



**The Deputy Director General of Forests (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/JMB/87/ **292** /2024  
May 27<sup>th</sup>, 2024

Ref.: Environmental Clearance letter no. - J-11015/91/2017-IA .II (M) dated- 11<sup>th</sup> July 2022.

**SUB: Half Yearly Compliance Status Report of Environment Clearance conditions issued  
by MoEFCC, New Delhi to Jamadoba 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-11015/91/2017-IA. II (M) dated- 11<sup>th</sup> July 2022 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, 5<sup>th</sup> Floor  
1582, Rajdanga Main Road, Kolkata -700107.

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

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](http://www.tatasteel.com)

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

Proposal No	IA/JH/CMIN/109757/2019
Compliance ID	72084031
Compliance Number(For Tracking)	EC/M/COMPLIANCE/72084031/2024
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**

<b>Proposal Name</b>	Modernization of Jamadoba Underground coal mine of 0.34 MTPA in ML area of 927.17 Ha by M/s Tata Steel Limited at Jorapokhar, Puttiya Dungri village, Jharia, Tehsil, Dhanbad (Jharkhand)		
<b>Name of Entity / Corporate Office</b>	Tata Steel Ltd.		
<b>Village(s)</b>	N/A		
<b>District</b>	DHANBAD		
<b>Proposal No.</b>	IA/JH/CMIN/109757/2019	<b>Category</b>	Coal Mining
<b>Plot / Survey / Khasra No.</b>	N/A	<b>Sub-District</b>	N/A
<b>State</b>	JHARKHAND	<b>Entity's PAN</b>	AAICM3854E~LALALLL
<b>MoEF File No.</b>	J-11015/91/2017- IA.II (M)	<b>Entity name as per PAN</b>	Prakash Sinha

**Compliance Reporting Details**

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

**Details of Production and Project Area**

**Name of Entity / Corporate Office**      Tata Steel Ltd.

	<b>Project Area as per EC Granted</b>	<b>Annual Project Area in Possession</b>
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	0.34	0	

Conditions		
Specific Conditions		
Sr.No.	Condition Type	Condition Details
1	MISCELLANEOUS	PP must seek the input of experts for phytoremediation of Slurry and accordingly work on it with proper scientific approach.
<b>PPs Submission:</b> Complied There is no generation of slurry during raw coal production.		Date: 29/05/2024
2	GREENBELT	PP to plant additional 100,000 plants with three tier plantations along the transportation route, if not completed, and identified areas with consent to the gram panchayat within two year and plant for remaining within 2 years for their proper growth.
<b>PPs Submission:</b> Being Complied Plantation and green belt development is a continuous process. For FY 24, around 12400 saplings have been planted. Green belt report has been attached as Annexure-II.		Date: 30/05/2024
3	ENERGY PRESERVATION MEASURES	PP to install solar lights along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with in its maintenance within the study area of 10 km radius buffer zone within one year
<b>PPs Submission:</b> Complied It shall be complied		Date: 29/05/2024
4	Human Health Environment	Proponent shall appoint an occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the project and maintain records accordingly also Occupational health check-up for workers having some ailments like BP, diabetes, habitual smoking etc. shall be undertaken once in six months and necessary redial/preventive measures taken accordingly. The recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented. The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.
<b>PPs Submission:</b> Complied It has been complied. It's a continuous process. There is fully developed Tata Central Hospital in Jamadoba to take care of all these types of concerns of community.		Date: 29/05/2024
5	MISCELLANEOUS	Persons of nearby villages shall be given training on livelihood and skill development makes them employable with its proper records.
<b>PPs Submission:</b> Complied It is a continuous process and has been complied. Separate training cell (JNTVTI) has been developed for skill based training of local youth.		Date: 29/05/2024
6	Noise Monitoring & Prevention	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may effects the health in the village located aloes tom mining operations. Habitations have a right for darkness and minimal noise levels at nights, PPs must ensure that the biological clock of the villages is not distributed by orienting the



		floodlights/masks away from the villagers and keeping the noise levels well within the prescribed limits for day lights/night hours
<b>PPs Submission:</b> Complied It has been noted and shall be complied strictly. No illumination and sound at night is being ensured.		Date: 29/05/2024
7	Statutory compliance	PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.
<b>PPs Submission:</b> Complied It has been noted and shall be complied.		Date: 29/05/2024
8	Statutory compliance	PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground A dedicated team to oversee environment management shall be setup which should comprise of Environmental Engineer, Laboratory chemist and staff for monitoring of air , water quality parameters on routine basis. Any non-compliance or infringement should be reported to the concerned authority.
<b>PPs Submission:</b> Complied We have a full-fledged Environment cell with Environment professionals and field monitoring staff.		Date: 29/05/2024
9	Statutory compliance	PP to obtain the CTO for 0.34 MTPA capacities immediately after grant of EC.
<b>PPs Submission:</b> Complied Consent to Operate for the existing capacity has been obtained from the State PCB on 14.11.2022 and is valid till 31.12.2024.		Date: 29/05/2024
10	WATER QUALITY MONITORING AND PRESERVATION	PP to conserve the Kari jhore, Dungri jhore, Damodar River following within the core area of the project and the measure taken for its conservation to be furnished in every six-monthly compliance to be reported to respective IRO and SPCB.
<b>PPs Submission:</b> Complied The conservation measures are ongoing, and the report shall be submitted to IRO, MoEFCC & SPCB as required.		Date: 29/05/2024
11	Statutory compliance	Since there is also Jamadoba Coal washery located within mine lease having separated EC vide Letter No.- J-11015/203/2011-II-IA(M) dated 3rd March 2014 so the adequate EMP measure to be adopted to minimize the cumulative impact, also the utilization of rejects generated from washery should be managed as per norms. PP shall obtain integrated EC for future coal/washery expansion.
<b>PPs Submission:</b> Complied There are existing environmental measures for the Jamadoba Coal preparation plant. The rejects like tailing, middling etc are utilized as per norms. The integrated EC shall be taken in case of washery expansion.		Date: 29/05/2024
12	Statutory compliance	PP shall obtain No objection certificate from Ground water Authority for extraction of ground water within six months and submit to IRO Ranchi.

<b>PPs Submission:</b> Complied The NOC from central Ground Water Authority for extraction of ground water has been granted vide NOC No. CGWA/NOC/MIN/ORIG/2021/13422; dated: 20/10/2021. The copy of NOC has been attached along with compliance report.		Date: 29/05/2024
13	WASTE MANAGEMENT	PP Shall reduce river sand used for stowing and explore usage of sand segregated from OB dump from any nearest mine (either its own or any mine) and submit detailed report to IRO Ranchi.
<b>PPs Submission:</b> Complied We are in the process of technological exploration of sand from OB dump.		Date: 29/05/2024
14	MISCELLANEOUS	PP shall follow the recommendation of subsidence study and monitor the degree of subsidence regularly and shall be submitted to IRO- Ranchi.
<b>PPs Submission:</b> Complied The subsidence is monitored regularly, and the recommendations are implemented.		Date: 30/05/2024
15	Statutory compliance	PP to accomplish the requirement of a full fledge qualified manpower with Environmental Engineer/Env. Science degree background in Environmental Management Cell etc. within six months and same shall be reported to IRO, MoEF&CC
<b>PPs Submission:</b> Complied We have a full-fledged Environment cell with Environment professionals and field monitoring staff.		Date: 29/05/2024
16	PUBLIC HEARING	PP to fulfil all the commitment made to address the public hearing issued in time bound manner as committed in EIA EMP report in Chapter & table 7.1 and a progressive report to be furnished to IRO with six monthly compliance report
<b>PPs Submission:</b> Complied The commitment are in various levels of compliance. The report shall be furnished to IRO, Ranchi as required. Annual Report for the FY 23, covering various activities carried out under CSR has been attached as Annexure-I.		Date: 30/05/2024
17	AIR QUALITY MONITORING AND PRESERVATION	PP to maintain the transportation road properly to minimize the dust emission. PP to also develop puce roads by seeking consent from the panchayat with widening of roads especially roads inters linking the villages within the study area of 10 Km radius buffer zone.
<b>PPs Submission:</b> Complied The transportation roads in core and buffer zones are maintained properly to minimize the dust emission. The construction of roads in nearby villages are continuous process in consent with panchayat.		Date: 29/05/2024
18	Corporate Environmental Responsibility	PP to complete the estimated allocated budgetary expenditure for EMP capital cost is Rs.273.0 lakhs & Recurring cost is Rs.1359.4 Lakhs per year as per its letter dated JMB/115/001339 dated 3rd September, 2021. Capital EMP budget shall be completed within strict timeline.
<b>PPs Submission:</b> Complied It is under progress. The completion within strict timeline shall be complied.		Date: 29/05/2024

19	WATER QUALITY MONITORING AND PRESERVATION	PP to monitor the water quality of the ground water and surface water body located within the core zone and 5 Km radius from the periphery of the mine boundary as per procedure laid down by CPCB.
PPs Submission: Complied It has been complied.		Date: 29/05/2024
20	AIR QUALITY MONITORING AND PRESERVATION	PP to install More continuous ambient air quality stations at suitable locations preferably village side with consultation of SPCB. The real time data so generated shall be uploaded on company website and linked it with website of CPCB & SPCB. In addition, data should also be displayed digitally at entry and exit gate of mine lease for public display.
PPs Submission: Complied A CAAQMS is being installed in Jamadoba group since 2014. A new CAAQMS has been installed recently in July 2022 and the data connectivity to SPCB, Jharkhand has been done.		Date: 29/05/2024
21	WATER QUALITY MONITORING AND PRESERVATION	PP shall develop rainwater harvesting in Jamadoba coal washery as proposed by PP in vide Letter dated JMB/115/001339 dated 3rd September, 2021 & water harvesting ponds near the villages of suitable area as suggested by EAC in consultation with Gram Panchayat within year and with cultivation of Lotus.
PPs Submission: Complied It shall be complied. Work has been initiated and under progress.		Date: 29/05/2024

## General Conditions

Sr.No.	Condition Type	Condition Details
1	WATER QUALITY MONITORING AND PRESERVATION	The surface drainage plan including surface water conservation of area of influence affected by the said mining operations shall be prepared, considering the presence of any river/rivulet/pond/lake etc. with impact of mining activities on it. And implemented by the project proponent. The surface drainage plan and /or any diversion of natural water courses shall be as per the provisions of the approved Mining Plan /EIA/EMP submitted to this Ministry and the same should be as per the approved mining plan and as per the permission of DGMS.
PPs Submission: Complied It has been noted and shall be complied		Date: 29/05/2024
2	Statutory compliance	The Environmental clearance shall be subject orders of Hon'ble Supreme Court of India. Hon'ble High Courts, NGT and any other Court of Law, from time to time, and as applicable to the project.
PPs Submission: Complied It has been noted.		Date: 29/05/2024
3	Statutory compliance	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non- forest purpose involved in the project.

<b>PPs Submission:</b> Complied It is not applicable.		Date: 29/05/2024
4	Statutory compliance	The Project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
<b>PPs Submission:</b> Complied Not Applicable		Date: 29/05/2024
5	Statutory compliance	The project proponent shall prepare a site-specific conservation plan/wildlife management Plan and approved by the Chief Wildlife Warden. The recommendation of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule I species in the study area)
<b>PPs Submission:</b> Complied It has been notes and shall be complied.		Date: 29/05/2024
6	Statutory compliance	The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and Water (Prevention & Control of Pollution) Act, 1974 from the Concerned State Pollution Control Board/Committee.
<b>PPs Submission:</b> Complied The CTE has been obtained from JSPCB vide letter no. JSPCB/HO/RNC/CTE-14115974/2022/523 dated 12.11.2022 & CTO has been received from JSPCB with Ref No. JSPCB/HO/RNC/CTO-13955624/2022/1601 dated 14.11.2022.		Date: 29/05/2024
7	Statutory compliance	The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
<b>PPs Submission:</b> Complied NOC was obtained from CGWA vide NOC No. CGWA/NOC/MIN/ORIG/2021/13422; dated: 20/10/2021, valid till 19.10.2023. Application for 1st renewal, application number 21-4/222/JH/MIN/2017, has been applied on 18.10.2023 whose approval process in underway.		Date: 29/05/2024
8	Statutory compliance	Solid Waste/Hazardous Waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules,2016/ Hazardous & Other Waste Management Rules,2016
<b>PPs Submission:</b> Complied It has been noted and shall be complied.		Date: 29/05/2024
9	WATER QUALITY MONITORING AND PRESERVATION	Adequate ground water recharge measure shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby villages in case the village wells go dry to dewatering of mine.
<b>PPs Submission:</b> Complied Water recharge structures are being constructed and renewed regularly in the nearby villages.		Date: 29/05/2024
10	MISCELLANEOUS	The Regional office of this Ministry shall monitor compliance of the stipulated conditions The project authorities should extend full cooperation to the officers of the Regional Office by furnishing the requisite data /information/monitoring reports.

<b>PPs Submission:</b> Complied Agreed		Date: 29/05/2024
11	MISCELLANEOUS	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1986, Hazardous and Other Waste (Managements and Trans-Boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders by the Hon'ble Supreme Court of India/ High Court and any other Court of Law relating to the subject matter.
<b>PPs Submission:</b> Complied It has been agreed		Date: 29/05/2024
12	MISCELLANEOUS	The Proponent shall abide by all the commitments and recommendation made in the EIA/EMP report and also that during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.
<b>PPs Submission:</b> Complied All the commitment and recommendations made as per Public hearing are under process of completion.		Date: 29/05/2024
13	MISCELLANEOUS	The proponent shall obtain all necessary Clarence /approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. Ministry or any other competent authority may stipulate any further condition for Environment protection.
<b>PPs Submission:</b> Complied It has been agreed		Date: 29/05/2024
14	MISCELLANEOUS	Any appeal against this environmental clearance shall lie with the Green Tribunal if Preferred, with in a period of 30 day as prescribed under section 16 of the National Green Tribunal Act, 2010.
<b>PPs Submission:</b> Complied Not required		Date: 29/05/2024
15	MISCELLANEOUS	The coal company\project proponent shall be liable to pay compensation against the illegal mining, if any, and raised by the respective state Government at any point of time in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.-114/2014 in the matter of Common Cause Vs Union of India & others.
<b>PPs Submission:</b> Complied Agreed		Date: 29/05/2024
16	MISCELLANEOUS	The concerned State Government shall ensure no mining operations to commence till the entire compensation for illegal mining if any is paid by the project proponents through their respective Department Of Mining & Geology, in strict compliance of judgement of Hon'ble Supreme Court.

