



**The Deputy Director General of Forest (C),
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office, (IRO) – Ranchi
2nd floor, Headquarter, Jharkhand State Housing Board Harmu Chowk,
Harmu Housing Colony, Argora, Jharkhand – 834002.**

Ref No. - JMB/ENV/DIG/37/ 293 /2024
May 27th, 2024

Ref.: Environmental Clearance letter No.-J-11015/372/2010-IA.II(M)dated-30th 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 October-23 to March-24.**


Dear Sir,

We are enclosing herewith compliance report for the period **October-23 to March-24** 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.

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, 5th Floor
1582, Rajdanga Main Road, Kolkata -700107.

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

Copy to: Regional Officer, JSPCB, HIG -1 Sardar Patel Nagar, Housing Colony, Hirapur,
Dhanbad

TATA STEEL LIMITED

Jharia Collieries Jamadoba 828 112 Dhanbad India

Tel 91 326 2320263/2320265/2320267 Fax 91 326 2320268

Regd. Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com



Your (**Environment Clearance**) application has been **Submitted** with following details

Proposal No	IA/JH/CMIN/19215/2010
Compliance ID	72049976
Compliance Number(For Tracking)	EC/M/COMPLIANCE/72049976/2024
Reporting Year	2024
Reporting Period	01 Jun(01 Oct - 31 Mar)
Submission Date	30-05-2024
IRO Name	ARTATRANA MISHRA
IRO Email	jhk109@ifs.nic.in
State	JHARKHAND
IRO Office Address	Integrated Regional Offices, Ranchi

Note:- SMS and E-Mail has been sent to ARTATRANA MISHRA, JHARKHAND with Notification to Project Proponent.

**Half Yearly Compliance Report
2024
01 Jun(01 Oct - 31 Mar)**

Acknowledgment

Proposal Name		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	
Name of Entity / Corporate Office		Tata Steel Ltd.	
Village(s)		N/A	
District		DHANBAD	
Proposal No.	IA/JH/CMIN/19215/2010	Category	Coal Mining
Plot / Survey / Khasra No.	N/A	Sub-District	N/A
State	JHARKHAND	Entity's PAN	AAICM3854E~LALALLL
MoEF File No.	J-11015/372/2010-IA.II (M)	Entity name as per PAN	Prakash Sinha

Compliance Reporting Details

Reporting Year	2024
Remarks (if any)	Half Yearly Compliance Submission for October 2023 to March 2024.
Reporting Period	01 Jun(01 Oct - 31 Mar)

Details of Production and Project Area

Name of Entity / Corporate Office Tata Steel Ltd.

	Project Area as per EC Granted	Annual Project Area in Possession
Private	0	0
Revenue Land	0	0
Forest	0	0
Others	0	0
Total	0	0

Production Capacity

Sr. no	Product Name	units	Valid Upto	Capacity	Production last year	Capacity as per CTO
1	Raw Coal	Million Tons per Annum (MTPA)	N/A	0.6	0	

Conditions

Specific Conditions

Sr.No.	Condition Type	Condition Details
1	WATER QUALITY MONITORING AND PRESERVATION	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.
PPs Submission: Complied Most 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. 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. The water requirement of the nearby villages is being met by the company already. Now piped drinking water is being provided.		Date: 29/05/2024
2	Statutory compliance	The maximum production from the mines shall not exceed beyond that for which environmental clearance has been granted.
PPs Submission: Complied 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.		Date: 29/05/2024
3	Statutory compliance	The impact on the Damodar river due to mining activity which is at a distance of 2 km be studied through a reputed 3rd Party and submitted to the SPCB and the regional office of the MoEF for monitoring.
PPs Submission: Complied 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 • 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. • 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. • 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. • The two coal washeries of Tata Steel are operating on Zero Liquid discharge (ZLD) principle. • Sewage water generated from our townships is treated in STP. For Sijua group, one STP of 200 KLD and another STP of 50 KLD has been installed in Bhelatand Colonies, 10 KLD has been installed at Sijua canteen and Bhelatand canteen individually. For Jamadoba group, 10 KLD STP/ETP installed in washery, Canteen, Garage and Hospital individually, other than that 60 KLD and 30 KLD installed at Digwadih Colony, 50 KLD installed at Railway Colony.		Date: 29/05/2024
4	Statutory compliance	Details of underground transportation of coal from mine to coal yard/ rail yard be submitted to the MoEF for record.

PPs Submission: Complied 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 reports.		Date: 29/05/2024
5	WASTE MANAGEMENT	Adequate care be taken to prevent sand spillages from the trucks/tippers.
PPs Submission: Complied 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. To ensure the compliance, every vehicle is checked as per vehicle checklist on PUC, Tyre /body condition, emission check at every entry point. Quality checks are done on trucks to ensure its health.		Date: 29/05/2024
6	WASTE MANAGEMENT	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.
PPs Submission: Complied 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 us, 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 in April'18.		Date: 29/05/2024
7	Corporate Environmental Responsibility	The CSR activities shall be need based and detailed CSR plan be prepared for implementation.
PPs Submission: Complied 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.		Date: 29/05/2024
8	Corporate Environmental Responsibility	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.
PPs Submission: Complied 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		Date: 29/05/2024
9	WASTE MANAGEMENT	There should be no OB dumps at the end of the mining.
PPs Submission: Complied Since this is an underground mine, it is not applicable.		Date: 29/05/2024
10	MISCELLANEOUS	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 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.
PPs Submission: Complied		Date:

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.		29/05/2024
11	Statutory compliance	If subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement of the landowners.
PPs Submission: Complied It will be strictly followed.		Date: 29/05/2024
12	Statutory compliance	Mining shall be carried out as per statuette at a safe distance from the river/nallah flowing adjacent to the lease boundary.
PPs Submission: Complied 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.		Date: 29/05/2024
13	GREENBELT	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
PPs Submission: Complied Impact on land by subsidence has been found to be negligible as per the subsidence monitoring reports prepared by CIMFR, Dhanbad.		Date: 29/05/2024
14	Statutory compliance	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.
PPs Submission: Complied It will be strictly followed.		Date: 29/05/2024
15	Statutory compliance	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.
PPs Submission: Complied Regular monitoring of subsidence is being done by CIMFR, Dhanbad.		Date: 29/05/2024
16	GREENBELT	3-tier plantation should be developed 2 km stretch of road from the mine using native species.
PPs Submission: Complied 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. However, plantation has been done on vacant plots and areas. Annexure-I.		Date: 30/05/2024
17	WATER QUALITY MONITORING AND PRESERVATION	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.

PPs Submission: Complied 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 earlier in April' 18.		Date: 29/05/2024
18	AIR QUALITY MONITORING AND PRESERVATION	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.
PPs Submission: Complied The locations of monitoring stations for our colliery have already been finalized in consultation with JSPCB, Dhanbad. The mineralogical composition study has been carried out by an independent laboratory (recognized by JSPCB and NABL) and the results are provided in Annexure-II.		Date: 30/05/2024
19	AIR QUALITY MONITORING AND PRESERVATION	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.
PPs Submission: Complied 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.		Date: 29/05/2024
20	AIR QUALITY MONITORING AND PRESERVATION	Transportation of coal from the mine to railway siding should be by 20T mechanically covered trucks.
PPs Submission: Complied Not applicable due to transportation of coal via underground belt conveyor network system directly to washery.		Date: 29/05/2024
21	GREENBELT	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.
PPs Submission: Complied 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. High root density trees of native species are planted under annual plantation program and around 25093 Nos of saplings were planted in the FY23 & 12452 Nos. in FY24.		Date: 30/05/2024
22	WATER QUALITY MONITORING AND PRESERVATION	Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. 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&CC and to the CPCB quarterly within one month of monitoring.

PPs Submission: Complied The regular monitoring of groundwater level and quality is done as per the requirement. The groundwater quality report & groundwater level reports are provided in Annexure-II.		Date: 30/05/2024
23	WATER QUALITY MONITORING AND PRESERVATION	Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided.
PPs Submission: Complied Not applicable.		Date: 29/05/2024
24	WATER QUALITY MONITORING AND PRESERVATION	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.
PPs Submission: Complied There is one mine-water outlet point in the colliery which is regularly monitored by the Environmental Laboratory.		Date: 29/05/2024
25	Human Health Environment	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.
PPs Submission: Complied 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 in previous compliance reports.		Date: 29/05/2024
26	Statutory compliance	The mining in the existing mines would be phased out after expiry of the current mining lease and 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.
PPs Submission: Complied It is not applicable in our case.		Date: 29/05/2024
27	Corporate Environmental Responsibility	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.
PPs Submission: Complied 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 FY23 was Rs. 11.84 crores. For FY24(H1) the expenditure is 4.47 crores CSR data submitted is for Jharia Division which comprises all 5 collieries and 2 washeries. Jamadoba Washery, Digwadiah Colliery and 6&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		Date: 29/05/2024

<p>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. 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.</p>		
28	Statutory compliance	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.
<p>PPs Submission: Complied Mine Closure Plan has been approved by Ministry of Coal, New Delhi. Details on deposition of closure cost in escrow account along with expenditure incurred for progressive closure is regularly submitted to Office of Coal controller. Final mine closure along with details of corpus fund will be submitted to MoEF&CC 5 years in advance.</p>		Date: 29/05/2024
29	Corporate Environmental Responsibility	Corporate Environment Responsibility: a)The Company shall have a well laid down Environment Policy approved by the Board of Directors. 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. 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. 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>PPs Submission: Complied The Company already has an Environment Policy approved by the Managing Director and it addresses all the issues mentioned. 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. 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>		Date: 29/05/2024
General Conditions		
Sr.No.	Condition Type	Condition Details
1	MISCELLANEOUS	No change in technology and scope of working shall be made without prior approval of the MoEF.
<p>PPs Submission: Complied It is being strictly followed. Board and Pillar method is being used for mining.</p>		Date: 29/05/2024
2	MISCELLANEOUS	No change in the calendar plan including quantum of mineral coal and waste being produced shall be made.
<p>PPs Submission: Complied It will be strictly followed.</p>		Date: 29/05/2024

3	AIR QUALITY MONITORING AND PRESERVATION	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.
PPs Submission: Complied The Air quality monitoring stations are: (i)Jamadoba Group Office (Core Zone) (ii)New Village Colony, Jamadoba (Buffer Zone) (iii)Digwadih 12 No. Colony (Buffer Zone) (iv)6&7 Pits Kalimandir area (Buffer Zone) Monitoring of heavy metals in ambient air is being performed by an independent laboratory (recognized by JSPCB & NABL) on quarterly basis. The results are enclosed as Annexure-II.		Date: 30/05/2024
4	MISCELLANEOUS	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 http://envfor.nic.in .
PPs Submission: Complied It has been complied with. Attached as Annexure-IV.		Date: 30/05/2024
5	Statutory compliance	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.
PPs Submission: Complied It has been complied with. Attached as Annexure-IV.		Date: 30/05/2024
6	Statutory compliance	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.
PPs Submission: Complied It has been complied with.		Date: 29/05/2024
7	Statutory compliance	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, 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.
PPs Submission: Complied The clearance letter has been uploaded on the company's website. The compliance status (as Half-		Date:

yearly compliance report) is being uploaded in company's website. The display of information near the mine's office has been done.		29/05/2024
8	Statutory compliance	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.
PPs Submission: Complied It is being complied		Date: 29/05/2024
9	Statutory compliance	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.
PPs Submission: Complied It will be complied with.		Date: 29/05/2024
10	Statutory compliance	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.
PPs Submission: Complied The environmental statement for financial year 2022-23 has been submitted to JSPCB vide letter no. JMB/ENV/ESSA/05/738/2023 on 29th September 2023 and it is also uploaded on the company website. The soft copy of Environment Statement is also sent to MOEF by email at ro.ranchi-mef@gov.in.		Date: 29/05/2024
11	AIR QUALITY MONITORING AND PRESERVATION	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.
PPs Submission: Complied Ambient air quality report (PM10, PM 2.5, SO2 and NOx) for the period from Oct'23 to Mar'24 is attached as Additionally, third party monitoring is being done through a JSPCB and NABL recognized Laboratory for PM10, PM 2.5, SO2, NOx, CO, NH3, O3 and heavy metals (As, Ni, Cd and Cr). The results are enclosed as Annexure-II.		Date: 30/05/2024
12	Noise Monitoring & Prevention	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.
PPs Submission: Complied Regular noise survey is being conducted in the underground work environment. Workers are provided with ear-plugs/ muffs in high noise areas.		Date: 29/05/2024
13	WATER QUALITY	Industrial wastewater (workshop and wastewater from the mine)

