



**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/6&7/36/ **295** /2024
May 27th, 2024

Ref.: Environmental Clearance letter no. - J-11015/373/2010-IA .II (M) dated- 3rd March 2014.

**SUB: Half Yearly Compliance Status Report of Environment Clearance conditions issued
by MoEFCC, New Delhi to 6 & 7 Pits Colliery, Tata Steel Limited, Dhanbad for the
period October-23 to March-24.**

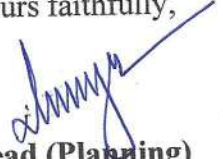
Dear Sir,

We are enclosing herewith compliance report for the period **October-23 to March-24** for the EC granted vide letter no.- J-11015/373/2010-IA.II(M) dated- 3rd March 2014 issued by Ministry of Environment, Forest and Climate Change, New Delhi.

We trust the information furnished is in line with your requirement.

Thanking you,

Yours faithfully,


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

Encl: As above.

Copy to: Member Secretary, CPCB, Eastern Zonal Office, Southend Conclave, 502, 5th Floor
1582, Rajdanga Main Road, Kolkata -700107.
Copy to: Member Secretary, JSPCB, T.A. Division Building (Ground Floor), H.E.C, Dhurwa,
Ranchi - 834004.
Copy to: Regional Officer, JSPCB, HIG -1 Sardar Patel Nagar, Housing Colony, Hirapur,
Dhanbad

TATA STEEL LIMITED

Jharia Collieries Jamadoba 828 112 Dhanbad India

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

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

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com



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

Proposal No	IA/JH/CMIN/8775/2010
Compliance ID	72041979
Compliance Number(For Tracking)	EC/M/COMPLIANCE/72041979/2024
Reporting Year	2024
Reporting Period	01 Jun(01 Oct - 31 Mar)
Submission Date	30-05-2024
IRO Name	ARTATRANA MISHRA
IRO Email	jhk109@ifs.nic.in
State	JHARKHAND
IRO Office Address	Integrated Regional Offices, Ranchi

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

Half Yearly Compliance Report 2024 01 Jun(01 Oct - 31 Mar) Acknowledgment						
Proposal Name			Expansion of 6 & 7 Pits colliery (from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, tehsil Jharia, dist. Dhanbad, Jharkhand			
Name of Entity / Corporate Office			Tata Steel Ltd.			
Village(s)			N/A			
District			DHANBAD			
Proposal No.		IA/JH/CMIN/8775/2010		Category		Coal Mining
Plot / Survey / Khasra No.		N/A		Sub-District		N/A
State		JHARKHAND		Entity's PAN		AAICM3854E~LALALLL
MoEF File No.		J-11015/373/2010-IA.II (M)		Entity name as per PAN		Prakash Sinha
Compliance Reporting Details						
Reporting Year		2024				
Remarks (if any)		Half Yearly Compliance Submission for the period of October 2023 to March 2024.				
Reporting Period		01 Jun(01 Oct - 31 Mar)				
Details of Production and Project Area						
Name of Entity / Corporate Office		Tata Steel Ltd.				
	Project Area as per EC Granted		Annual Project Area in Possession			
Private		0		0		
Revenue Land		0		0		
Forest		0		0		
Others		0		0		
Total		0		0		
Production Capacity						
Sr. no	Product Name	units	Valid Upto	Capacity	Production last year	Capacity as per CTO
1	Coal	Million Tons per Annum (MTPA)	N/A	0.6	0	

Conditions		
Specific Conditions		
Sr.No.	Condition Type	Condition Details
1	WATER QUALITY MONITORING AND PRESERVATION	Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.
PPs Submission: Complied Regular monitoring of subsidence is done by Central Institute for Mining and Fuel Research, Dhanbad. According to the subsidence reports, the impact of subsidence is negligible since the underground mine workings are now at great depth and proper filling of voids through sand stowing is being done.		Date: 29/05/2024
2	Corporate Environmental Responsibility	Corporate Environment Responsibility: a) The Company shall have a well laid down Environment Policy approved by the Board of Directors. b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions. c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished. d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
PPs Submission: Complied The Company already has an Environment Policy approved by the Managing Director and it addresses all the issues mentioned. The status of adherence to the policy and compliance to Environmental laws and regulations is regularly discussed at higher levels. Any non-compliance noticed is corrected at divisional level. If any issue is beyond our control, it is brought to the notice of higher management. Moreover, 6&7 Pits Colliery is IMS (Integrated Management System: Quality Management System, Environment Management System and OHSAS) certified unit addressing all environment aspects, impacts and needs and expectation of interested parties with respect to environment protection.		Date: 30/05/2024
3	Human Health Environment	Adequate measures be taken so as to prevent and control of manifestation of health problems due to coal mining activities.
PPs Submission: Complied The control measures implemented are as follows- i. Water spraying is carried out in underground workings ii. Water sprinkling arrangements are present at all coal transfer points in underground iii. Plantation within the mine lease area iv. Trucks carrying sand are properly covered as well as optimally loaded. v. Underground workings of the mine are well ventilated and meet the required standards prescribed by DGMS.		Date: 29/05/2024
4	GREENBELT	Adequate green belt shall be provided around coal handling and other areas.
PPs Submission: Complied Green belt has been developed around the CHP of washery and mass plantation activities are taking		Date:

place every year in the leasehold area. Green belt development plan attached as Annexure-1.		30/05/2024
5	AIR QUALITY MONITORING AND PRESERVATION	Transportation of coal shall be by mechanically covered trucks.
PPs Submission: Complied No coal transportation takes place by trucks. All coal is transported to the washery via underground conveyor belt system.		Date: 29/05/2024
6	AIR QUALITY MONITORING AND PRESERVATION	No dumping of fly ash in low lying areas and in mine voids are permitted.
PPs Submission: Complied It is not applicable as there is no generation of fly-ash due to closure of our power plant since April' 2015.		Date: 29/05/2024
7	WASTE MANAGEMENT	Utmost care be taken to prevent spillage of sand during transportation of sand.
PPs Submission: Complied The trucks that are being used for the transportation of sand are properly covered using tarpaulin sheets. Larger trucks have been engaged for reducing no of cycles. To ensure the compliance, every vehicle is checked as per vehicle checklist on PUC, Tyre/body condition, emission check at every entry point. Quality checks are done on trucks to ensure its health.		Date: 29/05/2024
8	MISCELLANEOUS	No use of fly ash with sand will take place for stowing in underground mines.
PPs Submission: Complied Office Memorandum F.No. 22-13/2019-IA.III dated 28th Aug' 19 by MOEFCC is being followed.		Date: 29/05/2024
9	Statutory compliance	The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.
PPs Submission: Complied It will be strictly followed. The EC capacity is for 0.6 MTPA raw coal while the raw coal production for 6&7 Pits Colliery is well below the limit.		Date: 29/05/2024
10	Statutory compliance	If subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement of the landowners.
PPs Submission: Complied It will be strictly followed.		Date: 29/05/2024
11	MINING PLAN	Mining shall be carried out as per statuette at a safe distance from the river/nallah flowing adjacent to the lease boundary.
PPs Submission: Complied The Damodar River flows at an approx. aerial distance of 2.5 kms from the lease boundary. Since this is an underground mine, no impact on the surface water bodies is expected. Though, regular monitoring on upstream and downstream of Damodar river is performed by own as well as NABL accredited laboratory. Monitoring report for the the Oct'23-Mar'24 period has been attached as Annexure-II.		Date: 30/05/2024

12	GREENBELT	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
PPs Submission: Complied Impact on land by subsidence has been found to be negligible as per the subsidence monitoring reports prepared by CIMFR, Dhanbad. Though, high root density trees of native species are covered under annual plantation program.		Date: 29/05/2024
13	MISCELLANEOUS	Coal Extraction shall also be optimised in areas where agricultural production is continuing. Some pillars shall be left below the agricultural land. No depillaring & coal extraction should be carried out below habitation, H.T. Lines & beneath road, water bodies.
PPs Submission: Complied It is strictly followed.		Date: 29/05/2024
14	Statutory compliance	Subsidence shall be monitored closely and if subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement with the landowners.
PPs Submission: Complied Regular monitoring of subsidence is being done by CIMFR, Dhanbad and it is well within under statutory limit.		Date: 29/05/2024
15	GREENBELT	3-tier plantation should be developed 2 km stretch of road from the mine using native species.
PPs Submission: Complied Plantation along the stretches of road has been done with native species and it is a continuous process under our green belt development programme		Date: 29/05/2024
16	WATER QUALITY MONITORING AND PRESERVATION	Garland drains (size, gradient and length) around the safety areas such as mine shaft and low lying areas and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.
PPs Submission: Complied Garland drains of adequate size and gradient already exist around the colliery area to channelize the surface runoff. Details of the same are as follows: S. No. Location Length Width Height Gradient 1. Office Area 850 m 2.5 m 1 m 1 in 75 2. Magazine Area 800 m 2.5 m 1 m 1 in 200 3. PH area 550 m 2.5 m 1 m 1 in 97 4. Jitpur Area 550 m 3.0 m 1 m 1 in 60 5. Brick field area 850 m 1.5 m 1 m 1 in 70		Date: 29/05/2024
17	AIR QUALITY MONITORING AND PRESERVATION	Water sprinkling system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.
PPs Submission: Complied Water spraying arrangement is present in the underground mines at all transfer points. Water spraying via tankers is done on sand transportation routes. Major approach roads have been black-topped and maintained regularly.		Date: 29/05/2024
18	MISCELLANEOUS	Coal transportation to washery shall be through a network of underground belt conveyor system and hence there is no surface transportation of coal. Transportation of men from surface to underground and back shall be via shaft. The material transport shall

