

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

Ref No. - JMB/ENV/JMB/87/249 /2025 May 28th, 2025

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

SUB: Half Yearly Compliance Status Report of Environment Clearance conditions issued by MoEFCC, New Delhi to Jamadoba Colliery, Tata Steel Limited, Dhanbad for the period October-24 to March-2025.

Dear Sir,

We are enclosing herewith compliance report for the period **October-24 to March-2025** for the EC granted vide letter no.- J-11015/91/2017-IA. II (M) dated-11th July 2022 issued by Ministry of Environment, Forest and Climate Change, New Delhi.

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

Thanking you,

Yours faithfully,

Head (Planning) Jharia Division, Tata Steel Ltd.

Encl: As above.

- Copy to: Member Secretary, CPCB, Eastern Zonal Office, Southend Conclave, 502, 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 (Half Yearly Compliance Report) has been Submitted with following details			
Proposal No	IA/JH/CMIN/109757/2019		
Compliance ID	128353495		
Compliance Number(For Tracking) EC/M/COMPLIANCE/128353495/2025			
Reporting Year	2025		
Reporting Period	01 Jun(01 Oct - 31 Mar)		
Submission Date	31-05-2025		
RO/SRO Name	Shri Senthil Kumar Sampath		
RO/SRO Email	agmu156@ifs.nic.in		
State	JHARKHAND		
RO/SRO Office Address	Integrated Regional Offices, Ranchi		
Notes CMC and C Mail has been cont to Chui Conthil Kunse			

Note:- SMS and E-Mail has been sent to Shri Senthil Kumar Sampath, JHARKHAND with Notification to Project Proponent.

Half Yearly Compliance Report 2025 01 Jun(01 Oct - 31 Mar) Acknowledgement			
Proposal Name		0.34 MTPA in ML area of	ba Underground coal mine of 927.17 Ha by M/s Tata Steel ttiya Dungri village, Jharia, nd)
Name of Entity / Corj	porate Office	Tata Steel Ltd.	
Village(s)		N/A	
District		DHANBAD	
Proposal No.	IA/JH/CMIN/109757/2019	Category	Coal Mining
Plot / Survey / Khasra No.	N/A	Sub-District	N/A
State	JHARKHAND	Entity's PAN	****2803M
MoEF File No.	J-11015/91/2017- IA.II (M)	Entity name as per PAN	UTSAV KASHYAP

Compliance Reporting Details

Reporting Year	2025
Remarks (if any)	Half Yearly Compliance Submission for October- 2024 to March-2025.
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	Actual Project Area in Possession	
Private	0	0	
Revenue Land	0	0	
Forest	0	0	
Others	927.17	927.15	
Total	927.17	927.15	

Production Capacity

Sr. no	Product Name	units	Valid Upto	Capacity	Production last year	Capacity as per CTO
1	Raw Coal	Million Tons per Annum (MTPA)	N/A	0.34	0	

Conditions

Specific Conditions

Sr.No.	Condition Type	Condition Details	
1	Statutory compliance	PP to obtain the CTO for 0.34 MTPA capacities immgrant of EC.	nediately afte
Consent t		y has been obtained from the State PCB on 31.01.2025 from the mines have been discontinued since January	Date: 28/05/2025
2	WATER QUALITY MONITORING AND PRESERVATION	PP to conserve the Kari jhore, Dungri jhore, Damoda following within the core area of the project and the m for its conservation to be furnished in every six-month to be reported to respective IRO and SPCB.	easure taken
Garland d productio		nd the boundary premises of the mines. Moreover, the ded since January 2024. Reclamation activities are act envisaged from the mines.	Date: 30/05/2025
3	Statutory compliance	Since there is also Jamadoba Coal washery located w lease having separated EC vide Letter No J-11015/20 IA(M) dated 3rd March 2014 so the adequate EMP me adopted to minimize the cumulative impact, also the u rejects generated from washery should be managed as shall obtain integrated EC for future coal/washery exp	03/2011-II- easure to be tilization of per norms. P
There are	iddling etc are utilized as per norr	for the Jamadoba Coal preparation plant. The rejects like ns. The integrated EC shall be taken in case of washery	Date: 28/05/2025
4	Statutory compliance	PP shall obtain No objection certificate from Ground Authority for extraction of ground water within six mo submit to IRO Ranchi.	
The NOC	bmission: Complied From central Ground Water Auth CGWA/NOC/MIN/REN/1/2024/	ority for extraction of ground water was granted vide (10124; dated: 05.11.2024.	Date: 28/05/2025
5	WASTE MANAGEMENT	PP Shall reduce river sand used for stowing and expl sand segregated from OB dump from any nearest mine own or any mine) and submit detailed report to IRO R	e (either its
	bmission: Complied the process of technological expl	oration of sand from OB dump.	Date: 28/05/2025
5	Statutory compliance	PP to accomplish the requirement of a full fledge que manpower with Environmental Engineer/Env. Science background in Environmental Management Cell etc. we months and same shall be reported to IRO, MoEF&CO	e degree vithin six
	bmission: Complied a full-fledged Environment cell w	ith Environment professionals and field monitoring staff.	Date: 28/05/2025
	Addresses IA Div	ision, Ministry of Environment, Forest and Climate Change,	Page

7	PUBLIC HEARING	PP to fulfil all the commitment made to address the issued in time bound manner as committed in EIA EM Chapter & table 7.1 and a progressive report to be furn with six monthly compliance report	IP report in
The con timeline		aring are being complied in time bound manner. The llowed. The report showing the status has been attached	Date: 30/05/2025
8	AIR QUALITY MONITORING AND PRESERVATION	PP to maintain the transportation road properly to m dust emission. PP to also develop puce roads by seekin from the panchayat with widening of roads especially linking the villages within the study area of 10 Km rad zone.	ng consent roads inters
The tran	n. The construction of roads in nearby	ones are maintained properly to minimize the dust y villages are continuous process in consent with	Date: 28/05/2025
9	Corporate Environmental Responsibility	PP to complete the estimated allocated budgetary ex EMP capital cost is Rs.273.0 lakhs & Recurring cost i Lakhs per year as per its letter dated JMB/115/001339 September, 2021. Capital EMP budget shall be comple- strict timeline.	s Rs.1359.4 dated 3rd
			D
It is bein	ubmission: Complied ng complied. Capital EMP budget exp ment is reported every year in the env	penditure has been completed. Recurring cost on the vironment statement.	Date: 30/05/2025
It is bein	ng complied. Capital EMP budget exp		30/05/2025 and surface lius from the
It is bein environ 10 PPs S	ng complied. Capital EMP budget exp ment is reported every year in the env WATER QUALITY MONITORING AND	PP to monitor the water quality of the ground water water body located within the core zone and 5 Km rad periphery of the mine boundary as per procedure laid	30/05/2025 and surface lius from the
It is bein environ 10 PPs S	ng complied. Capital EMP budget exp ment is reported every year in the env WATER QUALITY MONITORING AND PRESERVATION ubmission: Complied	PP to monitor the water quality of the ground water water body located within the core zone and 5 Km rad periphery of the mine boundary as per procedure laid	30/05/2025 and surface lius from the down by Date: 28/05/2025 ations at ation of SPCB company In addition,
It is bein environ 10 PPs S It has be 11 PPs S A CAA	ng complied. Capital EMP budget exp ment is reported every year in the env WATER QUALITY MONITORING AND PRESERVATION ubmission: Complied een complied. AIR QUALITY MONITORING AND PRESERVATION ubmission: Complied QMS is being installed in Jamadoba §	PP to monitor the water quality of the ground water water body located within the core zone and 5 Km rad periphery of the mine boundary as per procedure laid CPCB. PP to install More continuous ambient air quality sta suitable locations preferably village side with consulta The real time data so generated shall be uploaded on c website and linked it with website of CPCB & SPCB.	30/05/2025 and surface lius from the down by Date: 28/05/2025 ations at ation of SPCB company In addition,
It is bein environ 10 PPs S It has be 11 PPs S A CAA	ng complied. Capital EMP budget exp ment is reported every year in the env WATER QUALITY MONITORING AND PRESERVATION ubmission: Complied een complied. AIR QUALITY MONITORING AND PRESERVATION ubmission: Complied QMS is being installed in Jamadoba §	PP to monitor the water quality of the ground water water body located within the core zone and 5 Km rad periphery of the mine boundary as per procedure laid CPCB. PP to install More continuous ambient air quality sta suitable locations preferably village side with consulta The real time data so generated shall be uploaded on c website and linked it with website of CPCB & SPCB. data should also be displayed digitally at entry and exilease for public display. group since 2014. A new CAAQMS has been installed	30/05/2025 and surface lius from the down by Date: 28/05/2025 ations at ation of SPCB company In addition, it gate of mine Date: 28/05/2025 coal washery a dated 3rd illages of

