



To  
The Additional Principal Chief Conservator of Forest,  
Regional Office (Eastern Central Zone)  
Ministry of Environment, Forests and Climate Change, Govt. of India  
Bungalow No. A-2, Shyamali Colony,  
Ranchi – 834002, Jharkhand.

Ref No. - JMB/ENV/DIG/37/ 1080 /2018

November 26, 2018

Ref.: Environmental Clearance letter No.-J-11015/372/2010-IA.II(M)dated-30<sup>th</sup> September 2013.

**SUB: Half Yearly Compliance Status Report of Environment Clearance conditions issued by MoEFCC, New Delhi to Digwadih Colliery, Tata Steel Limited, Dhanbad for the period April'18 to September'18.**

Dear Sir,

We are enclosing herewith compliance report for the period **April'18 to September'18** for the EC granted vide letter no.- J-11015/372/2010-IA.II(M) dated- 30th September 2013 issued by Ministry of Environment, Forest and Climate Change, New Delhi.

Copy of the compliance report is also being sent in soft format through email at [ro.ranchi-mef@gov.in](mailto:ro.ranchi-mef@gov.in) for your kind perusal. We trust the information furnished is in line with your requirement.

Thanking you,

Yours faithfully,

**Head (Planning)**  
**Jharia Division, Tata Steel Ltd.**

Encl: As above.

Copy to: Member Secretary, CPCB, Eastern Zonal Office, Southend Conclave, 502, 5<sup>th</sup> Floor  
1582, Rajdanga Main Road, Kolkata -700107.

Copy to: Member Secretary, JSPCB, T.A. Division Building (Ground Floor), H.E.C, Dhurwa,  
Ranchi - 834004.

**TATA STEEL LIMITED**

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# **HALF YEARLY COMPLIANCE REPORT**

**(PERIOD: APRIL'18 – SEPTEMBER'18)**

## **DIGWADIH COLLIERY**

**(CAPACITY: EXPANSION FROM 0.38 TO 0.6 MTPA RAW COAL)**  
**TEHSIL: JHARIA, DIST: DHANBAD, JHARKHAND**



**TATA STEEL LIMITED, JHARIA DIVISION**

**P.O.- JAMADOBA, DIST. - DHANBAD,  
STATE- JHARKHAND, PIN CODE – 828112**

**ENVIRONMENTAL CLEARANCE GRANTED VIDE LETTER NO. - J-11015/372/2010-  
IA.II(M) DATED- 30.09.2013 ISSUED BY GOVT. OF INDIA, MINISTRY OF  
ENVIRONMENT, FOREST AND CLIMATE CHANGE, NEW DELHI.**

**Compliance status of Digwadih Colliery of M/s Tata Steel Ltd. for (Expansion from 0.38 MTPA to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/372/2010-IA.II (M) dated September 30, 2013**

S. No.	Condition	Compliance Status
<b>Specific Condition</b>		
(i)	The maximum production from the mines shall not exceed beyond that for which environmental clearance has been granted.	It is being strictly followed. The EC capacity is for 0.6 MTPA raw coal while the raw coal production for Digwadih Colliery is well below the limit. The production details are: FY18 – 0.259 MTPA FY17 – 0.262 MTPA FY16 – 0.308 MTPA FY15 – 0.25 MTPA
(ii)	The impact on the Damodar river due to mining activity which is at a distance of 2 km be studied through a reputed 3 <sup>rd</sup> Party and submitted to the SPCB and the regional office of the MoEF for monitoring.	The underground coal mines operated by Tata Steel Ltd are adjacent to the Damodar River. Other coal mines of BCCL & SAIL are also in close proximity to the river basin. Major source of pollution of Damodar River is the flow of industrial effluents and untreated sewage water into the river. A number of OB dumps lie close to the river banks causing the flow of sediments into the river. As per the hydrology study conducted by Indian School of Mines, Dhanbad, the impact of the underground mines of Tata Steel Ltd is minimal. This is due to the following reasons <ul style="list-style-type: none"> <li>• The mining activity does not require any diversion of river/streams or natural drain. As land profile does not change appreciably in case of underground mines with backfilling of mined out areas, there is no change in surface drainage till date and unlikely to occur in future.</li> <li>• Surface water quality also does not undergo any change, as there is no discharge to surface drainage in dry season. In Monsoon, the excess mine water discharged gets mixed with storm water.</li> <li>• Large settling tanks are available for storage and sedimentation of mine water before its discharge to conform to the norms. The industrial wastewater generated during vehicle washing from the central workshop catering to all the mines is treated in oil and grease trap followed by recycling of water.</li> <li>• The two coal washeries of Tata Steel are operating on Zero Liquid discharge (ZLD) principle.</li> <li>• Sewage water generated from our townships is treated in Soak pit and Septic tank arrangement. Now we are replacing it with Packaged Sewage Treatment Plant (PSTP). Already one STP of 200 KLD has been installed in one colony and remaining colonies are also proposed to be covered with STP.</li> </ul>

**Compliance status of Digwadih Colliery of M/s Tata Steel Ltd. for (Expansion from 0.38 MTPA to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/372/2010-IA.II (M) dated September 30, 2013**

(iii)	Details of underground transportation of coal from mine to coal yard/ rail yard be submitted to the MoEF for record.	Coal from the mine is sent to the captive Jamadoba coal washery for beneficiation purpose through a network of underground conveyor belts. The detailed diagram of transportation network has already been submitted in earlier compliance report.
(iv)	Adequate care be taken to prevent sand spillages from the trucks/tippers.	The trucks that are being used for the transportation of sand are properly covered using tarpaulin sheets. Larger trucks have been engaged for reducing no of cycles. Quality checks are done on trucks to ensure its health and punitive action is taken against defaulters by the management.
(v)	The test results of the study of leaching of heavy metals from bottom-ash be submitted to SPCB and the regional office of the MoEF for monitoring.	A study conducted in 2013, by Indian School of Mines, Dhanbad to assess the leachability characteristics of fly ash and bottom ash samples taken from our, has determined that the concentration of heavy metals in the leachates were invariably well below the permissible limits for discharge of effluents as per the Indian standards IS 2490 (1993). The test results have already been submitted in December'13 and also re-submitted during MoEFCC official's visit in April'18.
(vi)	The CSR activities shall be need based and detailed CSR plan be prepared for implementation.	The CSR plan for each financial year is prepared by TSRDS (Tata Steel Rural Development Society) only after proper discussions to assess the needs have been held with the elected/ senior members of the communities where our CSR activities are to be undertaken.
(vii)	The detailed breakup of funds during 2012-13 be submitted to the MoEF for record. A social audit to be got done annually by a reputed institute and uploaded on the company's website.	The detailed breakup has already been submitted to MOEF. The Corporate Sustainability Reports viz. Integrated Reports are made annually for the company which is certified by an assurance agency. It also includes the Social Audit of the company. All the reports are uploaded on the Tata Steel website. Further, an internal Social audit is also conducted once in five years. In 2012, a HDI (Human Development Index) survey of surrounding villages was conducted with the help of XLRI, Jamshedpur.
(viii)	There should be no OB dumps at the end of the mining.	Since this is an underground mine, it is not applicable.
(ix)	Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be	Regular monitoring of subsidence is done by Central Institute for Mining and Fuel Research, Dhanbad. According to the subsidence reports, the impact of subsidence is negligible since the underground mine workings are now at great depth and proper filling of voids through sand stowing is being done. The latest subsidence report has been submitted to MoEFCC,