		be through the shaft and by means of haulage in the underground.
PPs Submission: Complied It is already being followed and will continue in future too.		Date: 29/05/2024
19	GREENBELT	A progressive afforestation plan shall be prepared and implemented over the mine lease area acquired and shall include areas under green belt development, areas along roads, infrastructure, along ML boundary and township etc., by planting native species in consultation with the local DFO/Agriculture Department.
PPs Submission: Complied Tree plantation activities are carried out every year on the barren/ degraded areas, areas along road-side, infrastructure, etc of the colliery leasehold. Apart from these, fruit plants are distributed to employees and also to villagers, schools, institutions, etc. The environment department is responsible for implementing the afforestation plan which is prepared along with the mine management. High root density trees of native species are planted under annual plantation program every year.		Date: 29/05/2024
20	WATER QUALITY MONITORING AND PRESERVATION	Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.
PPs Submission: Complied The monitoring of groundwater level and quality is done four times a year. The groundwater quality report & groundwater level are provided in Annexure-II.		Date: 30/05/2024
21	WATER QUALITY MONITORING AND PRESERVATION	Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided.
PPs Submission: Complied 6&7 Pits Colliery is an underground mine. No acid mine drainage occur.		Date: 29/05/2024
22	WATER QUALITY MONITORING AND PRESERVATION	Mine discharge water outside the ML shall be monitored, particularly for TDS and treated to conform to prescribed levels before discharge into the natural environment.
PPs Submission: Complied There is one mine-water outlet point in the colliery which is regularly monitored by the Environmental Laboratory.		Date: 29/05/2024
23	WATER QUALITY MONITORING AND PRESERVATION	The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource, in case water table shows a declining trend. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
PPs Submission: Complied • The water pumped out during underground mining activity is re-circulated back into the mine for the purpose of stowing. Backfilling of mine voids by stowing is done using sand which is having the porosity to hold the underground water thus helping aquifer to retain the underground water. • Further, there are a number of ponds existing on the surface of the mining lease which act as natural reservoirs for recharging ground water. These ponds/ tanks are regularly cleaned and maintained by		Date: 29/05/2024

our CSR department. As per the hydro-geological report, the variation in the ground water level is only seasonal. • The water requirement of the nearby villages is being met by the company already. Now piped drinking water is being provided.			
24	Human Health Environment	Besides carrying out regular periodic health checkup of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health checkup for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmadabad within a period of one year and the results reported to this Ministry and to DGMS.	
PPs Submission: Complied The periodic health check-up of the workers is done regularly by our Occupational Health Department, Tata Central Hospital, Jamadoba. We have a PME (Periodic Medical Examination) centre approved by DGMS where 20 % of the workers identified from workforce engaged in active mining operations are subjected to full medical check up including hearing impairment check up, etc. These results are regularly submitted to DGMS as per mines rules. Some sample reports and as well as past records have been submitted in previous compliance reports.			Date: 29/05/2024
25	LAND RECLAMATION	The mining in the existing mines should be phased out after expiry of the current mining lease and after reclamation of mined over area. The operating mines may be analysed and monitored for compliance of conditions, bearing with movement of wildlife and until such time they are closed/phased out.	
PPs Submission: Complied It is not applicable in our case.			Date: 29/05/2024
26	Corporate Environmental Responsibility	Project specific CSR for an amount of Rs5/Tonne of coal production, as adjusted as per the annual inflation, should be provided for the CSR activities undertaken and the progress made thereon shall be uploaded annually on the company website. Monitoring of the impacts of activities under CSR shall be carried out periodically.	
PPs Submission: Complied The proposed CSR expenditure for the entire company is decided as per the new Company Rules. Once the CSR budget for company is fixed, a share of that amount is dedicated and utilized for implementing the CSR activities at our Jharia Division level. The CSR expenditure for FY24 is Rs. 21.81 crores. CSR data submitted is for Jharia Division which comprises all 5 collieries and 2 washeries. Jamadoba Washery, Digwadih Colliery and 6&7 Pits Colliery are adjacent to each other and fall under same leasehold area i.e. Jamadoba group of collieries. The core zone and buffer zone of all above units overlap to each other and in many cases, the villages are same where CSR work is going on. Therefore, we have a central budget for CSR which is managed by a team of experts who are dedicatedly involved in providing benefits and improving standard of living in over 50+ villages and municipal wards. Hence, separate CSR expenditure for individual unit cannot be estimated. For calculation/ statutory reporting purpose, the consolidated CSR expenditure can be divided into unit-wise based on size of leasehold area of individual units. The progress report is uploaded every year on the company website. Internal social audits are carried out regularly to assess the impact of CSR activities.			Date: 30/05/2024
27	MINING PLAN	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	
PPs Submission: Complied Mine Closure Plan has been approved by Ministry of Coal, New Delhi. Details on deposition of closure cost in escrow account along with expenditure incurred for progressive closure is regularly submitted to Office of Coal controller. Final mine closure along with details of corpus fund will be submitted to MoEF&CC 5 years in advance.			Date: 29/05/2024

28	PUBLIC HEARING	The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent.
PPs Submission: Complied The commitment made by project proponent has been taken up and are being addressed gradually. Roads have been maintained in the colliery and along sand transportation routes. Subsidence studies are done every year. All the ash dumps have been reclaimed. Village ponds are cleaned as per requirement. Laying of drinking water pipeline network has been extended to more villages. A network of more than 22000 metres of pipeline connection has been established along with 33 water tanks (capacity of 4500 litres). Health camps are regularly organized by TSRDS. Training to SHEs, women, youth and children are provided in various fields.		Date: 29/05/2024
General Conditions		
Sr.No.	Condition Type	Condition Details
1	Statutory compliance	The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
PPs Submission: Complied It will be complied with.		Date: 29/05/2024
2	MISCELLANEOUS	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
PPs Submission: Complied The points mentioned in the EC letter will be strictly followed. Board and Pillar method is being used for mining.		Date: 29/05/2024
3	MISCELLANEOUS	No change in the calendar plan of production for quantum of mineral coal shall be made.
PPs Submission: Complied It will be strictly followed.		Date: 29/05/2024
4	AIR QUALITY MONITORING AND PRESERVATION	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM10, PM2.5, SO2 and NOx monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
PPs Submission: Complied The Air quality monitoring in the core zone as well as buffer zone is done regularly by NABL recognized lab as well as by our inhouse lab. Monitoring of heavy metals in ambient air is being performed by an independent laboratory (recognised by NABL). The results are enclosed as Annexure-II		Date: 30/05/2024
5	AIR QUALITY MONITORING AND PRESERVATION	Data on ambient air quality (PM10, PM 2.5, SO2 and NOx) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random

		verification of samples through analysis from independent laboratories recognized under the EPA rules, 1986 shall be furnished as part of compliance report.
PPs Submission: Complied Ambient air quality report (PM10, PM 2.5, SO2 and NOx) for the period from Oct'23 to Mar'24 is attached as Annexure-II. Additionally, third party monitoring is done through a JSPCBC and NABL recognized Laboratory on ambient air quality (PM10, PM 2.5, SO2, NOx, CO, NH3, O3) and heavy metals (As, Ni, Cd and Cr) and results are enclosed as Annexure-II.		Date: 30/05/2024
6	Noise Monitoring & Prevention	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
PPs Submission: Complied Regular noise survey is being conducted in the underground work environment. Workers are provided with ear-plugs/ muffs in high noise areas.		Date: 29/05/2024
7	WATER QUALITY MONITORING AND PRESERVATION	Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.
PPs Submission: Complied No industrial wastewater is generated in 6&7 Pits Colliery premises. There is a central workshop and garage in Jamadoba where Effluent Treatment Plant having oil and grease trap facility has been provided.		Date: 29/05/2024
8	AIR QUALITY MONITORING AND PRESERVATION	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
PPs Submission: Complied Only the vehicles having valid PUC certificates are being allowed to operate for sand transportation. Coal transportation is done through underground belt network. Only sand transportation is done through trucks which are covered with tarpaulins as well as optimally loaded.		Date: 29/05/2024
9	Statutory compliance	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with SPCB and data got analysed through a laboratory recognised under EP Rules, 1986.
PPs Submission: Complied We have a fully equipped Environment Cell Laboratory with qualified personnel. The monitoring and analysis is also done at regular intervals by a JSPCB approved & NABL accredited laboratory. We have also installed a Continuous Ambient Air Quality Monitoring Station at Jamadoba for real time monitoring.		Date: 29/05/2024
10	AIR QUALITY MONITORING AND PRESERVATION	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
PPs Submission: Complied Persons working in dusty area have been provided with dust masks & have been given awareness training on safety & health aspects. Regular PME (Periodic Medical Examinations) are being done.		Date: 29/05/2024

11	Human Health Environment	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
PPs Submission: Complied The periodic health check-up of the workers is done regularly by our Occupational Health Department, Tata Central Hospital, Jamadoba. We have a PME (Periodic Medical Examination) centre approved by DGMS where 20 % of the workers identified from workforce engaged in active mining operations are subjected to full medical check-up including hearing impairment check-up, etc. These results are regularly submitted to DGMS as per mines rules. We are doing similar medical examination for our contractor workers in Tata central hospital.		Date: 29/05/2024
12	MISCELLANEOUS	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
PPs Submission: Complied We have a separate Environmental Management Cell with qualified personnel. The reporting of Environmental Cell is directly to General Manager of the Division.		Date: 29/05/2024
13	Corporate Environmental Responsibility	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Dhanbad.
PPs Submission: Complied The Environment Cell has a separate fund for Environmental protection measures and for complying with legal requirements. The annual environmental expenditure for the financial year 2021-22 is Rs. 258.45 Lakhs		Date: 29/05/2024
14	Statutory compliance	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in .
PPs Submission: Complied It has been complied with. Attached as Annexure-III.		Date: 29/05/2024
15	Statutory compliance	A copy of the environmental clearance letter shall be marked to concerned Panchayat/Zila Parishad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.
PPs Submission: Complied It has been complied with. Attached as Annexure-III.		Date: 29/05/2024
16	Statutory compliance	A copy of the clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.