	MONITORING AND PRESERVATION	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.
PPs Submission: Complied No industrial wastewater is generated in Digwadih Colliery premises. There is a central workshop and garage in Jamadoba where Effluent Treatment Plant having oil and grease trap facility has been provided.		Date: 29/05/2024
14	AIR QUALITY MONITORING AND PRESERVATION	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.
PPs Submission: Complied Only the vehicles having valid PUC certificates are being allowed to operate for sand transportation. 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.		Date: 29/05/2024
15	Statutory compliance	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.
PPs Submission: Complied We have a fully equipped Environment Cell Laboratory with qualified personnel. The monitoring and analysis is also done at regular intervals by a JSPCB & NABL accredited laboratory We have also installed a Continuous Ambient Air Quality Monitoring Station at Jamadoba for real time monitoring.		Date: 29/05/2024
16	Statutory compliance	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.
PPs Submission: Complied There is one mine-water outlet point in the colliery which is regularly monitored by the Environmental Laboratory. The analysis results have been provided as Annexure-II.		Date: 30/05/2024
17	Human Health Environment	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.
PPs Submission: Complied 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.		Date: 29/05/2024
18	MISCELLANEOUS	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.
PPs Submission: Complied We have a separate Environmental Management Cell with qualified personnel . The reporting of Environmental Cell is directly to General Manager of the Division.		Date: 30/05/2024
19	Corporate Environmental	The funds earmarked for environmental protection measures shall

	Responsibility	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.
PPs Submission: Complied 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 2022-2023 is Rs. 348.74 lakhs.		Date: 29/05/2024
Visit Remarks		
Last Site Visit Report Date:		N/A
Additional Remarks:		

HALF YEARLY COMPLIANCE REPORT

(PERIOD: OCTOBER'23 – MARCH'24)

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
Specific Condition		
(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.
(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 rd Party and submitted to the SPCB and the regional office of the MoEF for monitoring.	<p>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.</p> <p>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</p> <ul style="list-style-type: none"> • 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. • 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. • 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.

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		<ul style="list-style-type: none"> • The two coal washeries of Tata Steel are operating on Zero Liquid discharge (ZLD) principle. • Sewage water generated from our townships is treated in STP. For Sijua group, one STP of 200 KLD and another STP of 50 KLD has been installed in Bhelatand Colonies, 10 KLD has been installed at Sijua canteen and Bhelatand canteen individually. For Jamadoba group, 10 KLD STP/ETP installed in washery, Canteen, Garage and Hospital individually, other than that 60 KLD and 30 KLD installed at Digwadih Colony, 50 KLD installed at Railway Colony.
(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 reports.
(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. To ensure the compliance, every vehicle is checked as per vehicle checklist on PUC, Tyre /body condition, emission check at every entry point. Quality checks are done on trucks to ensure its health.
(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 us, 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 in April'18.

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(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
(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 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.	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.
(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

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		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. However, plantation has been done on vacant plots and areas. Annexure-I.
(xvi)	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 earlier in April'18.
(xvii)	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	The locations of monitoring stations for our colliery have already been finalized in consultation with JSPCB, Dhanbad. The mineralogical composition study has been carried out by an independent laboratory (recognized by JSPCB and NABL) and the results are provided in Annexure-II .

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	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.	
(xix)	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.
(xx)	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.
(xxi)	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.	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. High root density trees of native species are planted under annual plantation program and around 25093 Nos of saplings were planted in the FY23 & 12452 Nos. in FY24.
(xxii)	Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. 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&CC and to the CPCB	The regular monitoring of groundwater level and quality is done as per the requirement. The groundwater quality report & groundwater level reports are provided in Annexure-II .

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	quarterly within one month of monitoring.	
(xxiii)	Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided.	Not applicable.
(xxiv)	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.	There is one mine-water outlet point in the colliery which is regularly monitored by the Environmental Laboratory.
(xxv)	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.	Most 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. 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. The water requirement of the nearby villages is being met by the company already. Now piped drinking water is being provided.
(xxvi)	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 in previous compliance reports.

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(xxvii)	The mining in the existing mines would be phased out after expiry of the current mining lease and 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.	It is not applicable in our case.
(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 FY23 was Rs. 11.84 crores. For FY24 the expenditure is Rs. 21.81 crores</p> <p>CSR data submitted is for Jharia Division which comprises all 5 collieries and 2 washeries. Jamadoba Washery, Digwadih Colliery and 6&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.</p>

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(xxix)	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 has been approved by Ministry of Coal, New Delhi. Details on deposition of closure cost in escrow account along with expenditure incurred for progressive closure is regularly submitted to Office of Coal controller. Final mine closure along with details of corpus fund will be submitted to MoEF&CC 5 years in advance.
(xxx)	<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.</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>

B.	GENERAL CONDITIONS	
(i)	No change in technology and scope of working shall be made without prior approval of the MoEF.	It is being strictly followed. Board and Pillar method is being used for mining.

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(ii)	No change in the calendar plan including quantum of mineral coal and waste being produced shall be made.	It will be strictly followed.
(iii)	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> <p>(i) Jamadoba Group Office (Core Zone)</p> <p>(ii) New Village Colony, Jamadoba (Buffer Zone)</p> <p>(iii) Digwadih 12 No. Colony (Buffer Zone)</p> <p>(iv) 6&7 Pits Kalimandir area (Buffer Zone)</p> <p>Monitoring of heavy metals in ambient air is being performed by an independent laboratory (recognized by JSPCB & NABL) on quarterly basis. The results are enclosed as Annexure-II.</p>
(iv)	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 Oct'23 to Mar'24 is attached as Additionally, third party monitoring is being done through a JSPCB and NABL recognized Laboratory for PM10, PM 2.5, SO2, NOx, CO, NH3, O3 and heavy metals (As, Ni, Cd and Cr). The results are enclosed as Annexure-II .
(v)	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.	Regular noise survey is being conducted in the underground work environment. Workers are provided with ear-plugs/ muffs in high noise areas.
(vi)	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	No industrial wastewater is generated in Digwadih Colliery premises. There is a central workshop and garage in Jamadoba where

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	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.	Effluent Treatment Plant having oil and grease trap facility has been provided.
(vii)	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.	Only the vehicles having valid PUC certificates are being allowed to operate for sand transportation. 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.
(viii)	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.	We have a fully equipped Environment Cell Laboratory with qualified personnel. The monitoring and analysis is also done at regular intervals by a JSPCB & NABL accredited laboratory We have also installed a Continuous Ambient Air Quality Monitoring Station at Jamadoba for real time monitoring.
(ix)	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 have been provided as Annexure-II .
(x)	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.	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.
(xi)	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a	We have a separate Environmental Management Cell with qualified personnel . The reporting of Environmental Cell is directly to General Manager of the Division.

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	Senior Executive, who will report directly to the Head of the company.	Environment policy has been attached as Annexure-III.
(xii)	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.	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 2022-2023 is Rs. 348.74 lakhs.
(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 http://envfor.nic.in .	It has been complied with. Attached as Annexure-IV.
(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. Attached as Annexure-IV.
(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	The clearance letter has been uploaded on the company's website. The compliance status (as Half-yearly compliance report) is being

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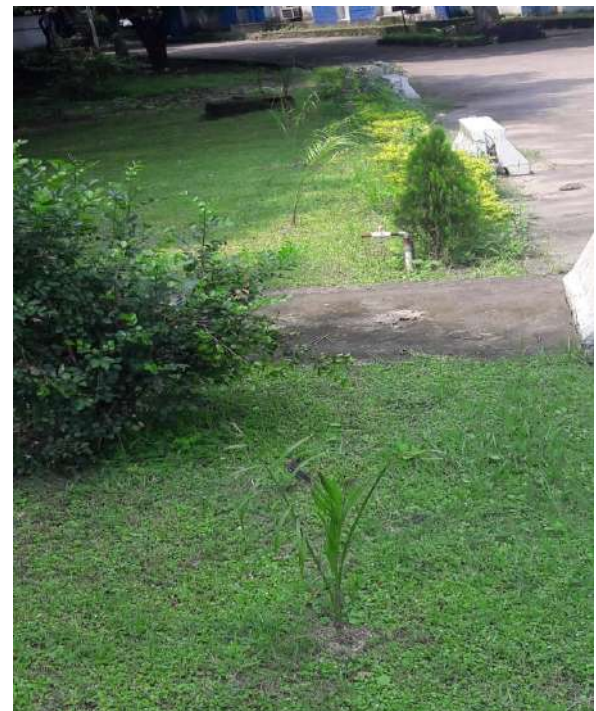
	conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM10, PM2.5, SO2 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.	uploaded in company's website. The display of information near the mine's office has been done.
(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	The environmental statement for financial year 2022-23 has been submitted to JSPCB vide letter no. JMB/ENV/ESSA/05/738/2023 on 29 th September 2023 and it is also uploaded on the company website. The soft copy of Environment Statement is also sent to MOEF by email at ro.ranchi-mef@gov.in.