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	continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.	Regional Office, Ranchi in hard copy during his visit and soft copy vide mail dt. 19.04.2018.
(x)	If subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement of the landowners.	It will be strictly followed.
(xi)	Mining shall be carried out as per statuette at a safe distance from the river/nallah flowing adjacent to the lease boundary.	Since this is an underground project, there is hardly any impact on the river/ nallah. The closest jore is at a distance of about 2kms from the mine office area. Therefore, no impact on the course of flow in the jore is anticipated.
(xii)	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	Impact on land by subsidence has been found to be negligible as per the subsidence monitoring reports prepared by CIMFR, Dhanbad.
(xiii)	Coal extraction shall also be optimized in areas where agricultural production is continuing. Some pillars shall be left below the agricultural land. No depillaring & coal extraction should be carried out below habitation, H.T. Lines & beneath road, water bodies.	It will be strictly followed.
(xiv)	Subsidence shall be monitored closely and if subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement with the landowners.	Regular monitoring of subsidence is being done by CIMFR, Dhanbad.
(xv)	3-tier plantation should be developed 2 km stretch of road from the mine using native species.	Plantation along stretches of road has been done. 3-tier plantation is not feasible due to presence of private land around the periphery of colliery. Details on greenbelt developed is provided in Annexure-I.

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<b>(xvi)</b>	Garland drains (size, gradient and length) around the safety areas such as mine shaft and low lying areas and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.	Garland drains of adequate size and gradient already exist around the colliery area to channelize the surface runoff. The details of size of garland drain mapped in surface plan has been submitted to MoEF in April'18.
<b>(xviii)</b>	The locations of monitoring stations in the Jharia Coalfields should be finalized in consultation with the Jharkhand State Pollution Control Board. The smoke/dust emission varies from source to source (fuel wood, coal, flyash from TPPs, silica from natural dust, etc). Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM10 and PM2.5) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.	The locations of monitoring stations for our colliery have already been finalized in consultation with JSPCB, Dhanbad. The mineralogical composition study has being carried out by an independent laboratory (recognized by MoEFCC) and the results are provided in Annexure-II.
<b>(xix)</b>	Water sprinkling system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.	Water spraying arrangement is present in the underground mines at all transfer points. Water spraying via tankers is done on sand transportation routes. Major approach roads have been black-topped and maintained regularly.
<b>(xx)</b>	Transportation of coal from the mine to railway siding should be by 20T mechanically covered trucks.	Not applicable due to transportation of coal via underground belt conveyor network system directly to washery.

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<p><b>(xxi)</b></p>	<p>A progressive afforestation plan shall be prepared and implemented over the mine lease area acquired and shall include areas under green belt development, areas along roads, infrastructure, along ML boundary and township etc, by planting native species in consultation with the local DFO/Agriculture Department.</p>	<p>Tree plantation activities are carried out every year on the barren/ degraded areas, areas along road-side, infrastructure, etc of the colliery leasehold. Apart from these, fruit plants are distributed to employees and also to villagers, schools, institutions, etc. The environment department is responsible for implementing the afforestation plan which is prepared along with the mine management. In the last two years, about 10000 trees have been planted in the leasehold areas. High root density trees of native species are planted under annual plantation program this year. We have covered around 39 Nos of species under tree plantation jobs this year:</p> <table border="1" data-bbox="727 667 1453 1094"> <tr> <td>Babul</td> <td>Mango</td> <td>Areca palm</td> <td>Semal</td> </tr> <tr> <td>Bael</td> <td>Mahaneem</td> <td>Bargad</td> <td>Palash</td> </tr> <tr> <td>Kala siris</td> <td>Imli</td> <td>Guler/ Dumar</td> <td>Ammda</td> </tr> <tr> <td>Alostromia</td> <td>Karipatta</td> <td>Shisham</td> <td>Mahua</td> </tr> <tr> <td>Kaju</td> <td>Karma</td> <td>Gulmohar</td> <td>Bija</td> </tr> <tr> <td>Sitaphal</td> <td>Kadam</td> <td>Sal</td> <td>Togger</td> </tr> <tr> <td>Kathal</td> <td>Teak/ Sagwan</td> <td>Lagerstroemia</td> <td>Jamun</td> </tr> <tr> <td>Neem</td> <td>Radhachuda</td> <td>Pipal</td> <td>Arjun</td> </tr> <tr> <td>Kachnar</td> <td>Phoenix palm</td> <td>Guava</td> <td>Ber</td> </tr> <tr> <td>Jungle Jalebi</td> <td>Amla</td> <td>Ashoka</td> <td></td> </tr> </table>	Babul	Mango	Areca palm	Semal	Bael	Mahaneem	Bargad	Palash	Kala siris	Imli	Guler/ Dumar	Ammda	Alostromia	Karipatta	Shisham	Mahua	Kaju	Karma	Gulmohar	Bija	Sitaphal	Kadam	Sal	Togger	Kathal	Teak/ Sagwan	Lagerstroemia	Jamun	Neem	Radhachuda	Pipal	Arjun	Kachnar	Phoenix palm	Guava	Ber	Jungle Jalebi	Amla	Ashoka	
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<p><b>(xxii)</b></p>	<p>Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the MoEF and to the CPCB quarterly within one month of monitoring.</p>	<p>The monitoring of groundwater level and quality is done four times a year. The groundwater quality report &amp; groundwater level for the Summer (May) and monsoon season (August) are provided in Annexure-I.</p>																																								
<p><b>(xxiii)</b></p>	<p>Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided.</p>	<p>Not applicable.</p>																																								