PPs Submission: Complied It has been complied with.		Date: 29/05/2024
17	Statutory compliance	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM10, PM2.5, SO2 and NOx (ambient and stack if any) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.
PPs Submission: Complied The clearance letter has been uploaded on the company's website. The compliance status (as Half-yearly compliance report) is being uploaded in company's website once in every six months. The display of information near the mine's office has also been done.		Date: 29/05/2024
18	Statutory compliance	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.
PPs Submission: Complied It is being complied.		Date: 29/05/2024
19	Statutory compliance	The environmental statement for each financial year ending 31st March in Form-V is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MOEF by E-mail.
PPs Submission: Complied The environmental statement for financial year 2021-22 has been submitted to JSPCB vide letter no. JMB/ENV/ESSA/05/714/2022 on 28th September 2022 and it is also uploaded on the company website. The soft copy of Environment Statement is also sent to MOEFCC by email at ro.ranchi-mef@gov.in.		Date: 29/05/2024
Visit Remarks		
Last Site Visit Report Date:		N/A
Additional Remarks:		

HALF YEARLY COMPLIANCE REPORT

(PERIOD: OCT'23 – MAR'24)

6&7 PITS COLLIERY

(CAPACITY: EXPANSION FROM 0.28 TO 0.6 MTPA RAW COAL)
TEHSIL: JHARIA, DIST: DHANBAD, JHARKHAND



TATA STEEL LIMITED, JHARIA DIVISION

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

**ENVIRONMENTAL CLEARANCE GRANTED VIDE LETTER NO. - J-11015/373/2010-IA.II
(M) DATED- 03.03.2014 ISSUED BY GOVT. OF INDIA, MINISTRY OF ENVIRONMENT,
FOREST AND CLIMATE CHANGE, NEW DELHI.**

Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

S. No.	Condition	Compliance Status
Specific Condition		
(i)	Adequate measures be taken so as to prevent and control of manifestation of health problems due to coal mining activities.	The control measures implemented are as follows- i. Water spraying is carried out in underground workings ii. Water sprinkling arrangements are present at all coal transfer points in underground iii. Plantation within the mine lease area iv. Trucks carrying sand are properly covered as well as optimally loaded. v. Underground workings of the mine are well ventilated and meet the required standards prescribed by DGMS.
(ii)	Adequate green belt shall be provided around coal handling and other areas.	Green belt has been developed around the CHP of washery and mass plantation activities are taking place every year in the leasehold area. Green belt development plan attached as Annexure-1 .
(iii)	Transportation of coal shall be by mechanically covered trucks.	No coal transportation takes place by trucks. All coal is transported to the washery via underground conveyor belt system.
(iv)	No dumping of fly ash in low lying areas and in mine voids are permitted.	It is not applicable as there is no generation of fly-ash due to closure of our power plant since April'2015.
(v)	Utmost care be taken to prevent spillage of sand during transportation of sand.	The trucks that are being used for the transportation of sand are properly covered using tarpaulin sheets. Larger trucks have been engaged for reducing no of cycles. To ensure the compliance, every vehicle is checked as per vehicle checklist on PUC, Tyre/body condition, emission check at every entry point. Quality checks are done on trucks to ensure its health.
(vi)	No use of fly ash with sand will take place for stowing in underground mines.	Office Memorandum F.No. 22-13/2019-IA.III dated 28 th Aug'19 by MOEFCC is being followed.
(vii)	The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.	It will be strictly followed. The EC capacity is for 0.6 MTPA raw coal while the raw coal production for 6&7 Pits Colliery is well below the limit.
(viii)	Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural	Regular monitoring of subsidence is done by Central Institute for Mining and Fuel Research, Dhanbad. According to the

Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

	drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.	subsidence reports, the impact of subsidence is negligible since the underground mine workings are now at great depth and proper filling of voids through sand stowing is being done.
(ix)	If subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement of the landowners.	It will be strictly followed.
(x)	Mining shall be carried out as per statuette at a safe distance from the river/nallah flowing adjacent to the lease boundary.	The Damodar River flows at an approx. aerial distance of 2.5 kms from the lease boundary. Since this is an underground mine, no impact on the surface water bodies is expected. Though, regular monitoring on upstream and downstream of Damodar river is performed by own as well as NABL accredited laboratory. Monitoring report for the the Oct'23-Mar'24 period has been attached as Annexure-II .
(xi)	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	Impact on land by subsidence has been found to be negligible as per the subsidence monitoring reports prepared by CIMFR, Dhanbad. Though, high root density trees of native species are covered under annual plantation program.
(xii)	Coal Extraction shall also be optimised in areas where agricultural production is continuing. Some pillars shall be left below the agricultural land. No depillaring & coal extraction should be carried out below habitation, H.T. Lines & beneath road, water bodies.	It is strictly followed.
(xiii)	Subsidence shall be monitored closely and if subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement with the landowners.	Regular monitoring of subsidence is being done by CIMFR, Dhanbad and it is well within under statutory limit.
(xiv)	3-tier plantation should be developed 2 km stretch of road from the mine using native species.	Plantation along the stretches of road has been done with native species and it is a continuous process under our green belt development programme
(xv)	Garland drains (size, gradient and length) around the safety areas such as mine shaft	Garland drains of adequate size and gradient already exist around the colliery area to

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	and low lying areas and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.	channelize the surface runoff. Details of the same are as follows: <table><tr><th>S. No.</th><th>Location</th><th>Length</th><th>Width</th><th>Height</th><th>Gradient</th></tr><tr><td>1.</td><td>Office Area</td><td>850 m</td><td>2.5 m</td><td>1 m</td><td>1 in 75</td></tr><tr><td>2.</td><td>Magazine Area</td><td>800 m</td><td>2.5 m</td><td>1 m</td><td>1 in 200</td></tr><tr><td>3.</td><td>PH area</td><td>550 m</td><td>2.5 m</td><td>1 m</td><td>1 in 97</td></tr><tr><td>4.</td><td>Jitpur Area</td><td>550 m</td><td>3.0 m</td><td>1 m</td><td>1 in 60</td></tr><tr><td>5.</td><td>Brick field area</td><td>850 m</td><td>1.5 m</td><td>1 m</td><td>1 in 70</td></tr></table>	S. No.	Location	Length	Width	Height	Gradient	1.	Office Area	850 m	2.5 m	1 m	1 in 75	2.	Magazine Area	800 m	2.5 m	1 m	1 in 200	3.	PH area	550 m	2.5 m	1 m	1 in 97	4.	Jitpur Area	550 m	3.0 m	1 m	1 in 60	5.	Brick field area	850 m	1.5 m	1 m	1 in 70
S. No.	Location	Length	Width	Height	Gradient																																	
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5.	Brick field area	850 m	1.5 m	1 m	1 in 70																																	
(xvi)	Water sprinkling system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.	Water spraying arrangement is present in the underground mines at all transfer points. Water spraying via tankers is done on sand transportation routes. Major approach roads have been black-topped and maintained regularly.																																				
(xvii)	Coal transportation to washery shall be through a network of underground belt conveyor system and hence there is no surface transportation of coal. Transportation of men from surface to underground and back shall be via shaft. The material transport shall be through the shaft and by means of haulage in the underground.	It is already being followed and will continue in future too.																																				
(xviii)	A progressive afforestation plan shall be prepared and implemented over the mine lease area acquired and shall include areas under green belt development, areas along roads, infrastructure, along ML boundary and township etc., by planting native species in consultation with the local DFO/Agriculture Department.	Tree plantation activities are carried out every year on the barren/ degraded areas, areas along road-side, infrastructure, etc of the colliery leasehold. Apart from these, fruit plants are distributed to employees and also to villagers, schools, institutions, etc. The environment department is responsible for implementing the afforestation plan which is prepared along with the mine management. High root density trees of native species are planted under annual plantation program every year.																																				
(xix)	Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four	The monitoring of groundwater level and quality is done four times a year. The groundwater quality report & groundwater level are provided in Annexure-II .																																				