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	Regional Offices of the MOEF by E-mail.	
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Annexure- I Greenbelt Development Report

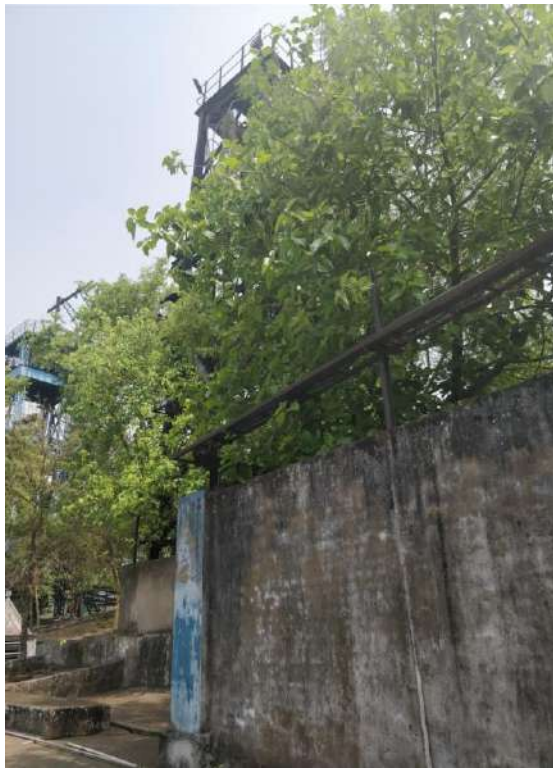
Glimpses of already existing green belt and plantation activities done in this monsoon season in and around Digwadih colliery premises to enhance the green cover have been depicted in the pictures below:



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

Ambient Air Quality and Groundwater Quality Report (Period- **October'23 to March'24**)**AIR QUALITY REPORT**

Core zone & Buffer zone

Period- **October'23 to December'23**

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/m³	RSPM 24 Hourly Limit- 300 µg/m³	SO ₂ 24 Hourly Limit- 120 µg/m³	NO _x 24 Hourly Limit-120 µg/m³
6&7 Pits Kalimandir area	23°43'15" N/ 86°24'12" E	20.10.23	Clear	218.3	80.9	15.2	17.2
		10.11.23	Clear	248.1	86.3	18.6	20.9
		13.12.23	Clear	242.5	84.2	17.8	19.5
Buffer zone (as per NAAQS 2009 for ambient air quality standards)							
Location	Latitude/ Longitude	Date	Weather Condition	PM10 24 Hourly Limit- 100µg/m³	PM2.5 24 Hourly Limit- 60µg/m³	SO ₂ 24 Hourly Limit- 80µg/m³	NO ₂ 24 Hourly Limit- 80µg/m³
Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	17.10.23	Clear	90.7	49.1	16.8	18.2
		08.11.23	Clear	94.2	50.7	17.9	20.5
		04.12.23	Clear	90.5	48.1	18.4	21.9
Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	19.10.23	Clear	76.1	36.0	18.4	20.1
		06.11.23	Clear	90.5	48.1	15.7	17.4
		11.12.23	Clear	88.6	45.2	14.9	18.3
New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	16.10.23	Clear	84.3	43.5	17.6	19.4
		09.11.23	Clear	87.4	46.5	16.8	18.2
		05.12.23	Clear	92.8	50.3	17.4	19.7
Tata Central Hospital	23°42'36" N/ 86°24'10.4"E	18.10.23	Clear	78..2	38.9	15.4	17.6
		07.11.23	Clear	82.1	41.0	18.4	21.3
		08.12.23	Clear	68.4	32.0	15.7	17.8


Area Manager (Environment)

Ambient Air Quality and Groundwater Quality Report (Period- **October'23 to March'24**)**AIR QUALITY REPORT**

Core zone & Buffer zone

Period- January'24 to March'24

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/m³	RSPM 24 Hourly Limit- 300 µg/m³	SO ₂ 24 Hourly Limit- 120 µg/m³	NO _x 24 Hourly Limit-120 µg/m³
6&7 Pits Kalimandir area	23°43'15" N/ 86°24'12" E	08.01.24	Clear	248.7	89.5	16.4	18.2
		16.02.24	Clear	231.9	84.2	18.2	22.8
		08.03.24	Clear	226.7	80.1	17.9	20.5
Buffer zone (as per NAAQS 2009 for ambient air quality standards)							
Location	Latitude/ Longitude	Date	Weather Condition	PM10 24 Hourly Limit- 100µg/m³	PM2.5 24 Hourly Limit- 60µg/m³	SO ₂ 24 Hourly Limit- 80µg/m³	NO ₂ 24 Hourly Limit- 80µg/m³
Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	05.01.24	Clear	94.2	50.1	17.6	19.5
		12.02.24	Clear	92.1	48.7	16.4	20.1
		06.03.24	Clear	76.6	32.8	18.4	20.3
Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	04.01.24	Clear	92.7	48.3	15.2	17.1
		15.02.24	Clear	95.3	51.6	18.7	21.5
		07.03.24	Clear	81.4	42.1	15.9	18.6
New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	09.01.24	Clear	90.5	46.9	16.8	18.4
		14.02.24	Clear	78.7	36.9	14.5	17.2
		04.03.24	Clear	84.3	44.2	17.2	19.5
Tata Central Hospital	23°42'36" N/ 86°24'10.4"E	03.01.24	Clear	76.3	38.9	14.8	16.2
		19.02.24	Clear	87.3	43.5	15.8	18.7
		11.03.24	Clear	74.5	30.4	16.7	19.2



Area Manager (Environment)

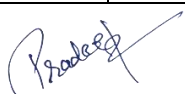
Ambient Air Quality and Groundwater Quality Report (Period- **October'23 to March'24**)**Ground Water Quality Analysis (Hand Pump & Dung Well)****(Post Monsoon Season- November'2023)**

S.No	Date	Location	Time	Depth in meter	pH	Electrical Conductivity, $\mu\text{S/m}$
1	15.11.23	Purnadih (Jorapokhar)	01:15 PM	3.53	7.0	1210
2	15.11.23	Bhowra 13 No	12:50 PM	3.32	7.3	1251
3	15.11.23	Mohalbani Basti	02:15 PM	2.94	6.9	1198
4	15.11.23	Digwadih 10 No F & J	12:10 PM	2.61	7.3	1252
5	15.11.23	Kalimela Shivmandir	11:05 AM	1.62	7.4	1022
6	15.11.23	Kalimela Kalimandir	11:20 AM	3.31	7.0	1358
7	15.11.23	Lower Dungari	10:45 AM	3.10	7.2	778
8	15.11.23	Upper Dungari	10:25 AM	2.26	7.4	912
9	15.11.23	Pattia Basti	10:00 AM	3.42	7.1	887
10	15.11.23	Kenduadih Basti	09:35 AM	2.34	7.4	810
11	15.11.23	Jorapokhar Kushtand	01:55 PM	4.24	7.6	1465
12	15.11.23	6&7 Pits (Ayodhya Nagri)	11:45 AM	1.86	7.3	994
13	15.11.23	Jorapokhar Basti Chhattand	12:25 PM	2.12	7.4	1236
14	15.11.23	Jorapokhar Babu Basa	01:30 PM	2.04	7.2	1138


Area Manager (Environment)

Ambient Air Quality and Groundwater Quality Report (Period- **October'23 to March'24**)**Ground Water Quality Analysis (Hand Pump & Dung Well)****(Winter Season- January'2024)**

S.No	Date	Location	Time	Depth in meter	pH	Electrical Conductivity $\mu\text{S/m}$
1	12.01.24	Purnadih (Jorapokhar)	11:50 AM	4.78	7.2	1208
2	12.01.24	Bhowra 13 No	12:20 PM	3.38	7.0	984
3	12.01.24	Mohalbani Basti	12:30 PM	2.98	7.1	1174
4	12.01.24	Digwadih 10 No F & J	12:50 PM	2.82	7.2	1608
5	12.01.24	Kalimela Shivmandir	10:55 AM	1.66	7.0	878
6	12.01.24	Kalimela Kalimandir	11:10 AM	3.42	7.1	1339
7	12.01.24	Lower Dungari	10:40 AM	3.41	7.3	776
8	12.01.24	Upper Dungari	09:35 AM	2.44	7.6	810
9	12.01.24	Pattia Basti	09:55 AM	3.51	7.2	920
10	12.01.24	Kenduadih Basti	10:15 AM	2.47	7.3	1120
11	12.01.24	Jorapokhar Kushtand	11:30 AM	4.52	7.3	1628
12	12.01.24	6&7 Pits (Ayodhya Nagri)	01:40 PM	1.95	7.4	1019
13	12.01.24	Jorapokhar Basti Chhattand	01:10 PM	1.01	7.2	1327
14	12.01.24	Jorapokhar Babu Basa	12:05 PM	2.08	7.0	1172


Area Manager (Environment)

Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)



ADITI R&D SERVICES

Testing Laboratory

NABL ACCREDITED

(A Constituent Board of Quality Council of India)

ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified

Plot No. - I-B-17 (P)
Sindri, Industrial Area,
P.O. - Domgarh, Dist. - Dhanbad
Jharkhand - 828107
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Website: aditimdservices.com
Phone: 0326-2952377 (O),
Fax: 0326-2952377
Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/1416

Date: 15.11.2023

TEST REPORT OF AMBIENT AIR QUALITY

- Name of the industry : M/S TATA STEEL, JAMADOBA,
TATA STEEL LIMITED
JAMADOBA GROUP PLANT,
DIST. - DHANBAD (JHARKHAND)
- Work Order Ref. NO. : 4700092573/932 Dt. 20.07.2021
- Date of Sample Collection : 09/11/2023 to 10/11/2023
- Date of Testing : 11/11/2023 to 14/11/2023
- Test Procedure : As per IS-5182

TEST RESULTS

LOCATION - 6 & 7 PITS COLLIERY OFFICE				
	Avg. Ambient Temperature	30°C	Avg. Humidity	39%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM ₁₀), µg/m ³	90.76	100 µg/m ³	
2.	Particulate Matter (PM _{2.5}), µg/m ³	53.45	60 µg/m ³	
3.	SO ₂ , µg/m ³	20.83	80 µg/m ³	
4.	NO ₂ , µg/m ³	28.62	80 µg/m ³	
5.	Ozone, µg/m ³	18.36	180 µg/m ³	
6.	NH ₃ , µg/m ³	14.25	400 µg/m ³	
7.	CO, mg/m ³	0.89	4 mg/m ³	
8.	Pb, µg/m ³	BDL	1 µg/m ³	
9.	As, ng/m ³	BDL	6 ng/m ³	
10.	Ni, ng/m ³	BDL	20 ng/m ³	
11.	Benzene, µg/m ³	BDL	5 µg/m ³	
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³	

NOTE: BDL - Below Detection Limit

S. D. Ray
Sr. Chemist
Aditi R&D Services


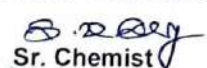




Technical Manager
Aditi R&D Services, Sindri


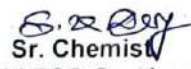


Statements :

- The test report refers only to the particular item(s) submitted for testing.
- The test results reported in this report are valid at the time of and under the stated condition of measurement.
- This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory.


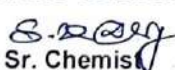


Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O.- Domgarh, Dist.- Dhanbad Jharkhand - 828107 Email ID: sindriadi@gmail.com Website: aditirndservices.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 09431512608		
Ref. No.: ARDS/23-24/1417		Date: 15.11.2023		
<h3 style="margin: 0;">TEST REPORT OF AMBIENT AIR QUALITY</h3>				
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Date of Sample Collection : 09/11/2023 to 10/11/2023 • Date of Testing : 11/11/2023 to 14/11/2023 • Test Procedure : As per IS-5182 				
<h4 style="margin: 0;">TEST RESULTS</h4>				
LOCATION – OFFICERS COLONY, 12 NO. DIGWADIH				
	Avg. Ambient Temperature	30°C	Avg. Humidity	39%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM ₁₀), µg/m ³	78.18	100 µg/m ³	
2.	Particulate Matter (PM _{2.5}), µg/m ³	44.90	60 µg/m ³	
3.	SO ₂ , µg/m ³	17.32	80 µg/m ³	
4.	NO ₂ , µg/m ³	29.30	80 µg/m ³	
5.	Ozone, µg/m ³	16.65	180 µg/m ³	
6.	NH ₃ , µg/m ³	14.15	400 µg/m ³	
7.	CO, mg/m ³	0.79	4 mg/m ³	
8.	Pb, µg/m ³	BDL	1 µg/m ³	
9.	As, ng/m ³	BDL	6 ng/m ³	
10.	Ni, ng/m ³	BDL	20 ng/m ³	
11.	Benzene, µg/m ³	BDL	5 µg/m ³	
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³	
NOTE: BDL - Below Detection Limit				
 Sr. Chemist Aditi R&D Services			 Technical Manager Aditi R&D Services, Sindri	
Statements : <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory. 				

Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

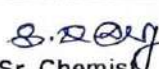
	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O. - Domgarh, Dist. - Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirnds.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 09431512608		
Ref. No.: - ARDS/23-24/1418		Date: 15.11.2023		
TEST REPORT OF AMBIENT AIR QUALITY				
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO. : 4700092573/932 Dt. 20.07.2021 • Date of Sample Collection : 09/11/2023 to 10/11/2023 • Date of Testing : 11/11/2023 to 14/11/2023 • Test Procedure : As per IS-5182 				
TEST RESULTS				
LOCATION – CENTRAL WORKSHOP AREA , JAMADOBA				
	Avg. Ambient Temperature	30°C	Avg. Humidity	39%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM ₁₀), µg/m ³	88.57	100 µg/m ³	
2.	Particulate Matter (PM _{2.5}), µg/m ³	54.15	60 µg/m ³	
3.	SO ₂ , µg/m ³	22.27	80 µg/m ³	
4.	NO ₂ , µg/m ³	29.00	80 µg/m ³	
5.	Ozone, µg/m ³	17.90	180 µg/m ³	
6.	NH ₃ , µg/m ³	18.36	400 µg/m ³	
7.	CO, mg/m ³	1.09	4 mg/m ³	
8.	Pb, µg/m ³	BDL	1 µg/m ³	
9.	As, ng/m ³	BDL	6 ng/m ³	
10.	Ni, ng/m ³	BDL	20 ng/m ³	
11.	Benzene, µg/m ³	BDL	5 µg/m ³	
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³	
NOTE: BDL - Below Detection Limit				
 Sr. Chemist Aditi R&D Services				
 Technical Manager Aditi R&D Services, Sindri				
Statements : <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory. 				


Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

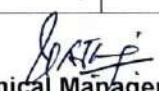
	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O. - Domgarh, Dist. - Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirndservices.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 09431512808		
Ret. No.: - ARDS/23-24/1419		Date: 15.11.2023		
TEST REPORT OF AMBIENT AIR QUALITY				
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Date of Sample Collection : 09/11/2023 to 10/11/2023 • Date of Testing : 11/11/2023 to 14/11/2023 • Test Procedure : As per IS-5182 				
TEST RESULTS				
LOCATION – TATA CENTRAL HOSPITAL				
	Avg. Ambient Temperature	30°C	Avg. Humidity	39%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM ₁₀), µg/m ³	70.63	100 µg/m ³	
2.	Particulate Matter (PM _{2.5}), µg/m ³	41.38	60 µg/m ³	
3.	SO ₂ , µg/m ³	18.12	80 µg/m ³	
4.	NO ₂ , µg/m ³	29.93	80 µg/m ³	
5.	Ozone, µg/m ³	15.83	180 µg/m ³	
6.	NH ₃ , µg/m ³	16.70	400 µg/m ³	
7.	CO, mg/m ³	0.73	4 mg/m ³	
8.	Pb, µg/m ³	BDL	1 µg/m ³	
9.	As, ng/m ³	BDL	6 ng/m ³	
10.	Ni, ng/m ³	BDL	20 ng/m ³	
11.	Benzene, µg/m ³	BDL	5 µg/m ³	
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³	
NOTE: BDL - Below Detection Limit				
 Sr. Chemist Aditi R&D Services			 Technical Manager Aditi R&D Services, Sindri	
Statements : <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory. 				

Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT							
ARDS/23-24/1420 Date: 15.11.2023		M/S TATA STEEL, JAMADOBA,							
Date of Monitoring		TATA STEEL LIMITED, JAMADOBA GROUP PLANT,							
09/11/2023 TO 10/11/2023		DIST. - DHANBAD (JHARKHAND)							
Work Order 4700092573/932 Dt. 20.07.2021		Avg. Ambient Temperature (°C)	Average Humidity (%)						
		30	44						
		Weather Condition	Status of the plant						
		Clear	Running						
MONITORING RESULTS									
Sl. No	Place of Monitoring	Day Time (6 AM to 10 PM) Avg. dB(A)	Night Time (10 PM to 6 AM) Avg. dB(A)	Noise level (Ambient standard) for Industrial Area as per CPCB Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 notified vide S.O. 1046(E) Dt. 22.11.2020 Limit in dB(A) Leq					
		MAX	MIN	AVG. dB(A) Leq	MAX	MIN	AVERAGE dB(A) Leq	Industrial Area	Industrial Area
1.	Central Workshop Area, Jamadoba	68.4	56.2	65.64	54.2	46.8	51.92	75	70
2.	6 & 7 Pits Colliery Office	69.8	53.4	66.89	58.6	52.4	56.52		
3.	Officers Colony 12 No. Digwadiah	52.8	47.2	50.85	46.8	42.4	45.13	Residential Area 65	Residential Area 55
4.	Tata Central Hospital	49.2	44.8	47.53	39.4	37.8	38.67	Silence Zone 50	Silence Zone 40


Sr. Chemist
 Aditi R&D Services




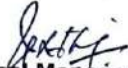



Technical Manager
 Aditi R&D Services, Sindri

Statements :

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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O.- Domgarh, Dist.- Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirmdservices.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 09431512608																						
Ref. No.: - ARDS/23-24/1421		Date: 15.11.2023																						
<h3 style="margin: 0;">TEST REPORT OF MINERALOGICAL COMPOSITION</h3> <h4 style="margin: 0;">OF PARTICULATE MATTER</h4>																								
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO. : 4700092573/932 Dt. 20.07.2021 • Date of Sample Collection : 10/11/2023 • Date of Testing : 11/11/2023 – 14/11/2023 																								
<h4 style="margin: 0;">TEST RESULTS</h4>																								
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Sl No.</th> <th rowspan="2">Particulars</th> <th colspan="4">Mineralogical Composition (%)</th> </tr> <tr> <th>SiO₂</th> <th>FeO</th> <th>Al₂O₃</th> <th>CaO</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Central Workshop Area, Jamadoba</td> <td>1.83</td> <td>0.06</td> <td>1.39</td> <td>2.8</td> </tr> <tr> <td>2.</td> <td>Officer's Colony 12 No. Digwadih</td> <td>1.09</td> <td>0.14</td> <td>1.30</td> <td>2.89</td> </tr> </tbody> </table>			Sl No.	Particulars	Mineralogical Composition (%)				SiO ₂	FeO	Al ₂ O ₃	CaO	1.	Central Workshop Area, Jamadoba	1.83	0.06	1.39	2.8	2.	Officer's Colony 12 No. Digwadih	1.09	0.14	1.30	2.89
Sl No.	Particulars	Mineralogical Composition (%)																						
		SiO ₂	FeO	Al ₂ O ₃	CaO																			
1.	Central Workshop Area, Jamadoba	1.83	0.06	1.39	2.8																			
2.	Officer's Colony 12 No. Digwadih	1.09	0.14	1.30	2.89																			
 Sr. Chemist Aditi R&D Services		 Technical Manager Aditi R&D Services, Sindri																						
Statements : <ol style="list-style-type: none"> 1. The test report refers only to the particular item(s) submitted for testing. 2. The test results reported in this report are valid at the time of and under the stated condition of measurement. 3. This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory. 																								

Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)



ADITI R&D SERVICES

Testing Laboratory

NABL ACCREDITED

(A Constituent Board of Quality Council of India)

ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified

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Sindri, Industrial Area,
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Email ID: sindriaditi@gmail.com
Website: aditirndservices.com
Phone: 0326-2952377 (O),
Fax: 0326-2952377
Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/1428

Date: 17.11.2023

TEST REPORT OF SURFACE WATER

- Name of the industry : M/S TATA STEEL, JAMADOBA,
TATA STEEL LIMITED
JAMADOBA GROUP PLANT,
DIST. - DHANBAD (JHARKHAND)
- Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021
- Sample Code : 1. Damodar River Up Stream
2. Damodar River Down Stream
- Date of Sample Collection: 09/11/2023
- Date of Testing : 11/11/2023 To 16/11/2023
- Test : pH, TDS, Turbidity, DO, BOD, Cl, F, SO₄

TEST RESULT

Sl. No.	PARAMETERS OF TEST	VALUE		Limit as per IS 2296 Class - C	Test Method
		Damodar River Up Stream	Damodar River Dn Stream		
1.	pH	7.9	8.0	6.5 -8.5	IS-3025 (P-11): 1983
2.	Total Dissolved Solids, mg/l	403	393	1500	IS-3025 (P-16): 1984
3.	Turbidity, NTU	1	1	-	IS-3025 (P-10):1984
4.	Dissolved Oxygen, mg/l	4.5	5.9	4.0	IS-3025 (P-38):1989
5.	Bio chemical Oxygen Demand, mg/l	2.6	2.0	3.0	IS-3025 (P-44):1994
6.	Chloride as Cl, mg/l	29.8	27.9	-	IS-3025 (P-32):1988
7.	Fluoride as F, mg/l	0.48	0.45	1.5	IS-3025 (P-60):2008
8.	Sulphate as SO ₄ , mg/l	65.5	49	400	IS-3025 (P-24):1986

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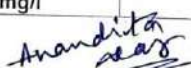

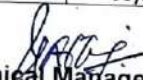


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Ref. No.: - ARDS/23-24/1429		Date: 17.11.2023						
TEST REPORT OF MINE WATER DISCHARGE								
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : <ul style="list-style-type: none"> 1. 3 Pit Jamadoba Colliery 2. 6 & 7 Pits Colliery 3. 2 Pit Jamadoba Colliery 4. 2 Incline Jamadoba Colliery 5. Digwadih Colliery • Date of Sample Collection: 09/11/2023 to 10/11/2023 • Date of Testing : 11/11/2023 to 16/11/2023 • Test : pH, TDS, TSS, BOD, COD, OIL & GREASE. 								
TEST RESULT								
Sl. No.	PARAMETERS OF TEST	VALUE	Limit as per IS-2296 Class B (For Bathing)	Test Method				
		3 Pit Jamadoba Colliery	6 & 7 Pits Colliery	2 Pit Jamadoba Colliery	2 Incline Jamadoba Colliery	Digwadih Colliery		
1.	pH,	7.7	6.8	7.4	7.1	7.3	6.5-8.5	IS-3025 (P-11): 1983
2.	Total Dissolved Solids, mg/l	799	912	845	720	932	-	IS-3025 (P-16): 1984
3.	Total Suspended Solids, mg/l	34	35	31	34	32	-	IS-3025(P-17): 1984
4.	Bio chemical Oxygen Demand, mg/l	2.4	1.8	2.0	2.0	1.6	3	IS-3025 (P-44):1994
5.	Chemical Oxygen Demand, mg/l	65	43.6	87	43.6	43.6	-	IS-3025 (P-58):2006
6.	Oil & Grease, mg/l	0.4	BDL	BDL	BDL	BDL	-	IS-3025 (P-39):2021
 Sr. Chemist Aditi R&D Services				 Technical Manager Aditi R&D Services, Sindri				
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Ref. No.: - ARDS/23-24/1430

Date: 17.11.2023

TEST REPORT OF SEWAGE

- Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)
- Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021
- Sample Code
 1. S.T.P. Outlet J.C.P.P. Canteen
 2. S.T.P. Outlet Jamadoba Canteen
 3. S.T.P. Outlet Railway Colony
 4. S.T.P. Out let Digwadih Officer Colony.
 5. S.T.P. Out let Digwadih 12 No. Supervisor Flat
- Date of Sample Collection: 09/11/2023 to 10/11/2023
- Date of Testing : 11/11/2023 to 16/11/2023
- Test : pH, TDS, TSS, BOD, COD, OIL & GREASE.

