green area.
xi	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,	A copy of clearance letter has already been sent to the mentioned bodies/organizations. Copy of clearance letter is already uploaded on Workshop project website <a href="http://www.workshopprojects.org.in">www.workshopprojects.org.in</a>

	were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	
xii	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 MOEF 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.	Results of monitoring data are being uploaded on website on monthly basis. Half yearly report is being dispatched to BSPCB and Bhubaneswar.
xiii	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 MOEF, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry at Bhubaneswar/ CPCB / SPCB shall monitor the stipulated conditions.	Agreed.  Six monthly reports of monitoring data along with status of the compliance of the stipulated environmental conditions are being sent to Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB.
xiv	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 MOEF at Bhubaneswar by e-mail.	Environment statement for the year 2016-17 in the format Form-V as mandate is being prepared and will be submitted to BSPCB, Patna.

xv	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 and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local 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.	complied
xvi	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.	complied

( J.P Pandey)  
WM/PFP cum Factory manager

**Rail Wheel Plant/Bela  
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Chief Administrative Officer,  
Administrative Building,  
Village- Bela, Block- Dariapur,  
District- Saran(Chhapra), Bihar-841221

**LIST OF ANNEXURE**

<b>SL. NO.</b>	<b>DESCRIPTION</b>	<b>ANNEXURE</b>
1.	Monitoring of Ambient Air Quality Report (Sampling & Analysis done by MoEF Recognized Environmental Laboratory, Netel India Limited)	I
2.	Stack Emission Monitoring Report (Sampling & Analysis done by MoEF Recognized Environmental Laboratory, Netel India Limited)	II
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## ANNEXURE-I

Rail Wheel Plant/Bela (Indian Railways) Govt. of India		Office of the Chief Administrative Officer, Administrative Building, Village-Bela, Block- Dariapur, Saran (Chhapra), Bihar.
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### Quarterly Analysis of Ambient Air Quality Sample from October 2016 to December 2016.


- REF:** (i) Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.  
 (ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. PT2-116/11 T6094 Patna 03.08.2016  
 (iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-6095, Patna, dated 03.08.2016.  
**(Sampling & Analysis done by MoEF Recognized Environmental Laboratory, Netel India Limited)**

### MONITORING & ANALYSIS OF AMBIENT AIR QUALITY

Month	Parameters	Limit (Max)	Near Main Gate	Near East Side Boundary Wall (Store Yard)	Near Main Store 2	Near ADM Building (TTC)	Avg. Values
<b>Average Value in <math>\mu\text{g}/\text{m}^3</math></b>							
Oct-16	PM <sub>10</sub>	100 $\mu\text{g}/\text{m}^3$	46.8	52.2	50.0	42.9	47.9
	PM <sub>2.5</sub>	60 $\mu\text{g}/\text{m}^3$	24.2	27.1	27.4	27.6	26.6
	SO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	8.9	8.7	9.0	8.4	8.8
	NO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	16.7	15.9	16.4	16.3	16.3
Nov-16	PM <sub>10</sub>	100 $\mu\text{g}/\text{m}^3$	46.6	51.8	49.9	43.9	48.5
	PM <sub>2.5</sub>	60 $\mu\text{g}/\text{m}^3$	23.2	26.1	26.7	26.8	25.7
	SO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	8.8	8.7	9.0	8.8	8.8
	NO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	16.8	16.3	16.4	16.5	16.5
Dec-16	PM <sub>10</sub>	100 $\mu\text{g}/\text{m}^3$	44.7	49.4	48.5	43.8	46.6
	PM <sub>2.5</sub>	60 $\mu\text{g}/\text{m}^3$	22.2	24.2	24.9	26.0	24.3
	SO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	9.3	8.8	9.3	9.4	9.2
	NO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	17.2	16.6	16.8	17.1	16.9

**Remark: All the above monitoring parameters are within the limit.**

**ANNEXURE-II**

Rail Wheel Plant/Bela (Indian Railways) Govt. of India		Office of the Chief Administrative Officer, Administrative Building, Village-Bela, Block- Dariapur, Saran (Chhapra), Bihar.
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**Quarterly Analysis of Stack Emission Sample from October 2016 to December 2016.**


- REF:** (i) Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.  
 (ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. PT2-116/11 T6094 Patna 03.08.2016  
 (iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-6095, Patna, dated 03.08.2016.  
**(Sampling & Analysis done by MoEF Recognized Environmental Laboratory, Netel India Limited.)**