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	times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.	
(xx)	Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided.	6&7 Pits Colliery is an underground mine. No acid mine drainage occur.
(xxi)	Mine discharge water outside the ML shall be monitored, particularly for TDS and treated to conform to prescribed levels before discharge into the natural environment.	There is one mine-water outlet point in the colliery which is regularly monitored by the Environmental Laboratory.
(xxii)	The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource, in case water table shows a declining trend. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.	<ul style="list-style-type: none"> • The water pumped out during underground mining activity is re-circulated back into the mine for the purpose of stowing. Backfilling of mine voids by stowing is done using sand which is having the porosity to hold the underground water thus helping aquifer to retain the underground water. • Further, there are a number of ponds existing on the surface of the mining lease which act as natural reservoirs for recharging ground water. These ponds/tanks are regularly cleaned and maintained by our CSR department. As per the hydro-geological report, the variation in the ground water level is only seasonal. • The water requirement of the nearby villages is being met by the company already. Now piped drinking water is being provided.
(xxiii)	Besides carrying out regular periodic health checkup of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health checkup for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmadabad within a period of one year and the results reported to this Ministry and to DGMS.	The periodic health check-up of the workers is done regularly by our Occupational Health Department, Tata Central Hospital, Jamadoba. We have a PME (Periodic Medical Examination) centre approved by DGMS where 20 % of the workers identified from workforce engaged in active mining operations are subjected to full medical check up including hearing impairment check up, etc. These results are regularly submitted to DGMS as per mines rules. Some sample

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		reports and as well as past records have been submitted in previous compliance reports.
(xxiv)	The mining in the existing mines should be phased out after expiry of the current mining lease and after reclamation of mined over area. The operating mines may be analysed and monitored for compliance of conditions, bearing with movement of wildlife and until such time they are closed/phased out.	It is not applicable in our case.
(xxv)	Project specific CSR for an amount of Rs5/Tonne of coal production, as adjusted as per the annual inflation, should be provided for the CSR activities undertaken and the progress made thereon shall be uploaded annually on the company website. Monitoring of the impacts of activities under CSR shall be carried out periodically.	The proposed CSR expenditure for the entire company is decided as per the new Company Rules. Once the CSR budget for company is fixed, a share of that amount is dedicated and utilized for implementing the CSR activities at our Jharia Division level. The CSR expenditure for FY24 is Rs. 21.81 crores. CSR data submitted is for Jharia Division which comprises all 5 collieries and 2 washeries. Jamadoba Washery, Digwadih Colliery and 6&7 Pits Colliery are adjacent to each other and fall under same leasehold area i.e. Jamadoba group of collieries. The core zone and buffer zone of all above units overlap to each other and in many cases, the villages are same where CSR work is going on. Therefore, we have a central budget for CSR which is managed by a team of experts who are dedicatedly involved in providing benefits and improving standard of living in over 50+ villages and municipal wards. Hence, separate CSR expenditure for individual unit cannot be estimated. For calculation/ statutory reporting purpose, the consolidated CSR expenditure can be divided into unit-wise based on size of leasehold area of individual units. The progress report is uploaded every year on the company website. Internal social audits are carried out regularly to assess the impact of CSR activities.
(xxvi)	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	Mine Closure Plan has been approved by Ministry of Coal, New Delhi. Details on deposition of closure cost in escrow account along with expenditure incurred for progressive closure is regularly submitted to Office of Coal controller. Final mine closure along with details of corpus fund will be submitted to MoEF&CC 5 years in advance.

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(xxvii)	The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent.	<p>The commitment made by project proponent has been taken up and are being addressed gradually. Roads have been maintained in the colliery and along sand transportation routes. Subsidence studies are done every year. All the ash dumps have been reclaimed. Village ponds are cleaned as per requirement.</p> <p>Laying of drinking water pipeline network has been extended to more villages. A network of more than 22000 metres of pipeline connection has been established along with 33 water tanks (capacity of 4500 litres). Health camps are regularly organized by TSRDS. Training to SHEs, women, youth and children are provided in various fields.</p>
(xxvii)	<p>Corporate Environment Responsibility:</p> <p>a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.</p> <p>b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.</p> <p>c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.</p> <p>d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.</p>	<p>The Company already has an Environment Policy approved by the Managing Director and it addresses all the issues mentioned. Attached as Annexure-IV.</p> <p>The status of adherence to the policy and compliance to Environmental laws and regulations is regularly discussed at higher levels. Any non-compliance noticed is corrected at divisional level. If any issue is beyond our control, it is brought to the notice of higher management.</p> <p>Moreover, 6&7 Pits Colliery is IMS (Integrated Management System: Quality Management System, Environment Management System and OHSAS) certified unit addressing all environment aspects, impacts and needs and expectation of interested parties with respect to environment protection.</p>

General Conditions:		
(i)	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	The points mentioned in the EC letter will be strictly followed. Board and Pillar method is being used for mining.

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(ii)	No change in the calendar plan of production for quantum of mineral coal shall be made.	It will be strictly followed.
(iii)	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM10, PM2.5, SO2 and NOx monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.	The Air quality monitoring in the core zone as well as buffer zone is done regularly by NABL recognized lab as well as by our inhouse lab. Monitoring of heavy metals in ambient air is being performed by an independent laboratory (recognised by NABL). The results are enclosed as Annexure-II
(iv)	Data on ambient air quality (PM10, PM 2.5, SO2 and NOx) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognized under the EPA rules, 1986 shall be furnished as part of compliance report.	Ambient air quality report (PM10, PM 2.5, SO2 and NOx) for the period from Oct'23 to Mar'24 is attached as Annexure-II . Additionally, third party monitoring is done through a JSPCBC and NABL recognised Laboratory on ambient air quality (PM10, PM 2.5, SO2, NOx, CO, NH3, O3) and heavy metals (As, Ni, Cd and Cr) and results are enclosed as Annexure-II .
(v)	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	Regular noise survey is being conducted in the underground work environment. Workers are provided with ear-plugs/ muffs in high noise areas.
(vi)	Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	No industrial wastewater is generated in 6&7 Pits Colliery premises. There is a central workshop and garage in Jamadoba where Effluent Treatment Plant having oil and grease trap facility has been provided.
(vii)	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	Only the vehicles having valid PUC certificates are being allowed to operate for sand transportation. Coal transportation is done through underground belt network. Only sand transportation is done through trucks which

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		are covered with tarpaulins as well as optimally loaded.
(viii)	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with SPCB and data got analysed through a laboratory recognised under EP Rules, 1986.	We have a fully equipped Environment Cell Laboratory with qualified personnel. The monitoring and analysis is also done at regular intervals by a JSPCB approved & NABL accredited laboratory. We have also installed a Continuous Ambient Air Quality Monitoring Station at Jamadoba for real time monitoring.
(ix)	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.	Persons working in dusty area have been provided with dust masks & have been given awareness training on safety & health aspects. Regular PME (Periodic Medical Examinations) are being done.
(x)	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.	The periodic health check-up of the workers is done regularly by our Occupational Health Department, Tata Central Hospital, Jamadoba. We have a PME (Periodic Medical Examination) centre approved by DGMS where 20 % of the workers identified from workforce engaged in active mining operations are subjected to full medical check-up including hearing impairment check-up, etc. These results are regularly submitted to DGMS as per mines rules. We are doing similar medical examination for our contractor workers in Tata central hospital.
(xi)	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	We have a separate Environmental Management Cell with qualified personnel. The reporting of Environmental Cell is directly to General Manager of the Division.
(xii)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Dhanbad.	The Environment Cell has a separate fund for Environmental protection measures and for complying with legal requirements. The annual environmental expenditure for the financial year 2022-23 is Rs. 391.38 Lakhs

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(xiii)	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in .	It has been complied with. Attached as Annexure-III .
(xiv)	A copy of the environmental clearance letter shall be marked to concerned Panchayat/Zila Parishad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.	It has been complied with. Attached as Annexure-III .
(xv)	A copy of the clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.	It has been complied with.
(xvi)	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM10, PM2.5, SO2 and NOx (ambient and stack if any) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.	The clearance letter has been uploaded on the company's website. The compliance status (as Half-yearly compliance report) is being uploaded in company's website once in every six months. The display of information near the mine's office has also been done.

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(xvii)	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.	It is being complied.
(xviii)	The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.	It will be complied with.
(xix)	The environmental statement for each financial year ending 31st March in Form-V is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MOEF by E-mail.	The environmental statement for financial year 2022-23 has been submitted to JSPCB vide letter no. JMB/ENV/ESSA/05/737/2023 on 29 th September 2023 and it is also uploaded on the company website. The soft copy of Environment Statement is also sent to MOEFCC by email at ro.ranchi-mef@gov.in.

Annexure- Greenbelt Development Report

Green belt developed in the past around 6&7 pits colliery is shown below. The green belt has been developed around the approach road to 6&7 pits colliery, around the office area and around Tata Steel colonies nearby. Plantation activities have been taken up in this monsoon season to enhance the green cover in areas nearby colliery.



Picture: Green belt in and around 6&7 pits colliery premises.



Picture: Already developed green belt in Patia area



Pictures: Plantation of around 4000 forestry plants in Patia area during this monsoon season.



Picture: Plantation done in this monsoon inside the creche area of 6&7 pits colliery.