PPs Submission: Complied It has been noted		Date: 29/05/2024
17	MISCELLANEOUS	This environmental clearance shall not be operational till time the project proponent complies with the above said judgement of Hon'ble Supreme Court, as applicable, and other statutory requirements.
PPs Submission: Complied Agreed		Date: 29/05/2024
18	MISCELLANEOUS	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change.
PPs Submission: Complied It has been Agreed		Date: 29/05/2024
19	MISCELLANEOUS	Concealing factual data or submission of false /fabricated data may result in revocation of this environmental clearance and attract action under this provision of Environment (Protection) Act, 1986.
PPs Submission: Complied It has been noted		Date: 29/05/2024
20	MISCELLANEOUS	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
PPs Submission: Complied It has been agreed		Date: 29/05/2024
21	AIR QUALITY MONITORING AND PRESERVATION	Adequate ambient air quality monitoring stations shall be established in core zone as well as in the buffer zone for monitoring of pollutants, namely particulates ,SO2and NOx location of the Station shall be decided based on the metrological data, topographical features and environmentally and ecologically sensitive in consultation with the State Pollution Control Board. Monitoring of heavy metal such as Hg, As, Ni, Cd, Cr, etc. to be carried out at least once in six months. Online ambient air quality monitoring station may also be installed in addition to the regular air monitoring stations as per the requirement and /or in consultation with the SPCB.
PPs Submission: Complied It has been complied		Date: 29/05/2024
22	AIR QUALITY MONITORING AND PRESERVATION	The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the coal Industry Standards notifies vide GSR 742 E dated 25.09.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
PPs Submission: Complied Ambient air quality of core as well as buffer zone are measures by inhouse environmental laboratory as well as third party NABL recognised lab. Report has been attached as Annexure-III.		Date: 30/05/2024

23	AIR QUALITY MONITORING AND PRESERVATION	Transportation of coal, to the extent permitted by road shall be carried out by covered trucks/conveyors .Effective control measure such as regular water sprinkling /rain gun/mist sprinkling etc. shall be carried out in critical areas prone to air pollution with higher level of particulate matter all through the coal; transport roads., loading /Unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/ State Pollution Control Board.
<b>PPs Submission:</b> Complied Transportation of coal from colliery to washery are done through covered conveyor belts. Road transportation is done through covered truck only.		Date: 29/05/2024
24	AIR QUALITY MONITORING AND PRESERVATION	Major approach roads shall be black topped and properly maintained.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
25	AIR QUALITY MONITORING AND PRESERVATION	The transportation of coal shall be carried out as per the provision and route proposed in the approved mining plan. Transportation of coal through the exiting road passing through any village shall be avoided. In case it is proposed to construct a bypass road it should be so constructed that the impact of sound, dust and accidents could be appropriately mitigated.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
26	AIR QUALITY MONITORING AND PRESERVATION	Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining PUC' certificate from the authorized pollution testing centres.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
27	AIR QUALITY MONITORING AND PRESERVATION	Coal Stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt conveyors shall be fully covered to avoid air borne dust Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
28	AIR QUALITY MONITORING AND PRESERVATION	Coal handling plant shall be operated with effective control measures w.r.t various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.
<b>PPs Submission:</b> Complied CHP is being operated using dry fog system, water sprinklers, mist canons and other various effective dust control measures.		Date: 29/05/2024
29	WATER QUALITY	The effluent discharge(mine waste water, workshop effluent) shall

	MONITORING AND PRESERVATION	be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standard vide GSR 742 E, dated 25.09.2000 as amended from time to time by the Central Pollution Control Board .
<b>PPs Submission:</b> Complied Water quality analysis discharge from mine sump, effluent treatment plants, sewage treatment plants are done regularly.		Date: 29/05/2024
30	WATER QUALITY MONITORING AND PRESERVATION	The Monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The Circular NO. J-20012/1/2006-1A.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regards for its compliance.
<b>PPs Submission:</b> Complied Monitoring data are being uploaded along with the half yearly compliance report on Tata Steel Limited website.		Date: 29/05/2024
31	WATER QUALITY MONITORING AND PRESERVATION	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and construction new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times in a year i.e, pre monsoon monsoon, post monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MoEFCC/RO.
<b>PPs Submission:</b> Complied It is being complied.		Date: 29/05/2024
32	WATER QUALITY MONITORING AND PRESERVATION	Monitoring of Water quality upstream and downstream of water bodies shall be carried out once in six months and records of monitoring data shall be maintained and submitted to the Ministry of environment, Forest and Climate Change/ Regional Office,
<b>PPs Submission:</b> Complied Water quality upstream and downstream of the water bodies are carried out.		Date: 29/05/2024
33	WATER QUALITY MONITORING AND PRESERVATION	Ground Water, excluding mine water, shall not be used for mining operations rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
<b>PPs Submission:</b> Complied It has been noted and shall be complied		Date: 29/05/2024
34	WATER QUALITY MONITORING AND PRESERVATION	The Project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine. The embankment constructed along river/nallah boundary shall be suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side, Stabilized with plantation so as to withstand the peak water pressure preventing any chance of mine inundation.
<b>PPs Submission:</b> Complied It has been noted and agreed to comply.		Date: 29/05/2024
35	WATER QUALITY	Garland drains (of suitable size, gradient and length) around the



	MONITORING AND PRESERVATION	critical areas i.e. mine shaft and low lying areas, shall be designed keeping at least 50% safety margin the mine sites. The sump capacity shall also provide adequate retention period to allow proper settling of slit material of the surface runoff.
<b>PPs Submission:</b> Complied It is being complied		Date: 29/05/2024
36	WATER QUALITY MONITORING AND PRESERVATION	The Water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads green belt development etc. The drains shall be regularly distilled particularly after monsoon and maintained properly.
<b>PPs Submission:</b> Complied The pumped water from the mine are being utilized for stowing, coal washing, sprinkling, green belt development and water treatment plant for community.		Date: 29/05/2024
37	WATER QUALITY MONITORING AND PRESERVATION	Industrial waste water from coal handling plant and mine water shall be properly collected and treated so as to conform to the standard prescribed under the Environment Protection Act, 1986 and the rules made thereunder, and as amended from time to time. Oil and grease trap shall be installed before discharge of workshop affluent. Sewage treatment plant of adequate capacity shall be installed for treatment of domestic waste water.
<b>PPs Submission:</b> Complied Industrial wastewater from coal handing plants are collected, treated and used in the coal washing and stowing activities.		Date: 29/05/2024
38	Human Health Environment	The project proponent shall undertake occupational Health survey for initial and Periodical medical examination of the workers engaged in the project and maintain records accordingly as per the provision of the Mines Rule, 1995 and DGMS Circulars. Besides carrying out regular periodic health check-up of their workers, 20% of the workers engaged in active mining operations shall be subjected to health check-up for occupational disease and hearing impairment, if any.
<b>PPs Submission:</b> Complied IME and PME rase done on regular basis through our inhouse Tata Central Hospital.		Date: 29/05/2024
39	Human Health Environment	Personal (including outsourcing employees) working in dusty area shall wear protective respiratory devices and shall also be provide with adequate training and information on safety and health aspects.
<b>PPs Submission:</b> Complied Adequate on site and off-site job training are given before deployment of employees. PPEs are being ensured to wear from safety and environment point of view.		Date: 29/05/2024
40	PUBLIC HEARING	Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.
<b>PPs Submission:</b> Complied Skill training along with basis safety training are done before deployment of employees to work.		Date: 29/05/2024
41	PUBLIC HEARING	Effective arrangements shall be made to provide and maintain at suitable point's conveniently situated, a sufficient supply of drinking water for all the persons employed.

<b>PPs Submission:</b> Complied Water treatment plants are operated for safe drinking water supply in nearby community.		Date: 29/05/2024
42	PUBLIC HEARING	Implementation of Action Plan on the issues raised during the public hearing shall be ensured. The Project Proponent shall undertake all the tasks as per the Action Plan Submitted with budgetary provisions during the Public Hearing. Land outies shall be compensated as per the norms laid out R&R Policy of the Company/or the National R&R Polity/R & R Policy of State Government as applicable.
<b>PPs Submission:</b> Complied It is under progress and shall be complied. The various action plans are in various stages of compliance.		Date: 29/05/2024
43	PUBLIC HEARING	The project proponent shall follow the mitigation measures provided in the Ministry's OM No. Z- 11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations issues related to the mining projects where habitation and villages are the part of mines lease areas or habitations and villages are surrounded by the mine lease area'.
<b>PPs Submission:</b> Complied It has been noted and shall be complied		Date: 29/05/2024
44	Corporate Environmental Responsibility	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures have proper checks and balances and to bring in focus any infringements/deviation/violation of the environment/forest /wildlife norms/conditions. The company shall have defined system of reporting infringements /deviation/violation of their environment /forest/wildlife norms/conditions and /or shareholder/ stockholders. The copy of the board resolution in this regards shall be submitted to MoEF&CC as a part of six monthly reports.
<b>PPs Submission:</b> Complied The company has well laid down Environmental Policy.		Date: 30/05/2024
45	Corporate Environmental Responsibility	A separate Environmental Cell both at the project and company head quarter level, with qualified personal shall be set up under the control of senior Executive, who will directly to the head of the organization.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
46	Corporate Environmental Responsibility	Action Plan for implementation EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be providing for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the six Monthly Compliance Report.
<b>PPs Submission:</b> Complied		Date:

It has been noted and shall be complied		29/05/2024
47	Corporate Environmental Responsibility	Self-Environmental audit shall be conducted annually. Every three year third party environmental audit shall be carried out.
<b>PPs Submission:</b> Complied Self-audit is conducted annually and IRQS audit for EMS 14001:2015 are conducted.		Date: 30/05/2024
48	MISCELLANEOUS	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspaper of District or State of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the projects proponents website permanently.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
49	MISCELLANEOUS	The copies of the environmental clearance shall be submitted by the projects proponents to the head of local bodies, panchayats and Municipal Bodies in addition to relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
50	MISCELLANEOUS	The project proponent shall upload the status of compliance of the Stipulated environment clearance conditions, including results of monitored data on their website and update the same on half yearly basis.
<b>PPs Submission:</b> Complied It has been noted and shall be complied		Date: 29/05/2024
51	MISCELLANEOUS	The project proponent shall monitor the criteria pollutants level namely; PM10, So2, NOx (ambient level) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to public and put on the website of the company.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
52	MISCELLANEOUS	The project proponent shall submit six monthly monthly reports on the status of the compliance of stipulated environment conditions on the and Climate Change at environmental clearance portal.
<b>PPs Submission:</b> Complied It has been noted and shall be complied		Date: 29/05/2024
53	MISCELLANEOUS	The project proponent shall follow the mitigation measure provided in this Ministry's OM No. Z-11013/5712014-IA.II (M) dated 29th October, 2014, Titled "Impact of mining activities on habitation - issues related to the mining projects wherein habitations and villages

		are the apart of mine lease areas or habitations and villages are surrounded by the mines lease area.
<b>PPs Submission:</b> Complied It has been notes and shall be complied		<b>Date:</b> 29/05/2024
54	MISCELLANEOUS	The project proponent shall submit the environmental statement for each financial year in FORM-V the concerned State pollution Control Board as prescribe under the Environment Rule, 1986 as amended subsequently and put on the Website of the company.
<b>PPs Submission:</b> Complied Environmental Statement has been submitted on time to the concerned authorities.		<b>Date:</b> 29/05/2024
55	MISCELLANEOUS	The project authorities shall inform to the regional Office of MoEF&CC regarding commencement of mining operations.
<b>PPs Submission:</b> Complied The mining activities are ongoing since more than 100 years.		<b>Date:</b> 29/05/2024
56	MISCELLANEOUS	The project authorities must strictly adhere to the stipulation made by the State Pollution Control Board and the State Government.
<b>PPs Submission:</b> Complied Shall be complied		<b>Date:</b> 29/05/2024
57	MISCELLANEOUS	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during public hearing and also that during their presentation to the Expert Appraisal Committee.
<b>PPs Submission:</b> Complied It has been noted and shall be complied		<b>Date:</b> 29/05/2024
58	MISCELLANEOUS	The Ministry reserve the right to stipulate additional condition if found necessary .The company in a time bound manner shall implement these conditions.
<b>PPs Submission:</b> Complied Agreed		<b>Date:</b> 29/05/2024
59	WATER QUALITY MONITORING AND PRESERVATION	The project proponent shall take all precautionary measure to ensure reverian/riparian ecosystem in and around the coal mine up to a distance of 5 km. a revarian/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation/water resources department in the state government.
<b>PPs Submission:</b> Complied It has been noted and shall be complied		<b>Date:</b> 29/05/2024
60	Noise Monitoring & Prevention	Adequate measures shall be taken for control of noise levels below 85 db. (A) in the work environment. Workers engaged in underground mining operations of HEMM etc. shall be provided with personal protective equipment's (PPE) like ear plugs/muffs in conformity with the prescribed norms/guidelines in this regards.

