



स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED
दुर्गापुर स्टील प्लांट
DURGAPUR STEEL PLANT

No. ECD.02.18/ 463

Dt. : 28-05-2021

To
The Deputy Director General of Forests (C)
Ministry of Env., Forest and Climate Change,
Integrated Regional Office,
IB – 198, Sector-III, Salt Lake City,
Kolkata – 700 106

Sub : Installation of Bloom Caster and Coal Dust Injection (CDI) system in Blast
Furnace No. 3 and 4 at Durgapur Steel Plant, Durgapur, West Bengal by M/s SAIL

Ref : EC No. J- 11013/396/2005-IA II (I), dated 29th March, 2007


Dear Sir,

Please find enclosed **half yearly compliance status report** for the period **Oct'20 to Mar'21** in regard to the EC for Installation of Bloom Caster and Coal Dust Injection (CDI) system in Durgapur Steel Plant.

Please find the following enclosed documents :-

1. Compliance Report
2. Stack Emission Report
3. Ambient Air Quality Report
4. Ambient Noise Report

With regards


(Asok Majumdar)
General Manager

Environment Control Deptt
Durgapur Steel Plant, Durgapur-713203
gmeed.dsp@sail.in, ecddsp@gmail.com

**Steel Authority of India Limited
Durgapur Steel Plant
Environment Control Department**

1. Name of the Project : Installation of Bloom Caster and Coal Dust Injection (CDI) system in Blast Furnace No. 3 and 4 at Durgapur Steel Plant, Durgapur , West Bengal by M/s SAIL
2. Clearance Letter no. with date : J- 11013/396/2005-IA II (I), dated 29th March, 2007
3. Period of Compliance Report : Oct'2020 to Mar'2021

I. Specific Conditions :

S.N.	Conditions	Compliance Status															
1	The gaseous and particulate matter emissions from various units shall conform to the standards prescribed by the State Pollution Control Board. At no time, particulate emissions from the unit shall exceed 100mg/Nm ³ and all the necessary air pollution control system shall be installed. Continuous on-line monitors for particulate emissions shall be installed in stacks. Interlocking facilities shall be provided in the pollution control equipment so that in the event of the pollution control equipment not working, the respective unit(s) is shut down automatically.	<p>The particulate matter emission is well below 100 mg/ Nm³ in Ladle furnace and CDI and monthly monitoring reports are regularly being sent to CPCB & WBPCB.</p> <p>Stack emission report monitored by NABL accredited third party (M/s. R. V. Briggs & Co. Private Ltd.) :-</p> <p style="text-align: right;">Unit: mg/Nm³</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Sl. No.</th> <th>Stack Location</th> <th>PM</th> <th>SO₂</th> <th>NO_x</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Coal Dust Injection (CDI)</td> <td>75</td> <td>32</td> <td>22</td> </tr> <tr> <td>2.</td> <td>Ladle Furnace</td> <td>32</td> <td>28</td> <td>18</td> </tr> </tbody> </table> <p>Copy of the reports enclosed</p> <p>Online Continuous Emission Monitoring System (OCEMS) installed at Ladle furnace and CDI stacks.</p>	Sl. No.	Stack Location	PM	SO ₂	NO _x	1.	Coal Dust Injection (CDI)	75	32	22	2.	Ladle Furnace	32	28	18
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2.	Ladle Furnace	32	28	18													
2	The company shall install adequate dust collection and extraction system at appropriate places to control fugitive dust emissions. Bag filters shall be provided to grinding mill. Gas	Dust collection and extraction systems (bag filters) have been installed at Coal Dust Injection and Ladle furnace. Dust from bag filters are being recycled through Sinter Plant. Stack emissions are well below 100 mg/Nm ³ and copies of monitoring reports by NABL accredited third party are enclosed.															