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<b>(xxiv)</b>	Mine discharge water outside the ML shall be monitored, particularly for TDS and treated to conform to prescribed levels before discharge into the natural environment.	<p>There is one mine-water outlet point in the colliery which is regularly monitored by the Environmental Laboratory. The analysis results are given below:</p> <table border="1" data-bbox="727 327 1464 741"> <thead> <tr> <th>Month</th> <th>Temp</th> <th>pH</th> <th>TSS</th> <th>TDS</th> <th>BOD</th> <th>COD</th> <th>Oil &amp; Grease</th> </tr> </thead> <tbody> <tr> <td>Limits</td> <td>&lt;40°C</td> <td>5.5-9.0</td> <td>100 mg/l</td> <td>2100 mg/l</td> <td>30mg/l</td> <td>250 mg/l</td> <td>10 mg/l</td> </tr> <tr> <td>April'18</td> <td colspan="7">No Discharge</td> </tr> <tr> <td>May'18</td> <td>30</td> <td>7.6</td> <td>10</td> <td>654</td> <td>3.8</td> <td>32</td> <td>1.0</td> </tr> <tr> <td>June'18</td> <td colspan="7">No Discharge</td> </tr> <tr> <td>July'18</td> <td>30</td> <td>7.4</td> <td>14</td> <td>632</td> <td>3.2</td> <td>16</td> <td>0.8</td> </tr> <tr> <td>Aug'18</td> <td colspan="7">No Discharge</td> </tr> <tr> <td>Sep'18</td> <td>26</td> <td>7.2</td> <td>14</td> <td>612</td> <td>2.4</td> <td>16</td> <td>1.2</td> </tr> <tr> <td>Min</td> <td>26</td> <td>7.2</td> <td>10</td> <td>612</td> <td>2.4</td> <td>16</td> <td>0.8</td> </tr> <tr> <td>Max</td> <td>30</td> <td>7.6</td> <td>14</td> <td>654</td> <td>3.8</td> <td>32</td> <td>1.2</td> </tr> <tr> <td>Average</td> <td>28.66</td> <td>7.4</td> <td>12.66</td> <td>632.67</td> <td>3.13</td> <td>21.33</td> <td>1.0</td> </tr> </tbody> </table>	Month	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease	Limits	<40°C	5.5-9.0	100 mg/l	2100 mg/l	30mg/l	250 mg/l	10 mg/l	April'18	No Discharge							May'18	30	7.6	10	654	3.8	32	1.0	June'18	No Discharge							July'18	30	7.4	14	632	3.2	16	0.8	Aug'18	No Discharge							Sep'18	26	7.2	14	612	2.4	16	1.2	Min	26	7.2	10	612	2.4	16	0.8	Max	30	7.6	14	654	3.8	32	1.2	Average	28.66	7.4	12.66	632.67	3.13	21.33	1.0
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<b>(xxv)</b>	The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource, in case water table shows a declining trend. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.	<p>More than 50% of the water pumped out during underground mining activity is re-circulated back into the mine for the purpose of stowing. Backfilling of mine voids by stowing is done using sand which is having the porosity to hold the underground water thus helping aquifer to retain the underground water.</p> <p>Further, there are a number of ponds existing on the surface of the mining lease which act as natural reservoirs for recharging ground water. These ponds/ tanks are regularly cleaned and maintained by our CSR department. As per the hydro-geological report, the variation in the ground water level is only seasonal.</p> <p>The water requirement of the nearby villages is being met by the company already. Now piped drinking water is being provided.</p>																																																																																								
<b>(xxvi)</b>	Besides carrying out regular periodic health checkup of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health checkup for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmedabad within a period of one year and the results reported to this Ministry and to DGMS.	The periodic health checkup of the workers is done regularly by our Occupational Health Department, Tata Central Hospital, Jamadoba. We have a PME (Periodic Medical Examination) centre approved by DGMS where 20 % of the workers identified from workforce engaged in active mining operations are subjected to full medical checkup including hearing impairment checkup, etc. These results are regularly submitted to DGMS as per mines rules. Some sample reports and as well as past records have been submitted during MoEFCC official's visit on 10.04.2018.																																																																																								
<b>(xxvii)</b>	The mining in the existing mines would be phased out after expiry of the current mining lease and	It is not applicable in our case.																																																																																								



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	after reclamation of mined over area. The operating mines may be analyzed and monitored for compliance of conditions, having bearing with movement of wild life until such time they are closed/ phased out.																													
(xxviii)	Project specific CSR for an amount of Rs 5/Tonne of coal production should be provided for the activities under CSR undertaken for the neighboring villages shall be for not less than Rs 10 per tonne of coal and the progress made thereon shall be uploaded by the company annually on the company website. Monitoring of the impacts of activities under CSR shall be carried out periodically.	<p>The proposed CSR expenditure for the entire company is decided as per the new Company Rules. Once the CSR budget for company is fixed, a share of that amount is dedicated and utilized for implementing the CSR activities at our Jharia Division level. The CSR expenditure for FY18 is Rs.5.27 crores.</p> <p>CSR data submitted is for Jharia Division which comprises all 5 collieries and 2 washeries. Jamadoba Washery, Digwadih Colliery and 6&amp;7 Pits Colliery are adjacent to each other and fall under same leasehold area i.e. Jamadoba group of collieries. The core zone and buffer zone of all above units overlap to each other and in many cases, the villages are same where CSR work is going on. Therefore, we have a central budget for CSR which is managed by a team of experts who are dedicatedly involved in providing benefits and improving standard of living in over 50+ villages and municipal wards. Hence, separate CSR expenditure for individual unit cannot be estimated. For calculation/ statutory reporting purpose, the consolidated CSR expenditure can be divided into unit-wise based on size of leasehold area of individual units.</p> <p>The progress report is uploaded every year on the company website. Internal social audits are carried out regularly to assess the impact of CSR activities. The CSR report with photographs and Food Basket Survey report are provided in Annexure.</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Unit</th> <th>Area (Ha)</th> <th>CSR expenditure in FY18 (in Lakhs)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Jamadoba Colliery and Jamadoba Coal Washery</td> <td>927.17</td> <td>224.7</td> </tr> <tr> <td>2</td> <td>Digwadih Colliery</td> <td>314.57</td> <td>76.2</td> </tr> <tr> <td>3</td> <td>6 &amp; 7 Pits Colliery</td> <td>168.12</td> <td>40.7</td> </tr> <tr> <td>4</td> <td>Bhelatand A. Colliery and BCPP</td> <td>529.68</td> <td>128.4</td> </tr> <tr> <td>5</td> <td>Sijua Colliery</td> <td>238.66</td> <td>57.8</td> </tr> <tr> <td></td> <td><b>Total</b></td> <td><b>2178.2</b></td> <td><b>527.9</b></td> </tr> </tbody> </table>	S. No.	Unit	Area (Ha)	CSR expenditure in FY18 (in Lakhs)	1	Jamadoba Colliery and Jamadoba Coal Washery	927.17	224.7	2	Digwadih Colliery	314.57	76.2	3	6 & 7 Pits Colliery	168.12	40.7	4	Bhelatand A. Colliery and BCPP	529.68	128.4	5	Sijua Colliery	238.66	57.8		<b>Total</b>	<b>2178.2</b>	<b>527.9</b>
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**Compliance status of Digwadih Colliery of M/s Tata Steel Ltd. for (Expansion from 0.38 MTPA to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/372/2010-IA.II (M) dated September 30, 2013**

<b>(xxix)</b>	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	Mine Closure Plan as per new guidelines has been prepared and submitted to MOC for its approval.
<b>(xxx)</b>	<p>Corporate Environment Responsibility:</p> <p>a)The Company shall have a well laid down Environment Policy approved by the Board of Directors.</p> <p>b)The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.</p> <p>c)The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.</p> <p>d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.</p>	<p>The Company already has an Environment Policy approved by the Managing Director and it addresses all the issues mentioned. Tata Steel Environmental Policy is attached as Annexure-IV.</p> <p>The status of adherence to the policy and compliance to Environmental laws and regulations is regularly discussed at higher levels. Any non-compliance noticed is corrected at divisional level. If any issue is beyond our control, it is brought to the notice of higher management.</p> <p>Moreover, Digwadih Colliery is IMS (Integrated Management System: Quality Management System, Environment Management System and OHSAS) certified unit addressing all environment aspects, impacts and needs and expectation of interested parties with respect to environment protection.</p>

**Compliance status of Digwadih Colliery of M/s Tata Steel Ltd. for (Expansion from 0.38 MTPA to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/372/2010-IA.II (M) dated September 30, 2013**