		Progress in usage of such accessories to be monitored. Adequate awareness programme for users to be conducted.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
61	Noise Monitoring & Prevention	The noise level survey shall be carried out as per the prescribed gridlines to assess noise exposure of the workmen at vulnerable points in the mines premises, and report in this regard shall be submitted to the Ministry/RO on six monthly basis.
<b>PPs Submission:</b> Complied It has been complied. The report has been attached in Annexure-III.		Date: 30/05/2024
62	MINING PLAN	Mining shall be carried out under strict adherence to provisions of Mines Act 1952 and subordinate legislations made there under as applicable.
<b>PPs Submission:</b> Complied It has been noted and shall be complied.		Date: 29/05/2024
63	MINING PLAN	No change in mining method i.e. UG to OC, calendar programme and scope of work shall be made without obtaining prior approval of the Ministry of Environment Forest, and Climate Change (MoEFCC)
<b>PPs Submission:</b> Complied It has been noted and shall be complied.		Date: 29/05/2024
64	MINING PLAN	Mining shall be carried out as per the approved mining plan (including mines closure plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General of Mines Safety (DGMS)
<b>PPs Submission:</b> Complied It has been noted and shall be complied.		Date: 29/05/2024
65	MINING PLAN	Underground work place environment conditions shall be rendered ergonomic and air breathable with adequate illumination in conformance with DGMS Standards.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
66	MINING PLAN	No mining activity shall be carried out in forest land without forestry clearance as per forest (Conservations) Act, 1980 and also adhering to the Scheduled tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act,2006 read with provisions of Indian Forest Act,1927
<b>PPs Submission:</b> Complied It has been noted. No forest land involved.		Date: 29/05/2024
67	MINING PLAN	Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

<b>PPs Submission:</b> Complied It has been noted and shall be complied		Date: 29/05/2024
68	LAND RECLAMATION	Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MoEFCC) from time to time shall be submitted to MoEFCC/ Regional Office (RO)
<b>PPs Submission:</b> Complied It has been complied. The LULC study was done in 2021 and the report was submitted to IRO, Ranchi		Date: 29/05/2024
69	LAND RECLAMATION	Post mining I/Forestry purpose and shall be handled over to the respective State Government, as specified in the Guidelines for preparation of Mine closure Plan, issued by the Ministry of Coal dated 27th August,2009 and subsequent amendments
<b>PPs Submission:</b> Complied It has been noted and shall be complied		Date: 29/05/2024
70	LAND RECLAMATION	Regular Monitoring of subsidence movement on the surface over and around the working areas and its 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 beyond the limit prescribed, appropriately effective mitigation measures shall be taken to avoid loss of life and materials. Cracks should be effectively plugged in with ballast and clay soil/suitable material.
<b>PPs Submission:</b> Complied It has been complied		Date: 29/05/2024
71	LAND RECLAMATION	Fly ash shall be used for external dump of overburden, backfilling, or stowing of mines as per provision contained in clause (I )and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 E dated 3rd Nov. 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from flue Gas Desulfurization (FGD) if any along with fly ash for external dump of overburden, backfilling or stowing of mines. Compliance report shall be submitted to Regional office of MoEFCC, CPCB, and SPCB.
<b>PPs Submission:</b> Complied It is being complied.		Date: 29/05/2024
72	LAND RECLAMATION	A separate team for subsidence monitoring and surface mitigation measures shall be constituted and continuous monitoring & implementation of mitigation measures be carried out.
<b>PPs Submission:</b> Complied A separate team including surveyors has been made for continuous measurement and monitoring subsidence and implement mitigation measures.		Date: 29/05/2024
73	LAND RECLAMATION	Through inspection of the mines lease area of any cracks developed at the surface due to mining activities below ground shall be carried out to prevent inrush of water in the mine.

<b>PPs Submission:</b> Complied It is being complied		Date: 29/05/2024
74	LAND RECLAMATION	Native tree species shall be selected and planted over areas affected by subsidence.
<b>PPs Submission:</b> Complied Generally, no areas are as much affected by subsidence. However, native species are planted for the land reclamation.		Date: 29/05/2024
75	LAND RECLAMATION	The Project proponent shall make necessary alternative arrangements, if grazing land is for livestock grazing, if any. In this context the project proponent shall implements the direction of Hon'ble Supreme Court with regards to acquiring grazing land.
<b>PPs Submission:</b> Complied Not applicable as it is an underground mine		Date: 29/05/2024
76	GREENBELT	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any spotted/ reported in the study area. Action plan, in this regards if any shall be prepared and implemented in consultation with the State Forest and Wildlife Department.
<b>PPs Submission:</b> Complied It has been noted and shall be complied		Date: 29/05/2024
77	GREENBELT	Green belt, consisting of three -tier plantation, of which not less than 7.5 m shall be developed all along the mines lease area in a phased manner. The green belt comprising of a mix of natives species shall be developed all along the major roads/ coal transportation roads.
<b>PPs Submission:</b> Complied It has been complied partially and work is under progress.		Date: 29/05/2024
<b>PPs Submission:</b> Complied It has been complied partially and work is under progress.		Date: 29/05/2024
78	Human Health Environment	Adequate illumination shall be ensured in all mine location (as per DGMS standards) and monitored.
<b>PPs Submission:</b> Complied Illumination monitoring is done on regular basis as per DGMS norms.		Date: 29/05/2024
<b>Visit Remarks</b>		
<b>Last Site Visit Report Date:</b>		N/A
<b>Additional Remarks:</b>		

# **HALF YEARLY COMPLIANCE REPORT**

**(PERIOD: OCT'23 – MAR'24)**

## **JAMADOBA UNDERGROUND COAL MINE**

**(CAPACITY: 0.34 MTPA)**  
**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-11015/91/2017-  
IA.II (M) dated July 11, 2022 ISSUED BY GOVT. OF INDIA, MINISTRY OF  
ENVIRONMENT, FOREST AND CLIMATE CHANGE, NEW DELHI.**



**Compliance status of Jamadoba Underground Coal Mine 0.34 MTPA in ML Area of 927.17 ha by M/s Tata Steel Ltd. At village Jorapokhar, Pattiya Dungri, Tehsil Jharia, District- Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/91/2017-IA.II (M) dated July 11, 2022**

Sl. No.	Consent Condition	Compliance Status
i	PP to obtain the CTO for 0.34 MTPA capacities immediately after grant of EC.	Consent to Operate for the existing capacity has been obtained from the State PCB on 14.11.2022 and is valid till 31.12.2024.
ii	PP to conserve the Kari jhore, Dungri jhore, Damodar River following within the core area of the project and the measure taken for its conservation to be furnished in every six-monthly compliance to be reported to respective IRO and SPCB.	The conservation measures are ongoing, and the report shall be submitted to IRO, MoEFCC & SPCB as required.
iii	Since there is also Jamadoba Coal washery located within mine lease having separated EC vide Letter No.- J-11015/203/2011-II-IA(M) dated 3rd March 2014 so the adequate EMP measure to be adopted to minimize the cumulative impact, also the utilization of rejects generated from washery should be managed as per norms. PP shall obtain integrated EC for future coal/washery expansion.	There are existing environmental measures for the Jamadoba Coal preparation plant. The rejects like tailing, middling etc are utilized as per norms. The integrated EC shall be taken in case of washery expansion.
iv	PP shall obtain No objection certificate from Ground water Authority for extraction of ground water within six months and submit to IRO Ranchi.	The NOC from central Ground Water Authority for extraction of ground water was granted vide NOC No. CGWA/NOC/MIN/ORIG/2021/1342 2; dated: 20/10/2021. Application for renewal has been filed on 18.10.2023 and the process of grant of NOC from the board is underway.
v	PP Shall reduce river sand used for stowing and explore usage of sand segregated from OB dump from any nearest mine (either its own or any mine) and submit detailed report to IRO Ranchi.	We are in the process of technological exploration of sand from OB dump.
vi	PP shall follow the recommendation of subsidence study and monitor the degree of subsidence regularly and shall be submitted to IRO- Ranchi.	The subsidence is monitored regularly, and the recommendations are implemented.
vii	PP to accomplish the requirement of a full fledge qualified manpower with Environmental Engineer/Env. Science degree background in Environmental Management Cell etc. within six months and same shall be reported to IRO, MoEF&CC	We have a full-fledged Environment cell with Environment professionals and field monitoring staff.

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viii	PP to fulfil all the commitment made to address the public hearing issued in time bound manner as committed in EIA EMP report in Chapter & table 7.1 and a progressive report to be furnished to IRO with six monthly compliance report	The commitment are in various levels of compliance. The report shall be furnished to IRO, Ranchi as required. Annual Report for the FY 23, covering various activities carried out under CSR has been attached as Annexure-I.
ix	PP to maintain the transportation road properly to minimize the dust emission. PP to also develop puce roads by seeking consent from the panchayat with widening of roads especially roads inters linking the villages within the study area of 10 Km radius buffer zone.	The transportation roads in core and buffer zones are maintained properly to minimize the dust emission. The construction of roads in nearby villages are continuous process in consent with panchayat.
x	PP to complete the estimated allocated budgetary expenditure for EMP capital cost is Rs.273.0 lakhs & Recurring cost is Rs.1359.4 Lakhs per year as per its letter dated JMB/115/001339 dated 3rd September, 2021. Capital EMP budget shall be completed within strict timeline.	It is under progress. The completion within strict timeline shall be complied.
xi	PP to monitor the water quality of the ground water and surface water body located within the core zone and 5 Km radius from the periphery of the mine boundary as per procedure laid down by CPCB.	It has been complied.
xii	PP to install More continuous ambient air quality stations at suitable locations preferably village side with consultation of SPCB. The real time data so generated shall be uploaded on company website and linked it with website of CPCB & SPCB. In addition, data should also be displayed digitally at entry and exit gate of mine lease for public display.	A CAAQMS is being installed in Jamadoba group since 2014. A new CAAQMS has been installed recently in July 2022 and the data connectivity to SPCB, Jharkhand has been done.
xiii	PP shall develop rainwater harvesting in Jamadoba coal washery as proposed by PP in vide Letter dated JMB/115/001339 dated 3rd September, 2021 & water harvesting ponds near the villages of suitable area as suggested by EAC in consultation with Gram Panchayat within year and with cultivation of Lotus.	It shall be complied. Work has been initiated and under progress.
xiv	PP must seek the input of experts for phytoremediation of Slurry and accordingly work on it with proper scientific approach.	There is no generation of slurry during raw coal production.
xv	PP to plant additional 100,000 plants with three tier plantations along the transportation route, if not completed, and identified areas with consent to the gram panchayat within two year and plant	Plantation and green belt development is a continuous process. For FY 24, around 12400 saplings have been planted. Green belt report

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	for remaining within 2 years for their proper growth.	has been attached as Annexure-II.
xvi	PP to install solar lights along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with in its maintenance within the study area of 10 km radius buffer zone within one year	It shall be complied
xvii	Proponent shall appoint an occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the project and maintain records accordingly also Occupational health check-up for workers having some ailments like BP, diabetes, habitual smoking etc. shall be undertaken once in six months and necessary redial/preventive measures taken accordingly. The recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented. The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.	It has been complied. It's a continuous process. There is fully developed Tata Central Hospital in Jamadoba to take care of all these types of concerns of community.
xviii	Persons of nearby villages shall be given training on livelihood and skill development makes them employable with its proper records.	It is a continuous process and has been complied. Separate training cell (JNTVTI) has been developed for skill based training of local youth.
xix	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may effects the health in the village located aloes tom mining operations. Habitations have a right for darkness and minimal noise levels at nights, PPs must ensure that the biological clock of the villages is not distributed by orienting the floodlights/masks away from the villagers and keeping the noise levels well within the prescribed limits for day lights/night hours	It has been noted and shall be complied strictly. No illumination and sound at night is being ensured.
xx	PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.	It has been noted and shall be complied.
xxi	PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground A dedicated team	We have a full-fledged Environment cell with Environment professionals and field monitoring staff.

**Compliance status of Jamadoba Underground Coal Mine 0.34 MTPA in ML Area of 927.17 ha by M/s Tata Steel Ltd. At village Jorapokhar, Pattiya Dungri, Tehsil Jharia, District- Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/91/2017-IA.II (M) dated July 11, 2022**

	to oversee environment management shall be setup which should comprise of Environmental Engineer, Laboratory chemist and staff for monitoring of air , water quality parameters on routine basis. Any non-compliance or infringement should be reported to the concerned authority.	
4.1	The grant of Environment Compliance (EC) is further subject to compliance of the Standard EC Conditions as under:	
(a)	Statutory Compliance:	
i	The Environmental clearance shall be subject orders of Hon'ble Supreme Court of India. Hon'ble High Courts, NGT and any other Court of Law, from time to time, and as applicable to the project.	It has been noted.
ii	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non- forest purpose involved in the project.	It is not applicable.
iii	The Project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	Not Applicable
iv	The project proponent shall prepare a site-specific conservation plan/wildlife management Plan and approved by the Chief Wildlife Warden. The recommendation of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule I species in the study area)	It has been notes and shall be complied.
v	The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and Water (Prevention & Control of Pollution) Act, 1974 from the Concerned State Pollution Control Board/Committee.	The CTE has been obtained from JSPCB vide letter no. JSPCB/HO/RNC/CTE-14115974/2022/523 dated 12.11.2022 & CTO has been received from JSPCB with Ref No. JSPCB/HO/RNC/CTO-13955624/2022/1601 dated 14.11.2022.
vi	The project proponent shall obtain the necessary permission from the Central Ground Water Authority.	NOC was obtained from CGWA vide NOC No. CGWA/NOC/MIN/ORIG/2021/1342 2; dated: 20/10/2021, valid till 19.10.2023.