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

Core zone & Buffer zone

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

No. of sampling points: 4

Core zone (as per Air quality standards for coal mines in EPA Notification, 1988)							
Location	Latitude/ Longitude	Date	Weather Condition	SPM 24 Hourly Limit- 700 µg/m³	RSPM 24 Hourly Limit- 300 µg/m³	SO ₂ 24 Hourly Limit- 120 µg/m³	NO _x 24 Hourly Limit-120 µg/m³
6&7 Pits Kalimandir area	23°43'15" N/ 86°24'12" E	20.10.23	Clear	218.3	80.9	15.2	17.2
		10.11.23	Clear	248.1	86.3	18.6	20.9
		13.12.23	Clear	242.5	84.2	17.8	19.5
Buffer zone (as per NAAQS 2009 for ambient air quality standards)							
Location	Latitude/ Longitude	Date	Weather Condition	PM10 24 Hourly Limit- 100µg/m³	PM2.5 24 Hourly Limit- 60µg/m³	SO ₂ 24 Hourly Limit- 80µg/m³	NO ₂ 24 Hourly Limit- 80µg/m³
Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	17.10.23	Clear	90.7	49.1	16.8	18.2
		08.11.23	Clear	94.2	50.7	17.9	20.5
		04.12.23	Clear	90.5	48.1	18.4	21.9
Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	19.10.23	Clear	76.1	36.0	18.4	20.1
		06.11.23	Clear	90.5	48.1	15.7	17.4
		11.12.23	Clear	88.6	45.2	14.9	18.3
New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	16.10.23	Clear	84.3	43.5	17.6	19.4
		09.11.23	Clear	87.4	46.5	16.8	18.2
		05.12.23	Clear	92.8	50.3	17.4	19.7
Tata Central Hospital	23°42'36" N/ 86°24'10.4"E	18.10.23	Clear	78..2	38.9	15.4	17.6
		07.11.23	Clear	82.1	41.0	18.4	21.3
		08.12.23	Clear	68.4	32.0	15.7	17.8


Area Manager (Environment)

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

Core zone & Buffer zone

Period- January'24 to March'24

No. of sampling points: 4

Core zone (as per Air quality standards for coal mines in EPA Notification, 1988)							
Location	Latitude/ Longitude	Date	Weather Condition	SPM 24 Hourly Limit- 700 µg/m³	RSPM 24 Hourly Limit- 300 µg/m³	SO ₂ 24 Hourly Limit- 120 µg/m³	NO _x 24 Hourly Limit-120 µg/m³
6&7 Pits Kalimandir area	23°43'15" N/ 86°24'12" E	08.01.24	Clear	248.7	89.5	16.4	18.2
		16.02.24	Clear	231.9	84.2	18.2	22.8
		08.03.24	Clear	226.7	80.1	17.9	20.5
Buffer zone (as per NAAQS 2009 for ambient air quality standards)							
Location	Latitude/ Longitude	Date	Weather Condition	PM10 24 Hourly Limit- 100µg/m³	PM2.5 24 Hourly Limit- 60µg/m³	SO ₂ 24 Hourly Limit- 80µg/m³	NO ₂ 24 Hourly Limit- 80µg/m³
Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	05.01.24	Clear	94.2	50.1	17.6	19.5
		12.02.24	Clear	92.1	48.7	16.4	20.1
		06.03.24	Clear	76.6	32.8	18.4	20.3
Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	04.01.24	Clear	92.7	48.3	15.2	17.1
		15.02.24	Clear	95.3	51.6	18.7	21.5
		07.03.24	Clear	81.4	42.1	15.9	18.6
New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	09.01.24	Clear	90.5	46.9	16.8	18.4
		14.02.24	Clear	78.7	36.9	14.5	17.2
		04.03.24	Clear	84.3	44.2	17.2	19.5
Tata Central Hospital	23°42'36" N/ 86°24'10.4"E	03.01.24	Clear	76.3	38.9	14.8	16.2
		19.02.24	Clear	87.3	43.5	15.8	18.7
		11.03.24	Clear	74.5	30.4	16.7	19.2



Area Manager (Environment)

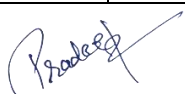
Ambient Air Quality and Groundwater Quality Report (Period- **October'23 to March'24**)**Ground Water Quality Analysis (Hand Pump & Dung Well)****(Post Monsoon Season- November'2023)**

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


Area Manager (Environment)

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

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


Area Manager (Environment)

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



ADITI R&D SERVICES

Testing Laboratory

NABL ACCREDITED

(A Constituent Board of Quality Council of India)

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

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

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

Date: 15.11.2023

TEST REPORT OF AMBIENT AIR QUALITY

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

TEST RESULTS

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

NOTE: BDL - Below Detection Limit

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


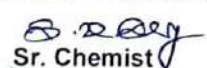




[Signature]
Technical Manager
Aditi R&D Services, Sindri


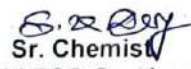


Statements :

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





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

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

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

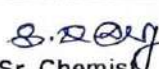
	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified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


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

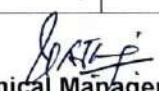
	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O. - Domgarh, Dist. - Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirndservices.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 09431512808		
Ret. No.: - ARDS/23-24/1419		Date: 15.11.2023		
TEST REPORT OF AMBIENT AIR QUALITY				
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Date of Sample Collection : 09/11/2023 to 10/11/2023 • Date of Testing : 11/11/2023 to 14/11/2023 • Test Procedure : As per IS-5182 				
TEST RESULTS				
LOCATION – TATA CENTRAL HOSPITAL				
	Avg. Ambient Temperature	30°C	Avg. Humidity	39%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD	
1.	Particulate Matter (PM ₁₀), µg/m ³	70.63	100 µg/m ³	
2.	Particulate Matter (PM _{2.5}), µg/m ³	41.38	60 µg/m ³	
3.	SO ₂ , µg/m ³	18.12	80 µg/m ³	
4.	NO ₂ , µg/m ³	29.93	80 µg/m ³	
5.	Ozone, µg/m ³	15.83	180 µg/m ³	
6.	NH ₃ , µg/m ³	16.70	400 µg/m ³	
7.	CO, mg/m ³	0.73	4 mg/m ³	
8.	Pb, µg/m ³	BDL	1 µg/m ³	
9.	As, ng/m ³	BDL	6 ng/m ³	
10.	Ni, ng/m ³	BDL	20 ng/m ³	
11.	Benzene, µg/m ³	BDL	5 µg/m ³	
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³	
NOTE: BDL - Below Detection Limit				
 Sr. Chemist Aditi R&D Services				
 Technical Manager Aditi R&D Services, Sindri				
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Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT							
ARDS/23-24/1420 Date: 15.11.2023		M/S TATA STEEL, JAMADOBA,							
Date of Monitoring		TATA STEEL LIMITED, JAMADOBA GROUP PLANT,							
09/11/2023 TO 10/11/2023		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. Digwadiah	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


Sr. Chemist
 Aditi R&D Services




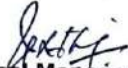



Technical Manager
 Aditi R&D Services, Sindri

Statements :

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

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

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



ADITI R&D SERVICES

Testing Laboratory

NABL ACCREDITED

(A Constituent Board of Quality Council of India)

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

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

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

Date: 17.11.2023

TEST REPORT OF SURFACE WATER

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

TEST RESULT

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

Anandita
Sr. Chemist
Aditi R&D Services


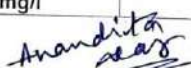

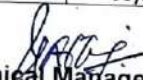


[Signature]
Technical Manager
Aditi R&D Services, Sindri

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

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	<p>Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O. - Domgarh, Dist. - Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditimdservices.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 09431512608</p>						
Ref. No.: - ARDS/23-24/1429		Date: 17.11.2023						
TEST REPORT OF MINE WATER DISCHARGE								
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : <ul style="list-style-type: none"> 1. 3 Pit Jamadoba Colliery 2. 6 & 7 Pits Colliery 3. 2 Pit Jamadoba Colliery 4. 2 Incline Jamadoba Colliery 5. Digwadih Colliery • Date of Sample Collection: 09/11/2023 to 10/11/2023 • Date of Testing : 11/11/2023 to 16/11/2023 • Test : pH, TDS, TSS, BOD, COD, OIL & GREASE. 								
TEST RESULT								
Sl. No.	PARAMETERS OF TEST	VALUE	Limit as per IS-2296 Class B (For Bathing)	Test Method				
		3 Pit Jamadoba Colliery	6 & 7 Pits Colliery	2 Pit Jamadoba Colliery	2 Incline Jamadoba Colliery	Digwadih Colliery		
1.	pH,	7.7	6.8	7.4	7.1	7.3	6.5-8.5	IS-3025 (P-11): 1983
2.	Total Dissolved Solids, mg/l	799	912	845	720	932	-	IS-3025 (P-16): 1984
3.	Total Suspended Solids, mg/l	34	35	31	34	32	-	IS-3025(P-17): 1984
4.	Bio chemical Oxygen Demand, mg/l	2.4	1.8	2.0	2.0	1.6	3	IS-3025 (P-44):1994
5.	Chemical Oxygen Demand, mg/l	65	43.6	87	43.6	43.6	-	IS-3025 (P-58):2006
6.	Oil & Grease, mg/l	0.4	BDL	BDL	BDL	BDL	-	IS-3025 (P-39):2021
 Sr. Chemist Aditi R&D Services				 Technical Manager Aditi R&D Services, Sindri				
Statements : <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory. 								