<b>B.</b>	<b>GENERAL CONDITIONS</b>	
<b>(i)</b>	No change in technology and scope of working shall be made without prior approval of the MoEF.	It is being strictly followed. Bord and Pillar method is being used for mining.
<b>(ii)</b>	No change in the calendar plan including quantum of mineral coal and waste being produced shall be made.	It will be strictly followed.
<b>(iii)</b>	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring PM10, PM2.5, SO2 and NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, in RSPM etc. shall be carried out at least once in six months.	<p>The Air quality monitoring stations are:</p> <ul style="list-style-type: none"> <li>(i) Jamadoba Group Office (Core Zone)</li> <li>(ii) New Village Colony, Jamadoba (Buffer Zone)</li> <li>(iii) Digwadih 12 No. Colony (Buffer Zone)</li> <li>(iv) 6&amp;7 Pits Kalimandir area (Buffer Zone)</li> </ul> <p>Monitoring of heavy metals in ambient air is being performed by an independent laboratory (recognized by MoEFCC) once in six months. The results are enclosed as Annexure-II.</p>
<b>(iv)</b>	Data on ambient air quality (PM10, PM2.5, SO2 and NOx and heavy metals such as Hg, As, Ni, Cr, etc) and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the SPCB and the CPCB once in six months. Random verification of samples through analysis from independent laboratories recognised under the EP Rules, 1986 shall be furnished as part of the compliance report.	Ambient air quality report (PM10, PM 2.5, SO2 and NOx) for the period from April'18 to September'18 is attached as Annexure-I. Additionally, M/s S S Environics India Pvt Ltd (an MoEFCC recognised Laboratory) has done monitoring on ambient air quality (PM10, PM 2.5, SO2, NOx, CO, NH3, O3) and heavy metals (As, Ni, Cd and Cr) in the month of Aug'18. The results are enclosed as Annexure-II.

**Compliance status of Digwadih Colliery of M/s Tata Steel Ltd. for (Expansion from 0.38 MTPA to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/372/2010-IA.II (M) dated September 30, 2013**

<p>(v)</p>	<p>Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.</p>	<p>Regular noise survey is being conducted in the underground work environment. Workers are provided with ear-plugs/ muffs in high noise areas. The noise levels monitored in the month of August' 18 is given below:</p> <table border="1" data-bbox="706 357 1469 1123"> <thead> <tr> <th>S. No.</th> <th>Unit / Place</th> <th>Equipment / Location</th> <th>Distance (meter away)</th> <th>Leq (dB 'A')</th> <th>Exposure Hours</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>11 Seam</td> <td>Pit Bottom,11 Seam</td> <td>-</td> <td>68.6</td> <td>8 hrs. /shift</td> </tr> <tr> <td>2</td> <td rowspan="9">8 Seam</td> <td>Pump Room 15<sup>th</sup> R / 1<sup>st</sup> R - L</td> <td>-</td> <td>71.6</td> <td>8 hrs. /shift</td> </tr> <tr> <td>3</td> <td>A/C Room 4<sup>th</sup> R – L / 15<sup>th</sup> – 16<sup>th</sup> R</td> <td>-</td> <td>66.3</td> <td>8 hrs. /shift</td> </tr> <tr> <td>4</td> <td>A/C Room near Plant</td> <td>-</td> <td>78.1</td> <td>8 hrs. /shift</td> </tr> <tr> <td>5</td> <td>Hoist 4<sup>th</sup> D / 3<sup>rd</sup> – 4<sup>th</sup> R - L</td> <td>-</td> <td>71.6</td> <td>8 hrs. /shift</td> </tr> <tr> <td>6</td> <td>Transformer Room, 0<sup>th</sup> D / 1<sup>st</sup> L (N) 8 Seam</td> <td>-</td> <td>65.1</td> <td>8 hrs. /shift</td> </tr> <tr> <td>7</td> <td>Auxiliary Room, 4<sup>th</sup> D / 4<sup>th</sup> L at Operator's Seat</td> <td>10 m.</td> <td>82.7</td> <td>8 hrs. /shift</td> </tr> <tr> <td>8</td> <td>Auxiliary Room, 4<sup>th</sup> D / 5<sup>th</sup> L at Operator's Seat</td> <td>10 m.</td> <td>83.9</td> <td>8 hrs. /shift</td> </tr> <tr> <td>9</td> <td>Compressor Room 3<sup>rd</sup> D / 5<sup>th</sup> L (N)</td> <td>-</td> <td>83.2</td> <td>8 hrs. /shift</td> </tr> <tr> <td>10</td> <td rowspan="3">Surface</td> <td>Pit top</td> <td>-</td> <td>67.1</td> <td>8 hrs. /shift</td> </tr> <tr> <td>11</td> <td>Winder Room</td> <td>-</td> <td>73.8</td> <td>8 hrs. /shift</td> </tr> <tr> <td>12</td> <td>Compressor Room for Winder</td> <td>-</td> <td>78.5</td> <td>8 hrs. /shift</td> </tr> </tbody> </table>	S. No.	Unit / Place	Equipment / Location	Distance (meter away)	Leq (dB 'A')	Exposure Hours	1	11 Seam	Pit Bottom,11 Seam	-	68.6	8 hrs. /shift	2	8 Seam	Pump Room 15 <sup>th</sup> R / 1 <sup>st</sup> R - L	-	71.6	8 hrs. /shift	3	A/C Room 4 <sup>th</sup> R – L / 15 <sup>th</sup> – 16 <sup>th</sup> R	-	66.3	8 hrs. /shift	4	A/C Room near Plant	-	78.1	8 hrs. /shift	5	Hoist 4 <sup>th</sup> D / 3 <sup>rd</sup> – 4 <sup>th</sup> R - L	-	71.6	8 hrs. /shift	6	Transformer Room, 0 <sup>th</sup> D / 1 <sup>st</sup> L (N) 8 Seam	-	65.1	8 hrs. /shift	7	Auxiliary Room, 4 <sup>th</sup> D / 4 <sup>th</sup> L at Operator's Seat	10 m.	82.7	8 hrs. /shift	8	Auxiliary Room, 4 <sup>th</sup> D / 5 <sup>th</sup> L at Operator's Seat	10 m.	83.9	8 hrs. /shift	9	Compressor Room 3 <sup>rd</sup> D / 5 <sup>th</sup> L (N)	-	83.2	8 hrs. /shift	10	Surface	Pit top	-	67.1	8 hrs. /shift	11	Winder Room	-	73.8	8 hrs. /shift	12	Compressor Room for Winder	-	78.5	8 hrs. /shift
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<p>(vi)</p>	<p>Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, and treated so as to conform to the standards including for heavy metals before discharge prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.</p>	<p>No industrial wastewater is generated in Digwadih Colliery premises. There is a central workshop and garage in Jamadoba where oil and grease trap has been provided.</p>																																																																					
<p>(vii)</p>	<p>Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of the mineral shall be covered with tarpaulins and optimally loaded.</p>	<p>Only the vehicles having valid PUC certificates are being allowed to operate for sand transportation. Some of the vehicle fitness certificates and PUC certificates have been shared in hard copies and over mail at <i>ro.ranchi-mef@gov.in</i>. Coal transportation is done through underground belt network. Only sand transportation is done through trucks which are covered with tarpaulins as well as optimally loaded.</p>																																																																					

**Compliance status of Digwadih Colliery of M/s Tata Steel Ltd. for (Expansion from 0.38 MTPA to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/372/2010-IA.II (M) dated September 30, 2013**