	cleaning plant (GCP) dust from Ladle furnace in Sinter plant shall be recycled. GCP/ Fume extraction system shall be installed in Ladle furnace. Dust emissions from LF stack shall be maintained within 100 mg/Nm3.																																																																																																																										
3	Ambient air quality monitoring stations shall be set up as per statutory requirement in consultation with the WBPCB. Ambient air quality including ambient noise levels shall not exceed the standards stipulated under EPA or by the State authorities. Monitoring of ambient air quality and shall be carried out regularly in consultation with WBPCB and data submitted to the CPCB and WBPCB regularly. The instruments used for ambient air quality monitoring shall be calibrated time to time.	<p>Ambient Air quality is regularly monitored in six locations. In addition a Continuous AAQ monitoring station has been working since 2011. Location and specifications have been finalized in consultation with WBPCB.</p> <p>Presently monitoring of ambient air quality is being done through NABL accredited M/s R V Briggs & Co. Private Ltd, and the data are regularly submitted to CPCB & WBPCB.</p> <p>AAQ report monitored by third party (M/s R V Briggs & Co. Private Ltd):</p> <table border="1" data-bbox="846 630 1843 1287"> <thead> <tr> <th rowspan="2">S N</th> <th rowspan="2">Parame ter</th> <th rowspan="2">Unit</th> <th colspan="4">Location</th> <th rowspan="2">Project Bldg</th> <th rowspan="2">ASP CISF Barrack</th> </tr> <tr> <th>Top of ECD Office</th> <th>ED(W) building</th> <th>R & C Lab</th> <th>Near DSTV Center</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>PM₁₀</td> <td>µg/m³</td> <td>75</td> <td>71</td> <td>65</td> <td>51</td> <td>63</td> <td>54</td> </tr> <tr> <td>2</td> <td>PM_{2.5}</td> <td>µg/m³</td> <td>42</td> <td>46</td> <td>33</td> <td>29</td> <td>31</td> <td>22</td> </tr> <tr> <td>3</td> <td>SO₂</td> <td>µg/m³</td> <td>11</td> <td>14</td> <td>10</td> <td>8</td> <td>12</td> <td>7</td> </tr> <tr> <td>4</td> <td>NO₂</td> <td>µg/m³</td> <td>30</td> <td>34</td> <td>24</td> <td>19</td> <td>25</td> <td>21</td> </tr> <tr> <td>5</td> <td>Pb</td> <td>µg/m³</td> <td><0.1</td> <td><0.1</td> <td><0.1</td> <td><0.1</td> <td><0.1</td> <td><0.1</td> </tr> <tr> <td>6</td> <td>Benzene</td> <td>µg/m³</td> <td><1.0</td> <td><1.0</td> <td><1.0</td> <td><1.0</td> <td>1.21</td> <td><1.0</td> </tr> <tr> <td>7</td> <td>NH₃</td> <td>µg/m³</td> <td>13</td> <td>18</td> <td>11</td> <td>13</td> <td>15</td> <td>8</td> </tr> <tr> <td>8</td> <td>CO</td> <td>mg/m³</td> <td>1.06</td> <td>1.21</td> <td>0.88</td> <td>0.63</td> <td>0.75</td> <td>0.54</td> </tr> <tr> <td>9</td> <td>Ozone (O₃)</td> <td>µg/m³</td> <td>17</td> <td>12</td> <td>16</td> <td>12</td> <td>15</td> <td>9</td> </tr> <tr> <td>10</td> <td>Benzo(a) Pyrene</td> <td>ng/m³</td> <td><0.5</td> <td><0.5</td> <td><0.5</td> <td><0.5</td> <td><0.5</td> <td><0.5</td> </tr> <tr> <td>11</td> <td>As</td> <td>ng/m³</td> <td><0.25</td> <td><0.25</td> <td><0.25</td> <td><0.25</td> <td><0.25</td> <td><0.25</td> </tr> <tr> <td>12</td> <td>Ni</td> <td>ng/m³</td> <td><5.0</td> <td><5.0</td> <td><5.0</td> <td><5.0</td> <td><5.0</td> <td><5.0</td> </tr> </tbody> </table> <p>Copies of the report enclosed.</p> <p>Ambient noise level is monitored using calibrated instrument and the results are well within the prescribed norms. Reports are regularly submitted to CPCB & WBPCB.</p>	S N	Parame ter	Unit	Location				Project Bldg	ASP CISF Barrack	Top of ECD Office	ED(W) building	R & C Lab	Near DSTV Center	1	PM ₁₀	µg/m ³	75	71	65	51	63	54	2	PM _{2.5}	µg/m ³	42	46	33	29	31	22	3	SO ₂	µg/m ³	11	14	10	8	12	7	4	NO ₂	µg/m ³	30	34	24	19	25	21	5	Pb	µg/m ³	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	Benzene	µg/m ³	<1.0	<1.0	<1.0	<1.0	1.21	<1.0	7	NH ₃	µg/m ³	13	18	11	13	15	8	8	CO	mg/m ³	1.06	1.21	0.88	0.63	0.75	0.54	9	Ozone (O ₃)	µg/m ³	17	12	16	12	15	9	10	Benzo(a) Pyrene	ng/m ³	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	11	As	ng/m ³	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	12	Ni	ng/m ³	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
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4	<p>Consumption of cooling water shall be reduced due to phasing out of blooming mill. Recycle and reuse of secondary cooler water through re-circulation shall be ensured. Effort shall be made to adopt 'Zero' discharge except during occasional blowdown.</p>	<p>Due to phasing out of Blooming & Billet Mill and continuous water conservation measures, cooling water consumption in the plant has been reduced considerably during last four years :-</p> <p>Quantity of cooling water being used annually during last 4 years:</p> <table border="1" data-bbox="1058 386 1770 599"> <thead> <tr> <th colspan="4">Cooling Water Consumption (m³)</th> </tr> <tr> <th>2017-18</th> <th>2018-19</th> <th>2019-20</th> <th>2020-21</th> </tr> </thead> <tbody> <tr> <td>12,153,710</td> <td>11,073,480</td> <td>10,544,297</td> <td>10,046,381</td> </tr> </tbody> </table> <p>Cooling water consumption has been reduced by 2.1 million m³ in 2020-21 compared to that of 2017-18.</p> <p>Moreover, to achieve ZLD phase wise, 4 schemes in Phase-I are under different stages of implementation. For Phase-II of Recirculation of Outfall-1, 2 & 3, FR/TS has already been submitted by our consultant M/s CET. For Phase-II of Recirculation of Outfall-5, FR/TS is under preparation by M/s CET.</p>	Cooling Water Consumption (m ³)				2017-18	2018-19	2019-20	2020-21	12,153,710	11,073,480	10,544,297	10,046,381
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5	Recycling of scale and scrap in Sinter plant shall be ensured. No solid waste shall be disposed off outside the premises.	<p>Mills scale is used in Sinter making in Sinter plant. Scrap is being salvaged through magnetic collector and continuously charged in Blast Furnace & Steel Melting Shop.</p> <p>Type and quantities of Solid waste generated and mode of their utilization during 2020-21 :</p> <table border="1" data-bbox="852 350 1801 1149"> <thead> <tr> <th>S. N.</th> <th>Product</th> <th>Generation (T)</th> <th>% Utilisation</th> <th>Mode of Disposal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BF Slag</td> <td>785,822</td> <td>100 %</td> <td>Sold to cement manufacturers</td> </tr> <tr> <td>2</td> <td>BF Flue Dust</td> <td>10,710</td> <td>100 %</td> <td>Sold</td> </tr> <tr> <td>3</td> <td>BF Sludge</td> <td>9,081</td> <td>89 %</td> <td>Dried & mixed with BOF sludge for use in Sinter making</td> </tr> <tr> <td>4</td> <td>BOF Slag</td> <td>305,651</td> <td>74.5 %</td> <td>Used as flux for iron making, sinter making and used for rail ballast and road making</td> </tr> <tr> <td>5</td> <td>BOF Sludge</td> <td>34,916</td> <td>94.2 %</td> <td>Used in sinter plant</td> </tr> <tr> <td>6</td> <td>Mill Scale</td> <td>78,559</td> <td>100%</td> <td>Used in sinter plant</td> </tr> <tr> <td>7</td> <td>Lime Fines</td> <td>28,870</td> <td>100%</td> <td>Used in sinter plant</td> </tr> <tr> <td>8</td> <td>Waste refractory</td> <td>6,366</td> <td>100%</td> <td>Sold to refractory manufacturers</td> </tr> <tr> <td>9</td> <td>Cinder</td> <td>13,662</td> <td>35 %</td> <td>Sold (sale significantly reduced due to Covid-19 pandemic)</td> </tr> </tbody> </table>	S. N.	Product	Generation (T)	% Utilisation	Mode of Disposal	1	BF Slag	785,822	100 %	Sold to cement manufacturers	2	BF Flue Dust	10,710	100 %	Sold	3	BF Sludge	9,081	89 %	Dried & mixed with BOF sludge for use in Sinter making	4	BOF Slag	305,651	74.5 %	Used as flux for iron making, sinter making and used for rail ballast and road making	5	BOF Sludge	34,916	94.2 %	Used in sinter plant	6	Mill Scale	78,559	100%	Used in sinter plant	7	Lime Fines	28,870	100%	Used in sinter plant	8	Waste refractory	6,366	100%	Sold to refractory manufacturers	9	Cinder	13,662	35 %	Sold (sale significantly reduced due to Covid-19 pandemic)
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6	All the recommendations mentioned in the Corporate Responsibility for Environmental Protection (CREP) of CPCB shall be implemented.	Compliance to CREP guidelines given at Annexure- I																																																		
7	Rainwater harvesting measures shall be adopted. The company shall harvest the rainwater from the roof tops and storm water drains to recharge the ground water and use	As per the guidelines issued by West Bengal Pollution Control Board to Durgapur Steel Plant :- “ Water bodies must be developed for storing of rainwater and recharging of groundwater is not permitted” .																																																		