TEST RESULT

Sl. No.	PARAMETERS OF TEST	VALUE					General Standards For Discharge Of Environmental Pollutants, Inland Surface Water By The MOEF&C	Test Method
		S.T.P. Outlet J.C.P.P. Canteen	S.T.P. Outlet Jamadoba Canteen	S.T.P. Outlet Railway Colony	S.T.P. Outlet Digwadih Officer Colony	S.T.P. Outlet Digwadih 12 NO. Supervisor Flat		
1.	pH,	7.5	7.3	7.4	8.1	7.3	5.5-9.0	IS-3025 (P-11):1983
2.	Total Dissolved Solids, mg/l	988	871	910	767	945	2100	IS-3025 (P-16):1984
3.	Total Suspended Solids, mg/l	42	38	45	34	40	100	IS-3025(P-17):1984
4.	Bio chemical Oxygen Demand, mg/l	2.4	2.8	3.2	3.6	3.0	30	IS-3025 (P-44):1994
5.	Chemical Oxygen Demand, mg/l	80	102	109	94	102	250	IS-3025 (P-58):2006
6.	Oil & Grease, mg/l	1.2	0.8	1.6	1.2	0.8	10	IS-3025 (P-39):2021

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Aditi R&D Services


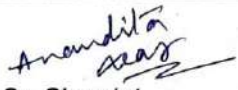




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Aditi R&D Services, Sindri


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Ref. No.: - ARDS/23-24/1431		Date: 17.11.2023			
<h3><u>TEST REPORT OF EFFLUENT</u></h3>					
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : 1. ETP Outlet Garage 2. ETP Outlet T.C.H Jamadoba • Date of Sample Collection: 09/11/2023 • Date of Testing : 11/11/2023 to 16/11/2023 • Test : pH, TDS, TSS, BOD, COD, OIL & GREASE. 					
<h3><u>TEST RESULT</u></h3>					
Sl. No.	PARAMETERS OF TEST	VALUE	MoEF&C Notification 1 st Jan.2016 Permissible Max. Desirable Limit	Test Method	
1.	pH,	8.1	8.2	6.0 – 9.0	IS-3025 (P-11): 1983
2.	Total Dissolved Solids, mg/l	858	754	2100	IS-3025 (P-16): 1984
3.	Total Suspended Solids, mg/l	45	36	100	IS-3025(P-17): 1984
4.	Bio chemical Oxygen Demand, mg/l	2.6	1.6	30	IS-3025 (P-44):1994
5.	Chemical Oxygen Demand, mg/l	87	29.2	250	IS-3025 (P-58):2006
6.	Oil & Grease, mg/l	1.6	1.2	10	IS-3025 (P-39):2021
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  Sr. Chemist Aditi R&D Services </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  Technical Manager Aditi R&D Services, Sindri </div> </div>					
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Ref. No.: - ARDS/23-24/1432		Date: 17.11.2023						
TEST REPORT OF DRINKING WATER								
<ul style="list-style-type: none"> Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 Sample Code : <ul style="list-style-type: none"> 1. Canteen - Jamadoba Colliery 2. Canteen 6 & 7 Pits Colliery 3. Canteen Digwadih Colliery 4. Canteen Jamadoba Washery Date of Sample Collection: 09/11/2023 to 10/11/2023 Date of Testing : 11/11/2023 to 16/11/2023 Test : <ul style="list-style-type: none"> Colour, Odour, Taste, Turbidity, pH, Total Hardness, Iron, Chloride, Res. Free chlorine, Total Dissolved Solids, Calcium, Copper, Manganese, Sulphate, Nitrate, Fluoride, Phenolic Compound, Mercury, Cadmium, Arsenic, Cyanide, Lead, Zinc, Total Coliform, Hexavalent Chromium, Mineral Oil, Alkalinity, Aluminium & Boron. 								
TEST RESULT								
Sl. No	PARAMETERS OF TEST	VALUE				IS as per IS 10500:2012		Test Method
		Canteen Jamadoba Colliery	Canteen 6 & 7 Pits Colliery	Canteen Digwadih Colliery	Canteen Jamadoba Washery	Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	1	1	1	5.00	15.0	IS 3025 (P-4):2021
2.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS 3025 (P-5):2018
3.	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS 3025 (P-7):2017
4.	Turbidity, NTU	NIL	NIL	NIL	NIL	1.0	5.0	IS 3025 (P-10):1984
5.	pH	7.7	7.8	7.9	8.1	6.5-8.5	No. Relax.	IS-3025 (P-11):1983
6.	Total Hardness as CaCO ₃ , mg/l	415.8	193.2	420	411.6	200	600	IS 3025 (P-21):2009
7.	Chloride as Cl, mg/l	57.6	24.2	59.5	57.6	250	1000	IS 3025 (P-32):1988
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	NIL	NIL	NIL	0.20	1.0	IS 3025 (P-26):2021
9.	Total Dissolved Solids, mg/l	503	368	727	684	500	2000	IS 3025 (P-16):1984
10.	Calcium as Ca, mg/l	72.2	42	87.4	84		200	IS 3025 (P-40):1991
11.	Copper as Cu, mg/l	BDL	BDL	BDL	BDL	BDL	1.5	IS 3025 (P-42):1992

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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)



ADITI R&D SERVICES

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- 2 -

Sl. No	PARAMETERS OF TEST	VALUE						IS as per IS 10500:1991		Test Method
		Kendwad ih Basti	6 & 7 Pits Ayodhaya Nagari	Upper Dungri	Kalimela Kalimandir	Purnadi h (Joraph okhar)	Digw adih 10 No. F&J	Desi r- able	Permi s-sible	
11	Sulphate as SO ₄ , mg/l	62.4	55.7	44	58.4	71	73.5	200	400	IS 3025(P-24):1986
12	Nitrate as NO ₃ , mg/l	8.6	8.1	4.5	8.7	9.3	9.1	45	No. Relax	IS 3025(P-34):1988
13	Alkalinity as CaCO ₃ , mg/l	306.6	310.8	105	264.6	564	576	200	600	IS 3025(P-23):1983
14	Lead as Pb, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	0.01	No. Relax	IS 3025(P-47):1994
15	Zinc as Zn, mg/l	0.56	0.38	0.18	0.7	0.8	0.64	5	15	IS 3025(P-42):1992
16	Iron as Fe, mg/l	0.18	0.2	0.12	0.33	0.29	0.28	0.3	No. Relax	IS 3025(P-53):2003
17	Copper as Cu, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	0.05	1.5	IS 3025 (P-42):1992
18	Mercury as Hg, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	0.001	No. Relax	IS 3025(P-48):1994
19	Cadmium as Cd, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	0.003	No. Relax	IS 3025(P-41):1992
20	Nickel as Ni, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	0.02	No. Relax	IS 3025(P-37):1992
21	Arsenic as As, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	0.01	No. Relax	IS 3025(P-37):1988
22	Cyanide as CN, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	0.05	No. Relax	IS 3025(P-27):1986
23	Total Chromium as Cr, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	0.05	No. Relax	IS 3025(P-52):2003

NOTE: BDL - Below Detection Limit

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Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/1433

Date: 17.11.2023

TEST REPORT OF GROUND WATER

- Name of the industry : M/S TATA STEEL, JAMADOBA,
TATA STEEL LIMITED
JAMADOBA GROUP PLANT,
DIST. - DHANBAD (JHARKHAND)
- Work Order Ref. NO. : 4700092573/932 Dt. 20.07.2021
- Sample Code : 1. Kendwadih Basti
2. 6 & 7 Pits Ayodhaya Nagari
3. Upper Dungri
4. Kalimela Kalimandir
5. Purnadih (Joraphokhar).
6. Digwadih 10 No. F&J
- Date of Sample Collection : 09/11/2023 to 10/11/2023
- Date of Testing : 11/11/2023 to 16/11/2023
- Test : Colour, Odour, Taste, Turbidity, pH, Total Hardness,
Iron, Chloride, Res. Free chlorine, Total Dissolved
Solids, Calcium, Copper, Manganese, Sulphate, Nitrate,
Fluoride, Phenolic Compound, Mercury, Cadmium,
Arsenic, Cyanide, Lead, Zinc, Total Coliform,
Hexavalent Chromium, Mineral Oil, Alkalinity,
Aluminium & Boron.

TEST RESULT

Sl. No	PARAMETERS OF TEST	VALUE						IS as per IS 10500:1991		Test Method
		Kendwadih Basti	6 & 7 Pits Ayodhaya Nagari	Upper Dungri	Kalimela Kalimandir	Purnadih (Joraphokhar)	Digwadih 10 No. F&J	Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	1	1	1	1	2	5	15	IS 3025 (P-4):2021
2.	Temperature °C	24	25	24	25	25	25	-	-	-
3.	Electrical Conductivity, µmhos/cm	1140	1100	400	1360	1400	1300	-	-	-
4.	Total Dissolved Solids, mg/l	734	711	265	878	862	842	500	2000	IS 3025(P-16):1984
5.	pH	7.3	7.5	7.8	7.2	7.4	7.5	6.5-8.5	No Relax	IS-3025(P-11):1983
6.	Total Hardness as CaCO ₃ , mg/l	491.4	508.2	138.6	484	510	496	200	600	IS 3025 (P-21):2009
7.	Calcium as Ca, mg/l	92.4	104.2	33.6	116	122	119	75	200	IS 3025(P-40):1991
8.	Magnesium as Mg, mg/l	62.5	59.5	13	47	49	48	30	100	IS 3025(P-46):1994
9.	Chloride as Cl, mg/l	81.8	55.8	20.5	132	174.7	165.5	250	1000	IS 3025(P-32):1988
10.	Fluoride as F, mg/l	0.42	0.38	0.28	0.56	0.62	0.58	1.0	1.5	IS 3025(P-60):2008

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- 2 -

Sl. No.	PARAMETERS OF TEST	VALUE				IS as per IS 10500:1991		Test Method
		Canteen Jamadoba Colliery	Canteen 6 & 7 Plts Colliery	Canteen Digwadih Colliery	Canteen Jamadoba Washery	Desirable	Permissible	
12.	Manganese as Mn, mg/l	BDL	BDL	BDL	BDL	0.10	0.30	IS 3025 (P-59):2006
13.	Sulphate as SO ₄ , mg/l	52.4	47.7	48.8	60.2	200	400	IS 3025 (P-24):1986
14.	Nitrate as NO ₃ , mg/l	3.7	1.8	2.1	1.7	45	No. Relax	IS 3025 (P-34):1988
15.	Fluoride as F, mg/l	0.26	0.34	0.56	0.38	1.0	1.5	IS 3025 (P-60):2008
16.	Phenolic Compound as (C ₆ H ₅ OH) mg/l	BDL	BDL	BDL	BDL	0.001	0.002	IS 3025 (P-43):1992
17.	Mercury as Hg, mg/l	BDL	BDL	BDL	BDL	0.001	No. Relax	IS 3025 (P-48):1994
18.	Cadmium as Cd, mg/l	BDL	BDL	BDL	BDL	0.003	No. Relax	IS 3025 (P-41):1992
19.	Arsenic as As, mg/l	BDL	BDL	BDL	BDL	0.01	No. Relax	IS 3025 (P-37):1988
20.	Cyanide as CN, mg/l	BDL	BDL	BDL	BDL	0.05	No. Relax	IS 3025 (P-27):1986
21.	Lead as Pb, mg/l	BDL	BDL	BDL	BDL	0.01	No. Relax	IS 3025 (P-47):1994
22.	Zinc as Zn, mg/l	0.28	0.16	0.24	0.18	5	15	IS 3025 (P-42):1992
23.	Total Coliform, No./100ml	Absent	Absent	Absent	Absent	Absent	Absent	IS 3025 (P-49):1994
24.	Hexavalent Chromium as Cr, mg/l	BDL	BDL	BDL	BDL	0.05	No. Relax	IS 3025 (P-52):2003
25.	Mineral Oil, mg/l	BDL	BDL	BDL	BDL	0.5	No. Relax	IS 3025 (P-39):1989
26.	Alkalinity as CaCO ₃ , mg/l	483	184.8	453.6	310.8	200	600	IS 3025 (P-23):1983
27.	Aluminium as Al, mg/l	BDL	BDL	BDL	BDL	0.03	0.2	IS 3025 (P-55):2003
28.	Boron as B, mg/l	BDL	BDL	BDL	BDL	0.5	1.0	IS 3025 (P-57):2005