13	MISCELLANEOUS	PP must seek the input of experts for phytoremediat and accordingly work on it with proper scientific appr	
	Submission: Complied is no generation of slurry during raw co	pal production.	Date: 28/05/2025
14	GREENBELT	PP to plant additional 100,000 plants with three tier along the transportation route, if not completed, and ic with consent to the gram panchayat within two year a remaining within 2 years for their proper growth.	dentified areas
Plantat have be		ntinuous process. For FY 24, around 12452 saplings have been planted Green belt report has been attached	Date: 30/05/2025
15	ENERGY PRESERVATION MEASURES	PP to install solar lights along the road used for tran minerals to avoid the accidents at night and also seek maintenance. PP is asked to also identify the rural are installation of solar light with in its maintenance with area of 10 km radius buffer zone within one year	its as for
Adequa	Submission: Complied ate lighting facilities have been installe ng lights have been provided in the are	ed along the roads. Several facilities under CSR, ea.	Date: 28/05/2025
16	Human Health Environment	Proponent shall appoint an occupational Health Spe Regular and Periodical medical examination of the we in the project and maintain records accordingly also C health check-up for workers having some ailments lik habitual smoking etc. shall be undertaken once in six necessary redial/preventive measures taken according recommendations of National Institute for ensuring go occupational environment for mine workers shall be in The prevention measure for burns, malaria and provise	orkers engaged Occupational e BP, diabetes months and ly. The bod mplemented. ion of anti-
		snake venom including all other paramedical safeguar ensured before initiating the mining activities.	
It has b	Submission: Complied been complied. Its a continuous process oba to take care of all these types of co	ensured before initiating the mining activities. s. There is fully developed Tata Central Hospital in	Date: 28/05/2025
It has b Jamado	been complied. Its a continuous process	ensured before initiating the mining activities. s. There is fully developed Tata Central Hospital in	28/05/2025 livelihood an
It has b Jamado 17 PPs \$ It is a c	been complied. Its a continuous process oba to take care of all these types of co MISCELLANEOUS Submission: Complied	ensured before initiating the mining activities. s. There is fully developed Tata Central Hospital in ncerns of community. Persons of nearby villages shall be given training or skill development makes them employable with its present training cell (JNTVTI) has been	28/05/2025 livelihood an

		levels well within the prescribed limits for day lights/	
	Ibmission: Complied en noted and shall be complied s	trictly.	Date: 28/05/2025
19	Statutory compliance	PP shall pay to farmers of agricultural land if there i to pollution found by concerned District Commissione rules or norms.	
	Ibmission: Complied en noted and shall be complied.		Date: 28/05/2025
20	Statutory compliance	PP should establish in house (at project site) environ laboratory for measurement of environment parameter to air quality and water (surface and ground A dedicat oversee environment management shall be setup whic comprise of Environmental Engineer, Laboratory cher for monitoring of air , water quality parameters on rou non-compliance or infringement should be reported to authority.	r with respect red team to h should mist and staff ttine basis. An
	Ibmission: Complied a full-fledged Environment cell	with Environment professionals and field monitoring staff.	Date: 28/05/2025
21	MISCELLANEOUS	PP shall follow the recommendation of subsidence s monitor the degree of subsidence regularly and shall b IRO- Ranchi.	
PPs Su	bmission: Complied	monitor the degree of subsidence regularly and shall b	
PPs Su The subs neral C	ibmission: Complied idence is monitored regularly, an onditions	monitor the degree of subsidence regularly and shall b IRO- Ranchi.	De submitted t
PPs Su The subs	ibmission: Complied idence is monitored regularly, an	monitor the degree of subsidence regularly and shall b IRO- Ranchi.	of Hon'ble nd any other
PPs Su The subs neral C Sr.No. 1 PPs Su	abmission: Complied idence is monitored regularly, an onditions Condition Type	monitor the degree of subsidence regularly and shall be IRO- Ranchi. and the recommendations are implemented. Condition Details The Environmental clearance shall be subject orders Supreme Court of India. Hon'ble High Courts, NGT at	of Hon'ble nd any other he project.
PPs Su The subs neral C Sr.No. 1 PPs Su	Ibmission: Complied idence is monitored regularly, an onditions Condition Type Statutory compliance	monitor the degree of subsidence regularly and shall be IRO- Ranchi. and the recommendations are implemented. Condition Details The Environmental clearance shall be subject orders Supreme Court of India. Hon'ble High Courts, NGT at	of Hon'ble nd any other he project. Date: 28/05/2025
PPs Su The subs neral C Sr.No. 1 PPs Su It has bee 2 PPs Su	Ibmission: Complied idence is monitored regularly, an onditions Condition Type Statutory compliance Ibmission: Complied en noted.	monitor the degree of subsidence regularly and shall be IRO- Ranchi. and the recommendations are implemented. Condition Details The Environmental clearance shall be subject orders Supreme Court of India. Hon'ble High Courts, NGT at Court of Law, from time to time, and as applicable to the court of Law, from time to time, and as applicable to the project proponent shall obtain forest clearance uprovisions of Forest (Conservation) Act, 1986, in case diversion of forest land for non- forest purpose involved	of Hon'ble nd any other the project. Date: 28/05/2025 Date: 28/05/2025
PPs Su The subs neral C Sr.No. 1 PPs Su It has bee 2 PPs Su	Ibmission: Complied idence is monitored regularly, an onditions Condition Type Statutory compliance Ibmission: Complied en noted. Statutory compliance	monitor the degree of subsidence regularly and shall be IRO- Ranchi. and the recommendations are implemented. Condition Details The Environmental clearance shall be subject orders Supreme Court of India. Hon'ble High Courts, NGT at Court of Law, from time to time, and as applicable to the court of Law, from time to time, and as applicable to the project proponent shall obtain forest clearance uprovisions of Forest (Conservation) Act, 1986, in case diversion of forest land for non- forest purpose involved	of Hon'ble and any other the project. Date: 28/05/2025 nder the of the ed in the Date: 28/05/2025