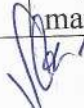
<b>(viii)</b>	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with SPCB and data got analysed through a laboratory recognised under EP Rules, 1986.	<p>We have a fully equipped Environment Cell Laboratory with qualified personnel. Laboratory has been recognized and registered with the Jharkhand State Pollution Control Board vide letter ref no. B-3922, dated-30.08.2012. The monitoring and analysis is also done at regular intervals by M/s S S Environics India Pvt. Ltd., an MoEF recognised laboratory (vide its notification 07.12.2012).</p> <p>We have also installed a Continuous Ambient Air Quality Monitoring Station at Jamadoba for real time monitoring with data transfer to JSPCB, Ranchi.</p>												
<b>(ix)</b>	Monitoring of outlet points should be carried out and records of same should be maintained and submitted to the Regional Office of the MOEF as part of the Compliance Report.	There is one mine-water outlet point in the colliery which is regularly monitored by the Environmental Laboratory. The analysis results has been provided in point no. (xxiv) of specific condition.												
<b>(x)</b>	There is one mine-water outlet point in the colliery which is regularly monitored by the Environmental Laboratory. The analysis results has been provided in point no. (xxiv) of specific condition.	Persons working in dusty area have been provided with dust masks & have been given awareness training on safety & health aspects. Regular PME (Periodic Medical Examinations) are being done. The details have been provided earlier. IME and PME records of last three years have been shared in hard copies and over mail at <a href="mailto:ro.ranchi-mef@gov.in">ro.ranchi-mef@gov.in</a> .												
<b>(xi)</b>	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	We have a separate Environmental Management Cell with four qualified personnel (One Head and Two Senior Managers and One Manager). The reporting of Environmental Cell is directly to General Manager of the Division.												
<b>(xii)</b>	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar.	<p>The Environment Cell has a separate fund for Environmental protection measures and for complying with legal requirements. The annual environmental expenditure for the financial year 2017-18 is Rs. 795.27 lakhs. The details are given below-</p> <table border="1" data-bbox="805 1591 1435 1885"> <thead> <tr> <th>S. No.</th> <th>Environment Management Activity</th> <th>Expenditure in Lakhs</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Stowing activities i.e filling of U/G voids for surface protection and prevention of subsidence</td> <td>699.23</td> </tr> <tr> <td>2.</td> <td>Fire Control measures (Fire/Isolation Stopping and Nitrogen plant)</td> <td>43.84</td> </tr> <tr> <td>3.</td> <td>Goaf Filling activities, drain repairing and maintenance, settling tank maintenance jobs</td> <td>4.03</td> </tr> </tbody> </table>	S. No.	Environment Management Activity	Expenditure in Lakhs	1.	Stowing activities i.e filling of U/G voids for surface protection and prevention of subsidence	699.23	2.	Fire Control measures (Fire/Isolation Stopping and Nitrogen plant)	43.84	3.	Goaf Filling activities, drain repairing and maintenance, settling tank maintenance jobs	4.03
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		4.	Water spraying costs in underground and surface	5.66
		5.	Making potable water in Water Treatment Plant & Supply to colonies	24.77
		6.	Horticultural activities including green belt development and regular lawn and garden maintenance	16.71
		7.	Plantation of saplings and maintenance	1.04
			<b>Total Cost incurred</b>	<b>795.27</b>
(xiii)	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	It has been complied with. Details are provided in Annexure.		
(xiv)	A copy of the environmental clearance letter shall be marked to concerned Panchayat/Zila Parishad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.	It has been complied with. Details are provided in Annexure.		
(xv)	A copy of the clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.	It has been complied with.		
(xvi)	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air,	The clearance letter has been uploaded on the company's website. The compliance status (as Half-yearly compliance report) is being uploaded in company's website (Enclosed as Annexure-III). The display of information near the mine's office has been done.		

**Compliance status of Digwadih Colliery of M/s Tata Steel Ltd. for (Expansion from 0.38 M to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand vide MoEFCC Letter no 11015/372/2010-IA.II (M) dated September 30, 2013**

	water, noise and soil) and critical pollutants such as PM10, PM2.5, SO2 and NOx (ambient and stack if any) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.	
(xvii)	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.	It is being complied
(xviii)	The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.	It will be complied with.
(xix)	The environmental statement for each financial year ending 31st March in Form-V 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 uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MOEF by E-mail.	The environmental statement for financial year 2017-18 has been submitted to JSPCB on 24th September 2018 and it is also uploaded on the company website (Annexure- III). The soft copy of Environment Statement is also sent to MOEF by email at ro.ranchi-mef@gov.in.

  
**Head Planning**  
**Tata Steel Limited,**  
**Jharia Division**

**AIR QUALITY REPORT**

Core zone &amp; Buffer zone

Period- April'18 to June'18

No. of sampling points: 4

Core zone (as per Air quality standards for coal mines in EPA Notification, 1988)									
Location	Latitude/ Longitude	Date	Weather Condition	SPM 24 Hourly Limit- 700 µg/m <sup>3</sup>	RSPM 24 Hourly Limit- 300 µg/m <sup>3</sup>	SO <sub>2</sub> 24 Hourly Limit- 120 µg/m <sup>3</sup>	NO <sub>x</sub> 24 Hourly Limit- 120 µg/m <sup>3</sup>		
Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	09.04.18	Rainy	176.9	92.2	15.6	17.7		
		29.05.18	Clear	182.3	94.3	17.4	16.2		
		04.06.18	Clear	162.8	72.1	13.1	14.2		
Buffer zone (as per NAAQS 2009 for ambient air quality standards)									
Location	Latitude/ Longitude	Date	Weather Condition	PM10 24 Hourly Limit- 100µg/m <sup>3</sup>	PM2.5 24 Hourly Limit- 60µg/m <sup>3</sup>	SO <sub>2</sub> 24 Hourly Limit- 80µg/m <sup>3</sup>	NO <sub>2</sub> 24 Hourly Limit- 80µg/m <sup>3</sup>		
Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	16.04.18	Clear	85.5	47.7	9.7	8.7		
		10.05.18	Clear	87.7	49.2	11.2	10.1		
		21.06.18	Clear	91.1	52.1	7.6	6.4		
New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	23.04.18	Clear	92.3	44.4	7.0	11.0		
		03.05.18	Rainy	83.4	46.6	9.7	12.1		
		26.06.18	Rainy	84.4	42.2	8.1	8.1		
6&7 Pits Kalimandir colony	23°43'15" N/ 86°24'12" E	27.04.18	Clear	96.6	46.0	11.0	12.2		
		14.05.18	Clear	93.4	48.0	7.8	8.9		
		08.06.18	Rainy	73.2	39.0	6.2	7.0		

Sr. Manager (Environment)