	the same water for the various activities of the project to conserve fresh water.	<p>DSP has build up different water bodies/ponds in steel township & surrounding villages under CSR project besides DSP's main water reservoir at Waria.</p> <p>Surface Area wise details are given below :-</p> <table border="0"> <tr> <td>Main Water Reservoir</td> <td>: 8,50,000 m²</td> </tr> <tr> <td>MKM Park Lake</td> <td>: 2,80,000 m²</td> </tr> <tr> <td>Waterbody at Vasundhara</td> <td>: 35,000 m²</td> </tr> <tr> <td>Pond at Dampara</td> <td>: 728 m²</td> </tr> <tr> <td>Pond at Akandara</td> <td>: 1,200 m²</td> </tr> <tr> <td>Check-Dam at Baganpara</td> <td>: 3,472 m²</td> </tr> <tr> <td>Pond at B-Zone Park</td> <td>: 8,190 m²</td> </tr> </table>	Main Water Reservoir	: 8,50,000 m ²	MKM Park Lake	: 2,80,000 m ²	Waterbody at Vasundhara	: 35,000 m ²	Pond at Dampara	: 728 m ²	Pond at Akandara	: 1,200 m ²	Check-Dam at Baganpara	: 3,472 m ²	Pond at B-Zone Park	: 8,190 m ²	
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8	Necessary other statutory clearances from other concerned Departments including 'No Objection Certificate' from the WBPCB shall be obtained.	'No Objection Certificate' from the WBPCB obtained. All other statutory clearances from concerned departments are being renewed regularly.															
9	Pollution load due to expansion / modernization of the project after installation of Bloom caster and Coal Dust Injection (CDI) system in Blast Furnace no. 3 & 4 shall be assessed and a report shall be submitted to the Ministry and its Regional Office at Bhuvaneshwar/ CPCB/ SPCB.	<p>Pollution load after installation of Bloom caster & Coal Dust Injection (CDI) system and due to other pollution control measures has shown a reducing trend over the last four years. The particulate emission load and effluent load of DSP for the last four years are given below :-</p> <table border="1"> <thead> <tr> <th></th> <th>2017-18</th> <th>2018-19</th> <th>2019-20</th> <th>2020-21</th> </tr> </thead> <tbody> <tr> <td>Particulate Emission Load (Kg/TCS)</td> <td>0.6906</td> <td>0.6831</td> <td>0.6814</td> <td>0.6783</td> </tr> <tr> <td>Effluent Load (Kg/TCS)</td> <td>0.0812</td> <td>0.0785</td> <td>0.0775</td> <td>0.0763</td> </tr> </tbody> </table>		2017-18	2018-19	2019-20	2020-21	Particulate Emission Load (Kg/TCS)	0.6906	0.6831	0.6814	0.6783	Effluent Load (Kg/TCS)	0.0812	0.0785	0.0775	0.0763
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10	The company shall undertake eco-development measures including community welfare measures in the project area.	<p>Extensive effort has been given for eco-development through afforestation. Since 2009-10, total 440.4 hectares of green belt has been developed.</p> <p>The details have been given in the prescribed format attached as Annexure -II.</p> <p>DSP is having laid down policy under Corporate Social Responsibility and actions are being taken as per the policy. Detailed activities/projects undertaken are given in Annexure-III.</p> <p>Around Rs. 255.4 Lakhs has been spent for CSR projects during the year 2020-21.</p>															