Not A	pplicable		28/05/2025
4	Statutory compliance	The project proponent shall prepare a site-specific co plan/wildlife management Plan and approved by the C Warden. The recommendation of the approved Site-Sp Conservation Plan/Wildlife Management Plan shall be in consultation with the State Forest Department. The report shall be furnished along with the six-monthly co report (in case of the presence of schedule I species in	chief Wildlife becific implemented implementatio pmpliance
	Submission: Complied is no Schedule-I species in the stud	dy area.	Date: 28/05/2025
5	Statutory compliance	The project proponent shall obtain Consent to Establunder the provisions of Air (Prevention & Control of I 1981 and Water (Prevention & Control of Pollution) A the Concerned State Pollution Control Board/Committed	Pollution) Act, Act, 1974 from
The C dated		vide letter no. JSPCB/HO/RNC/CTE-14115974/2022/523 eived from JSPCB with Ref No. JSPCB/HO/RNC/CTO-	Date: 28/05/2025
6	Statutory compliance	The project proponent shall obtain the necessary per the Central Ground Water Authority.	mission from
The N	Submission: Complied OC from central Ground Water Au No. CGWA/NOC/MIN/REN/1/202	1 thority for extraction of ground water was granted vide 24/10124; dated: 05.11.2024.	Date: 28/05/2025
7	Statutory compliance	Solid Waste/Hazardous Waste generated in the mine addressed in accordance to the Solid Waste Manageme Hazardous & Other Waste Management Rules,2016	
	Submission: Complied been noted and shall be complied.		Date: 28/05/2025
8	AIR QUALITY MONITORING AND PRESERVATION	Adequate ambient air quality monitoring stations sha established in core zone as well as in the buffer zone f of pollutants, namely particulates ,SO2and NOx locati Station shall be decided based on the metrological data features and environmentally and ecologically sensitiv consultation with the State Pollution Control Board. M heavy metal such as Hg, As, Ni, Cd, Cr, etc. to be carr once in six months. Online ambient air quality monito may also be installed in addition to the regular air mor as per the requirement and /or in consultation with the	or monitoring on of the a, topographic re in Ionitoring of ied out at leas ring station hitoring station
	Submission: Complied been complied		Date: 28/05/2025
9	AIR QUALITY MONITORING AND PRESERVATION	The Ambient Air Quality monitoring in the core zon carried out to ensure the coal Industry Standards notifi 742 E dated 25.09.2000 and as amended from time to Central Pollution Control Board. Data on ambient air of heavy metals such as Hg, As, Ni, Cd, Cr and other mo shall be regularly reported to the Ministry/Regional Of CPCB/SPCB.	es vide GSR time by the quality and nitoring data

Ambie		ffer zone are measures by inhouse environmental ecognised lab. Report has been attached as Annexure-II.	Date: 28/05/2025
10	WATER QUALITY MONITORING AND PRESERVATION	The project proponent shall take all precautionary ensure reverian/riparian ecosystem in and around the a distance of 5 km. a revarian/riparian ecosystem con management plan should be prepared and implement consultation with the irrigation/water resources departs state government.	e coal mine up to nservation and ted in
	Submission: Complied been noted and shall be complied		Date: 28/05/2025
11	PUBLIC HEARING	Effective arrangements shall be made to provide an suitable point's conveniently situated, a sufficient su water for all the persons employed.	
	Submission: Complied treatment plants are operated for same	afe drinking water supply in nearby community.	Date: 28/05/2025
12	AIR QUALITY MONITORING AND PRESERVATION	Transportation of coal, to the extent permitted by r carried out by covered trucks/conveyors .Effective c such as regular water sprinkling /rain gun/mist sprin carried out in critical areas prone to air pollution wit particulate matter all through the coal; transport road /Unloading and transfer points. Fugitive dust emissio sources shall be controlled regularly. It shall be ensu ambient air quality parameters conform to the norms the Central/ State Pollution Control Board.	ontrol measure kling etc. shall b h higher level of ls., loading ons from all red that the
The pro from co		iscontinued from January 2024. Transportation of coal gh covered conveyor belts. Road transportation is done	Date: 28/05/2025
13	AIR QUALITY MONITORING AND PRESERVATION	Major approach roads shall be black topped and pr maintained.	operly
	Submission: Complied been complied		Date: 28/05/2025
14	AIR QUALITY MONITORING AND PRESERVATION	The transportation of coal shall be carried out as per and route proposed in the approved mining plan. Tra- coal through the exiting road passing through any vi avoided. In case it is proposed to construct a bypass so constructed that the impact of sound, dust and acc- appropriately mitigated.	Insportation of llage shall be road it should be
The pro from co		iscontinued from January 2024. Transportation of coal gh covered conveyor belts. Road transportation is done	Date: 28/05/2025
15	AIR QUALITY MONITORING AND PRESERVATION	Vehicular emissions shall be kept under control an monitored. All the vehicles engaged in mining and a shall operate only after obtaining PUC' certificate fro	llied activities

		pollution testing centres.	
	Submission: Complied been complied		Date: 28/05/2025
16	AIR QUALITY MONITORING AND PRESERVATION	Coal Stock pile/crusher/feeder and breaker material shall invariably be provided with dust suppression sy conveyors shall be fully covered to avoid air borne d all along the conveyor gantry should be made to avoid Drills shall be wet operated or fitted with dust extract	stem. Belt ust Side claddir d air borne dus
	Submission: Complied been complied		Date: 28/05/2025
17	AIR QUALITY MONITORING AND PRESERVATION	Coal handling plant shall be operated with effective measures w.r.t various environmental parameters. En friendly sustainable technology should be implement such parameters.	vironmental
CHP i	Submission: Complied s being operated using dry fog system ve dust control measures.	tem, water sprinklers, mist canons and other various	Date: 28/05/2025
18	WATER QUALITY MONITORING AND PRESERVATION	The effluent discharge(mine waste water, workshop be monitored in terms of the parameters notified und 1974 Coal Industry Standard vide GSR 742 E, dated amended from time to time by the Central Pollution	er the Water Ac 25.09.2000 an
Water	Submission: Complied quality analysis discharge from m ne regularly.	ine sump, effluent treatment plants, sewage treatment plants	Date: 28/05/2025
19	WATER QUALITY MONITORING AND PRESERVATION	The Monitoring data shall be uploaded on the comp and displayed at the project site at a suitable location NO. J-20012/1/2006-1A.11 (M) dated 27.05.2009 iss of Environment, Forest and Climate Change shall als this regards for its compliance.	. The Circular sued by Ministr
Monit	Submission: Complied oring data are being uploaded alon ed website.	g with the half yearly compliance report on Tata Steel	Date: 28/05/2025
20	WATER QUALITY MONITORING AND PRESERVATION	Regular monitoring of ground water level and qual carried out in and around the mine lease area by estal network of existing wells and construction new piezo the mining operations. The monitoring of ground wat carried out four times in a year i.e, pre monsoon mon monsoon and winter. The ground water quality shall once a year, and the data thus collected shall be sent MoEFCC/RO.	olishing a ometers during ter levels shall l soon, post be monitored
	Submission: Complied sing complied.		Date: 28/05/2025
21	WATER QUALITY MONITORING AND	Monitoring of Water quality upstream and downstr bodies shall be carried out once in six months and re- monitoring data shall be maintained and submitted to	cords of

	Submission: Complied quality upstream and downstream	of the water bodies are carried out.	Date: 28/05/2025
22	WATER QUALITY MONITORING AND PRESERVATION	Ground Water, excluding mine water, shall not be us operations rainwater harvesting shall be implemented conservation and augmentation of ground water resou	for
	Submission: Complied been noted and shall be complied		Date: 28/05/2025
23	WATER QUALITY MONITORING AND PRESERVATION	The Project proponent shall not alter major water ch the site. Appropriate embankment shall be provided at the river/nallah flowing near or adjacent to the mine. T embankment constructed along river/nallah boundary suitable dimensions and critical patches shall be streng stone pitching on the river front side, Stabilized with p to withstand the peak water pressure preventing any c inundation.	long the side of The shall be gthened by plantation so as
	Submission: Complied been noted and agreed to comply.		Date: 28/05/2025
24	WATER QUALITY MONITORING AND PRESERVATION	Garland drains (of suitable size, gradient and length) critical areas i.e. mine shaft and low lying areas, shall keeping at least 50% safety margin the mine sites. The shall also provide adequate retention period to allow p of slit material of the surface runoff.	be designed e sump capacit
	Submission: Complied eing complied		Date: 28/05/2025
25	WATER QUALITY MONITORING AND PRESERVATION	The Water pumped out from the mine, after siltation utilized for industrial purpose viz. watering the mine a green belt development etc. The drains shall be regula particularly after monsoon and maintained properly.	rea, roads
PPs	Submission: Complied	ng utilized for stowing goal washing sprinkling groop balt	Date: 28/05/2025
The p	umped water from the mine are bei opment and water treatment plant for		
The p			n to the Act, 1986 and to time. Oil an shop affluent.
The pr develo 26 PPs Indust	WATER QUALITY WONITORING AND PRESERVATION	Industrial waste water from coal handling plant and shall be properly collected and treated so as to conform standard prescribed under the Environment Protection the rules made thereunder, and as amended from time grease trap shall be installed before discharge of work Sewage treatment plant of adequate capacity shall be in	n to the Act, 1986 and to time. Oil an shop affluent.