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		Application for 1 <sup>st</sup> renewal, application number 21-4/222/JH/MIN/2017, has been applied on 18.10.2023 whose approval process is underway.
vii	Solid Waste/Hazardous Waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016/ Hazardous & Other Waste Management Rules, 2016	It has been noted and shall be complied.
<b>I.(a)</b>	<b>Air Quality Monitoring and Preservation</b>	
i	Adequate ambient air quality monitoring stations shall be established in core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO <sub>2</sub> and NO <sub>x</sub> . Location of the Station shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive in consultation with the State Pollution Control Board. Monitoring of heavy metal such as Hg, As, Ni, Cd, Cr, etc. to be carried out at least once in six months. Online ambient air quality monitoring station may also be installed in addition to the regular air monitoring stations as per the requirement and /or in consultation with the SPCB.	It has been complied
ii	The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the coal Industry Standards notified vide GSR 742 E dated 25.09.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.	Ambient air quality of core as well as buffer zone are measures by inhouse environmental laboratory as well as third party NABL recognised lab. Report has been attached as Annexure-III.
iii	Transportation of coal, to the extent permitted by road shall be carried out by covered trucks/conveyors. Effective control measure such as regular water sprinkling /rain gun/mist sprinkling etc. shall be carried out in critical areas prone to air pollution with higher level of particulate matter all through the coal; transport roads, loading /Unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/ State Pollution Control Board.	Transportation of coal from colliery to washery are done through covered conveyor belts. Road transportation is done through covered truck only.

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iv	Major approach roads shall be black topped and properly maintained.	It has been complied
v	The transportation of coal shall be carried out as per the provision and route proposed in the approved mining plan. Transportation of coal through the exiting road passing through any village shall be avoided. In case it is proposed to construct a bypass road it should be so constructed that the impact of sound, dust and accidents could be appropriately mitigated.	It has been complied
vi	Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining PUC' certificate from the authorized pollution testing centres.	It has been complied
vii	Coal Stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt conveyors shall be fully covered to avoid air borne dust Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.	It has been complied
viii	Coal handling plant shall be operated with effective control measures w.r.t various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.	CHP is being operated using dry fog system, water sprinklers, mist canons and other various effective dust control measures.
<b>(b)</b>	<b>Water Quality Monitoring and Preservation</b>	
i	The effluent discharge(mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standard vide GSR 742 E, dated 25.09.2000 an as amended from time to time by the Central Pollution Control Board .	Water quality analysis discharge from mine sump, effluent treatment plants, sewage treatment plants are done regularly.
ii	The Monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The Circular NO. J-20012/1/2006-1A.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regards for its compliance.	Monitoring data are being uploaded along with the half yearly compliance report on Tata Steel Limited website.
iii	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and construction new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four	It is being complied.

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	times in a year i.e, pre monsoon monsoon, post monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MoEFCC/RO.	
vi	Monitoring of Water quality upstream and downstream of water bodies shall be carried out once in six months and records of monitoring data shall be maintained and submitted to the Ministry of environment, Forest and Climate Change/ Regional Office,	Water quality upstream and downstream of the water bodies are carried out.
v	Ground Water, excluding mine water, shall not be used for mining operation s rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.	It has been noted and shall be complied
vi	The Project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine. The embankment constructed along river/nallah boundary shall be suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side, Stabilized with plantation so as to withstand the peak water pressure preventing any chance of mine inundation.	It has been noted and agreed to comply.
vii	Garland drains (of suitable size, gradient and length) around the critical areas i.e. mine shaft and low lying areas, shall be designed keeping at least 50% safety margin the mine sites. The sump capacity shall also provide adequate retention period to allow proper settling of slit material of the surface runoff.	It is being complied
viii	The Water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads green belt development etc. The drains shall be regularly distilled particularly after monsoon and maintained properly.	The pumped water from the mine are being utilized for stowing, coal washing, sprinkling, green belt development and water treatment plant for community.
ix	Industrial waste water from coal handling plant and mine water shall be properly collected and treated so as to conform to the standard prescribed under the Environment Protection Act, 1986 and the rules made thereunder, and as amended from time to time. Oil and grease trap shall be installed before discharge of workshop affluent. Sewage treatment plant of adequate capacity shall be installed for treatment of domestic waste water.	Industrial wastewater from coal handling plants are collected, treated and used in the coal washing and stowing activities.

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x	Adequate ground water recharge measure shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby villages in case the village wells go dry to dewatering of mine.	Water recharge structures are being constructed and renewed regularly in the nearby villages.
xi	The surface drainage plan including surface water conservation of area of influence affected by the said mining operations shall be prepared, considering the presence of any river/rivulet/pond/lake etc. with impact of mining activities on it. And implemented by the project proponent. The surface drainage plan and /or any diversion of natural water courses shall be as per the provisions of the approved Mining Plan /EIA/EMP submitted to this Ministry and the same should be as per the approved mining plan and as per the permission of DGMS.	It has been noted and shall be complied
xii	The project proponent shall take all precautionary measure to ensure reverian/riparian ecosystem in and around the coal mine up to a distance of 5 km. a revarian/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation/water resources department in the state government.	It has been noted and shall be complied
<b>(c)</b>	<b>Noise and Vibration Monitoring and Prevention</b>	
i	Adequate measures shall be taken for control of noise levels below 85 db. (A) in the work environment. Workers engaged in underground mining operations of HEMM etc. shall be provided with personal protective equipment's (PPE) like ear plugs/muffs in conformity with the prescribed norms/guidelines in this regards. Progress in usage of such accessories to be monitored. Adequate awareness programme for users to be conducted.	It has been complied
ii	The noise level survey shall be carried out as per the prescribed gridlines to assess noise exposure of the workmen at vulnerable points in the mines premises, and report in this regard shall be submitted to the Ministry/RO on six monthly basis.	It has been complied. The report has been attached in <b>Annexure-III.</b>
<b>(d)</b>	<b>Mining Plan</b>	
i	Mining shall be carried out under strict adherence to provisions of Mines Act 1952 and subordinate legislations made there under as	It has been noted and shall be complied.



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	applicable.	
ii	No change in mining method i.e. UG to OC, calendar programme and scope of work shall be made without obtaining prior approval of the Ministry of Environment Forest, and Climate Change (MoEFCC)	It has been noted and shall be complied.
iii	Mining shall be carried out as per the approved mining plan (including mines closure plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General of Mines Safety (DGMS)	It has been noted and shall be complied.
iv	Underground work place environment conditions shall be rendered ergonomic and air breathable with adequate illumination in conformance with DGMS Standards.	It has been complied
v	No mining activity shall be carried out in forest land without forestry clearance as per forest (Conservations) Act, 1980 and also adhering to the Scheduled tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act,2006 read with provisions of Indian Forest Act,1927	It has been noted. No forest land involved.
vi	Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.	It has been noted and shall be complied
<b>(e)</b>	<b>Land Reclamation</b>	
i	Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MoEFCC) from time to time shall be submitted to MoEFCC/ Regional Office (RO)	It has been complied. The LULC study was done in 2021 and the report was submitted to IRO, Ranchi
ii	Post mining l/Forestry purpose and shall be handled over to the respective State Government, as specified in the Guidelines for preparation of Mine closure Plan, issued by the Ministry of Coal dated 27th August,2009 and subsequent amendments	It has been noted and shall be complied
iii	Regular Monitoring of subsidence movement on the surface over and around the working areas and its 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 beyond the limit prescribed, appropriately effective mitigation	It has been complied

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	measures shall be taken to avoid loss of life and materials. Cracks should be effectively plugged in with ballast and clay soil/suitable material.	
iv	Fly ash shall be used for external dump of overburden, backfilling, or stowing of mines as per provision contained in clause (I )and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 E dated 3rd Nov. 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from flue Gas Desulfurization (FGD) if any along with fly ash for external dump of overburden, backfilling or stowing of mines. Compliance report shall be submitted to Regional office of MoEFCC, CPCB, and SPCB.	It is being complied.
v	A separate team for subsidence monitoring and surface mitigation measures shall be constituted and continuous monitoring & implementation of mitigation measures be carried out.	A separate team including surveyors has been made for continuous measurement and monitoring subsidence and implement mitigation measures.
vi	Through inspection of the mines lease area of any cracks developed at the surface due to mining activities below ground shall be carried out to prevent inrush of water in the mine.	It is being complied
vii	Native tree species shall be selected and planted over areas affected by subsidence.	Generally, no areas are as much affected by subsidence. However, native species are planted for the land reclamation.
viii	The Project proponent shall make necessary alternative arrangements, if grazing land is for livestock grazing, if any. In this context the project proponent shall implements the direction of Hon'ble Supreme Court with regards to acquiring grazing land.	Not applicable as it is an underground mine
<b>(f)</b>	<b>Green Belt</b>	
i	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any spotted/ reported in the study area. Action plan, in this regards if any shall be prepared and implemented in consultation with the State Forest and Wildlife Department.	It has been noted and shall be complied
ii	Green belt, consisting of three -tier plantation, of which not less than 7.5 m shall be developed all along the mines lease area in a phased manner. The green belt comprising of a mix of natives species shall be developed all along the major roads/ coal transportation roads.	It has been complied partially and work is under progress.

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<b>(g)</b>	<b>Public Hearing and Human Health Issues</b>	
i	Adequate illumination shall be ensured in all mine location (as per DGMS standards) and monitored.	Illumination monitoring is done on regular basis as per DGMS norms.
ii	The project proponent shall undertake occupational Health survey for initial and Periodical medical examination of the workers engaged in the project and maintain records accordingly as per the provision of the Mines Rule, 1995 and DGMS Circulars. Besides carrying out regular periodic health check-up of their workers, 20% of the workers engaged in active mining operations shall be subjected to health check-up for occupational disease and hearing impairment, if any.	IME and PME rase done on regular basis through our inhouse Tata Central Hospital.
iii	Personal (including outsourcing employees) working in dusty area shall wear protective respiratory devices and shall also be provide with adequate training and information on safety and health aspects.	Adequate on site and off-site job training are given before deployment of employees. PPEs are being ensured to wear from safety and environment point of view.
iv	Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.	Skill training along with basis safety training are done before deployment of employees to work.
v	Effective arrangements shall be made to provide and maintain at suitable point's conveniently situated, a sufficient supply of drinking water for all the persons employed.	Water treatment plants are operated for safe drinking water supply in nearby community.
vi	Implementation of Action Plan on the issues raised during the public hearing shall be ensured. The Project Proponent shall undertake all the tasks as peer the Action Plan Submitted with budgetary provisions during the Public Hearing. Land outies shall be compensated as per the norms laid out R&R Policy of the Company/or the National R&R Polity/R & R Policy of State Government as applicable.	It is under progress and shall be complied. The various action plans are in various stages of compliance.
vii	The project proponent shall follow the mitigation measures provided in the Ministry's OM No. Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations issues related to the mining projects where habitation and villages are the part of mines lease areas or habitations and villages are surrounded by the mine lease area'.	It has been noted and shall be complied
<b>(h)</b>	<b>Corporate Environment Responsibility</b>	
i	The company shall have a well laid down environmental policy duly approve by the Board	The company has well laid down Environmental Policy. Attached as

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	of Directors. The environmental policy should prescribe for standard operating procedures have proper checks and balances and to bring in focus any infringements/deviation/violation of the environment/forest /wildlife norms/conditions. The company shall have defined system of reporting infringements /deviation/violation of their environment /forest/wildlife norms/conditions and /or shareholder/stockholders. The copy of the board resolution in this regards shall be submitted to MoEF&CC as a part of six monthly reports.	Annexure-IV.
ii	A separate Environmental Cell both at the project and company head quarter level, with qualified personal shall be set up under the control of senior Executive, who will directly to the head of the organization.	It has been complied
iii	Action Plan for implementation EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be providing for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the six Monthly Compliance Report.	It has been noted and shall be complied
iv	Self-Environmental audit shall be conducted annually. Every three year third party environmental audit shall be carried out.	Self-audit is conducted annually and IRQS audit for EMS 14001:2015 are conducted every three year.
	<b>Miscellaneous</b>	
i	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspaper of District or State of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the projects proponents website permanently.	It has been complied
ii	The copies of the environmental clearance shall be submitted by the projects proponents to the head of local bodies, panchayats and Municipal Bodies in addition to relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	It has been complied
iii	The project proponent shall upload the status of	It has been noted and shall be

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	compliance of the Stipulated environment clearance conditions, including results of monitored data on their website and update the same on half yearly basis.	complied
iv	The project proponent shall monitor the criteria pollutants level namely; MP10, So2, NOx (ambient level) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to public and put on the website of the company.	It has been complied
v	The project proponent shall submit six monthly reports on the status of the compliance of stipulated environment conditions on the website of the Ministry of Environment, Forest and Climate Change at environmental clearance portal.	It has been noted and shall be complied
vi	The project proponent shall follow the mitigation measure provided in this Ministry's OM No. Z-11013/5712014-IA.II (M) dated 29th October, 2014, Titled "Impact of mining activities on habitation - issues related to the mining projects wherein habitations and villages are the apart of mine lease areas or habitations and villages are surrounded by the mines lease area.	It has been noted and shall be complied
vii	The project proponent shall submit the environmental statement for each financial year in FORM-V the concerned State pollution Control Board as prescribe under the Environment Rule, 1986 as amended subsequently and put on the Website of the company.	Environmental Statement has been submitted on time to the concerned authorities.
viii	The project authorities shall inform to the regional Office of MoEF&CC regarding commencement of mining operations.	The mining activities are ongoing since more than 100 years.
ix	The project authorities must strictly adhere to the stipulation made by the State Pollution Control Board and the State Government.	Shall be complied
x	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during public hearing and also that during their presentation to the Expert Appraisal Committee.	It has been noted and shall be complied
xi	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change.	It has been Agreed
xii	Concealing factual data or submission of false /fabricated data may result in revocation of this	It has been noted

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	environmental clearance and attract action under this provision of Environment (Protection) Act, 1986.	
xiii	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	It has been agreed
xiv	The Ministry reserve the right to stipulate additional condition if found necessary .The company in a time bound manner shall implement these conditions.	Agreed
xv	The Regional office of this Ministry shall monitor compliance of the stipulated conditions The project authorities should extend full cooperation to the officers of the Regional Office by furnishing the requisite data /information/monitoring reports.	Agreed
xvi	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1986, Hazardous and Other Waste (Managements and Trans- Boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders by the Hon'ble Supreme Court of India/ High Court and any other Court of Law relating to the subject matter.	It has been agreed
5	The Proponent shall abide by all the commitments and recommendation made in the EIA/EMP report and also that during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.	All the commitment and recommendations made as per Public hearing are under process of completion.
6	The proponent shall obtain all necessary Clarence /approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. Ministry or any other competent authority may stipulate any further condition for Environment protection.	It has been agreed
7	Any appeal against this environmental clearance shall lie with the Green Tribunal if Preferred, with in a period of 30 day as prescribed under section 16 of the National Green Tribunal Act, 2010.	Not required
8	The coal company\project proponent shall be liable to pay compensation against the illegal	Agreed

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	mining, if any, and raised by the respective state Government at any point of time in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.-114/2014 in the matter of Common Cause Vs Union of India & others.	
9	The concerned State Government shall ensure no mining operations to commence till the entire compensation for illegal mining if any is paid by the project proponents through their respective Department Of Mining & Geology, in strict compliance of judgement of Hon'ble Supreme Court.	It has been noted
10	This environmental clearance shall not be operational till time the project proponent complies with the above said judgement of Hon'ble Supreme Court, as applicable, and other statutory requirements.	Agreed

## ANNEXURE-I

### Executive Summery

Tata Steel Foundation is focused upon co-creating solutions, with tribal and excluded communities, to address their development challenges. Working for the overall development of community through its interventions in Health, livelihood, Education and Skill development.