**AIR QUALITY REPORT**

Core zone &amp; Buffer zone

Period- July'18 to September'18

No. of sampling points: 4

Core zone (as per Air quality standards for coal mines in EPA Notification, 1988)									
Location	Latitude/ Longitude	Date	Weather Condition	SPM 24 Hourly Limit- 700 µg/m <sup>3</sup>	RSPM 24 Hourly Limit- 300 µg/m <sup>3</sup>	SO <sub>2</sub> 24 Hourly Limit- 120 µg/m <sup>3</sup>	NO <sub>x</sub> 24 Hourly Limit- 120 µg/m <sup>3</sup>	SO <sub>2</sub> 24 Hourly Limit- 120 µg/m <sup>3</sup>	NO <sub>x</sub> 24 Hourly Limit- 120 µg/m <sup>3</sup>
Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	16.07.18	Clear	156.4	68.2	14.2	15.6	14.2	15.6
		13.08.18	Clear	166.3	72.3	15.2	16.6	15.2	16.6
		14.09.18	Rainy	158.3	69.4	14.8	15.1	14.8	15.1
Buffer zone (as per NAAQS 2009 for ambient air quality standards)									
Location	Latitude/ Longitude	Date	Weather Condition	PM10 24 Hourly Limit- 100 µg/m <sup>3</sup>	PM2.5 24 Hourly Limit- 60 µg/m <sup>3</sup>	SO <sub>2</sub> 24 Hourly Limit- 80 µg/m <sup>3</sup>	NO <sub>2</sub> 24 Hourly Limit- 80 µg/m <sup>3</sup>	SO <sub>2</sub> 24 Hourly Limit- 80 µg/m <sup>3</sup>	NO <sub>2</sub> 24 Hourly Limit- 80 µg/m <sup>3</sup>
Digwadith 12 No. Colony	23°41'42" N/ 86°24'45.3" E	27.07.18	Rainy	82.3	42.0	8.4	8.2	8.4	8.2
		03.08.18	Rainy	93.0	49.0	8.6	11.1	8.6	11.1
		25.09.18	Clear	75.8	48.6	9.0	9.2	9.0	9.2
New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	12.07.18	Rainy	81.1	38.0	9.1	7.7	9.1	7.7
		20.08.18	Rainy	94.4	42.3	6.6	8.0	6.6	8.0
		19.09.18	Rainy	81.2	47.2	7.6	8.3	7.6	8.3
6&7 Pits Kalimandir colony	23°43'15" N/ 86°24'12" E	20.07.18	Rainy	78.0	40.1	8.2	10.1	8.2	10.1
		06.08.18	Rainy	86.6	45.5	11.0	10.2	11.0	10.2
		06.09.18	Rainy	83.1	53.7	8.2	9.7	8.2	9.7



Sr. Manager (Environment)

**Ground Water Quality Analysis (Hand Pump & Dugwell)  
Summer Season- May 2018**

S.No	Date	Location	Time	Sample Parameter			
				Depth in meter (m)	pH	Electrical Conductivity, $\mu\text{S/m}$	Total Hardness (as $\text{CaCO}_3$ ), mg/l
1	22.05.18	Purnadih (Jorapokhar)	12:05PM	10.12	7.6	540	396
2	22.05.18	Bhowra 13 No	11:20AM	4.10	7.4	590	392
3	22.05.18	Mohalbani Basti	10:50AM	9.16	7.5	610	444
4	22.05.18	Digwadih 12 No	10:30AM	8.10	7.5	588	440
5	22.05.18	Digwadih 10 No F & J	10:05AM	5.85	7.6	620	448
6	21.05.18	Kalimela Shivmandir	10:50AM	2.83	7.5	612	406
7	21.05.18	Kalimela Kalimandir	11:05AM	8.47	7.6	560	412
8	21.05.18	Lower Dungari	10:35AM	4.52	7.7	960	596
9	18.05.18	Upper Dungari	11:10AM	3.20	7.5	690	396
10	22.05.18	Pattia Basti	09:40AM	7.12	7.3	582	384
11	18.05.18	Kenduadih Basti	11:50AM	3.87	7.4	596	416
12	21.05.18	Jorapokhar Kushtand	10:15AM	5.18	7.5	602	432
13	18.05.18	Jamadoba 3 No	10:10AM	2.32	7.4	662	448
14	18.05.18	6&7 Pits (Ayodhya Nagri)	10:45AM	3.97	7.6	680	408



Sr. Manager (Environment)

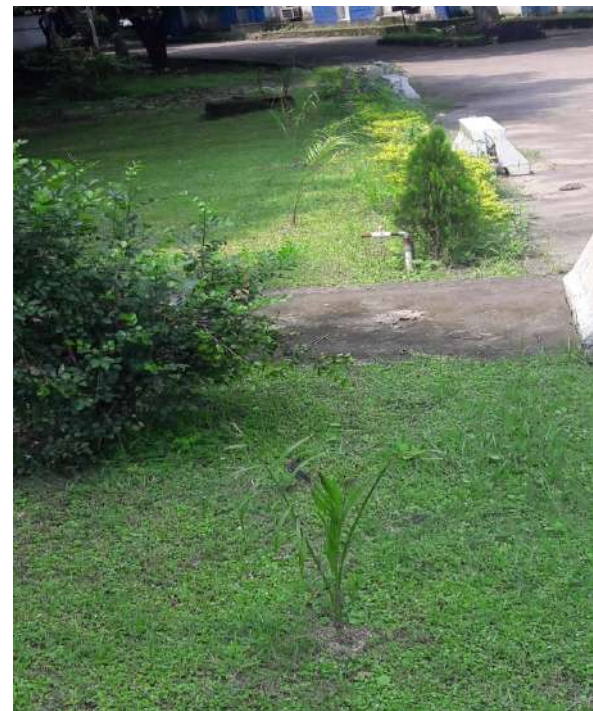
**Ground Water Quality Analysis (Hand Pump & Dugwell)**  
**Monsoon Season- August 2018**

S.No	Date	Location	Time	Sample Parameter			
				Depth in meter (m)	pH	Electrical Conductivity, $\mu\text{S/m}$	Total Hardness (as $\text{CaCO}_3$ ), mg/l
1	30.08.18	Purnadh (Jorapokhar)	10:40AM	1.84	7.2	616	580
2	30.08.18	Bhowra 13 No	10:55AM	1.65	7.1	584	494
3	30.08.18	Mohalhari Basti	11:15AM	1.97	7.0	694	514
4	30.08.18	Digwadh 12 No	11:35AM	1.26	7.2	444	420
5	30.08.18	Digwadh 10 No F & J	11:45AM	5.48	7.2	780	560
6	30.08.18	Kalimela Shivmandir	12:20PM	1.02	7.3	704	624
7	30.08.18	Kalimela Kalimandir	12:30PM	1.00	7.2	764	608
8	30.08.18	Lower Dungari	12:40PM	2.16	7.0	588	548
9	30.08.18	Upper Dungari	01:10PM	1.48	7.2	576	516
10	30.08.18	Pattia Basti	01:25PM	1.79	7.1	512	500
11	30.08.18	Kenduadh Basti	01:40PM	1.26	7.1	602	576
12	30.08.18	Jorapokhar Kushtand	10:20AM	1.84	7.2	688	612
13	30.08.18	Jamadoba 3 No	02:20PM	1.94	7.3	616	602
14	30.08.18	6&7 Pits (Ayodhya Nagri)	02:05PM	1.46	7.0	580	552

Sr. Manager (Environment)

# Annexure- Greenbelt Development Report

Glimpses of already existing green belt and plantation activities done in this monsoon season in and around Digwadih colliery premises to enhance the green cover have been depicted in the pictures below:



Picture: Plantation done in this monsoon season in and around Digwadih Colliery premises



Picture: Developed Green belt in and around Digwadih Colliery premises



Picture: Developed Green belt in and around Digwadih Colliery premises

**TEST REPORT**

Report No: LS1819R-0468

Release Date: 05.09.2018

**Name & Address of the Client** : M/s. Tata Steel Ltd, Jamadoba Group, Jharia Division, Jharkhand  
**Sample Type** : Ambient Air  
**Date of sampling** : 20.08.2018  
**Sample Received** : 21.08.2018  
**Analysis Date** : 21.08.2018 to 28.08.2018