	Submission: Complied recharge structures are being constructe	ed and renewed regularly in the nearby villages.	Date: 28/05/2025
28	WATER QUALITY MONITORING AND PRESERVATION	The surface drainage plan including surface water area of influence affected by the said miming opera prepared, considering the presence of any river/rive with impact of mining activities on it. And implement project proponent. The surface drainage plan and /o natural water courses shall be as per the provisions Mining Plan /EIA/EMP submitted to this Ministry a should be as per the approved mining plan and as p of DGMS.	tions shall be ilet/pond/lake etc ented by the or any diversion c of the approved and the same
	Submission: Complied been noted and shall be complied		Date: 28/05/2025
29	MISCELLANEOUS	The Proponent shall abide by all the commitment recommendation made in the EIA/EMP report and presentation to the EAC. All the commitments mad raised during public hearing shall also be implement spirit.	also that during le on the issues
		ade as per Public hearing are under process of	Date: 28/05/2025
30	Noise Monitoring & Prevention	Adequate measures shall be taken for control of m 85 db. (A) in the work environment. Workers engage underground mining operations of HEMM etc. shall personal protective equipment's (PPE) like ear pluge conformity with the prescribed norms/guidelines in Programs in wages of such accessories to be monitor	ged in Il be provided wi gs/muffs in this regards.
		Progress in usage of such accessories to be monitor awareness programme for users to be conducted.	ed. Adequate
	Submission: Complied		Date: 28/05/2025
			Date: 28/05/2025 the prescribed at vulnerable ard shall be
It has b 31 PPs S	been complied	awareness programme for users to be conducted. The noise level survey shall be carried out as per gridlines to assess noise exposure of the workmen a points in the mines premises, and report in this rega submitted to the Ministry/RO on six monthly basis.	Date: 28/05/2025 the prescribed at vulnerable ard shall be
It has b 31 PPs S	Noise Monitoring & Prevention Submission: Complied	awareness programme for users to be conducted. The noise level survey shall be carried out as per gridlines to assess noise exposure of the workmen a points in the mines premises, and report in this rega submitted to the Ministry/RO on six monthly basis.	Date: 28/05/2025 the prescribed at vulnerable ard shall be Date: 28/05/2025 e to provisions of
It has b 31 PPs S It has b 32 PPs S	Noise Monitoring & Prevention Submission: Complied been complied. The report has been attac	awareness programme for users to be conducted. The noise level survey shall be carried out as per gridlines to assess noise exposure of the workmen a points in the mines premises, and report in this rega submitted to the Ministry/RO on six monthly basis. ched in Annexure-II. Mining shall be carried out under strict adherence Mines Act 1952 and subordinate legislations made	Date: 28/05/2025 the prescribed at vulnerable ard shall be Date: 28/05/2025 e to provisions of

	ubmission: Complied een noted and shall be complied.		Date: 28/05/2025
34	MINING PLAN	Mining shall be carried out as per the approved min (including mines closure plan) abiding by mining law mining and the relevant circulars issued by Directora Mines Safety (DGMS)	vs related to coa
	ubmission: Complied een noted and shall be complied.		Date: 28/05/2025
35	MINING PLAN	Underground work place environment conditions s ergonomic and air breathable with adequate illumina conformance with DGMS Standards.	
	ubmission: Complied een complied		Date: 28/05/2025
36	MINING PLAN	No mining activity shall be carried out in forest lan forestry clearance as per forest (Conservations) Act, adhering to the Scheduled tribes and other Traditiona Dwellers (Recognition of Forest Rights) Act,2006 re- provisions of Indian Forest Act,1927	1980 and also Il Forest
	ubmission: Complied een noted. No forest land involved.		Date: 28/05/2025
37	MINING PLAN	Efforts should be made to reduce energy and fuel c conservation, efficiency improvements and use of res	
	ubmission: Complied een noted and shall be complied		Date: 28/05/2025
38	LAND RECLAMATION	Digital Survey of entire lease hold area/core zone u Remote Sensing survey shall be carried out at least o years for monitoring land use pattern and report in 1: as notified by Ministry of Environment, Forest and C (MoEFCC) from time to time shall be submitted to M Regional Office (RO)	nce in three 50,000 scale or limate Change
It has be Steel Li		s been done in 2025 by Natural Resources Division, Tata 001 (A QCI-NABET Accredited Agency). Report is	Date: 30/05/2025
39	LAND RECLAMATION	Post mining l/Forestry purpose and shall be handled respective State Government, as specified in the Guid preparation of Mine closure Plan, issued by the Mini dated 27th Auguust,2009 and subsequent amendmen	delines for stry of Coal
	ubmission: Complied een noted and shall be complied		Date: 28/05/2025
40	LAND RECLAMATION	Regular Monitoring of subsidence movement on th and around the working areas and its impact on natur pattern, water bodies, vegetation, structure, roads and	al drainage

		prescribed, appropriately effective mitigation measure to avoid loss of life and materials. Cracks should be ef plugged in with ballast and clay soil/suitable material.	fectively
	Submission: Complied een complied		Date: 28/05/2025
41	LAND RECLAMATION	Fly ash shall be used for external dump of overburde or stowing of mines as per provision contained in clau subparagraph (8) of fly ash notification issued vide SC 3rd Nov. 2009 as amended from time to time. Efforts as to utilize gypsum generated from flue Gas Desulfuriza any along with fly ash for external dump of overburde or stowing of mines. Compliance report shall be subm Regional office of MoEFCC, CPCB, and SPCB.	se (I) and (ii) 2804 E dated shall be made tion (FGD) if n, backfilling
	Submission: Complied een complied		Date: 28/05/2025
42	LAND RECLAMATION	A separate team for subsidence monitoring and surfa measures shall be constituted and continuous monitori implementation of mitigation measures be carried out.	ng &
A separ	Submission: Complied rate team including surveyors has be nce and implement mitigation meas	een made for continuous measurement and monitoring	Date: 28/05/2025
subside	nee and imprement invigation meas	utes.	
	LAND RECLAMATION	Through inspection of the mines lease area of any cr at the surface due to mining activities below ground sh out to prevent inrush of water in the mine.	
43 PPs S		Through inspection of the mines lease area of any cr at the surface due to mining activities below ground sh	nall be carried
43 PPs S	LAND RECLAMATION	Through inspection of the mines lease area of any cr at the surface due to mining activities below ground sh	Date: 28/05/2025
43 PPs S It is bei 44 PPs S General	LAND RECLAMATION Cubmission: Complied ng complied LAND RECLAMATION Cubmission: Complied	Through inspection of the mines lease area of any creat the surface due to mining activities below ground shout to prevent inrush of water in the mine. Native tree species shall be selected and planted over	Date: 28/05/2025 r areas affecte Date:
 43 PPs S 44 PPs S General land rec 	LAND RECLAMATION Submission: Complied LAND RECLAMATION Submission: Complied lly, no areas are as much affected by	Through inspection of the mines lease area of any cr at the surface due to mining activities below ground sh out to prevent inrush of water in the mine.	Date: 28/05/2025 r areas affecte Date: 28/05/2025 ive if any. In this ection of
 43 PPs S 44 PPs S General land rec 45 PPs S 	LAND RECLAMATION	Through inspection of the mines lease area of any crat the surface due to mining activities below ground shout to prevent inrush of water in the mine. Native tree species shall be selected and planted over by subsidence. y subsidence. However, native species are planted for the The Project proponent shall make necessary alternatiarrangements, if grazing land is for livestock grazing, context the project proponent shall implements the dire Hon'ble Supreme Court with regards to acquiring graz	Date: 28/05/2025 r areas affecte Date: 28/05/2025 ive if any. In this ection of