NOTE: BDL - Below Detection Limit

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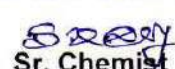




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Technical Manager
Aditi R&D Services, Sindri


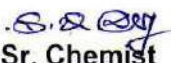

Statements :

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2. The test results reported in this report are valid at the time of and under the stated condition of measurement.
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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O.- Domgarh, Dist.- Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirndservices.com Phone: 0326-2952377 (O) Mobile: 09471358492, 09431512608		
Ref. No.: - ARDS/23-24/1943		Date: 17.02.2024		
<h3 style="margin: 0;"><u>TEST REPORT OF AMBIENT AIR QUALITY</u></h3>				
<ul style="list-style-type: none"> • Name of the industry • Work Order Ref. NO.: • Date of Sample Collection • Date of Testing • Test Procedure 	<ul style="list-style-type: none"> : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) : 4700092573/932 Dt. 20.07.2021 : 09.02.2024 to 10.02.2024 : 14.02.2024 to 16.02.2024 : As per IS-5182 			
<h3 style="margin: 0;"><u>TEST RESULTS</u></h3>				
LOCATION – 6 & 7 PITS COLLOIERY OFFICE				
	Avg. Ambient Temperature	24°C	Avg. Humidity	46%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM ₁₀), µg/m ³	93.28	100 µg/m ³	
2.	Particulate Matter (PM _{2.5}), µg/m ³	54.96	60 µg/m ³	
3.	SO ₂ , µg/m ³	21.18	80 µg/m ³	
4.	NO ₂ , µg/m ³	26.64	80 µg/m ³	
5.	Ozone, µg/m ³	17.63	180 µg/m ³	
6.	NH ₃ , µg/m ³	14.54	400 µg/m ³	
7.	CO, mg/m ³	0.78	4 mg/m ³	
8.	Pb, µg/m ³	BDL	1 µg/m ³	
9.	As, ng/m ³	BDL	6 ng/m ³	
10.	Ni, ng/m ³	BDL	20 ng/m ³	
11.	Benzene, µg/m ³	BDL	5 µg/m ³	
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³	
NOTE: BDL - Below Detection Limit				
 Sr. Chemist Aditi R&D Services			 Technical Manager Aditi R&D Services, Sindri	
Statements : <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory. 				

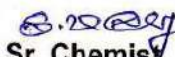
Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O.- Domgarh, Dist.- Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirndservices.com Phone: 0326-2952377 (O) Mobile: 09471358492, 09431512608	
Ref. No.: - ARDS/23-24/1944		Date: 17.02.2024	
<u>TEST REPORT OF AMBIENT AIR QUALITY</u>			
<ul style="list-style-type: none"> • Name of the industry • Work Order Ref. NO.: • Date of Sample Collection • Date of Testing • Test Procedure 	<ul style="list-style-type: none"> : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) : 4700092573/932 Dt. 20.07.2021 : 09.02.2024 to 10.02.2024 : 14.02.2024 to 16.02.2024 : As per IS-5182 		
<u>TEST RESULTS</u>			
LOCATION – OFFICERS COLONY, 12 NO. DIGWADIH			
	Avg. Ambient Temperature	24°C	Avg. Humidity
			46%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD
1.	Particulate Matter (PM ₁₀), µg/m ³	75.92	100 µg/m ³
2.	Particulate Matter (PM _{2.5}), µg/m ³	46.52	60 µg/m ³
3.	SO ₂ , µg/m ³	18.35	80 µg/m ³
4.	NO ₂ , µg/m ³	25.52	80 µg/m ³
5.	Ozone, µg/m ³	17.48	180 µg/m ³
6.	NH ₃ , µg/m ³	14.60	400 µg/m ³
7.	CO, mg/m ³	0.63	4 mg/m ³
8.	Pb, µg/m ³	BDL	1 µg/m ³
9.	As, ng/m ³	BDL	6 ng/m ³
10.	Ni, ng/m ³	BDL	20 ng/m ³
11.	Benzene, µg/m ³	BDL	5 µg/m ³
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³
NOTE: BDL - Below Detection Limit			
 Sr. Chemist Aditi R&D Services		 Technical Manager Aditi R&D Services, Sindri	
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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)


	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">Ref. No.: - ARDS/23-24/1945</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	<p>Plot No. - I-B-17 (P)</p> <p>Sindri, Industrial Area,</p> <p>P.O.- Domgarh, Dist.- Dhanbad</p> <p>Jharkhand - 828107</p> <p>Email ID: sindriadi@gmail.com</p> <p>Website: aditirs.com</p> <p>Phone: 0326-2952377 (O)</p> <p>Mobile: 09471358492, 09431512608</p>	
<p>TEST REPORT OF AMBIENT AIR QUALITY</p>			
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO. : 4700092573/932 Dt. 20.07.2021 • Date of Sample Collection : 09.02.2024 to 10.02.2024 • Date of Testing : 14.02.2024 to 16.02.2024 • Test Procedure : As per IS-5182 			
<p>TEST RESULTS</p>			
<p>LOCATION – CENTRAL WORKSHOP AREA, JAMADOBA</p>			
	Avg. Ambient Temperature	24°C	Avg. Humidity
		46%	
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD
1.	Particulate Matter (PM ₁₀), µg/m ³	90.48	100 µg/m ³
2.	Particulate Matter (PM _{2.5}), µg/m ³	53.29	60 µg/m ³
3.	SO ₂ , µg/m ³	22.46	80 µg/m ³
4.	NO ₂ , µg/m ³	30.29	80 µg/m ³
5.	Ozone, µg/m ³	17.32	180 µg/m ³
6.	NH ₃ , µg/m ³	17.83	400 µg/m ³
7.	CO, mg/m ³	0.95	4 mg/m ³
8.	Pb, µg/m ³	BDL	1 µg/m ³
9.	As, ng/m ³	BDL	6 ng/m ³
10.	Ni, ng/m ³	BDL	20 ng/m ³
11.	Benzene, µg/m ³	BDL	5 µg/m ³
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³

NOTE: BDL - Below Detection Limit



Sr. Chemist
Aditi R&D Services







Technical Manager
Aditi R&D Services, Sindri

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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

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<p>Ref. No.: - ARDS/23-24/1946</p>		<p>Date: 17.02.2024</p>	
<h3 style="margin: 0;"><u>TEST REPORT OF AMBIENT AIR QUALITY</u></h3>			
<ul style="list-style-type: none"> • Name of the industry • Work Order Ref. NO.: • Date of Sample Collection • Date of Testing • Test Procedure 	<ul style="list-style-type: none"> : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) : 4700092573/932 Dt. 20.07.2021 : 09.02.2024 to 10.02.2024 : 14.02.2024 to 16.02.2024 : As per IS-5182 		
<h3 style="margin: 0;"><u>TEST RESULTS</u></h3>			
<p>LOCATION – TATA CENTRAL HOSPITAL</p>			
	Avg. Ambient Temperature	24°C	Avg. Humidity
			46%
SI No.	Particulars	Value	NAAQ - CPCB STANDARD
1.	Particulate Matter (PM ₁₀), µg/m ³	72.41	100 µg/m ³
2.	Particulate Matter (PM _{2.5}), µg/m ³	44.38	60 µg/m ³
3.	SO ₂ , µg/m ³	16.48	80 µg/m ³
4.	NO ₂ , µg/m ³	26.88	80 µg/m ³
5.	Ozone, µg/m ³	16.56	180 µg/m ³
6.	NH ₃ , µg/m ³	17.44	400 µg/m ³
7.	CO, mg/m ³	0.83	4 mg/m ³
8.	Pb, µg/m ³	BDL	1 µg/m ³
9.	As, ng/m ³	BDL	6 ng/m ³
10.	Ni, ng/m ³	BDL	20 ng/m ³
11.	Benzene, µg/m ³	BDL	5 µg/m ³
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³
<p>NOTE: BDL - Below Detection Limit</p>			
<p><i>S. R. Q. S.</i></p> <p>Sr. Chemist</p> <p>Aditi R&D Services</p>		<p><i>[Signature]</i></p> <p>Technical Manager</p> <p>Aditi R&D Services, Sindri</p>	
			
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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

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Plot No. - I-B-17 (P)
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Email ID: sindriaditi@gmail.com
Website: aditirndservices.com
Phone: 0326-2952377 (O)
Mobile: 09471358492, 09431512608

TEST REPORT OF NOISE (AMBIENT) LEVEL MONITORING

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT							
ARDS/23-24/1903 Date: 12.02.2024		M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)							
Date of Monitoring									
09.02.2024 TO 10.02.2024		Avg. Ambient Temperature (°C)		Average Humidity (%)		Weather Condition		Status of the plant	
Work Order 4700092573/932 Dt. 20.07.2021		24		46		Clear		Running	
MONITORING RESULTS									
Sl. No	Place of Monitoring	Day Time (6 AM to 10 PM) Avg. dB(A)			Night Time (10 PM to 6 AM) Avg. dB(A)			Noise level (Ambient standard) for Industrial Area as per CPCB Noise Pollution (Regulation and Control) (Amendment) Rules , 2000 notified vide S.O. 1046(E) Dt. 22.11.2020 Limit in dB(A) Leq	
		MAX	MIN	AVG. dB(A) Leq	MAX	MIN	AVERAGE dB(A) Leq	Day Time	Night Time
LOCATION JAMADOBA GROUP								Industrial Area	Industrial Area
1.	Central Workshop	69.6	54.8	66.73	56.2	44.8	53.49	75	70
2.	6 & 7 Pits Colliery Office	68.6	62.4	66.52	57.2	48.4	54.73		
								Residential Area	Residential Area
3.	Officer Colony 12 No. Digwadih	50.4	46.2	48.79	44.2	40.4	42.7	65	55
								Silence Zone	Silence Zone
4.	Tata Central Hospital	47.8	42.6	45.94	36.8	32.4	34.6	50	40

S. D. Roy
Sr. Chemist
Aditi R&D Services



S. D. Roy
Technical Manager
Aditi R&D Services, Sindri

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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

**ADITI R&D SERVICES****Testing Laboratory****NABL ACCREDITED****(A Constituent Board of Quality Council of India)****ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified**

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Phone: 0326-2952377 (O)
Mobile: 09471358492, 09431612608

Ref. No.: - ARDS/23-24/1947

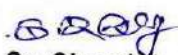
Date: 17.02.2024

TEST REPORT OF MINERALOGICAL COMPOSITION
OF PARTICULATE MATTER

- Name of the industry : M/S TATA STEEL, JAMADOBA,
TATA STEEL LIMITED
JAMADOBA GROUP PLANT,
DIST. - DHANBAD (JHARKHAND)
- Work Order Ref. NO. : 4700092573/932 Dt. 20.07.2021
- Date of Sample Collection : 10.02.2024
- Date of Testing : 14.02.2024 – 16.02.2024

TEST RESULTS

SI No.	Particulars	Mineralogical Composition (%)			
		SiO ₂	FeO	Al ₂ O ₃	CaO
1.	6 & 7 Pits Colliery Officer	1.76	0.08	1.24	2.4
2.	Tata Central Hospital	2.02	0.10	1.23	2.49