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

**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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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




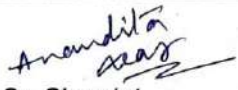
[Signature]
Technical Manager
Aditi R&D Services, Sindri


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

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O. - Domgarh, Dist. - Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirndservices.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 09431512808						
Ref. No.: - ARDS/23-24/1431	Date: 17.11.2023							
<h3 style="margin: 0;"><u>TEST REPORT OF EFFLUENT</u></h3>								
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : 1. ETP Outlet Garage 2. ETP Outlet T.C.H Jamadoba • Date of Sample Collection: 09/11/2023 • Date of Testing : 11/11/2023 to 16/11/2023 • Test : pH, TDS, TSS, BOD, COD, OIL & GREASE. 								
<h3 style="margin: 0;"><u>TEST RESULT</u></h3>								
Sl. No.	PARAMETERS OF TEST	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">VALUE</th> <th rowspan="2" style="text-align: center; vertical-align: middle;">MoEF&C Notification 1st Jan.2016 Permissible Max. Desirable Limit</th> <th rowspan="2" style="text-align: center; vertical-align: middle;">Test Method</th> </tr> <tr> <th style="text-align: center;">ETP Out let Garage</th> <th style="text-align: center;">ETP Outlet T.C.H Jamadoba</th> </tr> </table>	VALUE		MoEF&C Notification 1 st Jan.2016 Permissible Max. Desirable Limit	Test Method	ETP Out let Garage	ETP Outlet T.C.H Jamadoba
VALUE		MoEF&C Notification 1 st 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			


 Sr. Chemist
 Aditi R&D Services





 Technical Manager
 Aditi R&D Services, Sindri


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

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O. - Domgarh, Dist. - Dhanbad Jharkhand - 828107 Email ID: sindriadi@gmail.com Website: aditirdservices.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 09431512608						
Ref. No.: - ARDS/23-24/1432		Date: 17.11.2023						
TEST REPORT OF DRINKING WATER								
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : <ul style="list-style-type: none"> 1. Canteen - Jamadoba Colliery 2. Canteen 6 & 7 Pits Colliery 3. Canteen 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 ₃ , mg/l	415.8	193.2	420	411.6	200	600	IS 3025 (P-21):2009
7.	Chloride as Cl, mg/l	57.6	24.2	59.5	57.6	250	1000	IS 3025 (P-32):1988
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	NIL	NIL	NIL	0.20	1.0	IS 3025 (P-26):2021
9.	Total Dissolved Solids, mg/l	503	368	727	684	500	2000	IS 3025 (P-16):1984
10.	Calcium as Ca, mg/l	72.2	42	87.4	84		200	IS 3025 (P-40):1991
11.	Copper as Cu, mg/l	BDL	BDL	BDL	BDL	BDL	1.5	IS 3025 (P-42):1992

Continued on Page 2



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- 2 -

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

NOTE: BDL - Below Detection Limit

Anandita
Sr. Chemist
Aditi R&D Services



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

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

Date: 17.11.2023

TEST REPORT OF GROUND WATER

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

TEST RESULT

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

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

NOTE: BDL - Below Detection Limit

Anandita
Sr. Chemist
Aditi R&D Services


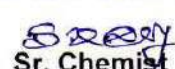




Aditi
Technical Manager
Aditi R&D Services, Sindri


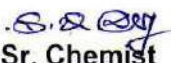

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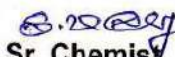


Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

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


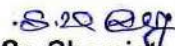


Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

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Ref. No.: - ARDS/23-24/1944		Date: 17.02.2024	
<h3 style="margin: 0;">TEST REPORT OF AMBIENT AIR QUALITY</h3>			
<ul style="list-style-type: none"> • Name of the industry • Work Order Ref. NO.: • Date of Sample Collection • Date of Testing • Test Procedure 	<ul style="list-style-type: none"> : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) : 4700092573/932 Dt. 20.07.2021 : 09.02.2024 to 10.02.2024 : 14.02.2024 to 16.02.2024 : As per IS-5182 		
<h3 style="margin: 0;">TEST RESULTS</h3>			
LOCATION – OFFICERS COLONY, 12 NO. DIGWADIH			
	Avg. Ambient Temperature	24°C	Avg. Humidity
			46%
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD
1.	Particulate Matter (PM ₁₀), µg/m ³	75.92	100 µg/m ³
2.	Particulate Matter (PM _{2.5}), µg/m ³	46.52	60 µg/m ³
3.	SO ₂ , µg/m ³	18.35	80 µg/m ³
4.	NO ₂ , µg/m ³	25.52	80 µg/m ³
5.	Ozone, µg/m ³	17.48	180 µg/m ³
6.	NH ₃ , µg/m ³	14.60	400 µg/m ³
7.	CO, mg/m ³	0.63	4 mg/m ³
8.	Pb, µg/m ³	BDL	1 µg/m ³
9.	As, ng/m ³	BDL	6 ng/m ³
10.	Ni, ng/m ³	BDL	20 ng/m ³
11.	Benzene, µg/m ³	BDL	5 µg/m ³
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³
NOTE: BDL - Below Detection Limit			
 Sr. Chemist Aditi R&D Services		 Technical Manager Aditi R&D Services, Sindri	
Statements : <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory. 			

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

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<p>TEST REPORT OF AMBIENT AIR QUALITY</p>			
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO. : 4700092573/932 Dt. 20.07.2021 • Date of Sample Collection : 09.02.2024 to 10.02.2024 • Date of Testing : 14.02.2024 to 16.02.2024 • Test Procedure : As per IS-5182 			
<p>TEST RESULTS</p>			
<p>LOCATION – CENTRAL WORKSHOP AREA, JAMADOBA</p>			
	Avg. Ambient Temperature	24°C	Avg. Humidity
		46%	
Sl No.	Particulars	Value	NAAQ - CPCB STANDARD
1.	Particulate Matter (PM ₁₀), µg/m ³	90.48	100 µg/m ³
2.	Particulate Matter (PM _{2.5}), µg/m ³	53.29	60 µg/m ³
3.	SO ₂ , µg/m ³	22.46	80 µg/m ³
4.	NO ₂ , µg/m ³	30.29	80 µg/m ³
5.	Ozone, µg/m ³	17.32	180 µg/m ³
6.	NH ₃ , µg/m ³	17.83	400 µg/m ³
7.	CO, mg/m ³	0.95	4 mg/m ³
8.	Pb, µg/m ³	BDL	1 µg/m ³
9.	As, ng/m ³	BDL	6 ng/m ³
10.	Ni, ng/m ³	BDL	20 ng/m ³
11.	Benzene, µg/m ³	BDL	5 µg/m ³
12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³
<p>NOTE: BDL - Below Detection Limit</p>			
 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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<div style="display: flex; justify-content: space-between;"> Ref. No.: - ARDS/23-24/1946 Date: 17.02.2024 </div> <h3 style="text-align: center; margin: 10px 0;">TEST REPORT OF AMBIENT AIR QUALITY</h3> <div style="margin-top: 10px;"> <p>Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)</p> <p>Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021</p> <p>Date of Sample Collection : 09.02.2024 to 10.02.2024</p> <p>Date of Testing : 14.02.2024 to 16.02.2024</p> <p>Test Procedure : As per IS-5182</p> </div> <h3 style="text-align: center; margin: 10px 0;">TEST RESULTS</h3> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="5">LOCATION – TATA CENTRAL HOSPITAL</th> </tr> <tr> <th></th> <th>Avg. Ambient Temperature</th> <th>24°C</th> <th>Avg. Humidity</th> <th>46%</th> </tr> <tr> <th>Sl No.</th> <th>Particulars</th> <th>Value</th> <th colspan="2">NAAQ - CPCB STANDARD</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Particulate Matter (PM₁₀), µg/m³</td> <td>72.41</td> <td colspan="2">100 µg/m³</td> </tr> <tr> <td>2.</td> <td>Particulate Matter (PM_{2.5}), µg/m³</td> <td>44.38</td> <td colspan="2">60 µg/m³</td> </tr> <tr> <td>3.</td> <td>SO₂, µg/m³</td> <td>16.48</td> <td colspan="2">80 µg/m³</td> </tr> <tr> <td>4.</td> <td>NO₂, µg/m³</td> <td>26.88</td> <td colspan="2">80 µg/m³</td> </tr> <tr> <td>5.</td> <td>Ozone, µg/m³</td> <td>16.56</td> <td colspan="2">180 µg/m³</td> </tr> <tr> <td>6.</td> <td>NH₃, µg/m³</td> <td>17.44</td> <td colspan="2">400 µg/m³</td> </tr> <tr> <td>7.</td> <td>CO, mg/m³</td> <td>0.83</td> <td colspan="2">4 mg/m³</td> </tr> <tr> <td>8.</td> <td>Pb, µg/m³</td> <td>BDL</td> <td colspan="2">1 µg/m³</td> </tr> <tr> <td>9.</td> <td>As, ng/m³</td> <td>BDL</td> <td colspan="2">6 ng/m³</td> </tr> <tr> <td>10.</td> <td>Ni, ng/m³</td> <td>BDL</td> <td colspan="2">20 ng/m³</td> </tr> <tr> <td>11.</td> <td>Benzene, µg/m³</td> <td>BDL</td> <td colspan="2">5 µg/m³</td> </tr> <tr> <td>12.</td> <td>Benzoapyrene ng/m³</td> <td>BDL</td> <td colspan="2">1 ng/m³</td> </tr> </tbody> </table> <p style="margin-top: 5px;">NOTE: BDL - Below Detection Limit</p> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: center;">  Sr. Chemist Aditi R&D Services </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  Technical Manager Aditi R&D Services, Sindri </div> </div>			LOCATION – TATA CENTRAL HOSPITAL						Avg. Ambient Temperature	24°C	Avg. Humidity	46%	Sl No.	Particulars	Value	NAAQ - CPCB STANDARD		1.	Particulate Matter (PM ₁₀), µg/m ³	72.41	100 µg/m ³		2.	Particulate Matter (PM _{2.5}), µg/m ³	44.38	60 µg/m ³		3.	SO ₂ , µg/m ³	16.48	80 µg/m ³		4.	NO ₂ , µg/m ³	26.88	80 µg/m ³		5.	Ozone, µg/m ³	16.56	180 µg/m ³		6.	NH ₃ , µg/m ³	17.44	400 µg/m ³		7.	CO, mg/m ³	0.83	4 mg/m ³		8.	Pb, µg/m ³	BDL	1 µg/m ³		9.	As, ng/m ³	BDL	6 ng/m ³		10.	Ni, ng/m ³	BDL	20 ng/m ³		11.	Benzene, µg/m ³	BDL	5 µg/m ³		12.	Benzoapyrene ng/m ³	BDL	1 ng/m ³	
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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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Website: aditirndservices.com
Phone: 0326-2952377 (O)
Mobile: 09471358492, 09431512608