	Submission: Complied een noted and shall be complied	2	Date: 28/05/2025
47	GREENBELT	Green belt, consisting of three -tier plantation, of wh than 7.5 m shall be developed all along the mines lease phased manner. The green belt comprising of a mix of shall be developed all along the major roads/ coal tran roads.	e area in a Enatives specie
It is an	Submission: Complied ongoing process. Plantation is being er feasible.	carried out regularly in and around the premises	Date: 30/05/2025
48	Human Health Environment	Adequate illumination shall be ensured in all mine lo DGMS standards) and monitored.	ocation (as per
	Submission: Complied ation monitoring is done on regular b	basis as per DGMS norms.	Date: 28/05/2025
49	Human Health Environment	The project proponent shall undertake occupational for initial and Periodical medical examination of the w in the project and maintain records accordingly as per of the Mines Rule, 1995 and DGMS Circulars. Beside regular periodic health check-up of their workers, 20% engaged in active mining operations shall be subjected check-up for occupational disease and hearing impair	vorkers engage the provision s carrying out 6 of the worke l to health
	Submission: Complied ad PME rase done on regular basis th	rough our inhouse Tata Central Hospital.	Date: 28/05/2025
50	Human Health Environment	Personal (including outsourcing employees) working shall wear protective respiratory devices and shall also with adequate training and information on safety and l	be provide
Adequa	Submission: Complied ate on site and off-site job training ar I to wear from safety and environment	e given before deployment of employees. PPEs are being nt point of view.	Date: 28/05/2025
Adequa	ate on site and off-site job training ar		28/05/2025 S shall be
Adequa ensured 51 PPs S	ate on site and off-site job training ar to wear from safety and environment PUBLIC HEARING Submission: Complied	nt point of view. Skill training as per safety norms specified by DGM provided to all workmen including the outsourcing em	28/05/2025 S shall be
Adequa ensured 51 PPs S	ate on site and off-site job training ar to wear from safety and environment PUBLIC HEARING Submission: Complied	nt point of view. Skill training as per safety norms specified by DGM provided to all workmen including the outsourcing em ensure high safety standards in mines.	28/05/2025 S shall be aployees to Date: 28/05/2025 during the t shall ted with outies shall be the

53	PUBLIC HEARING	The project proponent shall follow the mitigation m provided in the Ministry's OM No. Z- 11013/5712014 dated 29th October, 2014, titled 'Impact of mining act habitations issues related to the mining projects where villages are the part of mines lease areas or habitation are surrounded by the mine lease area'.	-IA.II (M) ivities on habitation and
	Submission: Complied been noted and shall be complied		Date: 28/05/2025
54	Corporate Environmental Responsibility	The company shall have a well laid down environmeduly approve by the Board of Directors. The environmeshould prescribe for standard operating procedures had checks and balances and to bring in focus any infringements/deviation/violation of the environment/norms/conditions. The company shall have defined sy reporting infringements /deviation/violation of their environments/wildlife norms/conditions and /or shareholder/The copy of the board resolution in this regards shall MoEF&CC as a part of six monthly reports.	nental policy ve proper forest /wildlife stem of nvironment stockholders.
			Date:
	Submission: Complied ompany has well laid down Environr	nental Policy.	30/05/2025
55	Corporate Environmental Responsibility	A separate Environmental Cell both at the project ar head quarter level, with qualified personal shall be set control of senior Executive, who will directly to the h organization.	up under the
	Submission: Complied been complied		Date: 28/05/2025
56	Corporate Environmental Responsibility	Action Plan for implementation EMP and environm along with responsibility matrix of the company shall shall be duly approved by competent authority. The ye earmarked for environmental protection measures sha separate account and not to be providing for any other wise progress of implementation of action plan shall be the Ministry/Regional Office along with the six Mont Report.	be prepared ar ear wise funds Il be kept in purpose. Year be reported to
	Submission: Complied been noted and shall be complied		Date: 28/05/2025
57	Corporate Environmental Responsibility	Self-Environmental audit shall be conducted annual year third party environmental audit shall be carried o	
	Submission: Complied adit is conducted annually and IRQS	audit for EMS 14001:2015 are conducted every three	Date: 28/05/2025
58	MISCELLANEOUS	The project proponent shall make public the enviror clearance granted for their project along with the envi conditions and safeguards at their cost by prominently at least in two local newspaper of District or State of be in the vernacular language within seven days and it shall also be displayed in the projects proponents web permanently.	ronmental advertising it which one shal n addition this

	bmission: Complied en complied		Date: 28/05/2025
59	MISCELLANEOUS	The copies of the environmental clearance shall be projects proponents to the head of local bodies, panch Municipal Bodies in addition to relevant offices of the who in turn has to display the same for 30 days from receipt.	ayats and e Government
	bmission: Complied en complied		Date: 28/05/2025
60	MISCELLANEOUS	The project proponent shall upload the status of con Stipulated environment clearance conditions, includir monitored data on their website and update the same basis.	ng results of
	bmission: Complied en noted and shall be complied		Date: 28/05/2025
61	MISCELLANEOUS	The project proponent shall monitor the criteria poll namely; PM10, So2, NOx (ambient level) or critical s parameters, indicated for the projects and display the convenient location for disclosure to public and put o the company.	sectoral same at a
	bmission: Complied en complied		Date: 28/05/2025
62	MISCELLANEOUS	The project proponent shall submit six monthly monthly the status of the compliance of stipulated environment the and Climate Change at environmental clearance p	t conditions on
	bmission: Complied en noted and shall be complied		Date: 28/05/2025
63	MISCELLANEOUS	The project proponent shall follow the mitigation m in this Ministry's OM No. Z-11013/5712014-IA.II (M October, 2014, Titled "Impact of mining activities on issues related to the mining projects wherein habitation are the apart of mine lease areas or habitations and vis surrounded by the mines lease area.	I) dated 29th habitation - ons and village
	bmission: Complied e mitigation measures are in pla	ce for any impact on surrounding environment/ habitations.	Date: 28/05/2025
64	MISCELLANEOUS	The project proponent shall submit the environment each financial year in FORM-V the concerned State p Board as prescribe under the Environment Rule, 1986 subsequently and put on the Website of the company.	oollution Contr 5 as amended
Environr	bmission: Complied nental Statement has been subm V/ESSA/05/564/2024 on 27th S	itted on time to the concerned authorities. vide letter no. September 2024.	Date: 28/05/2025

	ubmission: Complied ning activities are ongoing since me	ore than 100 years.	Date: 28/05/2025
66	MISCELLANEOUS	The project authorities must strictly adhere to the st by the State Pollution Control Board and the State Go	
	ubmission: Complied complied		Date: 28/05/2025
67	MISCELLANEOUS	The project proponent shall abide by all the commit recommendations made in the EIA/EMP report, comm during public hearing and also that during their presen Expert Appraisal Committee.	nitment made
	ubmission: Complied een noted and shall be complied		Date: 28/05/2025
68	MISCELLANEOUS	Concealing factual data or submission of false /fabr result in revocation of this environmental clearance a under this provision of Environment (Protection) Act	nd attract actio
	ubmission: Complied een noted		Date: 28/05/2025
69	MISCELLANEOUS	The Ministry may revoke or suspend the clearance, implementation of any of the above conditions is not	
	ubmission: Complied een agreed		Date: 28/05/2025
70	MISCELLANEOUS	The Ministry reserve the right to stipulate additiona found necessary .The company in a time bound mann implement these conditions.	
PPs S Agreed	ubmission: Complied		Date: 28/05/2025
71	MISCELLANEOUS	The Regional office of this Ministry shall monitor of the stipulated conditions The project authorities shoul cooperation to the officers of the Regional Office by requisite data /information/monitoring reports.	d extend full
PPs S Agreed	ubmission: Complied		Date: 28/05/2025
72	MISCELLANEOUS	The above conditions shall be enforced, inter-alia u provisions of the Water (Prevention & Control of Pol 1986, Hazardous and Other Waste (Managements and Boundary Movement) Rules, 2016 and the Public Lia Act, 1991 along with their amendments and Rules and orders by the Hon'ble Supreme Court of India/ High C other Court of Law relating to the subject matter.	lution) Act, l Trans- bility Insurand l any other