**STACK EMISSION MONITORING**

<b>Stack connected to Bag House attached with Electric Arc Furnace</b>		<b>Limit (Max)</b>	<b>Average Concentration for the Period Oct-16 to Dec-16</b>
1	PM, mg / Nm <sup>3</sup>	50	43.5
2	SO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	33.5
3	NO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	201
<b>Stack connected to 2400 KVA DG Set (I)</b>			
1	PM, mg / Nm <sup>3</sup>	75.00	34
2	SO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	41
3	NO <sub>2</sub> , mg / Nm <sup>3</sup>	710.00	206
<b>Stack connected to 2400 KVA DG Set (II)</b>			
1	PM, mg / Nm <sup>3</sup>	75.00	39.6
2	SO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	42
3	NO <sub>2</sub> , mg / Nm <sup>3</sup>	710.00	202.3
<b>Stack connected to Draw Furnace</b>			
1	PM, mg / Nm <sup>3</sup>	50.00	31.8
2	SO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	58
3	NO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	217
<b>Stack connected to Normalizing Furnace</b>			
1	PM, mg / NM <sup>3</sup>	50.00	34
2	SO <sub>2</sub> , mg / NM <sup>3</sup>	Not specified	52
3	NO <sub>2</sub> , mg / NM <sup>3</sup>	Not specified	217
<b>Stack connected to Incinerator</b>			
1	PM, mg / NM <sup>3</sup>	50.00	Not in operation
2	SO <sub>2</sub> , mg / NM <sup>3</sup>	Not specified	
3	NO <sub>2</sub> , mg / NM <sup>3</sup>	Not specified	

**Remark: All the above monitoring parameters are within the limit.**

### ANNEXURE-III

Rail Wheel Plant/Bela (Indian Railways) Govt. of India		Office of the Chief Administrative Officer, Administrative Building, Village-Bela, Block- Dariapur, Saran (Chhapra), Bihar.
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#### **Quarterly Analysis of Ground Water Sample from October 2016 to December 2016.**

**REF: (i)** Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.

(ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. PT2-116/11 T6094 Patna 03.08.2016

(iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-6095, Patna, dated 03.08.2016.


**(Sampling & Analysis done by MoEF Recognized Environmental Laboratory, Netel India Limited.)**

#### ANALYSIS OF GROUND WATER SAMPLES

Ground sample	Water	UNIT	Limit as per IS10500:2012		Borewell No.1	Borewell No.2	Borewell No.3		Borewell No.4	
			Limit (Max) (mg/l) Desirable	Permissible limit in the absence of alternative source	Nov-16	Nov-16	Oct-16	Dec-16	Oct-16	Dec-16
Colour	Hazen		5.0	25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
pH	--		6.5 to 8.5	--	7.50	7.40	7.30	7.30	7.20	7.20
Turbidity on NTU	NTU		5	10	< 1	< 1	< 1	< 1	< 1	< 1
Total Dissolved Solids (TDS)	mg/l.		500	2000	232	248	248	228	252	242
Total Hardness as CaCO <sub>3</sub>	mg/l.		300	600	162	165	164	163	168	164
Calcium as Ca	mg/l.		75	200	26.8	25	25.8	25.3	26.3	24.5
Magnesium as Mg	mg/l.		30	--	24.2	26.3	24.5	24.5	25.9	25.6
Iron as Fe	mg/l.		0.3	1.0	0.10	0.13	0.11	0.11	0.12	0.12
Total Alkalinity as CaCO <sub>3</sub>	mg/l.		200	600	176	182	175	175	179	179
Chloride as Cl	mg/l.		250	1000	44.2	46.2	44.2	44.5	45.6	45.9
Sulphate as SO <sub>4</sub>	mg/l.		200	400	13.5	14.9	13.2	13.5	14.8	14.5
Nitrate as NO <sub>3</sub>	mg/l.		45	100	3.5	3.5	3.2	3.6	3.6	3.7
Fluoride as F	mg/l.		1.0	1.5	0.12	0.14	0.13	0.15	0.13	0.16
Arsenic as As	mg/l.		0.05	No relaxation	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Coliform	MPN		10 in 100 ml	--	ND	ND	ND	ND	ND	ND

**Remark: All the above monitoring parameters are within the Permissible limit.**

## ANNEXURE-IV

Rail Wheel Plant/Bela (Indian Railways) Govt. of India		Office of the Chief Administrative Officer, Administrative Building, Village-Bela, Block- Dariapur, Saran (Chhapra), Bihar.
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### Quarterly Analysis of Ambient Noise Level Sample from October 2016 to December 2016.

- REF: (i)** Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.
- (ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. PT2-116/11 T6094 Patna 03.08.2016
- (iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-6095, Patna, dated 03.08.2016.