Sl. No.	Name of the Location	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	Cd (ng/m <sup>3</sup> )	Cr (ng/m <sup>3</sup> )
1.	Central Workshop Area Jamadoba	65.0	34.0	22.0	14.0	0.32	5.2	25.0	BDL	BDL	BDL	BDL
2.	Officer's Colony 12 No. Digwadiah	59.0	32.0	16.0	15.0	0.24	BDL	28.0	BDL	BDL	BDL	BDL
3.	Near General Manager's Office Area	85.0	39.0	15.0	17.0	0.17	5.5	26.0	BDL	BDL	BDL	BDL
4.	Jamadoba Colliery	68.0	35.0	19.0	16.0	0.16	BDL	27.0	BDL	BDL	BDL	BDL
<b>NAAQ Standard</b>		<b>100.00</b>	<b>60.00</b>	<b>80.00</b>	<b>80.00</b>	<b>4.0 (1hour)</b>	<b>180 (1hour)</b>	<b>400 (24 hours)</b>	<b>06 (Annu al)</b>	<b>20 (Annu al)</b>	-	-
<b>Methods of Measurement</b>		IS: 5182,Part-23	NAAQS Manual	IS: 5182,Part-2	IS: 5182 Part-6	Non Dispersive Infrared Spectroscopy (NDIR)	NAAQS Manual (UV Photometric )	NAAQS Manual (Indophenol Blue Method)	ICP Method After Sampling on EPM 2000 OR Equivalent Filter Paper.			

The results stated in the test report are refer only to the sample tested

For S.S. Environics (India) Pvt. Ltd.



## TEST REPORT

Report No: LS1819R-0474

Release Date: 05.09.2018

**Name & Address of the Client** : M/s. Tata Steel Ltd, Jamadoba Group,  
Jharia Division, Jharkhand

**Sample Type** : Waste Water

**Sampling Location** : Digwadih Colliery (WW-4)

**Date of Sampling** : 21.08.2018

**Sample received** : 22.08.2018

**Date of Analysis** : 22.08.2018 to 28.08.2018

Sl. No.	Parameters	Unit	Method of Testing	Schedule-VI of E (P) Act (Discharge to Inland Surface Water)	Results
01	pH	-	APHA SM 4500-H+ B	6.5-9.0	7.41
02	Suspended Solids	mg/l	APHA SM 2540 D	100	11.0
03	Total Dissolved Solids	mg/l	APHA SM 2540 C	--	64.0
04	BOD	mg/l	APHA SM 5210 – B	30	ND
05	COD	mg/l	APHA SM 5220 B	250	ND
06	Oil & Grease	mg/l	IS 3025 (Part 39)1991	10	ND

The results stated in the test report are refer only to the sample tested.

  
For S. S. Environics (India) Pvt. Ltd.



## TEST REPORT

Report No: LS1819R-0479

Release Date: 05.09.2018

**Name & Address of the Client** : M/s. Tata Steel Ltd, Jamadoba Group,  
Jharia Division, Jharkhand  
**Sample Type** : Noise Monitoring  
**Date of Monitoring** : 21.08.2018

Sl. No.	Noise Monitoring Locations	Results in dB(A) Leq Day Time (6.00 am to 10.00 pm)	Results in dB(A) Leq Night Time (10.00 pm to 6.00 am)
1.	Central Workshop Area Jamadoba	61.2	53.0
2.	Officer's Colony 12 No. Digwadih	55.2	51.4
3.	Near General Manager's Office Area	59.2	52.7
4.	Jamadoba Colliery	65.4	60.6
<b>Ambient Noise Standards (Industrial)</b>		<b>75.0</b>	<b>70.0</b>

For S. S. Environics (India) Pvt. Ltd.



## TEST REPORT

Report No: LS1819R-0480

Release Date: 05.09.2018

**Name & Address of the Client** : M/s. Tata Steel Ltd, Jamadoba Group,  
Jharia Division, Jharkhand  
**Sample Type** : Mineralogical Composition  
**Date of Sampling** : 20.08.2018  
**Date of Analysis** : 21.08.2018 to 27.08.2018

Sl. No.	Noise Monitoring Locations	Test Results in %			
		Silica (SiO <sub>2</sub> )	FeO	Alumina (Al <sub>2</sub> O <sub>3</sub> )	CaO
1	Central Workshop Area Jamadoba	2.14	0.19	1.5	3.2
2	Officer's Colony 12 No. Digwadih	1.9	0.16	1.38	2.7
3	Near General Manager's Office Area	2.4	0.18	1.5	3.3
4	Jamadoba Colliery	2.1	0.22	1.45	3.4

  
For S. S. Environics (India) Pvt. Ltd.

Upload of compliance report on company's website

Alloys Plant, Joda

TATA STEEL WeAlsoMakeTomorrow

Half Yearly EC Compliance Report of West Bokaro Open Cast Mine Oct 2017 to Mar 2018

» Sustainability » Environment Compliance Reports

- Half Yearly EC Compliance Report of 6&7 Pits Colliery Oct 2017 to Mar 2018
- Half Yearly EC Compliance Report of BAC and BCPP Oct 2017 to Mar 2018
- Half Yearly EC Compliance Report of Digwadih Colliery Oct 2017 to Mar 2018
- Half Yearly EC Compliance Report of Jamadoba Washery Oct 2017 to Mar 2018
- Half Yearly EC Compliance Report of Lagla Mahal Oct 2017 to Mar 2018
- Half Yearly EC Compliance Report of Mahal Saharjuri Oct 2017 to Mar 2018

Environment Statement for the financial year ending March 2018 for Lagla Mahal Sand

TATA STEEL WeAlsoMakeTomorrow

Environment Statement for the financial year ending March 2018 for Lagla Mahal Sand

» Sustainability » Environment Compliance Reports

- Environment Statement for the financial year ending March 2018 for 6&7 Pits Colliery
- Environment Statement for the financial year ending March 2018 for Jamadoba Colliery
- Environment Statement for the financial year ending March 2018 for Jamadoba Coal Washery
- Environment Statement for the financial year ending March 2018 for Digwadih Colliery
- Environment Statement for the financial year ending March 2018 for Bhelatand Coal Washery

GM (J)

Chief (HR/IR)

Publication

**DAINIK BHASKAR, DHANBAD** Date **11-10-13**



**TATA**

**TATA STEEL**

**सूचना**

जन साधारण को सूचित किया जाता है कि भारत सरकार, वन एवं पर्यावरण मंत्रालय के पत्रांक संख्या- J -11015/372/2010-IA.II(M) डिगवाडीह कोलियरी (0.38 मिलियन टन प्रति वर्ष से 0.6 मिलियन टन प्रति वर्ष, विस्तारीकरण परियोजना) मेसर्स टाटा स्टील लिमिटेड, डिगवाडीह, जिला-धनबाद को पर्यावरण स्वीकृति प्रदान की गई है। जिसकी प्रतिलिपि क्षेत्रीय कार्यालय, झारखंड राज्य प्रदूषण नियंत्रण परिषद, धनबाद में उपलब्ध है तथा भारत सरकार, वन एवं पर्यावरण मंत्रालय के इंटरनेट साइट :- <http://envfor.nic.in> में भी देखी जा सकती है।

महाप्रबंधक (झारिया)

टाटा स्टील, जामाडोबा (धनबाद)

GM (J)

Chief (HR/IR)

Publication

**PRABHAT KHABAR, DHANBAD** Date **11-10-13**



**TATA STEEL**  
**सूचना**

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महाप्रबंधक (झरिया)  
टाटा स्टील, जामाडोबा (धनबाद)

GM (J)  Chief (HR/IR)

Publication HINDUSTAN, DHANBAD Date 11-10-13



**TATA STEEL**  
**सूचना**

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महाप्रबंधक (झरिया)  
टाटा स्टील, जामाडोबा (धनबाद)

GM (J)

Chief (HR/IR)

Publication

**DAINIK JAGRAN, DHANBAD**

Date **11-10-13**



**TATA STEEL**  
**सूचना**

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महाप्रबंधक (झरिया)  
टाटा स्टील, जामाडोबा (धनबाद)

Municipal Commissioner,  
Dhanbad.