	ubmission: Complied een agreed		Date: 28/05/2025
73	MISCELLANEOUS	The proponent shall obtain all necessary Clarence / may be required before the start of the project. The M other competent authority may stipulate any further c environmental protection. Ministry or any other com may stipulate any further condition for Environment	finistry or any condition for petent authority
	ubmission: Complied een agreed		Date: 28/05/2025
74	MISCELLANEOUS	Any appeal against this environmental clearance sh Green Tribunal if Preferred, with in a period of 30 da under section 16 of the National Green Tribunal Act,	y as prescribed
PPs S Not requ	ubmission: Complied uired		Date: 28/05/2025
75	MISCELLANEOUS	The coal company\/project proponent shall be liable compensation against the illegal mining, if any, and r respective state Government at any point of time in to orders dated 2nd August, 2017 of Hon'ble Supreme O (Civil) No114/2014 in the matter of Common Cause India & others.	raised by the erms of the Court in WP
PPs S Agreed	ubmission: Complied		Date: 28/05/2025
76	MISCELLANEOUS	The concerned State Government shall ensure no m to commence till the entire compensation for illegal m paid by the project proponents through their respective Of Mining & Geology, in strict compliance of judger Supreme Court.	nining if any is ve Department
	ubmission: Complied een noted		Date: 28/05/2025
77	MISCELLANEOUS	This environmental clearance shall not be operation project proponent complies with the above said judge Supreme Court, as applicable, and other statutory req	ement of Hon'b
PPs S Agreed	ubmission: Complied		Date: 28/05/2025
78	MISCELLANEOUS	No further expansion or modifications in the plant out without prior approval of the Ministry of Environ Climate Change.	
	ubmission: Complied een Agreed		Date: 28/05/2025
		Visit Remarks	
	Address: IA	Division, Ministry of Environment, Forest and Climate Change,	Page

ast Site Visit Report Date:	N/A	
dditional Remarks:		
Note: This acknowledgement is as per the considered as conclusion on any action or	he details submitted by project proponent. In no way is this document to on the compliance of the project. This is strictly for the project propone reference purpose.	to be ent's

HALF YEARLY COMPLIANCE REPORT (PERIOD: OCTOBER-2024 TO MARCH-2025)

JAMADOBA UNDERGROUND COAL MINE

(CAPACITY: 0.34 MTPA) TEHSIL: JHARIA, DIST: DHANBAD, JHARKHAND



TATA STEEL LIMITED, JHARIA DIVISION

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

ENVIRONMENTAL CLEARANCE GRANTED VIDE LETTER NO. J-11015/91/2017-IA.II (M) dated July 11, 2022 ISSUED BY GOVT. OF INDIA, MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, NEW DELHI.

Sl. No.	Consent Condition	Compliance Status
i	PP to obtain the CTO for 0.34 MTPA capacities immediately after grant of EC.	Consent to Operate for the existing capacity has been obtained from the State PCB on 31.01.2025 and is valid till 31.12.2025. The production from the mines have been discontinued since January 2024.
ii	PP to conserve the Kari jhore, Dungri jhore, Damodar River following within the core area of the project and the measure taken for its conservation to be furnished in every six- monthly compliance to be reported to respective IRO and SPCB.	Garland drains have been constructed around the boundary premises of the mines. Moreover, the production from the mines has been suspended since January 2024. Reclamation activities are ongoing and hence there is no adverse impact envisaged from the mines.
iii	Since there is also Jamadoba Coal washery located within mine lease having separated EC vide Letter No J-11015/203/2011-II-IA(M) dated 3rd March 2014 so the adequate EMP measure to be adopted to minimize the cumulative impact, also the utilization of rejects generated from washery should be managed as per norms. PP shall obtain integrated EC for future coal/washery expansion.	There are existing environmental measures for the Jamadoba Coal preparation plant. The rejects like tailing, middling etc are utilized as per norms. The integrated EC shall be taken in case of washery expansion.
iv	PP shall obtain No objection certificate from Ground water Authority for extraction of ground water within six months and submit to IRO Ranchi.	The NOC from central Ground Water Authority for extraction of ground water was granted vide NOC No. CGWA/NOC/MIN/REN/1/2024/101 24; dated: 05.11.2024.
v	PP Shall reduce river sand used for stowing and explore usage of sand segregated from OB dump from any nearest mine (either its own or any mine) and submit detailed report to IRO Ranchi.	We are in the process of technological exploration of sand from OB dump.
vi	PP shall follow the recommendation of subsidence study and monitor the degree of subsidence regularly and shall be submitted to IRO- Ranchi.	The subsidence is monitored regularly, and the recommendations are implemented.
vii	PP to accomplish the requirement of a full fledge qualified manpower with Environmental Engineer/Env. Science degree background in Environmental Management Cell etc. within six months and same shall be reported to IRO,	We have a full-fledged Environment cell with Environment professionals and field monitoring staff.

	July 11, 2022	
viii	MoEF&CC PP to fulfil all the commitment made to address the public hearing issued in time bound manner as committed in EIA EMP report in Chapter & table 7.1 and a progressive report to be furnished to IRO with six monthly compliance report PP to maintain the transportation road properly	The commitments made during the public hearing are being complied in time bound manner. The timeline mentioned in Table 7.1 is strictly followed. The report showing the status has been attached as Annexure-IV. The transportation roads in core and
ix	to minimize the dust emission. PP to also develop puce roads by seeking consent from the panchayat with widening of roads especially roads inters linking the villages within the study area of 10 Km radius buffer zone.	buffer zones are maintained properly to minimize the dust emission. The construction of roads in nearby villages are continuous process in consent with panchayat.
x	PP to complete the estimated allocated budgetary expenditure for EMP capital cost is Rs.273.0 lakhs & Recurring cost is Rs.1359.4 Lakhs per year as per its letter dated JMB/115/001339 dated 3rd September, 2021. Capital EMP budget shall be completed within strict timeline.	It is being complied. Capital EMP budget expenditure has been completed. Recurring cost on the environment is reported every year in the environment statement.
xi	PP to monitor the water quality of the ground water and surface water body located within the core zone and 5 Km radius from the periphery of the mine boundary as per procedure laid down by CPCB.	It has been complied.
xii	PP to install More continuous ambient air quality stations at suitable locations preferably village side with consultation of SPCB. The real time data so generated shall be uploaded on company website and linked it with website of CPCB & SPCB. In addition, data should also be displayed digitally at entry and exit gate of mine lease for public display.	A CAAQMS is being installed in Jamadoba group since 2014. A new CAAQMS has been installed recently in July 2022 and the data connectivity to SPCB, Jharkhand has been done.
xiii	PP shall develop rainwater harvesting in Jamadoba coal washery as proposed by PP in vide Letter dated JMB/115/001339 dated 3rd September, 2021 & water harvesting ponds near the villages of suitable area as suggested by EAC in consultation with Gram Panchayat within year and with cultivation of Lotus.	There are a number of ponds developed 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. Rain water harvesting structure inside the washery premises shall be