II. General Conditions :

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1	The project authority shall adhere to the stipulations made by West Bengal Pollution Control Board (WBPCB) and State Government.	All the stipulations given by West Bengal Pollution Control Board are being strictly adhered to.																											
2	No further expansion or modification of the plant shall be carried out without prior approval of this Ministry.	This will be adhered to.																											
3	The overall noise levels in and around 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 shall conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	<p>Necessary measures have been taken to control noise level within the standards (85 dBA) in and around plant. In various units, noise levels are regularly being monitored and monthly reports are being submitted to CPCB & WBPCB.</p> <p>Noise level monitoring report:</p> <p style="text-align: center;">Work Zone Noise</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Sl. No.</th> <th>Location</th> <th>Noise Level Leq (dB(A))</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Oxygen plant</td> <td>78.2</td> </tr> <tr> <td>2</td> <td>Blast Furnace</td> <td>80.6</td> </tr> <tr> <td>3</td> <td>Turbines (OPP)</td> <td>81.3</td> </tr> <tr> <td>4</td> <td>OPP (other areas)</td> <td>71.7</td> </tr> <tr> <td>5</td> <td>Mills (Rolling / forgoing)</td> <td>77.4</td> </tr> <tr> <td>6</td> <td>SMS</td> <td>68.5</td> </tr> <tr> <td>7</td> <td>SP</td> <td>72.3</td> </tr> <tr> <td>8</td> <td>Coke-oven area</td> <td>75.1</td> </tr> </tbody> </table>	Sl. No.	Location	Noise Level Leq (dB(A))	1	Oxygen plant	78.2	2	Blast Furnace	80.6	3	Turbines (OPP)	81.3	4	OPP (other areas)	71.7	5	Mills (Rolling / forgoing)	77.4	6	SMS	68.5	7	SP	72.3	8	Coke-oven area	75.1
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3	Gate No.2	60.7	59.4																																						
4	Waria Gate	63.1	54.6																																						
4	<p>Proper house keeping and adequate occupational health programmes shall be taken up.</p>	<p>For better house-keeping, lots of jobs like road widening, fencing and garden development, tree plantation, regular cleaning and sweeping of roads, repair and painting of building and structures etc. are being done regularly.</p> <p>DSP has separate Occupational Health department solely responsible to carry out occupational health programmes. DSP is also certified to OH&S ISO 45001:2018 and best practices being followed for occupational health and safety.</p> <p>Occupational health surveillance report for the period Oct'20-Mar'21:-</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Sl. No.</th> <th>Parameter</th> <th>No. of Persons</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>OHS Emergency</td> <td>6177</td> </tr> <tr> <td>2.</td> <td>Periodic Medical Examination</td> <td>00*</td> </tr> <tr> <td>3.</td> <td>Vision Testing</td> <td>00*</td> </tr> <tr> <td>4.</td> <td>Biochemistry</td> <td>00*</td> </tr> <tr> <td>5.</td> <td>Pathological Test</td> <td>00*</td> </tr> <tr> <td>6.</td> <td>Pulmonary Function Test</td> <td>00*</td> </tr> <tr> <td>7.</td> <td>Audio Test</td> <td>00*</td> </tr> <tr> <td>8.</td> <td>ECG</td> <td>00*</td> </tr> <tr> <td>9.</td> <td>X-Ray</td> <td>00*</td> </tr> <tr> <td>10.</td> <td>Hygiene Survey</td> <td>00*</td> </tr> <tr> <td>11.</td> <td>Hygiene Locations</td> <td>00*</td> </tr> <tr> <td>12.</td> <td>Training</td> <td>67</td> </tr> </tbody> </table> <p>* Due to Covid-19 pandemic routine non- emergency services have been suspended till situation improves.</p>	Sl. No.	Parameter	No. of Persons	1.	OHS Emergency	6177	2.	Periodic Medical Examination	00*	3.	Vision Testing	00*	4.	Biochemistry	00*	5.	Pathological Test	00*	6.	Pulmonary Function Test	00*	7.	Audio Test	00*	8.	ECG	00*	9.	X-Ray	00*	10.	Hygiene Survey	00*	11.	Hygiene Locations	00*	12.	Training	67
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5	A separate environmental management cell to carry out various management and monitoring functions shall be setup under the control of Senior Executive.	<p>A full fledged Environment Control Department exists with four executives, headed by General Manager(Environment). The Air and Water laboratory is manned by 3 experienced senior analysts.</p> <p>Names of Officers of Environment Control Deptt. as per hierarchy:</p> <table border="1" data-bbox="926 354 1902 727"> <thead> <tr> <th>Sl. No.</th> <th>Name</th> <th>Designation</th> <th>Contact Details (e-mail id & mobile no.)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Asok Majumdar</td> <td>General Manager</td> <td>asokdsp@sail.in, 9434791325</td> </tr> <tr> <td>2.</td> <td>Santanu Dey</td> <td>General Manager</td> <td>santanudey@sail.in, 9434792471</td> </tr> <tr> <td>3.</td> <td>Sujata Roy Sarkar</td> <td>Asstt General Manager</td> <td>srs.sail@sail.in, 9434791920</td> </tr> <tr> <td>4.</td> <td>Rubi Chakraborty</td> <td>Manager</td> <td>r.maji@sail.in, 9434791498</td> </tr> </tbody> </table>	Sl. No.	Name	Designation	Contact Details (e-mail id & mobile no.)	1.	Asok Majumdar	General Manager	asokdsp@sail.in, 9434791325	2.	Santanu Dey	General Manager	santanudey@sail.in, 9434792471	3.	Sujata Roy Sarkar	Asstt General Manager	srs.sail@sail.in, 9434791920	4.	Rubi Chakraborty	Manager	r.maji@sail.in, 9434791498
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6	Rs. 4.05 Crores earmarked towards environmental pollution control measures shall be judiciously used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purpose.	<p>The full amount has been spent towards pollution control measures for Bloom Caster, Ladle Furnace and CDI units.</p> <p>Total amount spent on various environment protection measures throughout the plant during last 3 years is as follows:</p> <p style="text-align: right;">(Figs. In Rs. Crores)</p> <table border="1" data-bbox="1058 1105 1873 1182"> <thead> <tr> <th>Year</th> <th>2018-19</th> <th>2019-20</th> <th>2020-21</th> </tr> </thead> <tbody> <tr> <td>Expenditure</td> <td>17.97</td> <td>12.75</td> <td>69.31</td> </tr> </tbody> </table>	Year	2018-19	2019-20	2020-21	Expenditure	17.97	12.75	69.31												
Year	2018-19	2019-20	2020-21																			
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7	The Regional Office of this Ministry at Bhuvaneshwar/ CPCB/ SPCB shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	Six monthly compliance report is being sent to MOEFCC, Bhubaneswar and monthly monitoring reports for the all units are being sent to CPCB/ WBPCB regularly. Six monthly compliance report is also available at SAIL's website.																				

8	The 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.	Project already commissioned.
9	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 West Bengal Pollution Control Board /Committee and may also be seen at Website of Ministry of Environment and Forests at http://envfor.nic.in . This should 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 shall be forwarded to the Regional Office at Bhubaneswar.	Done. The same was sent to MOEFCC, Bhubaneswar also.

Compliance to CREP guidelines

1. Coke Oven Plants

- PLD, PLL and PLO are all within norm.

Battery No.	PLD (%)	PLL (%)	PLO (%)	Charging emission (sec/ charge)
Battery No. 1	5.61	0.74	1.87	71
Battery No. 2	4.12	0.33	0.82	28
Battery No. 5	2.33	0.51	1.21	41
Battery No. 6	4.76	0.46	1.56	63

- Rebuilding of Coke Oven Batteries

- Bat # 1 Rebuilding – To be taken up from July’ 2021
- Bat # 2 Rebuilding – Completed
- Bat # 3 Rebuilding – Cold Repair from Apr’2017 to July’2021
- Bat # 4 Rebuilding – Phased out
- Bat # 5 Rebuilding – Completed
- Bat # 6 Rebuilding - Cold and Hot repair from March’2016 to Jun’2017

2. Steel Melting Shop

Fugitive Emissions :

Reduction level at present is 85 % through the following actions:

- a. Mouth jam cleaning being carried out on requirement basis instead of opportunity basis to result proper sealing of skirt over converter mouth
- b. Iron ore & dolomite being charged in small batches instead of 500 kg or 1 ton
- c. Scrubber cleaning being done after every 250- 300 heats
- d. To have proper suction and to reduce puffing at converter mouth gas flow being maintained by running ID fan at a speed of +1300 rpm

100 % Reduction by Installation of Dog House- Order placed on M/s SMS GmbH, Germany on 30.01.2019. Completion schedule- 20 months from order placement. Job is near completion. Despite our best efforts, the originally planned project completion schedule is delayed due to lockdown & restricted movements arising out of global COVID-19 pandemic.