Sr. Chemist
Aditi R&D Services








Technical Manager
Aditi R&D Services, Sindri





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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

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Ref. No.: - ARDS/23-24/1924		Date: 15.02.2024			
<u>TEST REPORT OF SURFACE WATER</u>					
<p>• Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)</p>					
<p>• Work Order Ref. NO.: : 4700092673/932 Dt. 20.07.2021</p> <p>• Sample Code : 1. Damodar River Up Stream 2. Damodar River Down Stream</p> <p>• Date of Sample Collection: 09.02.2024</p> <p>• Date of Testing : 10.02.2024 To 14.02.2024</p> <p>• Test : pH, TDS, Turbidity, DO, BOD, Cl, F, SO₄</p>					
<u>TEST RESULT</u>					
Sl. No.	PARAMETERS OF TEST	VALUE	Limit as per IS 2296 Class - C	Test Method	
		Damodar River Up Stream	Damodar River Dn Stream		
1.	pH	7.5	7.6	6.5 -8.5	IS-3025 (P-11): 1983
2.	Total Dissolved Solids, mg/l	455	462	1500	IS-3025 (P-16): 1984
3.	Turbidity, NTU	2.2	2.6	-	IS-3025 (P-10):1984
4.	Dissolved Oxygen, mg/l	5.3	5.7	4.0 (Min)	IS-3025 (P-38):1989
5.	Bio chemical Oxygen Demand, mg/l	1.3	1.4	3.0	IS-3025 (P-44):1994
6.	Chloride as Cl, mg/l	31.34	32.3	600 (Max.)	IS-3025 (P-32):1988
7.	Fluoride as F, mg/l	0.65	0.69	1.5	IS-3025 (P-60):2008
8.	Sulphate as SO ₄ , mg/l	70.9	74.7	400	IS-3025 (P-24):1986
 Sr. Chemist Aditi R&D Services			 Technical Manager Aditi R&D Services, Sindri		
Statements : <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory. 					


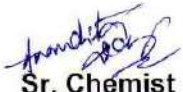


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Ref. No.: - ARDS/23-24/1925		Date: 15.02.2024					
<u>TEST REPORT OF MINE WATER DISCHARGE</u>							
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : 1. 2 Pit Jamadoba Colliery 2. 3 Pit Jamadoba Colliery 3. 6 & 7 Pits Colliery 4. Digwadih Colliery • Date of Sample Collection: 09.02.2024 To 10.02.2024 • Date of Testing : 10.02.2024 to 14.02.2024 • Test : pH, TDS, TSS, BOD, COD, OIL & GREASE. 							
<u>TEST RESULT</u>							
Sl. No.	PARAMETERS OF TEST	VALUE				Limit as per IS-2296 Class B (For Bathing)	Test Method
		2 Pit Jamadoba Colliery	3 Pit Jamadoba Colliery	6 & 7 Pits Colliery	Digwadih Colliery		
1.	pH,	7.7	7.6	7.3	7.3	6.5-8.5	IS-3025 (P-11): 1983
2.	Total Dissolved Solids, mg/l	924	826	1066	845	-	IS-3025 (P-16): 1984
3.	Total Suspended Solids, mg/l	34	36	38	30	-	IS-3025(P-17): 1984
4.	Bio chemical Oxygen Demand, mg/l	2.7	2.8	2.4	3.0	3	IS-3025 (P-44):1994
5.	Chemical Oxygen Demand, mg/l	67	74	61	54	-	IS-3025 (P-58):2006
6.	Oil & Grease, mg/l	BDL	BDL	BDL	BDL	-	IS-3025 (P-39):2021
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  Sr. Chemist Aditi R&D Services </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  Technical Manager Aditi R&D Services, Sindri </div> </div>							
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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

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<p>Ref. No.: - ARDS/23-24/1948</p>		<p>Date: 17.02.2024</p>		
<h3><u>TEST REPORT OF SEWAGE</u></h3>				
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : <ul style="list-style-type: none"> 1. S.T.P. Outlet J.C.P.P. Canteen 2. S.T.P. Outlet Jamadoba Canteen 3. S.T.P. Outlet Railway Colony 4. S.T.P. Supervisor Apartment Digwadih 12 No 5. S.T.P. Officer Colony Digwadih 12 No. • Date of Sample Collection: 10.02.2024 • Date of Testing : 12.02.2024 to 16.02.2024 • Test : pH, TDS, TSS, BOD, COD, OIL & GREASE. 				
<h3><u>TEST RESULT</u></h3>				
Sl. No.	PARAMETERS OF TEST	VALUE	MoEF&C Notification 1 st Jan.2016 Permissible Max. Desirable Limit	Test Method
		<div style="display: flex; justify-content: space-around;"> <div>S.T.P. Outlet J.C.P.P. Canteen</div> <div>S.T.P. Outlet Jamadoba Canteen</div> <div>S.T.P. Outlet Railway Colony</div> <div>S.T.P. Supervisor or Apartment Digwadih 12 No</div> <div>S.T.P. Officer Colony Digwadih 12 No</div> </div>		
1.	pH,	7.4 7.8 8.1 7.7 8.0	5.5-9.0	IS-3025(P-11):1983
2.	Total Dissolved Solids, mg/l	1131 975 1300 1430 858	2100	IS-3025(P-16):1984
3.	Total Suspended Solids, mg/l	47 35 50 45 40	100	IS-3025(P-17):1984
4.	Bio chemical Oxygen Demand, mg/l	5.7 1.9 7.5 8.1 7.8	30	IS-3025(P-44):1994
5.	Chemical Oxygen Demand, mg/l	81 33.6 94 101 94	250	IS-3025(P-58):2006
6.	Oil & Grease, mg/l	BDL BDL 3.2 2.4 2.0	10	IS-3025(P-39):2021
<p>Note : BDL - Below Detection Limit</p>				
 Sr. Chemist Aditi R&D Services			 Technical Manager Aditi R&D Services, Sindri	
<p>Statements :</p> <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory. 				

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	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	<p>Plot No. - I-B-17 (P)</p> <p>Sindri, Industrial Area,</p> <p>P.O.- Domgarh, Dist.- Dhanbad</p> <p>Jharkhand - 828107</p> <p>Email ID: sindriaditi@gmail.com</p> <p>Website: aditirndservices.com</p> <p>Phone: 0326-2952377 (O)</p> <p>Mobile: 09471358492, 09431512608</p>																																												
<div style="display: flex; justify-content: space-between;"> Ref. No.: - ARDS/23-24/1926 Date: 15.02.2024 </div> <h3 style="text-align: center; margin-top: 10px;">TEST REPORT OF EFFLUENT</h3> <div style="margin-top: 10px;"> <ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : 1. E.T.P. Outlet T.C.H. 2. E.T.P. Outlet Garage • Date of Sample Collection: 09.02.2024 to 10.02.2024 • Date of Testing : 10.02.2024 to 14.02.2024 • Test : pH, TDS, TSS, BOD, COD, OIL & GREASE. </div> <h4 style="text-align: center; margin-top: 10px;">TEST RESULT</h4> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Sl. No.</th> <th rowspan="2">PARAMETERS OF TEST</th> <th colspan="2">VALUE</th> <th rowspan="2">MoEF&C Notification 1st Jan.2016 Permissible Max. Desirable Limit</th> <th rowspan="2">Test Method</th> </tr> <tr> <th>E.T.P. Outlet T.C.H</th> <th>E.T.P. Outlet Garage</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>pH,</td> <td>7.9</td> <td>8.1</td> <td>5.5-9.0</td> <td>IS-3025 (P-11): 1983</td> </tr> <tr> <td>2.</td> <td>Total Dissolved Solids, mg/l</td> <td>872</td> <td>715</td> <td>2100</td> <td>IS-3025 (P-16): 1984</td> </tr> <tr> <td>3.</td> <td>Total Suspended Solids, mg/l</td> <td>40</td> <td>42</td> <td>100</td> <td>IS-3025(P-17) : 1984</td> </tr> <tr> <td>4.</td> <td>Bio chemical Oxygen Demand, mg/l</td> <td>2.6</td> <td>6.9</td> <td>30</td> <td>IS-3025 (P-44):1994</td> </tr> <tr> <td>5.</td> <td>Chemical Oxygen Demand, mg/l</td> <td>33.6</td> <td>81</td> <td>250</td> <td>IS-3025 (P-58):2006</td> </tr> <tr> <td>6.</td> <td>Oil & Grease, mg/l</td> <td>B.D.L</td> <td>2.8</td> <td>10</td> <td>IS-3025 (P-39):2021</td> </tr> </tbody> </table> <p style="margin-top: 5px;">Note : BDL - Below Detection Limit</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%; text-align: center;">  <p>Sr. Chemist Aditi R&D Services</p> </div> <div style="width: 10%; text-align: center;">  </div> <div style="width: 45%; text-align: center;">  <p>Technical Manager Aditi R&D Services, Sindri</p> </div> </div>			Sl. No.	PARAMETERS OF TEST	VALUE		MoEF&C Notification 1 st Jan.2016 Permissible Max. Desirable Limit	Test Method	E.T.P. Outlet T.C.H	E.T.P. Outlet Garage	1.	pH,	7.9	8.1	5.5-9.0	IS-3025 (P-11): 1983	2.	Total Dissolved Solids, mg/l	872	715	2100	IS-3025 (P-16): 1984	3.	Total Suspended Solids, mg/l	40	42	100	IS-3025(P-17) : 1984	4.	Bio chemical Oxygen Demand, mg/l	2.6	6.9	30	IS-3025 (P-44):1994	5.	Chemical Oxygen Demand, mg/l	33.6	81	250	IS-3025 (P-58):2006	6.	Oil & Grease, mg/l	B.D.L	2.8	10	IS-3025 (P-39):2021
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	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	<p>Plot No. - I-B-17 (P)</p> <p>Sindri, Industrial Area,</p> <p>P.O. - Domgarh, Dist. - Dhanbad</p> <p>Jharkhand - 828107</p> <p>Email ID: sindriaditi@gmail.com</p> <p>Website: aditirndservices.com</p> <p>Phone: 0326-2952377 (O)</p> <p>Mobile: 09471358492, 09431512608</p>						
Ref. No.: - ARDS/23-24/1932		Date: 16.02.2024						
TEST REPORT OF DRINKING WATER								
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : <ul style="list-style-type: none"> 1. Canteen Jamadoba Colliery 2. Canteen Digwadiah Colliery 3. Canteen 6&7 Pit Colliery 4. Canteen Jamadoba Washery • Date of Sample Collection: 09.02.2024 to 10.02.2024 • Date of Testing : 10.02.2024 to 15.02.2024 • Test : <ul style="list-style-type: none"> Colour, Odour, Taste, Turbidity, pH, Total Hardness, Iron, Chloride, Res. Free chlorine, Total Dissolved Solids, Calcium, Copper, Manganese, Sulphate, Nitrate, Fluoride, Phenolic Compound, Mercury, Cadmium, Arsenic, Cyanide, Lead, Zinc, Total Coliform, Hexavalent Chromium, Mineral Oil, Alkalinity, Aluminium & Boron. 								
TEST RESULT								
Sl. No	PARAMETERS OF TEST	VALUE				IS as per IS 10500:2012		Test Method
		Canteen Jamadoba Colliery	Canteen Digwadiah Colliery	Canteen 6&7 Pit Colliery	Canteen Jamadoba Washery	Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	1	1	1	5.00	15.0	IS 3025 (P-4):2021
2.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS 3025 (P-5):2018
3.	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS 3025 (P-7):2017
4.	Turbidity, NTU	NIL	NIL	NIL	NIL	1.0	5.0	IS 3025 (P-10):1984
5.	pH	7.6	7.8	7.7	7.9	6.5-8.5	No. Relax.	IS-3025 (P-11):1983
6.	Total Hardness as CaCO ₃ , mg/l	325.6	330	259.6	343.2	200	600	IS 3025 (P-21):2009
7.	Chloride as Cl, mg/l	64.5	64.5	32.3	66.5	250	1000	IS 3025 (P-32):1988
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	NIL	NIL	NIL	0.20	1.0	IS 3025 (P-26):2021
9.	Total Dissolved Solids, mg/l	825	805	458	845	500	2000	IS 3025 (P-16):1984
10.	Calcium as CaCO ₃ , mg/l	65.12	41.2	52.8	66.8	75	200	IS 3025 (P-40):1991
11.	Copper as Cu, mg/l	BDL	BDL	BDL	BDL	0.05	1.5	IS 3025 (P-42):1992
Continued on Page 2								
<p>Statements :</p> <p>1. The test report refers only to the particular item(s) submitted for testing.</p> <p>2. The test results reported in this report are valid at the time of and under the stated condition of measurement.</p> <p>3. This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory.</p>								

Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)



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Phone: 0326-2952377 (O)
Mobile: 09471358492, 09431512608

- 2 -

Sl. No.	PARAMETERS OF TEST	VALUE				IS as per IS 10500:1991		Test Method
		Canteen Jamadoba Colliery	Canteen Digwadiah Colliery	Canteen 6&7 Pit Colliery	Canteen Jamadoba Washery	Desirable	Permissible	
12.	Manganese as Mn, mg/l	BDL	BDL	BDL	BDL	0.10	0.30	IS 3025 (P-59):2006
13.	Sulphate as SO ₄ , mg/l	70.3	64.4	61.8	75.1	200	400	IS 3025 (P-24):1986
14.	Nitrate as NO ₃ , mg/l	3.2	3.7	2.7	3.5	45	No. Relax	IS 3025 (P-34):1988
15.	Fluoride as F, mg/l	0.35	0.42	0.30	0.40	1.0	1.5	IS 3025 (P-60):2008
16.	Phenolic Compound as (C ₆ H ₅ OH) mg/l	BDL	BDL	BDL	BDL	0.001	0.002	IS 3025 (P-43):1992
17.	Mercury as Hg, mg/l	BDL	BDL	BDL	BDL	0.001	No. Relax	IS 3025 (P-48):1994
18.	Cadmium as Cd, mg/l	BDL	BDL	BDL	BDL	0.003	No. Relax	IS 3025 (P-41):1992
19.	Arsenic as As, mg/l	BDL	BDL	BDL	BDL	0.01	No. Relax	IS 3025 (P-37):1988
20.	Cyanide as CN, mg/l	BDL	BDL	BDL	BDL	0.05	No. Relax	IS 3025 (P-27):1986
21.	Lead as Pb, mg/l	BDL	BDL	BDL	BDL	0.01	No. Relax	IS 3025 (P-47):1994
22.	Zinc as Zn, mg/l	0.20	0.16	0.14	0.28	5	15	IS 3025 (P-42):1992
23.	Total Coliform, No./100ml	Absent	Absent	Absent	Absent	Absent	Absent	IS 3025 (P-49):1994
24.	Hexavalent Chromium as Cr, mg/l	BDL	BDL	BDL	BDL	0.05	No. Relax	IS 3025 (P-52):2003
25.	Mineral Oil, mg/l	BDL	BDL	BDL	BDL	0.5	No. Relax	IS 3025 (P-39):1989
26.	Alkalinity as CaCO ₃ , mg/l	523.2	528	216	523.2	200	600	IS 3025 (P-23):1983
27.	Aluminium as Al, mg/l	BDL	BDL	BDL	BDL	0.03	0.2	IS 3025 (P-55):2003
28.	Boron as B, mg/l	BDL	BDL	BDL	BDL	0.5	1.0	IS 3025 (P-57):2005

NOTE: BDL - Below Detection Limit


Sr. Chemist
Aditi R&D Services





Technical Manager
Aditi R&D Services, Sindri

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<p>Ref. No.: - ARDS/23-24/1933 Date: 16.02.2024</p> <p style="text-align: center;">TEST REPORT OF GROUND WATER</p>									
<p>• Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)</p> <p>• Work Order Ref. NO. : 4700092573/932 Dt. 20.07.2021</p> <p>• Sample Code : 1. Mohalbani Basti 2. Jorapokhar Kushtand 3. Bhowra 13 NO 4. Jamadoba 3 No 5. Lower Dungri</p> <p>• Date of Sample Collection : 09.02.2024 to 10.02.2024</p> <p>• Date of Testing : 10.02.2024 to 16.02.2024</p> <p>• Test : Colour, Odour, Taste, Turbidity, pH, Total Hardness, Iron, Chloride, Res. Free chlorine, Total Dissolved Solids, Calcium, Copper, Manganese, Sulphate, Nitrate, Fluoride, Phenolic Compound, Mercury, Cadmium, Arsenic, Cyanide, Lead, Zinc, Total Coliform, Hexavalent Chromium, Mineral Oil, Alkalinity, Aluminium & Boron.</p>									
TEST RESULT									
Sl. No	PARAMETERS OF TEST	VALUE					IS as per IS 10500:1991		Test Method
		Mohalbani Basti	Jorapokhar Kushtand	Bhowra 13 NO	Jamadoba 3 No	Lower Dungri	Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	2	2	1	1	5	15	IS 3025 (P-4):2021
2.	Temperature °C	22	22	20	22	21	-	-	-
3.	Electrical Conductivity, µmhos/cm	1040	2400	1090	550	870	-	-	-
4.	Total Dissolved Solids, mg/l	676	1545	708	350	560	-	-	IS 3025(P-16):1984
5.	pH	7.0	7.6	7.5	7.6	7.0	6.5-8.5	No Relax	IS-3025(P-11):1983
6.	Total Hardness as CaCO ₃ , mg/l	470.8	589.6	466.4	233.2	347.6	200	600	IS 3025(P-21):2009
7.	Calcium as Ca, mg/l	96.8	153.1	95.0	49.3	72.2	75	200	IS 3025(P-40):1991
8.	Magnesium as Mg, mg/l	54.9	49.6	54.9	26.4	40.1	30	100	IS 3025(P-46):1994
9.	Chloride as Cl, mg/l	930	138.7	75.9	24.7	53.2	250	1000	IS 3025(P-32):1988
10.	Fluoride as F, mg/l	0.30	0.54	0.34	0.35	0.42	1.0	1.5	IS 3025(P-60):2008





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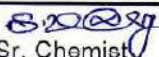

Continued on Page -2




Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

 ADITI R&D SERVICES Testing Laboratory NABL ACCREDITED (A Constituent Board of Quality Council of India) ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified		Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O.- Domgarh, Dist.- Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirndservices.com Phone: 0326-2952377 (O) Mobile: 09471358492, 09431512608												
2														
Sl. No	PARAMETERS OF TEST	VALUE					IS as per IS 10500:1991		Test Method					
		Mohalbani Basti	Jorapokhar Kushtand	Bhowra 13 NO	Jamado ba 3 No	Lower Dungri	Desi r-able	Permi s-sible						
11	Sulphate as SO ₄ , mg/l	49.5	97.6	60.5	38.2	43.9	200	400	IS 3025(P-24):1986					
12	Nitrate as NO ₃ , mg/l	7.8	11.5	8.7	7.7	8.5	45	No. Relax	IS 3025(P-34):1988					
13	Alkalinity as CaCO ₃ , mg/l	242	523.2	384	144	196.8	200	600	IS 3025(P-23):1983					
14	Lead as Pb, mg/l	BDL	BDL	BDL	BDL	BDL	0.01	No. Relax	IS 3025(P-47):1994					
15	Zinc as Zn, mg/l	0.24	0.36	0.3	0.14	0.24	5	15	IS 3025(P-42):1992					
16	Iron a Fe, mg/l	0.09	0.09	0.07	0.08	0.09	1.0	No. Relax	IS 3025(P-53):2003					
17	Copper as Cu, mg/l	BDL	BDL	BDL	BDL	BDL	0.05	1.5	IS 3025 (P-42):1992					
18	Mercury as Hg, mg/l	BDL	BDL	BDL	BDL	BDL	0.00 1	No. Relax	IS 3025(P-48):1994					
19	Cadmium as Cd, mg/l	BDL	BDL	BDL	BDL	BDL	0.00 3	No. Relax	IS 3025(P-41):1992					
20	Nickel as Ni, mg/l	BDL	BDL	BDL	BDL	BDL	0.02	No. Relax	IS 3025(P-37):1992					
21	Arsenic as As, mg/l	BDL	BDL	BDL	BDL	BDL	0.01	No. Relax	IS 3025(P-37):1988					
22	Cyanide as CN, mg/l	BDL	BDL	BDL	BDL	BDL	0.05	No. Relax	IS 3025(P-27):1986					
23	Total Chromium as Cr, mg/l	BDL	BDL	BDL	BDL	BDL	0.05	No. Relax	IS 3025(P-52):2003					
NOTE: BDL - Below Detection Limit														
 Sr. Chemist Aditi R&D Services										 Technical Manager Aditi R&D Services, Sindri				
Statements : 1. The test report refers only to the particular item(s) submitted for testing. 2. The test results reported in this report are valid at the time of and under the stated condition of measurement. 3. This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory.														

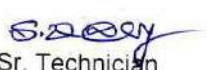
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	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	<p>Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O. - Domgarh, Dist. - Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirndservices.com Phone: 0326-2952377 (O) Mobile: 09471358492, 09431512608</p>																																													
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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

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Sl. No	Place of Monitoring	Day Time (6 AM to 10 PM) dB(A)	Noise level (Ambient standard) for Industrial Area as per CPCB Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 notified vide S.O. 1046(E) Dt. 22.11.2020 Limit in dB(A) Leq <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Day Time</td> <td style="width: 50%;">Night Time</td> </tr> <tr> <td>Industrial Area</td> <td>Industrial Area</td> </tr> </table>	Day Time	Night Time	Industrial Area	Industrial Area												
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JAMADOBA GROUP																			
Central Workshop Area Jamadoba near DG Set		71.4	65.8	75	70														

Remarks: Noise level is well within the standard specified limit for Industrial Area.


 Sr. Technician
 Aditi R&D Services




 Technical Manager
 Aditi R&D Services, Sindri

Statements :

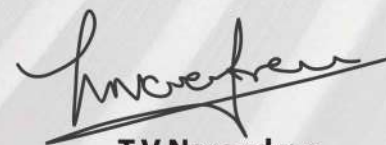
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ENVIRONMENTAL POLICY

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



GM (J) ☐Chief (HR/IR) ☐

Publication

DAINIK BHASKAR, DHANBAD Date 11-10-13**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 (झरिया)
टाटा स्टील, जामाडोबा (धनबाद)

GM (J) ☐

Chief (HR/IR) ☐

Publication

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



TATA STEEL
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टाटा स्टील, जामाडोबा (धनबाद)

GM (J) ☐

Chief (HR/IR) ☐

Publication

HINDUSTAN, DHANBAD

Date **11-10-13**



TATA STEEL

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टाटा स्टील, जामाडोबा (धनबाद)

GM (J) ☐

Chief (HR/IR) ☐

Publication

DAINIK JAGRAN, DHANBAD

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TATA

TATA STEEL

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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