uuttu	July 11, 2022	
		complied. Work has been initiated and under progress.
xiv	PP must seek the input of experts for phytoremediation of Slurry and accordingly work on it with proper scientific approach.	There is no generation of slurry during raw coal production.
XV	PP to plant additional 100,000 plants with three tier plantations along the transportation route, if not completed, and identified areas with consent to the gram panchayat within two year and plant for remaining within 2 years for their proper growth.	Plantation and green belt development is a continuous process. For FY 24, around 12452 saplings have been planted. For FY25 12313 saplings have been planted Green belt report has been attached as Annexure-I.
xvi	PP to install solar lights along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with in its maintenance within the study area of 10 km radius buffer zone within one year	Adequate lighting facilities have been installed along the roads. Several facilities under CSR, including lights have been provided in the area.
xvii	Proponent shall appoint an occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the project and maintain records accordingly also Occupational health check-up for workers having some ailments like BP, diabetes, habitual smoking etc. shall be undertaken once in six months and necessary redial/preventive measures taken accordingly. The recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented. The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.	It has been complied. It's a continuous process. There is fully developed Tata Central Hospital in Jamadoba to take care of all these types of concerns of community.
xviii	Persons of nearby villages shall be given training on livelihood and skill development makes them employable with its proper records.	It is a continuous process and has been complied. Separate training cell (JNTVTI) has been developed for skill based training of local youth.
xix	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may effects the health in the village located aloes tom mining operations. Habitations have a right for darkness and minimal noise levels at nights, PPs must ensure that the biological clock of the villages is not distributed by orienting the floodlights/masks away from the villagers and keeping the noise	It has been noted and shall be complied strictly.

uateu	July 11, 2022	
	levels well within the prescribed limits for day	
	lights/night hours	
xx	PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.	It has been noted and shall be complied.
xxi	PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground A dedicated team to oversee environment management shall be setup which should comprise of Environmental Engineer, Laboratory chemist and staff for monitoring of air , water quality parameters on routine basis. Any non-compliance or infringement should be reported to the concerned authority.	We have a full-fledged Environment cell with Environment professionals and field monitoring staff.
4.1	The grant of Environment Compliance (EC) is Standard EC Conditions as under:	further subject to compliance of the
(a)	Statutory Compliance:	
i	The Environmental clearance shall be subject orders of Hon'ble Supreme Court of India. Hon'ble High Courts, NGT and any other Court of Law, from time to time, and as applicable to the project.	It has been noted.
ii	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non- forest purpose involved in the project.	It is not applicable.
iii	The Project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	
iv	The project proponent shall prepare a site- specific conservation plan/wildlife management Plan and approved by the Chief Wildlife Warden. The recommendation of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule I species in the study area)	There is no Schedule-I species in the study area.
v	The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and Water (Prevention & Control of Pollution)	The CTE has been obtained fromJSPCBvideletterno.JSPCB/HO/RNC/CTE-14115974/2022/523dated

aatea	July 11, 2022	
	Act, 1974 from the Concerned State Pollution Control Board/Committee.	12.11.2022 & CTO has been received from JSPCB with Ref No. JSPCB/HO/RNC/CTO- 13955624/2022/1601 dated 14.11.2022.
vi	The project proponent shall obtain the necessary permission from the Central Ground Water Authority.	The NOC from central Ground Water Authority for extraction of ground water was granted vide NOC No. CGWA/NOC/MIN/REN/1/2024/101 24; dated: 05.11.2024.
vii	Solid Waste/Hazardous Waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules,2016/ Hazardous & Other Waste Management Rules,2016	It has been noted and shall be complied.
I.(a)	Air Quality Monitoring and Preservation	
i	Adequate ambient air quality monitoring stations shall be established in core zone as well as in the buffer zone for monitoring of pollutants, namely particulates ,SO2and NOx location of the Station shall be decided based on the metrological data, topographical features and environmentally and ecologically sensitive in consultation with the State Pollution Control Board. Monitoring of heavy metal such as Hg, As, Ni, Cd, Cr, etc. to be carried out at least once in six months. Online ambient air quality monitoring station may also be installed in addition to the regular air monitoring stations as per the requirement and /or in consultation with the SPCB.	It has been complied
ii	The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the coal Industry Standards notifies vide GSR 742 E dated 25.09.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.	Ambient air quality of core as well as buffer zone are measures by inhouse environmental laboratory as well as third party NABL recognised lab. Report has been attached as Annexure-II.
iii	Transportation of coal, to the extent permitted by road shall be carried out by covered trucks/conveyors .Effective control measure such as regular water sprinkling /rain gun/mist sprinkling etc. shall be carried out in critical areas prone to air pollution with higher level of particulate matter all through the coal; transport	The production from the mine has been discontinued from January 2024. Transportation of coal from colliery to washery was done through covered conveyor belts. Road transportation is done through

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	roads., loading /Unloading and transfer points.	covered truck only.
	Fugitive dust emissions from all sources shall be	
	controlled regularly. It shall be ensured that the	
	ambient air quality parameters conform to the norms prescribed by the Central/ State Pollution	
	Control Board.	
	Major approach roads shall be black topped and	It has been complied
iv	properly maintained.	it has been complied
	The transportation of coal shall be carried out as	The production from the mine has
	per the provision and route proposed in the	been discontinued from January
	approved mining plan. Transportation of coal	2024.
	through the exiting road passing through any	Transportation of coal from colliery
v	village shall be avoided. In case it is proposed to	to washery was done through
	construct a bypass road it should be so	covered conveyor belts. Road
	constructed that the impact of sound, dust and	transportation is done through
	accidents could be appropriately mitigated.	covered truck only.
	Vehicular emissions shall be kept under control	It has been complied
.	and regularly monitored. All the vehicles	
vi	engaged in mining and allied activities shall	
	operate only after obtaining PUC' certificate	
	from the authorized pollution testing centres.	
	Coal Stock pile/crusher/feeder and breaker	It has been complied
	material transfer points shall invariably be	
	provided with dust suppression system. Belt	
vii	conveyors shall be fully covered to avoid air	
	borne dust Side cladding all along the conveyor	
	gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust	
	extractors.	
	Coal handling plant shall be operated with	CHP is being operated using dry fog
	effective control measures w.r.t various	system, water sprinklers, mist canons
viii	environmental parameters. Environmental	and other various effective dust
	friendly sustainable technology should be	control measures.
	implemented for mitigating such parameters.	
(b)	Water Quality Monitoring and Preservation	
	The effluent discharge(mine waste water,	Water quality analysis discharge
	workshop effluent) shall be monitored in terms	from mine sump, effluent treatment
i	of the parameters notified under the Water Act,	plants, sewage treatment plants are
1	1974 Coal Industry Standard vide GSR 742 E,	done regularly.
	dated 25.09.2000 an as amended from time to	
	time by the Central Pollution Control Board .	
	The Monitoring data shall be uploaded on the	Monitoring data are being uploaded
	company's website and displayed at the project	along with the half yearly
	site at a suitable location. The Circular NO. J-	compliance report on Tata Steel
ii	20012/1/2006-1A.11 (M) dated 27.05.2009	Limited website.
	issued by Ministry of Environment, Forest and	
	Climate Change shall also be referred in this	
	regards for its compliance.	