TEST REPORT OF NOISE (AMBIENT) LEVEL MONITORING

Ref. No. & Date		NAME AND ADDRESS OF THE CLIENT							
ARDS/23-24/1903 Date: 12.02.2024		M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)							
Date of Monitoring									
09.02.2024 TO 10.02.2024		Avg. Ambient Temperature (°C)		Average Humidity (%)		Weather Condition		Status of the plant	
Work Order 4700092573/932 Dt. 20.07.2021		24		46		Clear		Running	
MONITORING RESULTS									
Sl. No	Place of Monitoring	Day Time (6 AM to 10 PM) Avg. dB(A)			Night Time (10 PM to 6 AM) Avg. dB(A)			Noise level (Ambient standard) for Industrial Area as per CPCB Noise Pollution (Regulation and Control) (Amendment) Rules , 2000 notified vide S.O. 1046(E) Dt. 22.11.2020 Limit in dB(A) Leq	
		MAX	MIN	AVG. dB(A) Leq	MAX	MIN	AVERAGE dB(A) Leq	Day Time	Night Time
LOCATION		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



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

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ADITI R&D SERVICES

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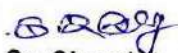
Date: 17.02.2024

TEST REPORT OF MINERALOGICAL COMPOSITION OF PARTICULATE MATTER

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

TEST RESULTS

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


Sr. Chemist
Aditi R&D Services








Technical Manager
Aditi R&D Services, Sindri





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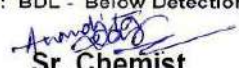


Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

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Ref. No.: - ARDS/23-24/1924		Date: 15.02.2024			
<h3 style="margin: 0;">TEST REPORT OF SURFACE WATER</h3>					
<p>• Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND)</p>					
<p>• Work Order Ref. NO.: : 4700092673/932 Dt. 20.07.2021</p>					
<p>• Sample Code : 1. Damodar River Up Stream 2. Damodar River Down Stream</p>					
<p>• Date of Sample Collection: 09.02.2024</p>					
<p>• Date of Testing : 10.02.2024 To 14.02.2024</p>					
<p>• Test : pH, TDS, Turbidity, DO, BOD, Cl, F, SO₄</p>					
<h4 style="margin: 0;">TEST RESULT</h4>					
Sl. No.	PARAMETERS OF TEST	VALUE	Limit as per IS 2296 Class - C	Test Method	
		Damodar River Up Stream	Damodar River Dn Stream		
1.	pH	7.5	7.6	6.5 -8.5	IS-3025 (P-11): 1983
2.	Total Dissolved Solids, mg/l	455	462	1500	IS-3025 (P-16): 1984
3.	Turbidity, NTU	2.2	2.6	-	IS-3025 (P-10):1984
4.	Dissolved Oxygen, mg/l	5.3	5.7	4.0 (Min)	IS-3025 (P-38):1989
5.	Bio chemical Oxygen Demand, mg/l	1.3	1.4	3.0	IS-3025 (P-44):1994
6.	Chloride as Cl, mg/l	31.34	32.3	600 (Max.)	IS-3025 (P-32):1988
7.	Fluoride as F, mg/l	0.65	0.69	1.5	IS-3025 (P-60):2008
8.	Sulphate as SO ₄ , mg/l	70.9	74.7	400	IS-3025 (P-24):1986
 Sr. Chemist Aditi R&D Services			 Technical Manager Aditi R&D Services, Sindri		
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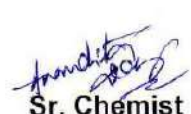


Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	<p>Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O.- Domgarh, Dist.- Dhanbad Jharkhand - 828107 Email ID: sindriadi@gmail.com Website: aditirndservices.com Phone: 0326-2952377 (O) Mobile: 09471358492, 09431512608</p>					
Ref. No.: - ARDS/23-24/1925		Date: 15.02.2024					
<u>TEST REPORT OF MINE WATER DISCHARGE</u>							
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : 1. 2 Pit Jamadoba Colliery 2. 3 Pit Jamadoba Colliery 3. 6 & 7 Pits Colliery 4. Digwadih Colliery • Date of Sample Collection: 09.02.2024 To 10.02.2024 • Date of Testing : 10.02.2024 to 14.02.2024 • Test : pH, TDS, TSS, BOD, COD, OIL & GREASE. 							
<u>TEST RESULT</u>							
Sl. No.	PARAMETERS OF TEST	VALUE	Limit as per IS-2296 Class B (For Bathing)	Test Method			
		2 Pit Jamadoba Colliery	3 Pit Jamadoba Colliery	6 & 7 Pits Colliery	Digwadih Colliery		
1.	pH,	7.7	7.6	7.3	7.3	6.5-8.5	IS-3025 (P-11): 1983
2.	Total Dissolved Solids, mg/l	924	826	1066	845	-	IS-3025 (P-16): 1984
3.	Total Suspended Solids, mg/l	34	36	38	30	-	IS-3025(P-17): 1984
4.	Bio chemical Oxygen Demand, mg/l	2.7	2.8	2.4	3.0	3	IS-3025 (P-44):1994
5.	Chemical Oxygen Demand, mg/l	67	74	61	54	-	IS-3025 (P-58):2006
6.	Oil & Grease, mg/l	BDL	BDL	BDL	BDL	-	IS-3025 (P-39):2021
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  Sr. Chemist Aditi R&D Services </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  Technical Manager Aditi R&D Services, Sindri </div> </div>							
Statements : <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory. 							


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

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	<p>Plot No. - I-B-17 (P)</p> <p>Sindri, Industrial Area,</p> <p>P.O.- Domgarh, Dist.- Dhanbad</p> <p>Jharkhand - 828107</p> <p>Email ID: sindriaditi@gmail.com</p> <p>Website: aditirndservices.com</p> <p>Phone: 0326-2952377 (O)</p> <p>Mobile: 09471358492, 09431512608</p>							
Ref. No.: - ARDS/23-24/1948		Date: 17.02.2024							
<h3 style="margin: 0;">TEST REPORT OF SEWAGE</h3>									
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : <ul style="list-style-type: none"> 1. S.T.P. Outlet J.C.P.P. Canteen 2. S.T.P. Outlet Jamadoba Canteen 3. S.T.P. Outlet Railway Colony 4. S.T.P. Supervisor Apartment Digwadih 12 No 5. S.T.P. Officer Colony Digwadih 12 No. • Date of Sample Collection: 10.02.2024 • Date of Testing : 12.02.2024 to 16.02.2024 • Test : pH, TDS, TSS, BOD, COD, OIL & GREASE. 									
<h3 style="margin: 0;">TEST RESULT</h3>									
Sl. No.	PARAMETERS OF TEST	VALUE					MoEF&C Notification 1 st 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	
Note : BDL - Below Detection Limit									
 Sr. Chemist Aditi R&D Services									 Technical Manager Aditi R&D Services, Sindri
Statements : <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory. 									