3. Blast Furnace

Direct inject of reducing agents :

- Coal Dust Injection in operation in all the three Blast Furnaces

4. Solid Waste/ Hazardous Waste Management

Utilisation of SMS/ BF Slag during 2020-21:

Waste	Generation (T)	Utilisation (T)	% Utilisation
BOF Slag	305,651	227,825	74.5 %
BF Slag	785,822	803,517 *	102.3 %
Total	1,091,473	1,031,342	94.5 %

*Extra from stock

Efforts to enhance BOF slag utilization :

- Expression of Interest (EOI) published on 4th Feb'2021 for disposal of unutilized BOF slag
- Discussions going on with West Bengal State Rural Road Development Authority for use of BOF slag in road making under Pradhan Mantri Gramin Sadak Yojana

Hazardous Wastes

- Utilisation of Tar sludge/ ETP sludge :

Tar sludge and ETP sludge are blended with coal and charged into Coke Oven Batteries

- Inventorisation of hazardous waste :

Being done as per Hazardous Waste (M & H) Rules

5. Water Conservation/ Water Pollution

- Specific Water consumption for 2020-21 is 3.30 m³/tcs (<5 m³/tcs)

- CO-BP effluent treatment plant is running efficiently and meeting effluent discharge standards

Location of the sampling point	Parameters monitored (mg/l, except pH)							
	pH	TSS	Phenol	Cyanide as CN ⁻	BOD	COD	Amm. Nitrogen	O & G
<u>COBP Effluent</u> Outlet to BOD plant	7.24	26	0.48	0.138	18.0	126	31.1	<6

Copy of the report enclosed.

6. Installation of Continuous Stack and AAQ systems

- Installation of Continuous Stack Emission monitoring system :

Continuous Stack Emission Monitoring systems installed and commissioned in all 37 no. stacks with regular online data transmission to CPCB server since February'2019.

- Online ambient air quality monitoring station :

- Commissioned in March 2011 .
- On-line data transfer on real time basis is being done to the CPCB server from the CAAQM Station

7. Efficient functioning of pollution control equipment

Pollution control equipments are being maintained and run efficiently. Compliance report in this regard is being submitted to CPCB every quarter.

8. Life Cycle Assessment (LCA) study recommendations

Raw Material usage

- Sinter in BF burden increased to around 70 %
- Recycling of iron ore fines, mill scales & lime fines being done
- LD slag is being used in BF, SP and in other areas
- CDI commissioned in all BFs

Improvement in Iron & Steel Making Process

- 100 % steel production through LD route
- 100 % steel processed through continuous casting

Clean Technology Development

- CDI in Blast Furnaces-2, 3 & 4
- Bell Less Top at BF-3
- Curtain Flame ignition system for ignition of sinter mix at Sinter Plant

Integrated energy management

- By-product gases are being used for power generation and as fuel in BF Stoves, Rolling mill reheating furnaces etc.
- Energy intensive Blooming & Billet Mills have been phased out and replaced by energy efficient production through Caster route

Integrated waste water management

- Water consumption 3.30 m³/tcs
- Waste water treated in effluent treatment plants of Coke Oven, Blast Furnace, Continuous Casting Plant, Rolling Mills etc. and re-circulated back into process

9. Clean Technology Measures

- Castable runners installed in Blast Furnaces

- Reuse of the waste containing flux & ferrous waste. BOF Slag is being used in Blast Furnace, Sinter Plant. BOF Sludge, Mill scales, Lime fines is used for sinter making. Scrap is being charged in Blast Furnace and BOF.

- Reduction of Green House Gases

By-product gases are being used as fuel and for power generation and continuous efforts are being made to reduce power consumption

- Up-gradation of environment monitoring laboratories and training

Environment Laboratory is ISO 14001 certified and equipped with all latest instruments

- Improve overall House Keeping

House keeping has improved. Further improvement and beautification jobs are taken up regularly.

Annexure-II

FORMAT FOR PROVIDING PARTICULARS ON GREEN BELT/PLANTATION
UNDER F© ACT 1980 AND E(p) ACT 1986

1.	a) Name of the Project	Expansion-cum-modernisation of Durgapur Steel Plant
	b) Env. /Forest Clearance Nos.	EC letter no. J-11011/492/2007-IA-II(I) dated 10.09.2007
2.	Location, Block/Sub. Divn./Dist/State	Faridpur, Burdwan, Durgapur, West Bengal
3.	Address for communication	Chief General Manager (Env. & Utilities), Durgapur Steel Plant, Durgapur – 713203
4.	Existing vegetation in the area region :	
	a) Species (trees/shrubs/grasses/climbers)	Woody plants
	b) Major prevalent species of each type	Sonajhuri (Acacia species), Teak plant, Sisoo plants, Krishna Chura & Radha Chura
5.	Land coverage by the project :	
	a) Total area under the project	20.5 hectares
	b) Area covered for basic infrastructure (roads/buildings/factory etc.)	Records not available
6.	Details about natural vegetation :	
	a) Name and number of trees/species felled	Nil
	b) Name and number of plants and species still available in the area	Nil
	c) By protecting the area will indigenous stock come up	Not applicable
	d) Extent of green belt developed	440.4hectares (from 2009-10 to 2020-21)

7.	Plantation required to be carried out as per :	
	a) Conditions of Environmental clearance in ha./ Nos.	Green belt to be developed in 250 hectare within and around the plant premises
	b) Conditions for Forest Act (c) clearance in ha. /Nos.	Not applicable
	c) Voluntarily in ha. /Nos.	-

8.	Details of plantation					
a) Total area available for plantation in each category						
i)Green Belt	ii)Dumps	iii)Back filled area	iv)Road sides	v)Block plantation		
440.4 ha	-	-	-	-		
b) Plantation details (category wise & methodology used)						
Year of Plantation	Species planted	Spacing	Height attained (in ft.)	Total area covered (in hectares)	Area still available	
2016-17	Woody plants	2.5 metres	8 – 10	19.25	n.a.	
2017-18	-do-	-do-	8 – 9	80.94	-do-	
2018-19	-do-	-do-	7 – 8	24.28	-do-	
2019-20	-do-	-do-	5- 6	40.00	-do-	
2020-21	-do-	-do-	2-3	12.5	-do-	
c) Survival of plantation		1 st year	2 nd year	3 rd year	4 th year	5 th year
		2016-17	2017-18	2018-19	2019-20	2020-21
- Total plantation (No.)		30,800	140,000	40,000	40500	20000
- Survival (No.)		26,193	118,860	38,400	39285	19800
- Survival (%)		85.04	84.90	96.00	97.00	99.00
9.	Agency carrying out plantation and maintenance	i) Horticulture & Social Forestry Department, Durgapur Steel Plant ii) Divisional Forest Office, Govt. of West Bengal, Bidhan Nagar, Durgapur				