Followings are the key highlights of the work carried out by Tata Steel Foundation in FY'23:

- In Public Health camp, 24968 villagers from 35 villages got free health check-up and medicines.
- A total of 79 camps were organized for Non communicable diseases (hypertension, diabetes, breast, and oral cancers) in which 2,296 beneficiaries got screened and were provided health services.
- Under the Ni-kshya Mitra program, 673 food packets were provided in Baghmara block.
- Under Cataract, 85 Nukar natak were organised to create awareness among villagers on blindness and a total of Eight camps organized in which 1,021 surgeries were successfully done.
- In Nutritional Garden, TSF Jamadoba distributed seed, plants and Agri materials to 1500 Households and wall paintings around nutrition were done at 180 places in different villages.
- Tata Steel started SPARSH centre with technical collaboration with LEPRASociety in which 1570 patients got benefitted.
- Under RISHTA project, TSF Jamadoba is working with 1465 beneficiaries through Pre and post-test.
- Total number of students enrolled in Pre-Matriculation Couching in FY'23 is 2378 in 18 centres.
- TSF Jamadoba has recently organized the `placement-drives for the job-openings at Tata Electronics Private Limited (TEPL) in which 24 candidates joined Tata Electronics.
- The total enrolment of the candidates in Community Youth coaching program for Uniform services is 64.
- Tata Steel Foundation (TSF), in collaboration with NIIT Foundation (NF), has been offering IT and English Courses in which total enrolment is 755.
- To promote paddy cultivation a total of 92 farmers (36 from Jamadoba and 56 from Sijua) of the leasehold area were supported with paddy seeds having acreage of 92 acres.
- 20 acre of horticulture plantation has been done through providing plants of Banana, papaya, Mango, coconut, guava, and lemon.
- TSF Jamadoba is supporting 140 landless families with critical inputs around various types of micro enterprises.
- Gender and Leadership for Disha, in which 240 women leaders are being developed. Out of 240, 60 women have completed training till module 4.
- Tata feeder centre, training of budding sports talent in three sporting segments i.e., Football, Archery and Athletics. As of now the total intake of the players under these sporting segments is 188.



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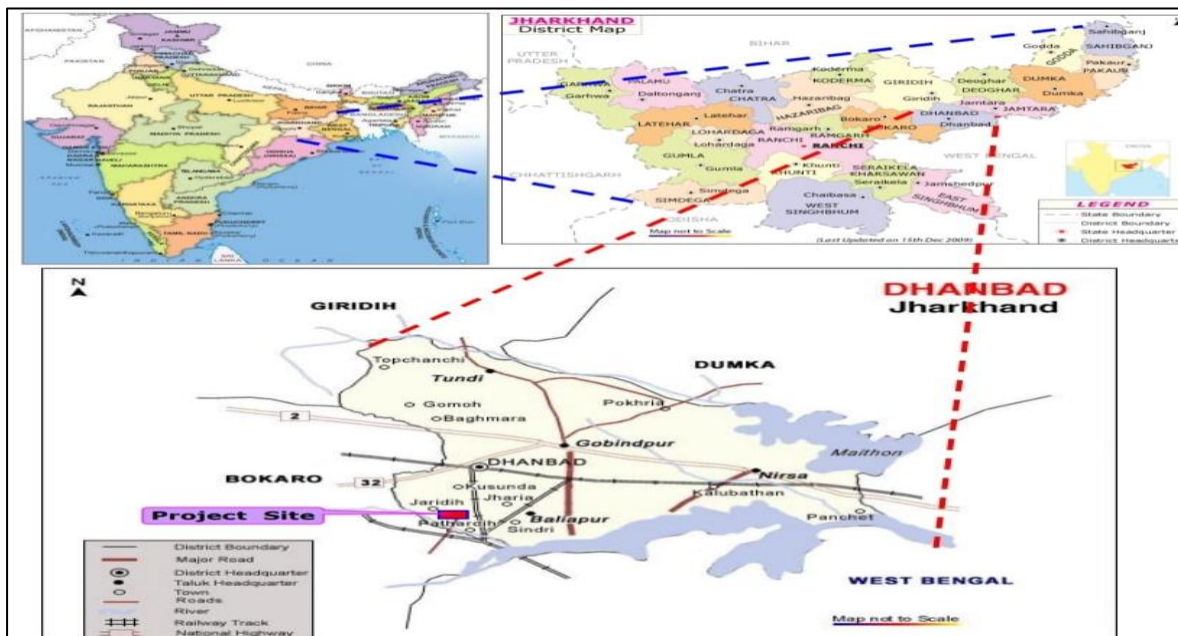
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## INTRODUCTION

Tata Steel Foundation (the Foundation), a wholly owned subsidiary of Tata Steel Limited, was incorporated on August 16, 2016, under Section 8 of the Companies Act 2013. The Foundation is focused upon co-creating solutions, with tribal and excluded communities, to address their development challenges. During this process of co-creation, the Foundation endeavours to develop and implement change models that are replicable at a national scale, enable significant and lasting betterment in the well-being of communities proximate to the Company's operating locations and embed a societal perspective in key business decisions. The Foundation strives for excellence by ensuring that all programmes are aligned with community needs and focus on national priority areas enabling communities to access and control resources to improve the quality of their lives with dignity.



TSF, Jamadoba is working in 44 villages of three blocks (Jharia, Dhanbad and Baghmara). Working in different areas like Health, Livelihood, Education, and Infrastructural development for livelihood enhancement and make community self-sufficient.



## PUBLIC HEALTH

Tata Steel provides both curative and preventive healthcare services to improve levels of health amongst the community. Tata Steel Foundation is committed to provide best health care facility to people in Tata Steel leasehold area. TSF Jamadoba, acts as strengthening agency for awareness generation, promotion of good health and hygiene, and bridge gap between community and government health facilities.

### **Major Achievement:**

- In Public Health camp, 24968 villagers from 35 villages got free health check-up and medicines.
- Focussing the preventive aspects of public health, a total of 79 camps were organized for Non communicable diseases (hypertension, diabetes, breast, and oral cancers) in which 2296 beneficiaries got screened and were provided health services.
- Under the Ni-kshya Mitra program, 673 food packets were provided in Baghmara block.

### **Nutritional Garden:**

The kitchen/home gardens have been found to play an important role in improving food security for the poor rural household. Keeping in view the importance of vegetables in daily diets and its low availability, TSF Jamadoba has started Nutritional Garden program for villagers of Tata Steel lease hold area. TSF Jamadoba, provides seed, plants and Agri materials to villagers for Kitchen Garden and have the benefits of good quality of food without using external fertilizer or chemicals.

TSF Jamadoba, distributed seed, plants and Agri materials to 1500 Households and wall paintings around nutrition were done at 180 places in different villages.

### **Case Study of Mrs. Dhani Devi**

“Connecting with nature is connecting with God” is the story of Dhani Devi (Age -29) wife of Mr. Devan Kalindi, and resident of Harijan Tola of Patia Panchayat. TSF Jamadoba reached her during seed distribution campaign in her village. During the home visit TSF Jamadoba team came to know that they have to rely on daily wages for their livelihood as they are landless. After monitoring the troublesome and pathetic condition of the family during home visit. Mrs. Dhani Devi was suggested to do kitchen gardening and explained about the benefits of kitchen garden. Which will not only increase her family nutritional intake but also save money which they spend on buying vegetable or for medical purpose which arises due to malnourishment. Kitchen garden will also help her generate additional income if the produce is high through selling of vegetable.

She decided to own an uncultivated and useless land in her village with the consent of community and SHG members. The issue was discussed in front of village community, and she got a small piece of land. TSF Jamadoba has supported her with seed, plants and Agri materials and provided one day training session.

Now after three months, she has done one of the best kitchen gardens and promised to continue it in near future. Mrs. Dhani Devi thanked TSF Jamadoba team for their effort and handholding support.



## **CATARACT**

Tata steel has collaborated with Shankar Netralaya during the year 2017-18 to do cataract camps through Mobile Eye surgical unit (MESU) which carries out operations for the cataract infected patients. Under the program for preventable blindness a total of 85 Nukar natak were organised to create awareness among villagers on blindness because of cataract in Tata Steel lease hold area villages and a total of Eight camp organised (2 at Baghmara CHC, Rajganj, 2 at Bhelatand and 3 at Digwadih) in which 1441 patient were screened, and total surgery done is 1,021.

### **Case Study of Mr. Niranjan Mahato:**

It has been correctly said “I have a very poor eyesight, and I can’t imagine a world without my glasses or contacts”. Mr. Niranjan Mahato of Nunidih Basti, was working as a helper at Tata Steel canteen, he uses to put coal in the cooking stove. During his mid-forties he notice that his vision is getting blur. He started wearing spectacles for clear vision. His right eye vision deteriorated dramatically.

He gets to know about Tata Steel Foundation, Eye check-up camp from one of the beneficiaries residing near his house. So, he visited the camp and diagnosed with cataract. After all the screening done by doctors, operation date was given. But on the date of operation, he was diagnosed with Hypertension and was referred to TSF Medical department. He visited TSF, Jamadoba and the medical team provided all the necessary support and medicines. The next day he visited again as per the advice of TSF medical team, and he was found normal and sent for cataract surgery.

On 20.09.2022, Cataract surgery was done. And now he can see the world clearly and does all his work without any support from others. He expresses his happiness and gratitude to Tata Steel Foundation.





## RISHTA

Regional Initiative for Safe Sexual Health by Today's Adolescents, formally known as "Project RISHTA" is a consortium project on Adolescents' Reproductive and Sexual Health, which aims "to improve the sexual and reproductive health and wellbeing of adolescents in Jharia Division.

RISHTA project aims at empowering adolescents to know and exercise their adolescent rights and be sensitive to issues of adolescent health (preventive and curative). Furthermore, pregnancy during adolescence is associated with higher risk of health problems like anaemia, sexually transmitted infections, unsafe abortion, and mental disorders (like depression). Pregnant adolescents also bear negative social consequences and often have to leave school reducing their employability leading to long-term economic implications. Unmet needs for family planning especially for spacing are high among adolescents.

### Key objectives of RISHTA project

- Enable adolescents to take right decision with right information for their future.
- Inculcating the importance of adolescents' health, which otherwise remains ignored.
- Reduce Early Age of Marriage across the block
- Inducing the importance of life skills in adolescents as catalysts to cater to their life approach in a more progressive manner.
- Orienting the adolescents with adolescent rights which are powerful tools for them to exercise.



- Number of adolescents reached through ARSH sessions -1465.
- 4 number of National/International Day observed in which 567 number of participants participated.
- 4 Kishor Navdampatti samaroh was organized with 56 adolescent couple participation.



- Total 123 meeting with AWW, Asha and PRI member with 1470 participants.
- Total 3 Child marriage delayed.
- 135 Sathiya were trained around various aspects of sexual and reproductive health
- Total 13 no. of pregnancy delayed.

### Case Study of Mohini Kumari Khetrapal

Mohini Kumari Khetrapal is 20 years (DOB – 11/11/2002) old girl who believes that education and hard work never goes in vain. Her father Mr. Deepak Kumar Khetrapal is a daily wage labor, and her mother Mrs. Anjana Devi is a house manager. She has one younger sibling, who works as a daily wage laborer with his father. The monthly income of the family was Rs. 8000 /-.

And the financial condition was not good. She is associated with RISHTA team for last 4 years. She has completed her intermediate and wanted to help her family financially. One day Mohini came to attend RISHTA meeting in which one of the TSF staff was discussing on F&B training which is given by PACE Centre Jamshedpur. She found this training fruitful for her career growth and to make her family financial stable.



She contacted RISHTA team after few days of training to know the procedure of selection in F&B course and wanted RISHTA team to convince her parents. The team visited her house and counselled her parents and convinced them.

The team lined up with PACE training Centre for F&B training and Mohini got admission in 2 months training program. After successful completion of her training, she got placed at Ramada Hotel Jamshedpur. Now she is earning Rs. 14,500/- per month with free accommodation, which enabled her to take care of both her and her family financial need.

With regular guidance of TSF RISHTA team, she completed her graduation and now enrolled herself in Hotel Management course for departmental promotion. She and her family are very thankful to TSF Jamadoba and RISHTA team for all the support and guidance.

### SPARSH

In 2005, India was declared with leprosy eliminated. Vertical system comprising Non-Medical Assistants and Supervisors were abolished. Health personals dedicated for NLEP2 have been deployed in other health vertical. Rigorous screening and monitoring system became poor post 2005. Considering the fact of high endemicity in Dhanbad (adjacent to

Purulia), a joint venture namely “SPARSH centre- A healing Touch” had been started in 2009.