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

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	<p>Plot No. - I-B-17 (P)</p> <p>Sindri, Industrial Area,</p> <p>P.O.- Domgarh, Dist.- Dhanbad</p> <p>Jharkhand - 828107</p> <p>Email ID: sindriaditi@gmail.com</p> <p>Website: aditirndservices.com</p> <p>Phone: 0326-2952377 (O)</p> <p>Mobile: 09471358492, 09431512608</p>																																												
<div style="display: flex; justify-content: space-between;"> Ref. No.: - ARDS/23-24/1926 Date: 15.02.2024 </div> <h3 style="text-align: center; margin: 10px 0;">TEST REPORT OF EFFLUENT</h3> <div style="margin-top: 10px;"> <ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : 1. E.T.P. Outlet T.C.H. 2. E.T.P. Outlet Garage • Date of Sample Collection: 09.02.2024 to 10.02.2024 • Date of Testing : 10.02.2024 to 14.02.2024 • Test : pH, TDS, TSS, BOD, COD, OIL & GREASE. </div> <h4 style="text-align: center; margin: 10px 0;">TEST RESULT</h4> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Sl. No.</th> <th rowspan="2">PARAMETERS OF TEST</th> <th colspan="2">VALUE</th> <th rowspan="2">MoEF&C Notification 1st Jan.2016 Permissible Max. Desirable Limit</th> <th rowspan="2">Test Method</th> </tr> <tr> <th>E.T.P. Outlet T.C.H</th> <th>E.T.P. Outlet Garage</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>pH,</td> <td>7.9</td> <td>8.1</td> <td>5.5-9.0</td> <td>IS-3025 (P-11): 1983</td> </tr> <tr> <td>2.</td> <td>Total Dissolved Solids, mg/l</td> <td>872</td> <td>715</td> <td>2100</td> <td>IS-3025 (P-16): 1984</td> </tr> <tr> <td>3.</td> <td>Total Suspended Solids, mg/l</td> <td>40</td> <td>42</td> <td>100</td> <td>IS-3025(P-17) : 1984</td> </tr> <tr> <td>4.</td> <td>Bio chemical Oxygen Demand, mg/l</td> <td>2.6</td> <td>6.9</td> <td>30</td> <td>IS-3025 (P-44):1994</td> </tr> <tr> <td>5.</td> <td>Chemical Oxygen Demand, mg/l</td> <td>33.6</td> <td>81</td> <td>250</td> <td>IS-3025 (P-58):2006</td> </tr> <tr> <td>6.</td> <td>Oil & Grease, mg/l</td> <td>B.D.L</td> <td>2.8</td> <td>10</td> <td>IS-3025 (P-39):2021</td> </tr> </tbody> </table> <p style="margin-top: 5px;">Note : BDL - Below Detection Limit</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%; text-align: center;">  <p>Sr. Chemist Aditi R&D Services</p> </div> <div style="width: 10%; text-align: center;">  </div> <div style="width: 45%; text-align: center;">  <p>Technical Manager Aditi R&D Services, Sindri</p> </div> </div>			Sl. No.	PARAMETERS OF TEST	VALUE		MoEF&C Notification 1 st Jan.2016 Permissible Max. Desirable Limit	Test Method	E.T.P. Outlet T.C.H	E.T.P. Outlet Garage	1.	pH,	7.9	8.1	5.5-9.0	IS-3025 (P-11): 1983	2.	Total Dissolved Solids, mg/l	872	715	2100	IS-3025 (P-16): 1984	3.	Total Suspended Solids, mg/l	40	42	100	IS-3025(P-17) : 1984	4.	Bio chemical Oxygen Demand, mg/l	2.6	6.9	30	IS-3025 (P-44):1994	5.	Chemical Oxygen Demand, mg/l	33.6	81	250	IS-3025 (P-58):2006	6.	Oil & Grease, mg/l	B.D.L	2.8	10	IS-3025 (P-39):2021
Sl. No.	PARAMETERS OF TEST	VALUE			MoEF&C Notification 1 st Jan.2016 Permissible Max. Desirable Limit	Test Method																																								
		E.T.P. Outlet T.C.H	E.T.P. Outlet Garage																																											
1.	pH,	7.9	8.1	5.5-9.0	IS-3025 (P-11): 1983																																									
2.	Total Dissolved Solids, mg/l	872	715	2100	IS-3025 (P-16): 1984																																									
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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																																									
<p>Statements :</p> <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory. 																																														

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

	<h2 style="margin: 0;">ADITI R&D SERVICES</h2> <h3 style="margin: 0;">Testing Laboratory</h3> <p style="margin: 0;">NABL ACCREDITED</p> <p style="margin: 0;">(A Constituent Board of Quality Council of India)</p> <p style="margin: 0;">ISO/IEC 17025:2017, ISO 9001:2015, ISO (OHSAS) 45001:2018 Certified</p>	<p>Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O. - Domgarh, Dist. - Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirnds-services.com Phone: 0326-2952377 (O) Mobile: 09471358492, 09431512608</p>						
Ref. No.: - ARDS/23-24/1932		Date: 16.02.2024						
TEST REPORT OF DRINKING WATER								
<ul style="list-style-type: none"> • Name of the industry : M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, DIST. - DHANBAD (JHARKHAND) • Work Order Ref. NO.: : 4700092573/932 Dt. 20.07.2021 • Sample Code : <ul style="list-style-type: none"> 1. Canteen Jamadoba Colliery 2. Canteen Digwadiah Colliery 3. Canteen 6&7 Pit Colliery 4. Canteen Jamadoba Washery • Date of Sample Collection: 09.02.2024 to 10.02.2024 • Date of Testing : 10.02.2024 to 15.02.2024 • Test : <ul style="list-style-type: none"> Colour, Odour, Taste, Turbidity, pH, Total Hardness, Iron, Chloride, Res. Free chlorine, Total Dissolved Solids, Calcium, Copper, Manganese, Sulphate, Nitrate, Fluoride, Phenolic Compound, Mercury, Cadmium, Arsenic, Cyanide, Lead, Zinc, Total Coliform, Hexavalent Chromium, Mineral Oil, Alkalinity, Aluminium & Boron. 								
TEST RESULT								
Sl. No	PARAMETERS OF TEST	VALUE				IS as per IS 10500:2012		Test Method
		Canteen Jamadoba Colliery	Canteen Digwadiah Colliery	Canteen 6&7 Pit Colliery	Canteen Jamadoba Washery	Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	1	1	1	5.00	15.0	IS 3025 (P-4):2021
2.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS 3025 (P-5):2018
3.	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS 3025 (P-7):2017
4.	Turbidity, NTU	NIL	NIL	NIL	NIL	1.0	5.0	IS 3025 (P-10):1984
5.	pH	7.6	7.8	7.7	7.9	6.5-8.5	No. Relax.	IS-3025 (P-11):1983
6.	Total Hardness as CaCO ₃ , mg/l	325.6	330	259.6	343.2	200	600	IS 3025 (P-21):2009
7.	Chloride as Cl ₂ , mg/l	64.5	64.5	32.3	66.5	250	1000	IS 3025 (P-32):1988
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	NIL	NIL	NIL	0.20	1.0	IS 3025 (P-26):2021
9.	Total Dissolved Solids, mg/l	825	805	458	845	500	2000	IS 3025 (P-16):1984
10.	Calcium as CaCO ₃ , mg/l	65.12	41.2	52.8	66.8	75	200	IS 3025 (P-40):1991
11.	Copper as Cu, mg/l	BDL	BDL	BDL	BDL	0.05	1.5	IS 3025 (P-42):1992
Continued on Page 2								
Statements : <ol style="list-style-type: none"> The test report refers only to the particular item(s) submitted for testing. The test results reported in this report are valid at the time of and under the stated condition of measurement. This particular test report cannot be reproduced except in full without prior permission of Quality Manager of the laboratory. 								

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



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

- 2 -

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

NOTE: BDL - Below Detection Limit


Sr. Chemist
Aditi R&D Services





Technical Manager
Aditi R&D Services, Sindri

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

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





Statements :

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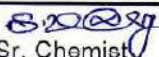

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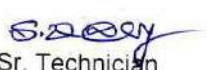


Ambient Air Quality and Groundwater Quality Report (Period- October'23 to March'24)

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

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

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

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LOCATION			Day Time	Night Time																	
JAMADOBA GROUP		MAX MIN	Industrial Area	Industrial Area																	
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		 <div style="text-align: right;">  Technical Manager Aditi R&D Services, Sindri </div>																			
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Publication **PRABHAT KHAZAR, DHANBAD** Date 11-3-14**सूचना**

जन साधारण को सूचित किया जाता है कि भारत सरकार, वन एवं पर्यावरण मंत्रालय के पत्रांक संख्या - J-11015/203/2011-IA.II(M) के जरिए जामाडोबा कोल वाशरी (1.0 मिलियन टन प्रतिवर्ष से 2.0 मिलियन टन प्रतिवर्ष विस्तारीकरण परियोजना) मेसर्स टाटा स्टील लिमिटेड, जामाडोबा, जिला-धनबाद को पर्यावरण स्वीकृति प्रदान की गयी है, जिसकी प्रतिलिपि क्षेत्रीय कार्यालय, झारखण्ड राज्य प्रदूषण नियंत्रण परिषद, धनबाद में उपलब्ध है तथा भारत सरकार, वन एवं पर्यावरण मंत्रालय के इंटरनेट साइट <http://envfor.nic.in> पर भी देखी जा सकती है।

महाप्रबंधक (झरिया)

टाटा स्टील, जामाडोबा (धनबाद)

FROM THE PRESS

Publication **HINDUSTANI, DHANBAD** Date **11-3-14**



**TATA
TATA STEEL**

सूचना

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TATA STEEL

सूचना

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टाटा स्टील, जामाडोबा (धनबाद)

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Publication **DAINIK JAGRAN, DHANBAD** Date **11-3-14**



सूचना

जन साधारण को सूचित किया जाता है कि भारत सरकार, वन एवं पर्यावरण मंत्रालय के पत्रांक संख्या - J-11015/373/2010-IA.II(M) के जरिए 6 एवं 7 पिट्स कोलियरी (0.28 मिलियन टन प्रतिवर्ष से 0.6 मिलियन टन प्रतिवर्ष विस्तारीकरण परियोजना) मेसर्स टाटा स्टील लिमिटेड, जामाडोबा, जिला-धनबाद को पर्यावरण स्वीकृति प्रदान की गयी है, जिसकी प्रतिलिपि क्षेत्रीय कार्यालय, झारखण्ड राज्य प्रदूषण नियंत्रण परिषद, धनबाद में उपलब्ध है तथा भारत सरकार, वन एवं पर्यावरण मंत्रालय के इंटरनेट साइट <http://envfor.nic.in> पर भी देखी जा सकती है।

महाप्रबंधक (झरिया)

टाटा स्टील, जामाडोबा (धनबाद)

Municipal Commissioner,
Dhanbad.

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

September 17 , 2018

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

Dear Sir,

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

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

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

Thanking You,

Yours faithfully,


Head, Planning
Jharia Division

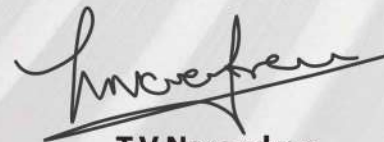


ENVIRONMENTAL POLICY

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

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

Date : November 1, 2017



T V Narendran
CEO & Managing Director