10.	Financial details (year wise) plantation wise and item wise			
Sl. No.	Year	Funds allocated (Rs. Lakhs)	Expenditure made (Rs. Lakhs)	Average cost of each surviving plant (in Rs.)
1.	2016-17	18.81	18.81	71.81
2.	2017-18	25	25	21.03
3.	2018-19	24	24	62.5
4.	2019-20	28.24	28.24	40.34
5.	2020-21	14.91	14.91	74.55
11.	Inspection of plantation by field experts and their comments and follow up actions		Previously the total duration of the job was only 11 months (development period: 02 months and maintenance period: 09 months) which was not sufficient for the proper growth and development of the plants. To increase the survival rate of the plant saplings, total duration of the plantation project is 910 days from 2019-20 (development period: 180 days and maintenance period : 730 days)	
12.	Remarks/ any other information		Plantation target for 2021-22 is 40,000 nos. (Tendering stage)	

Corporate Social Responsibility

Sl.	Sector	Schemes / Projects during H2 of 2020-21
Education		
1	Education	Financial Grant for Running & Management of the Primary School - SAIL Kanya Shiksha Niketan for economically poor Girl Child
2	Education	Financial Grant for Running of Mukul School in A-Zone of DSP Township for economically poor students
3	Education	Educational activities in Model Steel Villages.
4	Education	Repair & Renovation of DSP School Building at Mirabai Road for shifting of Mukul Nursery School from Harshabardhan Road.
Healthcare		
5	Healthcare	Regular Free Health Check up Camps at all the 11 MSVs of DSP.
6	Healthcare	Regular Free Health Check up Camps at all the 6 Peripheral Villages.
7	Healthcare	Running Free Medical Unit NIVEDITA at DSP Township.
8	Healthcare	Free Eye Camp at DSP Mahila Samaj premises.
9	Healthcare	Organizing Detection Drive and Operations of Cataract.
Livelihood Generation / Voc. Trg.		
10	Livelihood Generation / Voc.Trg.	Running of Vocational Training Institute (VTI) for unemployed youth (including women).
Women Empowerment		
11	Women Empowerment	Running of Hair & Skin Care Unit for economically poor Women.
12	Women Empowerment	Running of Vocational Training courses on Dress Making, Garments Designing & Embroidery for economically poor Women.

Sanitation		
13	Sanitation	Construction of Sanitation Units in Model Steel Villages.
14	Sanitation	Repair/Renovation of Sanitation Units at Ex-Servicemen's Welfare Society, Amarabati Defence Colony.
Sports		
15	Sports	Installation of Goal Posts in Football Grounds in peripheral villages of DSP.
Art & Culture		
16	Art & Culture	Running of Durgapur Museum at Tagore House, Dgp-4.
Environment		
17	Environment	Removal of Plastic Waste from Steel Township.
18	Environment	Maintenance of Plantation at Vasundhara - The SAIL Bio Diversity Park.
Rural Development		
19	Rural Development	Renovation of Community Centres at MSVs

Contact Person :

Sri Asok Majumdar

General Manager

Environment Control Department

Durgapur Steel Plant

Durgapur – 713203 (W.B)

ecddsp@gmail.com

Stack Emission Report



R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS
(AN ISO 9001:2015 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR
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 Phone : (033) 4044-3380 / 3381 / 3382 / 3383, Fax : 33 2248-0447
 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com
 CIN : U51109WB1931PTC007007



NABL ACCREDITED
 LABORATORY
 Certificate No. TC-7815

TEST REPORT

No. AP-FG/20-21/DSP/83

Date: April'05,2021

Page 1 of 1

Issued to : M/S. STEEL AUTHORITY OF INDIA LIMITED.					
Address : Durgapur Steel Plant, Durgapur – 713203 (W.B.).					
Your W.O. No. : 4515011509, dtd. 20.10.2020	<u>Parameters Tested</u> Physical : Temp., Velocity, Quantity of gas Chemical : SO ₂ , NO ₂ , CO, CO ₂ & PM				
Sample Description : Stack Gas					
Date & time of sampling : 16.03.2021 at 02:00 P.M. to 02:30 P.M.					
Test Completed on : 05.04.2021					
A. General information about stack :					
1. Stack connected to : Blast Furnace (CDI)					
2. Emission due to : Process activity					
3. Material of construction of stack : M.S					
4. Shape of stack : Circular.					
5. Whether stack is provided with permanent platform & ladder : Sample was taken from roof top.					
B. Physical characteristics of stack :					
1. Height of the stack (a) from ground level : 57.65 M (b) from roof level : ---					
2. Diameter of the stack (a) at bottom : --- (b) at top : ---					
3. Diameter of the stack at sampling point : 1.8 M					
4. No. of Traverse point : 20 Nos.					
5. Height of the sampling point from GL : ---					
C. Analysis / Characteristic of stack :					
1. Fuel used : N.A					
2. Fuel consumption : N.A					
D. Results of Physical Parameters of Flue Gas : Barometric pressure : 758mmHg					
SI No	Test Parameters	Test Method	Unit	Results	
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	94	
2.	Velocity of gas in duct	IS 11255:Part 3:2008 RA 2010 (1 st Rev.)	m/sec	9.01	
3.	Quantity of gas flow	IS 11255:Part 3:2008 RA 2010 (1 st Rev.)	NM ³ /hr	63579.00	
E. Results of gaseous emission :					
SI No	Test Parameters	Test Method	Unit	Results	Norms as per MOE & F Notification, 31st March, 2012 {Environment (Protection) 3rd Amendment Rules 2012}
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985 RA 2012	mg/Nm ³	32.0	Not Available
2.	Nitrogen dioxide	IS 11255 : Part 7 : 2005 RA 2012	mg/Nm ³	22.0	Not Available
3.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Available
4.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	4.0	Not Available
5.	Particulate Matters	IS 11255 : Part 1 : 1985 RA 2009	mg/Nm ³	75	100 max.
F. Pollution control device					
Details of pollution control devices attached with the stack : E.S.P.					