Above all, new cases have been found in special pockets of India through Leprosy Case Detection Campaign by NLEP, GoI (14th September to 4th October 2016). According to WHO report, India accounts for 60% of total new cases of Leprosy across the world. Many new cases have been found in Bihar, Jharkhand, and Chhattisgarh.

Tata Steel started SPARSH centre with technical collaboration with LEPRO Society, for the benefit of the Leprosy affected persons in the year 2009 (26th October) and the reconstructive surgery unit started during the year 2017. This reconstructive surgery unit which is one-of-its-kind in Eastern India will play a major role in the leprosy eradication programmes, benefitting the patients from the States of Jharkhand and Bihar.



### **Coverage Area**

The SPARSH centre caters to the patients from Jharkhand and Bihar. Till today patients from 13 blocks have been able to access health services.

### **Objective of SPARSH Centre**

- Provide healthcare facilities to leprosy affected people and helping them to cope up with the societal stigma attached to the disease.
- To correct the deformities of people suffering from Leprosy, so that they come in the mainstream society.
- Restoring livelihood opportunities for those who have undergone reconstructive surgery.

### **Services offered**

- OPD services for patients suffering from leprosy
- Providing specially designed footwear to the patients
- Raising awareness regarding leprosy through a Mobile IEC Van in 200 villages in Dhanbad district
- Capacity building of health officials in leprosy

### **Key achievements during this period**

- A total of 1570 persons suffering from leprosy and related illness were provided health facilities.



- 1,53,500 persons were covered under the IEC campaign which creates awareness around the early identification and treatment of leprosy in 200 villages of the Dhanbad district.
- 454 MCR footwear manufactured for person affected of Leprosy.
- Reconstructive surgery to correct deformity was organised in which total 23 RCS was done.

### **Case Study of Mr. Prahalad Mahato:**

Mr. Prahalad Mahato (Age – 26 years) son of Ramlochan Mahto, Resident of Nischitpur village, Baghmara. He lives in his sister's house in Baghara village due to leprosy. His wife and son left him and his father lives alone at Nischitpur village, where he works as a daily wage worker.

He was referred by PHC Baghmara for reconstructive surgery at SPARSH centre to correct left claw hand after one year treatment from MDT. During examination, SPARSH Doctors found that he is suffering with Type II(ENL) reaction with right Ulnar, bilateral lateral popliteal and posterior tibial neuritis.

Prahalad Mahato was suffering from Leprosy for last 4 year and started his treatment at Nirmal Leprosy Hospital, Gobindpur for one year. During his treatment he get Lepra reaction. Then he started his treatment at MDT, PHC Baghmara.



After examination and diagnose at SPARSH centre, the treatment started with Storied therapy for a period of one month. The reaction was subsided, and muscle power improved. Again, he gets recurrent reaction. The centre started second line drug for Lepra rection with clofazimine therapy with proper counselling for a period of 4 month. He was declared cured of ENL reaction.

The reason of reaction was psychological problem caused due to disease, family, and future. The centre counsels Prahalad and his family time to time for proper case holding and management. Finally, he copped and accepted mental health treatment and case management of SPARSH centre.



The reason of reaction was psychological problem caused due to disease, family, and future. The centre counsels Prahalad and his family time to time for proper case holding and management. Finally, he copped and accepted mental health treatment and case management of SPARSH centre.



Now he is doing good and works as a daily wage worker with his father at his hometown. He believes that his deformity will correct, and his family will live together after surgery. He is very thankful to TSF Jamadoba and SPARSH team.

## EDUCATION

### **Pre-Matriculation coaching:**

PMC (Pre-Matriculation Coaching) classes have been running since 2012 in government and private (J.A.C. Board) schools for class VI to X in the leasehold areas of Jamadoba and Sijua. PMC was started in 2011-12 with 1,025 students at 11 centres, especially for the poor students, who cannot afford private tuition classes for bringing improvement in their studies. Pre- Matriculation coaching classes have been operated in two parts from Class VIII - X and Preparatory classes for classes VI to VII.

Total number of students enrolled last year (FY22) was 1548 in 09 centres. The Pre-Matriculation Coaching class is a boon for the students as it has been observed that the students have gained a lot from this program. Due to this program, they have been able to score good marks in their academic exams. According to the survey done before starting of PMC class, the passing % of the class 10th was 70%. In FY 22, TSF Jamadoba has achieved 100% result in the matriculation exam.

The purpose of running this Pre-Matriculation Coaching class is to provide quality tuitions to the poor students in English, Math, and Science. The total number of teachers in one centre is 5 - two teachers for Classes VI-VII and three teachers for classes VIII-X. The teachers are being paid through the school committees or the SHGs (Self Help Group).

In FY 23, TSF Jamadoba have conducted PMC classes at 18 centres covering 2378 students.



### **Jyoti Fellowship Programme:**

As part of affirmative action policy and effort towards inclusive growth and development of Scheduled Caste and Scheduled Tribe community. Tata Steel Foundation awarded Jyoti Fellowship to 346 meritorious students of Jamadoba region. Total scholarship amount is Rs. 17,98,750/-.

The objective of Tata Steel Jyoti Fellowship is to ensure that meritorious student from economically- challenged SC/ ST families have an opportunity to continue and pursue their

educational goals and fulfil career aspirations. Tata Steel's Tribal Cultural Society (TCS) identifies deserving candidates from operational areas of the company on the merit-based test.

### **Language Classes:**

Language classes on `Ol-chiki` script was started for the Santali communities residing in and around Tata Steel leasehold areas that is Bhowra-parsiabad village (Jamadoba) and Bhelatand Majhi tola (Sijua location). The classes are held during the weekend. The total enrolment is 71 (JMB- 33 students and Sijua- 38 students).



## **Employability Programme**

### **Placement Drives**

With an objective to provide employment opportunity for youths, TSF Jamadoba has recently organized the `placement-drives (for the job-openings at Tata Electronics Private Limited (TEPL) in collaboration with the Model Career Centre, Jamshedpur.

The placement –drive was specially meant for the local female candidates who are aged between 18-20 years (21 for the SC/ST category) and have passed out their intermediate exam during the year 2021 and 2022.

This placement drive was attended by total 128 candidates out of which 64 were shortlisted and finally 24 female candidates from Tata Steel leasehold areas have joined Tata Electronics.



### **Community Youth coaching program for Uniform services:**

With an objective to support the youth prepare for entry into uniformed services, TSF Jamadoba is running ``Community Youth Coaching Program`` for the local youths. The coaching is provided to prepare for written as well as physical tests for clearing various competitive exam(s) of the Uniformed Services like State Police, CMPF like BSF, CRPF, ITBP, Coast Guards, Army, Navy, and Air Force etc.

As of now, the total enrolment of the candidates is 64 (31 at Jamadoba and 33 at Sijua). While this coaching program, the enrolled candidates have started appearing at the competitive exam related to the Uniformed Services.

Total 29 candidates (11 from Jamadoba, 18 from Sijua) have appeared at the SSC GD EXAM-2022 which was held in January`23. The SSC has declared the results of SSC GD Exam on 08th April,2023. Total 9 candidates (6 from Sijua and 3 from Jamadoba) have cleared the

written exam of SSC GD. The physical exam is likely to be held soon for the candidates who have cleared the written exam of SSC GD-2022.



### **Skill development centre:**

Tata Steel Foundation (TSF), in collaboration with NIIT Foundation (NF), has been offering IT and English Courses in small towns and interior villages of the Company's operational areas since FY15. This program was initiated in response to the high demand for these skills among youth. The goal is to empower communities within Tata Steel operational areas by developing IT (Information Technology) and English capabilities among them. This would include youths, women (SHG, ANM, Asha, etc), adolescents and migrant laborers.

#### **Progress made during the period**

- A total of 755 enrolment has been done for FY'23.
- Out of 755 – 375 enrolled in Jamadoba and 380 in Sijua centre.
- A total of 677 students completed their course – 330 at Jamadoba and 347 at Sijua.



## **LIVELIHOOD ENHANCEMENT**

### **Support to farmers during kharif season:**

To promote paddy cultivation a total of 92 farmers (36 from Jamadoba and 56 from Sijua) of the leasehold area were supported with paddy seeds having acreage of 92 acres. The improved varieties of seeds promoted were KV21 and Purnima Gold. The farmers contributed 50% of the cost of seeds and each farmer was supported with a maximum of 1 acre. A total of 200 kg of seeds were promoted (164 kg of Purnima Gold seeds and 36 kg of KV2 seeds).



## Horticulture Development:

Horticulture development is a very useful method of income augmentation for the farmers. During the year 20 acre of horticulture plantation has been done through providing plants of Banana, papaya, Mango, coconut, guava, and lemon. Out of which the district horticulture department has also supported in this initiative by providing plants for 10 acres. In which total of 142 farmers got benefited.



## Leveraging Government Resources:

Community mobilization has been done by raising awareness levels of the farmers so that they can access the agriculture related schemes. During the year following progress has been made:

- 13 farmers have received 5350 banana and papaya plant from District Horticulture Department Dhanbad having an acreage of 6 acre of land.
- 4 animal health camps have been organized with support of district animal husbandry department in which a total of 1414 animal received medical check-up.
- TSF Jamadoba in collaboration with MSME Dhanbad has organised 30 days stitching training program in Petia Panchyat Bhawan, Petiya.
- FLD project of District Horticulture Department is being implemented in Tundi.
- 15 Diesel pump sets and 2 tractors was lesioned with govt. on 90% subsidiary under which 15 farmers got benefitted.
- 331 farmers got free elephant yam seed from District Horticulture Department.
- 160 women attended 3 days training on mushroom farming and received free Mushroom spawn.



### **Distribution of Micro-Enterprise Toolkit:**

Micro-Enterprise businesses not only help in promoting quality of life for business runners but also add value to the local economy. They produce numerous jobs at small-scale, improve income, and boost purchasing power.

TSF Jamadoba is supporting 140 landless families with critical inputs around various types of micro enterprises which will help them in self-employment and entrepreneurship.



### **Promoting Fish Farming:**

“Promoting fish farming” is one of the key initiatives towards improving the livelihood of the people living in Tata Steel leasehold area. During the FY’23, total 52 ponds were supported with fingerlings having 208 beneficiaries. Total 312 kg of fingerlings were distributed. The fingerlings were provided at 50% contribution from the pond-beneficiaries.

Besides providing fingerlings to the pond beneficiaries and build their capacities, much emphasis is given on improving the feeding practice. In this respect, TSF Jamadoba is facilitating farmers in getting proper-feed packets from the District Fishery Department at 50% subsidy.

### **Case Study of Mr. Abhimanyu Mahato:**

A young farmer Mr. Abhimanyu Mahato (Age 35), his father’s name Mr. Shankar Mahato resident of Patia Panchayat of Dhanbad district. Just a matric pass is growing rapidly with increase interest in the field of fish production. It is correctly said “The capacity to learn is a gift; the ability to learn is a skill; the willingness to learn is a choice.” With his willingness and support from TSF Jamadoba, made him earn his livelihood with dignity.

He used to support his family by doing agriculture which was not sufficient for overall development and give a dignified life to his family. Then he comes to know about Tata Steel Foundation and about its programmes from his friend. With keen interest in fish farming, he reached TSF Jamadoba office. And after knowing that TSF Jamadoba is supporting with fingerlings and capacity building on fish farming.

On the next day he meets TSF field staff and gives the application for fish farming. After that he received 5 days training on fish farming from Government Fishery Department at Ranchi.

When he returned from training, decided to start his own business of fish production. Mr. Abhimanyu Mahato improved his pond by expanding the area of pond to 1.5 acer and cleaned grass under water that can harm fishes. Then the TSF provided 100 kg fingerlings at 50% subsidy. Currently his annual income is one Lakh from Fish farming.

Mr. Abhimanyu Mahato is very happy with the support provided by TSF and said that now he can send his children for higher education and live his life with dignity. The help from TSF Jamadoba made him economically as well as socially strong.

## LIVELIHOOD EMPOWERMENT

### Disha Training:

The primary objective of Disha project is to enable women leaders through social-political empowerment by making systematic investments in community-based organizations to enhance their participation and productivity, and to create and sustain model of rural women. The project has an objective to increase knowledge, awareness, and income of women through capacity building.

Training of active SHG members on Gender and Leadership for Disha, in which 240 women leaders are being developed. Out of 240, 60 women have completed training till module 4.



## SPORTS

Organising sporting events/activities etc. has been a key strategy for ensuring the community engagement and to nurture the local young talents across Tata Steel leasehold areas. The children from the leasehold-villages will be given opportunities to take part in various sporting events/ activities towards shaping their future career in the Sports field.



During this year in the feeder centre training of budding sports talent is being done in three sporting segments i.e., Football, Archery and Athletics. As of now the total intake of the players under these sporting segments is 188.