**(Sampling & Analysis done by MoEF Recognized Environmental Laboratory, Netel India Limited.)**


### AMBIENT NOISE LEVEL MONITORING

Monitoring Location	Unit	Oct-16		Nov-6		Dec-16		Ambient Noise Standard Leq dBA
		Day	Night	Day	Night	Day	Night	
1. Near Main Gate	dB(A)	41.6	33.9	42.8	34.9	41.8	35.2	75 (Day Time)
2. Near ADM Building	dB(A)	36.8	32.5	37.6	31.5	37.9	31.4	70 (Night Time)

**Remark: All the above monitoring parameters are within the limit.**

Monitoring Location	Unit	Oct-16		Nov-6		Dec-16		Standard Level of Exposure as per Factories Act, 1986
		Day	Night	Day	Night	Day	Night	
1. Near Final Wheel Processing Sec.	dB	48.2	43.2	47.2	41.6	45.6	42.1	90 dB – 8 hr 92 dB – 6 hr 95 dB – 4 hr
2. Near Furnace	dB	51.6	44.2	51.0	44.1	51.8	45.6	97 dB – 3 hr 100 dB – 2 hr 105 dB – 1 hr

## ANNEXURE-V

Rail Wheel Plant/Bela (Indian Railways) Govt. of India		Office of the Chief Administrative Officer, Administrative Building, Village-Bela, Block- Dariapur, Saran (Chhapra), Bihar.
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### Quarterly Analysis of Ambient Air Quality Sample from January 2017 to March 2017.


- REF:** (i) Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.  
 (ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. PT2-116/11 T6094 Patna 03.08.2016  
 (iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-6095, Patna, dated 03.08.2016.  
**(Sampling & Analysis done by MoEF Recognized Environmental Laboratory, EMTRC Consultants Pvt. Ltd.)**

### MONITORING & ANALYSIS OF AMBIENT AIR QUALITY

Month	Parameters	Limit (Max)	Near Main Gate	Near East Side Boundary Wall (Store Yard)	Near Main Store 2	Near ADM Building (TTC)	Avg. Values
<b>Average Value in <math>\mu\text{g}/\text{m}^3</math></b>							
Jan-17	PM <sub>10</sub>	100 $\mu\text{g}/\text{m}^3$	60	54	63	52	57.3
	PM <sub>2.5</sub>	60 $\mu\text{g}/\text{m}^3$	27	22	26	20.5	23.9
	SO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	4.0	4.0	4.0	4.0	4.0
	NO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	10.9	9.3	11.15	9.0	10.1
Feb-17	PM <sub>10</sub>	100 $\mu\text{g}/\text{m}^3$	46.5	47.0	44.0	44.5	46.0
	PM <sub>2.5</sub>	60 $\mu\text{g}/\text{m}^3$	19.0	18.5	18	17.5	18.3
	SO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	4.0	4.0	4.0	4.0	4.0
	NO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	9.0	9.0	9.1	9.0	9.0
March-17	PM <sub>10</sub>	100 $\mu\text{g}/\text{m}^3$	47.5	48.5	51.5	46.0	48.4
	PM <sub>2.5</sub>	60 $\mu\text{g}/\text{m}^3$	21.0	19.0	22.0	19.5	20.4
	SO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	4.0	4.0	4.0	4.0	4.0
	NO <sub>2</sub>	80 $\mu\text{g}/\text{m}^3$	9.3	9.3	9.6	9.1	9.3

**Remark: All the above monitoring parameters are within the limit.**

**ANNEXURE-VI**

Rail Wheel Plant/Bela (Indian Railways) Govt. of India		Office of the Chief Administrative Officer, Administrative Building, Village-Bela, Block- Dariapur, Saran (Chhapra), Bihar.
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**Quarterly Analysis of Stack Emission Sample from January 2017 to March 2017.**


- REF:** (i) Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.  
 (ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. PT2-116/11 T6094 Patna 03.08.2016  
 (iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-6095, Patna, dated 03.08.2016.  
**(Sampling & Analysis done by MoEF Recognized Environmental Laboratory, EMTRC Consultants Pvt. Ltd.)**

**STACK EMISSION MONITORING**

Stack connected to Bag House attached with Electric Arc Furnace		Prescribed Standard Limit	Average Concentration for the Period Jan-17 to March-17
1	PM, mg / Nm <sup>3</sup>	50	31
2	SO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	<1 (BDL)
3	NO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	6.5
<b>Stack connected to 2400 KVA DG Set (I)</b>			Not in operation
1	PM, mg / Nm <sup>3</sup>	75.00	
2	SO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	
3	NO <sub>2</sub> , mg / Nm <sup>3</sup>	710.00	
<b>Stack connected to 2400 KVA DG Set (II)</b>			Not in operation
1	PM, mg / Nm <sup>3</sup>	75.00	
2	SO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	
3	NO <sub>2</sub> , mg / Nm <sup>3</sup>	710.00	
<b>Stack connected to Draw Furnace</b>			<b>Concentration for the Month of Jan-2017</b>
1	PM, mg / Nm <sup>3</sup>	50.00	18
2	SO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	<1 (BDL)
3	NO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	6
<b>Stack connected to Normalizing Furnace</b>			<b>Concentration for the Month of Jan-2017</b>
1	PM, mg / Nm <sup>3</sup>	50.00	26
2	SO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	<1 (BDL)
3	NO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	8
<b>Stack connected to Incinerator</b>			Not in operation
1	PM, mg / Nm <sup>3</sup>	50.00	
2	SO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	
3	NO <sub>2</sub> , mg / Nm <sup>3</sup>	Not specified	