:- END OF TEST REPORT :-

(J. MUKHERJEE)
 Quality Manager

Authorised Signatory
 For R.V.BRIGGS & CO. (P) LTD.



R. V. BRIGGS & CO. PRIVATE LTD.

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NABL ACCREDITED
 LABORATORY
 Certificate No. TC-7815

TEST REPORT

No. AP-FG/20-21/DSP/92

Date: April'05,2021

Page 1 of 1

Issued to : M/S. STEEL AUTHORITY OF INDIA LIMITED.					
Address : Durgapur Steel Plant, Durgapur – 713203 (W.B.).					
Your W.O. No. : 4515011509, dtd. 20.10.2020	Parameters Tested Physical : Temp., Velocity, Quantity of gas Chemical : SO ₂ , NO ₂ , CO, CO ₂ & PM				
Sample Description : Stack Gas					
Date & time of sampling : 09.03.2021 at 02:30 P.M. to 03:14 P.M.					
Test Completed on : 05.04.2021					
A. General information about stack :					
1. Stack connected to : Ladle Furnace (New)					
2. Emission due to : Burning of CO & BF Gas					
3. Material of construction of stack : M.S					
4. Shape of stack : Circular.					
5. Whether stack is provided with permanent platform & ladder : Yes.					
B. Physical characteristics of stack :					
1. Height of the stack (a) from ground level : 50.0 M (b) from roof level : ---					
2. Diameter of the stack (a) at bottom : --- (b) at top : ---					
3. Diameter of the stack at sampling point : 1.59 M					
4. No. of Traverse point : 24 Nos.					
5. Height of the sampling point from GL : ---					
C. Analysis / Characteristic of stack :					
1. Fuel used : CO & BF Gas					
2. Fuel consumption : N.A					
D. Results of Physical Parameters of Flue Gas :					
Barometric pressure : 758 mmHg					
Sl No	Test Parameters	Test Method	Unit	Results	
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	59	
2.	Velocity of gas in duct	IS 11255:Part 3:2008 RA 2010 (1 st Rev.)	m/sec	10.58	
3.	Quantity of gas flow	IS 11255:Part 3:2008 RA 2010 (1 st Rev.)	NM ³ /hr	64512	
E. Results of gaseous emission :					
Sl No	Test Parameters	Test Method	Unit	Results	Norms as per MOE & F Notification, 31st March, 2012 {Environment (Protection) 3rd Amendment Rules 2012}
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985 RA 2012	mg/Nm ³	28.0	Not Available
2.	Nitrogen dioxide	IS 11255 : Part 7 : 2005 RA 2012	mg/Nm ³	18.0	Not Available
3.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Available
4.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	2.6	Not Available
5.	Particulate Matters	IS 11255 : Part 1 : 1985 RA 2009	mg/Nm ³	32	100 max.
F. Pollution control device					
Details of pollution control devices attached with the stack : Bag filter.					

:- END OF TEST REPORT :-

(J. MUKHERJEE)
 Quality Manager

Authorised Signatory

For R.V.BRIGGS & CO. (P) LTD.

BB

Ambient Air Quality Report



R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007



NABL ACCREDITED
 LABORATORY
 Certificate No. TC-7815

TEST REPORT

No. AP-AAQ/20-21/DSP/47

Date: April 09,2021

Page 1 of 1

Issued to	: M/S. STEEL AUTHORITY OF INDIA LTD. Durgapur Steel Plant		
Address	: Durgapur – 713203, West Bengal.		
Your W.O. No.	: 4515011509, dtd. 20.10.2020	Parameters Tested	
Sample Description	: Ambient Air	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As, C ₆ H ₆ & BaP	
Location	: ECD Building		
Date of Monitoring	: 05.03.2021	Test Completed on	30.03.2021
Time of sampling	: 10:00 A.M. to 10:00 A.M.	Duration of Sampling	: 24Hrs.

Barometric Pressure : 756 - 753 mmHg

Temperature : 36.0°C - 26.0°C

TEST FINDINGS:

Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m ³	42	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23): 2006 Reaffirmed 2012	µg/m ³	75	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2): 2001 Reaffirmed 2012	µg/m ³	10.9	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6): 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	30.1	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9): 1974 (2nd Reprint June' 1996)	µg/m ³	17.0	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	13.1	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m ³	1.06	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004 Reaffirmed 2009	µg/m ³	0.055	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2006, 2 nd Revision	µg/m ³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

-: END OF TEST REPORT :-

(J. MUKHERJEE)

Quality Manager

Authorised Signatory

For R.V.BRIGGS & CO. (P) LTD.

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 CIN : U51109WB1931PTC007007



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TEST REPORT

No. AP-AAQ/20-21/DSP/48

Date: April 09, 2021

Page 1 of 1

Issued to	: M/S. STEEL AUTHORITY OF INDIA LTD. Durgapur Steel Plant		
Address	: Durgapur – 713203, West Bengal.		
Your W.O. No.	: 4515011509, dtd. 20.10.2020	Parameters Tested	
Sample Description	: Ambient Air	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As, C ₆ H ₆ & BaP	
Location	: ED(Works) Building		
Date of Monitoring	: 17.03.2021	Test Completed on	30.03.2021
Time of sampling	: 10:30 A.M. to 10:30 A.M.	Duration of Sampling : 24Hrs.	

Barometric Pressure : 756 - 751 mmHg

Temperature : 36.0°C - 27.0°C

TEST FINDINGS:

Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a, 40 CFR Part 50, Appendix L.	µg/m ³	46	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23): 2006 Reaffirmed 2012	µg/m ³	71	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2): 2001 Reaffirmed 2012	µg/m ³	14.0	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6): 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	34.1	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9): 1974 (2nd Reprint June' 1996)	µg/m ³	12.1	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	18.0	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m ³	1.21	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004 Reaffirmed 2009	µg/m ³	0.048	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2006, 2 nd Revision	µg/m ³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

-: END OF TEST REPORT :-


(J. MUKHERJEE)
 Quality Manager

Authorised Signatory

For R V BRIGGS & CO. (P) LTD.