Major achievement in Sports:

#### **Achievement in Archery**

<b>S. No.</b>	<b>Name</b>	<b>Village</b>	<b>Medal</b>	<b>Event</b>
1	Ms. Nazia Parween	Digwadih No.10	Selected	Centre for excellence (Govt. of Jharkhand), U-16
2	Ms. Madhu Kumari	Patherdih	Selected	Centre for excellence (Govt. of Jharkhand), U-16
3	Ms. Riya Kumari	Digwadih No.10	Selected	Centre for excellence (Govt. of Jharkhand), U-16
4	Ms. Pinky Kumari	Jealgora	Selected	Centre for excellence (Govt. of Jharkhand), U-16
5	Ms. Simran Kumari	Jealgora	Selected	Centre for excellence (Govt. of Jharkhand), U-16
6	Ms. Versha Chakroborty	Noonidih	Selected	Centre for excellence (Govt. of Jharkhand), U-16
7	Khusi Kumari	Digwadih	Gold	NTPC Mini National Archery Competition
8	Md. Adil	Digwadih	Selected	Tata Archery Academy

#### **Achievement in Football**

<b>S. No.</b>	<b>Name</b>	<b>Village</b>	<b>Selection</b>	<b>Event</b>
9	Mr. Pankaj Basti	Bhowra -36 No. PO Bhowra	Selected	National Camp at Bhubneshwar
10	Mr. Mrinal	Jealgora Basti	Selected	National Camp at Bhubneshwar
11	Mr. Prashant Diger	Nagina Bazar, Mohalbani	Selected	Residential sports training centre, Kumaitha Stadium Deoghar
12	Ms. Anju Sharma	Domgarh	Selected	Jharkhand state team camp u-17 at Chaibasa
13	Master Narayan Mahato	Digwadih No.10	Selected	SAIL Football Academy, Bokaro
14	Raj Kr. Mahato	Upper Dungri	Selected	CISF Delhi
15	Md. Irfan	Bhaga	Selected	Kuljeet Football Academy, Punjab
16	Mr. Vishnu Hajari	Noonidih Basti	Selected	Kuljeet Football Academy, Punjab
17	Mr. Vikky Kr. Mahato	Dumariatand	Selected	Kuljeet Football Academy, Punjab



## INFRASTRUCTURE

- 7600 people got benefitted through construction of 6,193 mts. long roads in 10 villages (Sijua 12 no., Dukhitdih, Rampur 2, Chetudih, Kanchanpur Bauritola, Upper dungri, Petiya, Banskapuria, Suyakanali, Malkera) and drain of length 1,552 mts were constructed in (Belubakhar, Lahargora, Purnadih, Sundarpur, Petiya, Kalimela, Lower Dungri, Upper Dungri, Digwadih Mahato basti, Kasiatand, Fatehpur, Rampur, Barughutu, Malkera villages) of Tata Steel intervention area.



- 1000 people got benefitted through repair of 4 deep bore well in 4 villages ((Lower Dungri, Rampur Md tola, Kapuria, Kanchanpur)



- In 11 villages (Debogram harijan tola, Debogram bangali tola, Banskapuria, Azadnagar, Belubakhar, Suyakanali, Upper dungri, Dungri no.3, Dungri no.7, Digwadih Majhi basti, Sunderpur) of Tata Steel leasehold area, 11,435 people got benefitted through installation of 8,878 mts. long piped drinking water supply.





- Renovation and construction of 282 mts long irrigation drain which is benefitting 34 farmers in 5 villages (Chattand, Petiya, Chaitudih, Kasiatand, Lower Dungri).



- In 4 villages of Sijua (Banskapuria, Rampur, Debogram, Sawaldih) deepening of 4 ponds is done to solve water crises at village level.



- 9080 people got benefitted through construction of 39 Rural infrastructure like pond steps (17), sitting platform (15), community center (3), culvert (1), community shed (2), Biswanath club.





## Annexure-II 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 &amp; 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 <sub>2</sub> 24 Hourly Limit- 120 µg/m³	NO <sub>x</sub> 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 <sub>2</sub> 24 Hourly Limit- 80µg/m³	NO <sub>2</sub> 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 &amp; 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 <sub>2</sub> 24 Hourly Limit- 120 µg/m³	NO <sub>x</sub> 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 <sub>2</sub> 24 Hourly Limit- 80µg/m³	NO <sub>2</sub> 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)**





# 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),  
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 <sub>10</sub> ), µg/m <sup>3</sup>	90.76	100 µg/m <sup>3</sup>	
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	53.45	60 µg/m <sup>3</sup>	
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	20.83	80 µg/m <sup>3</sup>	
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	28.62	80 µg/m <sup>3</sup>	
5.	Ozone, µg/m <sup>3</sup>	18.36	180 µg/m <sup>3</sup>	
6.	NH <sub>3</sub> , µg/m <sup>3</sup>	14.25	400 µg/m <sup>3</sup>	
7.	CO, mg/m <sup>3</sup>	0.89	4 mg/m <sup>3</sup>	
8.	Pb, µg/m <sup>3</sup>	BDL	1 µg/m <sup>3</sup>	
9.	As, ng/m <sup>3</sup>	BDL	6 ng/m <sup>3</sup>	
10.	Ni, ng/m <sup>3</sup>	BDL	20 ng/m <sup>3</sup>	
11.	Benzene, µg/m <sup>3</sup>	BDL	5 µg/m <sup>3</sup>	
12.	Benzoapyrene ng/m <sup>3</sup>	BDL	1 ng/m <sup>3</sup>	

NOTE: BDL - Below Detection Limit

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



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: ARDS/23-24/1417

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 – OFFICERS COLONY, 12 NO. DIGWADIH				
	Avg. Ambient Temperature	30°C	Avg. Humidity	39%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	78.18	100 µg/m <sup>3</sup>	
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	44.90	60 µg/m <sup>3</sup>	
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	17.32	80 µg/m <sup>3</sup>	
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	29.30	80 µg/m <sup>3</sup>	
5.	Ozone, µg/m <sup>3</sup>	16.65	180 µg/m <sup>3</sup>	
6.	NH <sub>3</sub> , µg/m <sup>3</sup>	14.15	400 µg/m <sup>3</sup>	
7.	CO, mg/m <sup>3</sup>	0.79	4 mg/m <sup>3</sup>	
8.	Pb, µg/m <sup>3</sup>	BDL	1 µg/m <sup>3</sup>	
9.	As, ng/m <sup>3</sup>	BDL	6 ng/m <sup>3</sup>	
10.	Ni, ng/m <sup>3</sup>	BDL	20 ng/m <sup>3</sup>	
11.	Benzene, µg/m <sup>3</sup>	BDL	5 µg/m <sup>3</sup>	
12.	Benzoapyrene ng/m <sup>3</sup>	BDL	1 ng/m <sup>3</sup>	

NOTE: BDL - Below Detection Limit

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



*S. D. Ray*  
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/23-24/1418

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 – CENTRAL WORKSHOP AREA , JAMADOBA				
	Avg. Ambient Temperature	30°C	Avg. Humidity	39%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	88.57	100 µg/m <sup>3</sup>	
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	54.15	60 µg/m <sup>3</sup>	
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	22.27	80 µg/m <sup>3</sup>	
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	29.00	80 µg/m <sup>3</sup>	
5.	Ozone, µg/m <sup>3</sup>	17.90	180 µg/m <sup>3</sup>	
6.	NH <sub>3</sub> , µg/m <sup>3</sup>	18.36	400 µg/m <sup>3</sup>	
7.	CO, mg/m <sup>3</sup>	1.09	4 mg/m <sup>3</sup>	
8.	Pb, µg/m <sup>3</sup>	BDL	1 µg/m <sup>3</sup>	
9.	As, ng/m <sup>3</sup>	BDL	6 ng/m <sup>3</sup>	
10.	Ni, ng/m <sup>3</sup>	BDL	20 ng/m <sup>3</sup>	
11.	Benzene, µg/m <sup>3</sup>	BDL	5 µg/m <sup>3</sup>	
12.	Benzoapyrene ng/m <sup>3</sup>	BDL	1 ng/m <sup>3</sup>	

NOTE: BDL - Below Detection Limit

S. R. Das  
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/23-24/1419

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 - TATA CENTRAL HOSPITAL

	Avg. Ambient Temperature	30°C	Avg. Humidity	39%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	70.63	100 µg/m <sup>3</sup>	
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	41.38	60 µg/m <sup>3</sup>	
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	18.12	80 µg/m <sup>3</sup>	
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	29.93	80 µg/m <sup>3</sup>	
5.	Ozone, µg/m <sup>3</sup>	15.83	180 µg/m <sup>3</sup>	
6.	NH <sub>3</sub> , µg/m <sup>3</sup>	16.70	400 µg/m <sup>3</sup>	
7.	CO, mg/m <sup>3</sup>	0.73	4 mg/m <sup>3</sup>	
8.	Pb, µg/m <sup>3</sup>	BDL	1 µg/m <sup>3</sup>	
9.	As, ng/m <sup>3</sup>	BDL	6 ng/m <sup>3</sup>	
10.	Ni, ng/m <sup>3</sup>	BDL	20 ng/m <sup>3</sup>	
11.	Benzene, µg/m <sup>3</sup>	BDL	5 µg/m <sup>3</sup>	
12.	Benzoapyrene ng/m <sup>3</sup>	BDL	1 ng/m <sup>3</sup>	

NOTE: BDL - Below Detection Limit

*S. D. Singh*  
Sr. Chemist  
Aditi R&D Services



*S. D. Singh*  
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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### TEST REPORT OF NOISE (AMBIENT) LEVEL MONITORING

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, DIST. - DHANBAD (JHARKHAND)							
09/11/2023 TO 10/11/2023		Avg. Ambient Temperature (°C)		Average Humidity (%)		Weather Condition		Status of the plant	
Work Order 4700092573/932 Dt. 20.07.2021		30		44		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		MAX	MIN	AVG. dB(A) Leq	MAX	MIN	AVERAGE dB(A) Leq	Industrial Area	Industrial Area
JAMADOBA GROUP									
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		
								Residential Area	Residential Area
3.	Officers Colony 12 No. Digwadih	52.8	47.2	50.85	46.8	42.4	45.13	65	55
								Silence Zone	Silence Zone
4.	Tata Central Hospital	49.2	44.8	47.53	39.4	37.8	38.67	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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Ref. No.: - ARDS/23-24/1421

Date: 15.11.2023

## 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 : 10/11/2023
- Date of Testing : 11/11/2023 - 14/11/2023

### TEST RESULTS

Sl No.	Particulars	Mineralogical Composition (%)			
		SiO <sub>2</sub>	FeO	Al <sub>2</sub> O <sub>3</sub>	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

*B. D. Singh*  
Sr. Chemist  
Aditi R&D Services



*Aditi*  
Technical Manager  
Aditi R&D Services, Sindri

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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, SO<sub>4</sub>

## 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 <sub>4</sub> , mg/l	65.5	49	400	IS-3025 (P-24):1986

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/1429

Date: 17.11.2023

## TEST REPORT OF MINE WATER DISCHARGE

- 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. 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

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
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

Anandita  
Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/1431

Date: 17.11.2023

### TEST REPORT OF EFFLUENT

- 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.

### TEST RESULT

Sl. No.	PARAMETERS OF TEST	VALUE		MoEF&C Notification 1 <sup>st</sup> Jan.2016 Permissible Max. Desirable Limit	Test Method
		ETP Out let Garage	ETP Outlet T.C.H Jamadoba		
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

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
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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Fax: 0326-2952377  
Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/1432

Date: 17.11.2023

### TEST REPORT OF DRINKING 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. Canteen - Jamadoba Colliery  
2. Canteen 6 & 7 Pits Colliery  
3. Canteen Digwadiah 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 : 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 Digwadiah 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 <sub>3</sub> , 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 <sub>2</sub> 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

Continued on Page 2



*[Signature]*

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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 <sub>4</sub> , mg/l	62.4	55.7	44	58.4	71	73.5	200	400	IS 3025(P-24):1986
12	Nitrate as NO <sub>3</sub> , 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 <sub>3</sub> , 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

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri

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Fax: 0326-2952377  
Mobile: 09471358492, 09431512608

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	882	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 <sub>3</sub> , 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

Continued on Page -2



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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 Pits 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 <sub>4</sub> , mg/l	52.4	47.7	48.8	60.2	200	400	IS 3025 (P-24):1986
14.	Nitrate as NO <sub>3</sub> , 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 <sub>6</sub> H <sub>5</sub> 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 <sub>3</sub> , 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

*Anandita*  
Sr. Chemist  
Aditi R&D Services



*Aditi*  
Technical Manager  
Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/1943

Date: 17.02.2024

### 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 : 09.02.2024 to 10.02.2024
- Date of Testing : 14.02.2024 to 16.02.2024
- Test Procedure : As per IS-5182

### TEST RESULTS

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 <sub>10</sub> ), µg/m <sup>3</sup>	93.28	100 µg/m <sup>3</sup>	
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	54.96	60 µg/m <sup>3</sup>	
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	21.18	80 µg/m <sup>3</sup>	
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	26.64	80 µg/m <sup>3</sup>	
5.	Ozone, µg/m <sup>3</sup>	17.63	180 µg/m <sup>3</sup>	
6.	NH <sub>3</sub> , µg/m <sup>3</sup>	14.54	400 µg/m <sup>3</sup>	
7.	CO, mg/m <sup>3</sup>	0.78	4 mg/m <sup>3</sup>	
8.	Pb, µg/m <sup>3</sup>	BDL	1 µg/m <sup>3</sup>	
9.	As, ng/m <sup>3</sup>	BDL	6 ng/m <sup>3</sup>	
10.	Ni, ng/m <sup>3</sup>	BDL	20 ng/m <sup>3</sup>	
11.	Benzene, µg/m <sup>3</sup>	BDL	5 µg/m <sup>3</sup>	
12.	Benzoapyrene ng/m <sup>3</sup>	BDL	1 ng/m <sup>3</sup>	

NOTE: BDL - Below Detection Limit

Sr. Chemist  
Aditi R&D Services



Technical Manager  
Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/1944

Date: 17.02.2024

### 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 : 09.02.2024 to 10.02.2024
- Date of Testing : 14.02.2024 to 16.02.2024
- Test Procedure : As per IS-5182

### TEST RESULTS

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 <sub>10</sub> ), µg/m <sup>3</sup>	75.92	100 µg/m <sup>3</sup>	
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	46.52	60 µg/m <sup>3</sup>	
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	18.35	80 µg/m <sup>3</sup>	
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	25.52	80 µg/m <sup>3</sup>	
5.	Ozone, µg/m <sup>3</sup>	17.48	180 µg/m <sup>3</sup>	
6.	NH <sub>3</sub> , µg/m <sup>3</sup>	14.60	400 µg/m <sup>3</sup>	
7.	CO, mg/m <sup>3</sup>	0.63	4 mg/m <sup>3</sup>	
8.	Pb, µg/m <sup>3</sup>	BDL	1 µg/m <sup>3</sup>	
9.	As, ng/m <sup>3</sup>	BDL	6 ng/m <sup>3</sup>	
10.	Ni, ng/m <sup>3</sup>	BDL	20 ng/m <sup>3</sup>	
11.	Benzene, µg/m <sup>3</sup>	BDL	5 µg/m <sup>3</sup>	
12.	Benzoapyrene ng/m <sup>3</sup>	BDL	1 ng/m <sup>3</sup>	