Ref No.: JMB/ENV/DIG/37/ 805 /2018

September 17 , 2018

Sub: Submission of copy of Environmental Clearance granted to units of M/s Tata Steel Limited

Dear Sir,

Please find enclosed the letter of Environmental Clearance (EC) granted by MoEFCC to various units of Tata Steel Limited, Jharia Division, Dhanbad as per the following details-

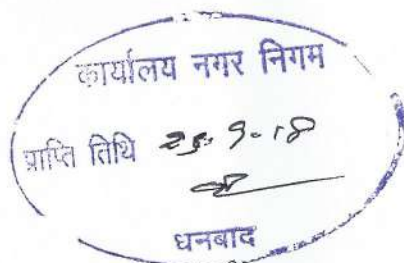
1. Digwadih Colliery (for expansion from 0.38 MTPA to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand.
2. 6 & 7 Pits Colliery (for expansion from 0.28 MTPA to 0.6 MTPA in ML area 168.12 ha), dist. Dhanbad, Jharkhand.
3. Jamadoba Coal Washery (for expansion from 1 MTPA to 2 MTPA in 7 Ha area), dist. Dhanbad, Jharkhand.

The copy of EC letter and its compliance is also uploaded in website (<http://www.tatasteel.com/sustainability/environment-compliance-reports/>) for your kind perusal.

Thanking You,

Yours faithfully,

  
Head, Planning  
Jharia Division





## ENVIRONMENTAL POLICY

Tata Steel's environmental responsibilities are driven by our commitment to preserve the environment and are integral to the way we do business.

1. We are committed to deal proactively with Climate Change issue by efficient use of natural resources & energy; reducing and preventing pollution; promoting waste avoidance and recycling measures; and product stewardship.
  - We shall identify, assess and manage our environment impact.
  - We shall regularly monitor, review and report publicly our environmental performance.
  - We shall develop & rehabilitate abandoned sites through afforestation and landscaping and shall protect and preserve the biodiversity in the areas of our operations.
  - We shall enhance awareness, skill and competence of our employees and contractors so as to enable them to demonstrate their involvement, responsibility and accountability for sound environmental performance.
2. We are committed to continual improvement in our environmental performance.
  - We shall set objective-targets, develop, implement and maintain management standards and systems, and go beyond compliance of the relevant industry standards, legal and other requirements.
3. We will truly succeed when we sustain our environmental achievement and are valued by the communities in which we work.

**Date :** November 1, 2017



**T V Narendran**  
CEO & Managing Director



## FOOD BASKET SURVEY

Food basket survey was conducted for 181 respondents of the neighbouring villages of Jamadoba and Bhelatand Group. The survey was conducted across 24 hamlets and wards nearby our operations area with the following objectives:-

1. To know the living conditions of the people.
2. To know the minimum wage of the people.
3. Develop an action plan to improve the living conditions by identifying gaps.

The following hamlets and municipal wards (24 villages) were surveyed:-

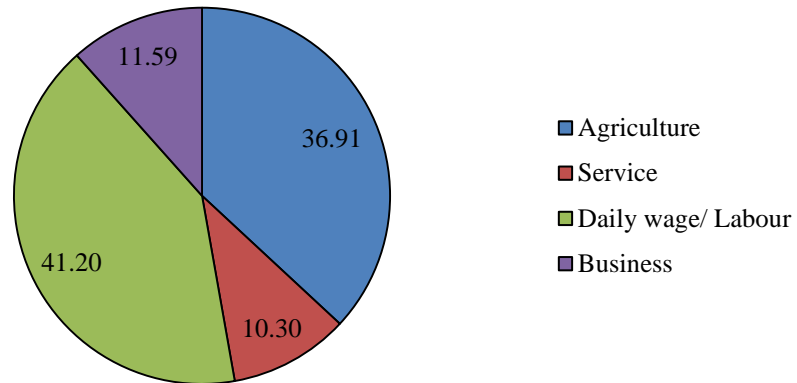
Baidnawadih, Banskapuria, Belubakhar, Bhelatand, Birajdih, Bustar, Chhatand, Debogram, Digwadih-10 no., Dukhidih, Dumri-4 no., Jahajtand, Jorapokhar, Kalimela, Kasiatand, Kushtand, Lalbunglow, Noonudih, Patia, Purnadih, Suyakanali, Tata Sijua-12 no, Tata Sijua 6 no., Upper Dungri.

### Observations: -

- It was observed that there was a great skewedness in economic well among the population. The average income per Family is Rs. 8823.00 (181 beneficiaries).
- Out of 181 Households, 295 were earning members.
- The minimum earnings per day in unorganised sector and casual workers is approx. Rs208.00 ( Total earning / total no. of earning members)
- No. of members per family is  $991/181 = 5.47$
- Average Working persons per family is  $295/181 = 1.63$
- The major demands that have come up is ameliorating unemployment and Drinking water and combating social evils like Alcoholism, Dowry and Domestic Violence. Unemployment is especially to the new generation who may not be having adequate number of jobs.
- The major livelihood is wage labour and also a substantial number of Population is engaged in Agriculture. Only a few are unemployed.

Livelihood	Numbers	Percentage (%)
Agriculture	86	36.90
Service	24	10.30
Daily wage/ Labour	96	41.20
Business	27	11.59
TOTAL	233	100%

## LIVELIHOOD PATTERN %



### Expenditure in (Rs) Per Family Per Month

S.No.	Expenditure Item	Expenditure in Rupees	Expenditure per family per month in Rupees
1	Transportation	49376	272
2	House	0	0
3	Electricity	24005	132.62
4	Water	3003	17.00
5	Education	65426	361.46
6	Medical	84259	465.37
7	Clothing	88034	486.37
8	Soc. Oblg.	25581.31	141.33
9	Food	3598.16	3598.16
10	Fuel	37851	209.12
	<b>Total</b>	<b>381133.5</b>	<b>5683.43</b>

- Total Expenditure per month- Rs 3,81,133.5
- Average expenditure per family per month- Rs 5683.58
- Average expenditure per member- (5683.58/5.4)= Rs 1052.4
- Income per family- Rs 8823
- Income per month per individual Earning member= Rs 208.00 x 26= Rs 5,408.00
- Expenditure Per person on food per month= Rs 3598.16/5.4= Rs 719.63
- % of Expenditure Spent on food by per person per month= 719.63/1052.40\*100=68.37%

### **BASIC NEED WAGE:**

Basic food expense per person X 100/% expense on food X 1/Avg working persons per family X Avg Family Size X 1.1

$$=719.63 \times 100/68.37 \times 1/1.63 \times 5.4 \times 1.1 = \text{Rs}3835.68$$

**So, The Basic Need Wage is Rs 3835.68**