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TEST REPORT

No. AP-AAQ/20-21/DSP/32		Date: March 03,2021		Page 1 of 1	
Issued to		: M/S. STEEL AUTHORITY OF INDIA LTD.			
Address		: Durgapur Steel Plant			
Your W.O. No.		: 4515011509, dtd. 20.10.2020		Parameters Tested	
Sample Description		: Ambient Air		PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As,	
Location		: R & C Lab		C ₆ H ₆ & BaP	
Date of Monitoring		: 19.02.2021		Test Completed on : 24.02.2021	
Time of sampling		: 10:20 A.M. - 10:20 A.M.		Duration of Sampling : 24Hrs.	
TEST FINDINGS:		Barometric Pressure : 760 - 754 mmHg			
		Temperature : 29.0°C - 18.0°C			
Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m ³	33	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23): 2006 Reaffirmed 2012	µg/m ³	65	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2): 2001 Reaffirmed 2012	µg/m ³	10.0	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6): 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	24.0	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9): 1974 (2nd Reprint June' 1996)	µg/m ³	16.0	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	11.1	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m ³	0.88	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004 Reaffirmed 2009	µg/m ³	0.033	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2006, 2 nd Revision	µg/m ³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

-: END OF TEST REPORT :-

(J. MUKHERJEE)

Quality Manager

Authorised Signatory

For R.V.BRIGGS & CO. (P) LTD.

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TEST REPORT

No. AP-AAQ/20-21/DSP/31 Date: March 03, 2021 Page 1 of 1

Issued to : M/S. STEEL AUTHORITY OF INDIA LTD. Durgapur Steel Plant					
Address : Durgapur – 713203, West Bengal.					
Your W.O. No.	: 4515011509, dtd. 20.10.2020	Parameters Tested			
Sample Description	: Ambient Air	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As, C ₆ H ₆ & BaP			
Location	: DSTV Centre				
Date of Monitoring	: 16.02.2021	Test Completed on		: 24.02.2021	
Time of sampling	: 09:30 A.M. - 09:30 A.M.	Duration of Sampling		: 24Hrs.	
TEST FINDINGS:		Barometric Pressure : 760 - 755 mmHg Temperature : 28.0°C - 18.0°C			
Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a, 40 CFR Part 50, Appendix L.	µg/m ³	29	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23): 2006 Reaffirmed 2012	µg/m ³	51	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2): 2001 Reaffirmed 2012	µg/m ³	8.0	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6): 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	19.2	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9): 1974 (2nd Reprint June' 1996)	µg/m ³	12.1	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	13.2	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m ³	0.63	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004 Reaffirmed 2009	µg/m ³	0.035	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2006, 2 nd Revision	µg/m ³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

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(J. MUKHERJEE)

Quality Manager

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TEST REPORT

No. AP-AAQ/20-21/DSP/46 Date: April 09,2021 Page 1 of 1

Issued to		: M/S. STEEL AUTHORITY OF INDIA LTD.			
Address		: Durgapur Steel Plant			
Your W.O. No.		: 4515011509, dtd. 20.10.2020		Parameters Tested	
Sample Description		: Ambient Air		PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As,	
Location		: Project Building CISF Pass Section		C ₆ H ₆ & BaP	
Date of Monitoring		: 15.03.2021		Test Completed on 30.03.2021	
Time of sampling		: 10:20 A.M. to 10:20 A.M.		Duration of Sampling : 24Hrs.	
TEST FINDINGS:		Barometric Pressure : 756 - 752 mmHg			
		Temperature : 36.0°C - 25.0°C			
Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m ³	31	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23) : 2006 Reaffirmed 2012	µg/m ³	63	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2) : 2001 Reaffirmed 2012	µg/m ³	11.9	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6) : 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	25.1	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9) : 1974 (2nd Reprint June' 1996)	µg/m ³	15.1	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	15.2	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m ³	0.75	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22) : 2004 Reaffirmed 2009	µg/m ³	0.043	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2006, 2 nd Revision	µg/m ³	1.21	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12) : 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

-: END OF TEST REPORT :-

(J. MUKHERJEE)

Quality Manager

Authorised Signatory

For R.V.BRIGGS & CO. (P) LTD.

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TEST REPORT

No. AP-AAQ/20-21/DSP/33 Date: March 03, 2021 Page 1 of 1

Issued to		: M/S. STEEL AUTHORITY OF INDIA LTD. Durgapur Steel Plant			
Address		: Durgapur – 713203, West Bengal.			
Your W.O. No.	: 4515011509, dtd. 20.10.2020	Parameters Tested			
Sample Description	: Ambient Air	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As,			
Location	: ASP-CISF Barrack	C ₆ H ₆ & BaP			
Date of Monitoring	: 22.02.2021	Test Completed on	: 24.02.2021		
Time of sampling	: 10:00 A.M. - 10:00 A.M.	Duration of Sampling	: 24Hrs.		
TEST FINDINGS:		Barometric Pressure : 760 - 756 mmHg Temperature : 29.0°C - 19.0°C			
Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m ³	22	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23): 2006 Reaffirmed 2012	µg/m ³	54	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2): 2001 Reaffirmed 2012	µg/m ³	7.0	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6): 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	21.0	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9): 1974 (2nd Reprint June' 1996)	µg/m ³	9.0	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	8.0	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m ³	0.54	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004 Reaffirmed 2009	µg/m ³	0.047	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2006, 2 nd Revision	µg/m ³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

-: END OF TEST REPORT :-

(J. MUKHERJEE)

Quality Manager

Authorised Signatory

For R.V.BRIGGS & CO. (P) LTD.

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Ambient Noise Report



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TEST REPORT

No. AP-SI/20-21/DSP/200-204	Date: April'05,2021	Page 1 of 1
Issued to	: M/S. STEEL AUTHORITY OF INDIA LIMITED. Durgapur Steel Plant,	
Address	: Durgapur, Pin: 713203, West Bengal, India.	
Your Ref. No.	: W.O. No.: 4515011509 dtd. 20.10.2020	
Description of Sample	: Sound Level Monitoring	Parameters Tested L _{Min} , L _{Max} & L _{eq}
Date of Monitoring	: 03.03.2021	

SOUND LEVEL MONITORING AT AMBIENT LOCATION :

Sl. No	Locations	Day Time (06.00 A.M to 10.00 P.M)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area	Night Time (10.00 P.M to 06.00 A.M)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area
		Sound Level in dβ(A)				Sound Level in dβ(A)			
		L _{Min}	L _{Max}	L _{eq}		L _{Min}	L _{Max}	L _{eq}	
1	Near Main Gate	66.7	69.1	68.3	75 dβ(A)	59.4	63.4	61.5	70 dβ(A)
2	Near Tamla Gate	61.3	66.3	63.5		54.5	57.5	56.2	
3	Gate No. 02	59.0	62.6	60.7		58.4	61	59.4	
4	Waria Gate	62.2	64.7	63.1		53.5	55.9	54.6	

Note : - L_{eq} - Equivalent sound energy.

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Quality Manager

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