NOTE: BDL - Below Detection Limit

S. D. Dey  
Sr. Chemist

Aditi R&D Services




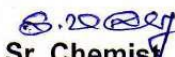

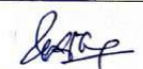
Technical Manager  
Aditi R&D Services, Sindri

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	<h2 style="margin: 0;">ADITI R&amp;D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;"><b>NABL ACCREDITED</b></p> <p style="margin: 0;">Ref. No.: - ARDS/23-24/1945 (A Constituent Board of Quality Council of India)</p> <p style="margin: 0; color: red;">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: sindriaditiservices.com Phone: 0326-2952377 (O) Mobile: 09471358492, 09431512608		
<b>TEST REPORT OF AMBIENT AIR QUALITY</b>				
<ul style="list-style-type: none"> <li>• Name of the industry</li> <li>• Work Order Ref. NO.</li> <li>• Date of Sample Collection</li> <li>• Date of Testing</li> <li>• Test Procedure</li> </ul>	<ul style="list-style-type: none"> <li>: M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)</li> <li>: 4700092573/932 Dt. 20.07.2021</li> <li>: 09.02.2024 to 10.02.2024</li> <li>: 14.02.2024 to 16.02.2024</li> <li>: As per IS-5182</li> </ul>			
<b>TEST RESULTS</b>				
<b>LOCATION – CENTRAL WORKSHOP AREA , JAMADOBA</b>				
	Avg. Ambient Temperature	24°C	Avg. Humidity	46%
SI No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	90.48	100 µg/m <sup>3</sup>	
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	53.29	60 µg/m <sup>3</sup>	
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	22.46	80 µg/m <sup>3</sup>	
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	30.29	80 µg/m <sup>3</sup>	
5.	Ozone, µg/m <sup>3</sup>	17.32	180 µg/m <sup>3</sup>	
6.	NH <sub>3</sub> , µg/m <sup>3</sup>	17.83	400 µg/m <sup>3</sup>	
7.	CO, mg/m <sup>3</sup>	0.95	4 mg/m <sup>3</sup>	
8.	Pb, µg/m <sup>3</sup>	BDL	1 µg/m <sup>3</sup>	
9.	As, ng/m <sup>3</sup>	BDL	6 ng/m <sup>3</sup>	
10.	Ni, ng/m <sup>3</sup>	BDL	20 ng/m <sup>3</sup>	
11.	Benzene, µg/m <sup>3</sup>	BDL	5 µg/m <sup>3</sup>	
12.	Benzoapyrene ng/m <sup>3</sup>	BDL	1 ng/m <sup>3</sup>	
NOTE: BDL - Below Detection Limit				
 <b>Sr. Chemist</b> Aditi R&D Services			 <b>Technical Manager</b> Aditi R&D Services, Sindri	
<b>Statements :</b>				
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Phone: 0326-2952377 (O)  
Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/1946

Date: 17.02.2024

## 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 : 09.02.2024 to 10.02.2024
- Date of Testing : 14.02.2024 to 16.02.2024
- Test Procedure : As per IS-5182

### TEST RESULTS

LOCATION – TATA CENTRAL HOSPITAL				
	Avg. Ambient Temperature	24°C	Avg. Humidity	46%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	72.41	100 µg/m <sup>3</sup>	
2.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	44.38	60 µg/m <sup>3</sup>	
3.	SO <sub>2</sub> , µg/m <sup>3</sup>	16.48	80 µg/m <sup>3</sup>	
4.	NO <sub>2</sub> , µg/m <sup>3</sup>	26.88	80 µg/m <sup>3</sup>	
5.	Ozone, µg/m <sup>3</sup>	16.56	180 µg/m <sup>3</sup>	
6.	NH <sub>3</sub> , µg/m <sup>3</sup>	17.44	400 µg/m <sup>3</sup>	
7.	CO, mg/m <sup>3</sup>	0.83	4 mg/m <sup>3</sup>	
8.	Pb, µg/m <sup>3</sup>	BDL	1 µg/m <sup>3</sup>	
9.	As, ng/m <sup>3</sup>	BDL	6 ng/m <sup>3</sup>	
10.	Ni, ng/m <sup>3</sup>	BDL	20 ng/m <sup>3</sup>	
11.	Benzene, µg/m <sup>3</sup>	BDL	5 µg/m <sup>3</sup>	
12.	Benzoapyrene ng/m <sup>3</sup>	BDL	1 ng/m <sup>3</sup>	

NOTE: BDL - Below Detection Limit

*S. R. Dey*  
Sr. Chemist  
Aditi R&D Services



*[Signature]*  
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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### 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,							
Date of Monitoring		TATA STEEL LIMITED, JAMADOBA GROUP PLANT,							
		DIST. - DHANBAD (JHARKHAND)							
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		MAX	MIN	AVG. dB(A) Leq	MAX	MIN	AVERAGE dB(A) Leq	Industrial Area	Industrial Area
JAMADOBA GROUP									
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



*Arce*  
Technical Manager  
Aditi R&D Services, Sindri

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

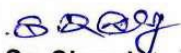
Date: 17.02.2024

## 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

Sl No.	Particulars	Mineralogical Composition (%)			
		SiO <sub>2</sub>	FeO	Al <sub>2</sub> O <sub>3</sub>	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

### 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: 09.02.2024
- Date of Testing : 10.02.2024 To 14.02.2024
- Test : pH, TDS, Turbidity, DO, BOD, Cl, F, SO<sub>4</sub>

### 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	7.5	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 <sub>4</sub> , mg/l	70.9	74.7	400	IS-3025 (P-24):1986

*Anand K. Singh*  
Sr. Chemist  
Aditi R&D Services




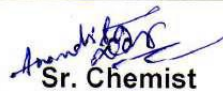


*[Signature]*  
Technical Manager  
Aditi R&D Services, Sindri

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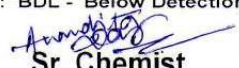




# Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

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Ref. No.: - ARDS/23-24/1925		Date: 15.02.2024					
<h3><u>TEST REPORT OF MINE WATER DISCHARGE</u></h3>							
<ul style="list-style-type: none"> <li>• Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)</li> <li>• Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021</li> <li>• Sample Code : 1. 2 Pit Jamadoba Colliery 2. 3 Pit Jamadoba Colliery 3. 6 &amp; 7 Pits Colliery 4. Digwadih Colliery</li> <li>• Date of Sample Collection: 09.02.2024 To 10.02.2024</li> <li>• Date of Testing : 10.02.2024 to 14.02.2024</li> <li>• Test : pH, TDS, TSS, BOD, COD, OIL &amp; GREASE.</li> </ul>							
<h3><u>TEST RESULT</u></h3>							
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;">   <b>Sr. Chemist</b>              Aditi R&amp;D Services         </div> <div style="text-align: center;">  </div> <div style="text-align: center;">   <b>Technical Manager</b>              Aditi R&amp;D Services, Sindri         </div> </div>							
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<p>Ref. No.: - ARDS/23-24/1948 <span style="float: right;">Date: 17.02.2024</span></p>								
<h3><u>TEST REPORT OF SEWAGE</u></h3>								
<ul style="list-style-type: none"> <li>• Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)</li> <li>• Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021</li> <li>• Sample Code :                          <ul style="list-style-type: none"> <li>1. S.T.P. Outlet J.C.P.P. Canteen</li> <li>2. S.T.P. Outlet Jamadoba Canteen</li> <li>3. S.T.P. Outlet Railway Colony</li> <li>4. S.T.P. Supervisor Apartment Digwadih 12 No</li> <li>5. S.T.P. Officer Colony Digwadih 12 No.</li> </ul> </li> <li>• Date of Sample Collection: 10.02.2024</li> <li>• Date of Testing : 12.02.2024 to 16.02.2024</li> <li>• Test : pH, TDS, TSS, BOD, COD, OIL &amp; GREASE.</li> </ul>								
<h3><u>TEST RESULT</u></h3>								
Sl. No.	PARAMETERS OF TEST	VALUE					MoEF&C Notification 1 <sup>st</sup> Jan.2016 Permissible Max. Desirable Limit	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. Supervisor or Apartment Digwadih 12 No	S.T.P. Officer Colony Digwadih 12 No		
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> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 40%;"> <p style="text-align: center;">   <b>Sr. Chemist</b>  <b>Aditi R&amp;D Services</b> </p> </div> <div style="width: 20%; text-align: center;">  </div> <div style="width: 40%;"> <p style="text-align: center;">   <b>Technical Manager</b>  <b>Aditi R&amp;D Services, Sindri</b> </p> </div> </div>								
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Ref. No.: - ARDS/23-24/1926

Date: 15.02.2024


### TEST REPORT OF EFFLUENT

- 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.

### TEST RESULT

Sl. No.	PARAMETERS OF TEST	VALUE		MoEF&C Notification 1 <sup>st</sup> 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

Note : BDL - Below Detection Limit

  
**Sr. Chemist**  
 Aditi R&D Services



  
**Technical Manager**  
 Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/1932

Date: 16.02.2024

## TEST REPORT OF DRINKING 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. Canteen Jamadoba Colliery
  2. Canteen Digwadih 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 : 
 

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 Digwadih 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 <sub>3</sub> , 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 <sub>2</sub> 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 <sub>3</sub> , 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

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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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- 2 -

Sl. No.	PARAMETERS OF TEST	VALUE				IS as per IS 10500:1991		Test Method
		Canteen Jamadoba Colliery	Canteen Digwadih 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 <sub>4</sub> , mg/l	70.3	64.4	61.8	75.1	200	400	IS 3025 (P-24):1986
14.	Nitrate as NO <sub>3</sub> , 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 <sub>6</sub> H <sub>5</sub> 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 <sub>3</sub> , 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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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/1933

Date: 16.02.2024

## 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. Mohalbani Basti
  2. Jorapokhar Kushtand
  3. Bhowra 13 NO
  4. Jamadoba 3 No
  5. Lower Dungri
- Date of Sample Collection : 09.02.2024 to 10.02.2024
- Date of Testing : 10.02.2024 to 16.02.2024
- 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
		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 <sub>3</sub> , 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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# Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)



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- 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 <sub>4</sub> , mg/l	49.5	97.6	60.5	38.2	43.9	200	400	IS 3025(P-24):1986
12	Nitrate as NO <sub>3</sub> , mg/l	7.8	11.5	8.7	7.7	8.5	45	No. Relax	IS 3025(P-34):1988
13	Alkalinity as CaCO <sub>3</sub> , 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	IS3025 (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**

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### TEST REPORT OF STACK EMISSION

Ref. No & Dt.	NAME AND ADDRESS OF THE CLIENT			
ARDS/23-24/1927 Date: 15.02.2024	M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)			
Date of Sample Collection				
12.02.2024				
Date of Testing	Nature of Sampling Collection: ISO - KINETIC SAMPLING			
13.02.2024 to 14.02.2024	Weather condition	Status of the Plant	Avg. Ambient Temperature (°C)	Average Humidity (%)
	Clear	Running	24	39

### GENERAL INFORMATION

1.	Nature of the Plant	M.S
2.	Capacity of DG Set	2.0+2.0+2.0 MVA (6.0 MVA)
3.	Location	Central Workshop Area, Jamadoba
4.	No. of Stack	1
5.	Stack Height from G.L. in Meter	30
6.	Inner Shape & Size of Stack (in meter)φ	2.5
7.	Stack attached to	DG Set
8.	Type of Fuel used	HSD

### GASEOUS EMISSION ANALYSIS RESULTS

Sl. No	Particulars	Method	Value	As per CPCB STANDARD mg/Nm <sup>3</sup>
1.	Flue gas temperature (°C)	IS : 11255 (Part-3)	83	-
2.	Velocity of flue gas (m/sec)	IS : 11255 (Part-3)	8.6	-
3.	Flow Rate of Flue gas (Nm <sup>3</sup> /Hr)	IS : 11255 (Part-3)	127265.85	-
4.	Concentration of Particulate Matter (mg/ Nm <sup>3</sup> ) 15%O <sub>2</sub>	IS : 11255 (Part-1)	63.74	75
5.	Concentration of SOX as SO <sub>2</sub> (mg/Nm <sup>3</sup> ) at 15%O <sub>2</sub>	IS : 11255 (Part-2)	43.70	-
6.	Concentration of NOX as NO <sub>2</sub> (mg/Nm <sup>3</sup> ) at 15%O <sub>2</sub>	IS : 11255 (Part-7)	93.38	360
7.	Non Methane Hydrocarbon (NMHC) at 15%O <sub>2</sub>	IS : 13270	37.28	100
8.	Carbon Monoxide (CO)	IS : 13270	39.50	150

*S. Dey*  
Sr. Chemist  
Aditi R&D Services



*base*  
Technical Manager  
Aditi R&D Services, Sindri

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### TEST REPORT OF NOISE (AMBIENT) LEVEL MONITORING

Ref. No. & Date	NAME AND ADDRESS OF THE CLIENT			
ARDS/23-24/1928 Date: 15.02.2024	M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)			
Date of Monitoring				
13.02.2024 to 14.02.2024	Avg. Ambient Temperature (°C)	Average Humidity (%)	Weather Condition	Status of the plant
Work Order 4700092573/932 Dt. 20.07.2021	24	39	Clear	Running
MONITORING RESULTS				

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	
				Day Time	Night Time
LOCATION		MAX	MIN	Industrial Area	Industrial Area
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 :

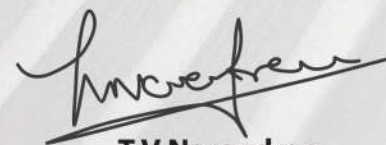
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## ENVIRONMENTAL POLICY

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