**Remark: All the above monitoring parameters are within the limit.**

## ANNEXURE-VII

Rail Wheel Plant/Bela (Indian Railways) Govt. of India		Office of the Chief Administrative Officer, Administrative Building, Village-Bela, Block- Dariapur, Saran (Chhapra), Bihar.
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### Quarterly Analysis of Ground Water Sample from January 2017 to March 2017.


- REF:** (i) Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.
- (ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. PT2-116/11 T6094 Patna 03.08.2016
- (iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-6095, Patna, dated 03.08.2016.
- (Sampling & Analysis done by MoEF Recognized Environmental Laboratory, EMTRC Consultants Pvt. Ltd.)**

### ANALYSIS OF GROUND WATER SAMPLES

Ground sample	Water	UNIT	Limit as per IS10500:2012		Borewell No.1		Borewell No.2		Borewell No.3	Borewell No.4
			Limit (Max) (mg/l) Desirable	Permissible limit in the absence of alternative source	Jan-17	Mar-17	Jan-17	Feb-17	Feb-17	March-17
Colour		Hazen	5.0	25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
pH		--	6.5 to 8.5	--	7.14	7.32	7.60	7.22	7.28	7.72
Turbidity on NTU		NTU	5	10	< 1	< 1	< 1	< 1	< 1	< 1
Total Dissolved Solids (TDS)		mg/l.	500	2000	442	455	484	472	480	496
Total Hardness as CaCO <sub>3</sub>		mg/l.	300	600	280	260	260	260	270	250
Calcium as Ca		mg/l.	75	200	76	72	64	64	68.0	60.0
Magnesium as Mg		mg/l.	30	--	21.9	19.4	24.3	24.4	24.4	24.3
Iron as Fe		mg/l.	0.3	1.0	0.11	0.11	0.14	0.68	0.70	0.15
Total Alkalinity as CaCO <sub>3</sub>		mg/l.	200	600	230	240	250	220	230	240
Chloride as Cl		mg/l.	250	1000	40.0	48.0	25	45.0	40.0	30.0
Sulphate as SO <sub>4</sub>		mg/l.	200	400	23.0	28.0	32.0	26.0	28.0	35.0
Nitrate as NO <sub>3</sub>		mg/l.	45	100	4.5	5.4	5.2	4.2	4.5	5.8
Fluoride as F		mg/l.	1.0	1.5	0.72	0.74	0.74	0.14	0.15	0.76
Arsenic as As		mg/l.	0.05	No relaxation	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Coliform		MPN	10 in 100 ml	--	ND	ND	ND	ND	ND	ND

**Remark: All the above monitoring parameters are within the Permissible limit.**

## ANNEXURE-VIII

Rail Wheel Plant/Bela (Indian Railways) Govt. of India		Office of the Chief Administrative Officer, Administrative Building, Village-Bela, Block- Dariapur, Saran (Chhapra), Bihar.
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### **Quarterly Analysis of Ambient Noise Level Sample from January 2017 to March 2017.**

- REF:** (i) Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.  
 (ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. PT2-116/11 T6094 Patna 03.08.2016  
 (iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-6095, Patna, dated 03.08.2016.

**(Sampling & Analysis done by MoEF Recognized Environmental Laboratory, EMTRC Consultants Pvt. Ltd.)**

### AMBIENT NOISE LEVEL MONITORING

Monitoring Location	Unit	Jan-17		Feb-17		March-17		Ambient Noise Standard Leq dBA
		Day	Night	Day	Night	Day	Night	
1. Near Main Gate	dB(A)	52.4	44.6	50.2	43.2	51.4	36.6	75 (Day Time) 70 Night Time)
2. Near ADM Building	dB(A)	50.8	43.2	48.6	42.4	49.9	42.8	

**Remark: All the above monitoring parameters are within the limit.**

Monitoring Location	Unit	Jan-17		Feb-17		March-17		Standard Level of Exposure as per Factories Act, 1986
		Day	Night	Day	Night	Day	Night	
1. Near Final Wheel Processing Sec.	dB	78.6	76.4	58.6	51.8	74.8	72.6	90 dB – 8 hr 92 dB – 6 hr 95 dB – 4 hr
2. Near Furnace	dB	94.4	93.6	60.2	52.4	88.6	82.4	97 dB – 3 hr 100 dB – 2 hr 105 dB – 1 hr