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

uateu	July 11, 2022	
	Act, 1986 and the rules made thereunder, and as amended from time to time. Oil and grease trap shall be installed before discharge of workshop affluent. Sewage treatment plant of adequate capacity shall be installed for treatment of domestic waste water.	
X	Adequate ground water recharge measure shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby villages in case the village wells go dry to dewatering of mine.	Water recharge structures are being constructed and renewed regularly in the nearby villages.
xi	The surface drainage plan including surface water conservation of area of influence affected by the said miming operations shall be prepared, considering the presence of any river/rivulet/pond/lake etc. with impact of mining activities on it. And implemented by the project proponent. The surface drainage plan and /or any diversion of natural water courses shall be as per the provisions of the approved Mining Plan /EIA/EMP submitted to this Ministry and the same should be as per the approved mining plan and as per the permission of DGMS.	It has been noted and shall be complied
xii	The project proponent shall take all precautionary measure to ensure reverian/riparian ecosystem in and around the coal mine up to a distance of 5 km. a revarian/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation/water resources department in the state government.	It has been noted and shall be complied
(c)	Noise and Vibration Monitoring and Prevention	
i	Adequate measures shall be taken for control of noise levels below 85 db. (A) in the work environment. Workers engaged in underground mining operations of HEMM etc. shall be provided with personal protective equipment's (PPE) like ear plugs/muffs in conformity with the prescribed norms/guidelines in this regards. Progress in usage of such accessories to be monitored. Adequate awareness programme for users to be conducted.	It has been complied
ii	The noise level survey shall be carried out as per the prescribed gridlines to assess noise exposure of the workmen at vulnerable points in the mines premises, and report in this regard shall be	It has been complied. The report has been attached in Annexure-II.

uaicu	July 11, 2022	1
	submitted to the Ministry/RO on six monthly	
	basis.	
(d)	Mining Plan	
i	Mining shall be carried out under strict adherence to provisions of Mines Act 1952 and subordinate legislations made there under as applicable.	It has been noted and shall be complied.
ii	No change in mining method i.e. UG to OC, calendar programme and scope of work shall be made without obtaining prior approval of the Ministry of Environment Forest, and Climate Change (MoEFCC)	It has been noted and shall be complied.
iii	Mining shall be carried out as per the approved mining plan (including mines closure plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General of Mines Safety (DGMS)	It has been noted and shall be complied.
iv	Underground work place environment conditions shall be rendered ergonomic and air breathable with adequate illumination in conformance with DGMS Standards.	It has been complied
V	No mining activity shall be carried out in forest land without forestry clearance as per forest (Conservations) Act, 1980 and also adhering to the Scheduled tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act,2006 read with provisions of Indian Forest Act,1927	It has been noted. No forest land involved.
vi	Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.	It has been noted and shall be complied
(e)	Land Reclamation	
(e) i	Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MoEFCC) from time to time shall be submitted to MoEFCC/ Regional Office (RO)	It has been complied. The LULC study has been done in 2025 by Natural Resources Division, Tata Steel Limited, Jamshedpur, Jharkhand – 831001 (A QCI- NABET Accredited Agency). Report is attached as Annexure-III.
ii	Post mining l/Forestry purpose and shall be handled over to the respective State Government, as specified in the Guidelines for preparation of Mine closure Plan, issued by the Ministry of Coal dated 27th Auguust,2009 and subsequent amendments	It has been noted and shall be complied
iii	Regular Monitoring of subsidence movement on the surface over and around the working areas	It has been complied

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	and its impact on natural drainage pattern, water bodies, vegetation, structure, roads and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence beyond the limit prescribed, appropriately effective mitigation measures shall be taken to avoid loss of life and materials. Cracks should be effectively plugged in with ballast and clay soil/suitable material.	
iv	Fly ash shall be used for external dump of overburden, backfilling, or stowing of mines as per provision contained in clause (I)and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 E dated 3rd Nov. 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from flue Gas Desulfurization (FGD) if any along with fly ash for external dump of overburden, backfilling or stowing of mines. Compliance report shall be submitted to Regional office of MoEFCC, CPCB, and SPCB.	It is being complied.
v	A separate team for subsidence monitoring and surface mitigation measures shall be constituted and continuous monitoring & implementation of mitigation measures be carried out.	A separate team including surveyors has been made for continuous measurement and monitoring subsidence and implement mitigation measures.
vi	Through inspection of the mines lease area of any cracks developed at the surface due to mining activities below ground shall be carried out to prevent inrush of water in the mine.	It is being complied
vii	Native tree species shall be selected and planted over areas affected by subsidence.	Generally, no areas are as much affected by subsidence. However, native species are planted for the land reclamation.
viii	The Project proponent shall make necessary alternative arrangements, if grazing land is for livestock grazing, if any. In this context the project proponent shall implements the direction of Hon'ble Supreme Court with regards to acquiring grazing land.	Not applicable as it is an underground mine
(f)	Green Belt	
i	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any spotted/ reported in the study area. Action plan, in this regards if any shall be prepared and implemented in consultation with the State Forest and Wildlife Department.	It has been noted and shall be complied

	July 11, 2022	
ii	Green belt, consisting of three -tier plantation, of which not less than 7.5 m shall be developed all along the mines lease area in a phased manner. The green belt comprising of a mix of natives species shall be developed all along the major roads/ coal transportation roads.	It is an ongoing process. Plantation is being carried out regularly in and around the premises wherever feasible.
(g)	Public Hearing and Human Health Issues	
i	Adequate illumination shall be ensured in all mine location (as per DGMS standards) and monitored.	Illumination monitoring is done on regular basis as per DGMS norms.
ii	The project proponent shall undertake occupational Health survey for initial and Periodical medical examination of the workers engaged in the project and maintain records accordingly as per the provision of the Mines Rule, 1995 and DGMS Circulars. Besides carrying out regular periodic health check-up of their workers, 20% of the workers engaged in active mining operations shall be subjected to health check-up for occupational disease and hearing impairment, if any.	IME and PME rase done on regular basis through our inhouse Tata Central Hospital.
iii	Personal (including outsourcing employees) working in dusty area shall wear protective respiratory devices and shall also be provide with adequate training and information on safety and health aspects.	Adequate on site and off-site job training are given before deployment of employees. PPEs are being ensured to wear from safety and environment point of view.
iv	Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.	Skill training along with basis safety training are done before deployment of employees to work.
V	Effective arrangements shall be made to provide and maintain at suitable point's conveniently situated, a sufficient supply of drinking water for all the persons employed.	
vi	Implementation of Action Plan on the issues raised during the public hearing shall be ensured. The Project Proponent shall undertake all the tasks as per the Action Plan Submitted with budgetary provisions during the Public Hearing. Land outies shall be compensated as per the norms laid out R&R Policy of the Company/or the National R&R Polity/R & R Policy of State Government as applicable.	It is under progress and shall be complied. The various action plans are in various stages of compliance.
vii	The project proponent shall follow the mitigation measures provided in the Ministry's OM No. Z- 11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations issues related to the mining projects	It has been noted and shall be complied

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	where habitation and villages are the part of	
	mines lease areas or habitations and villages are	
	surrounded by the mine lease area'.	
(h)	Corporate Environment Responsibility	
i	The company shall have a well laid down	The company has well laid down
	environmental policy duly approve by the Board	Environmental Policy.
	of Directors. The environmental policy should	-
	prescribe for standard operating procedures have	
	proper checks and balances and to bring in focus	
	any infringements/deviation/violation of the	
	environment/forest /wildlife norms/conditions.	
	The company shall have defined system of	
	reporting infringements /deviation/violation of	
	their environment /forest/wildlife	
	norms/conditions and /or shareholder/	
	stockholders. The copy of the board resolution in	
	this regards shall be submitted to MoEF&CC as	
	a part of six monthly reports.	
ii	A separate Environmental Cell both at the	It has been complied
	project and company head quarter level, with	it has been complied
	qualified personal shall be set up under the	
	control of senior Executive, who will directly to	
	the head of the organization.	
iii	Action Plan for implementation EMP and	It has been noted and shall be
	environmental conditions along with	complied
	responsibility matrix of the company shall be	complica
	prepared and shall be duly approved by	
	competent authority. The year wise funds	
	earmarked for environmental protection	
	measures shall be kept in separate account and	
	not to be providing for any other purpose. Year	
	wise progress of implementation of action plan	
	shall be reported to the Ministry/Regional Office	
	along with the six Monthly Compliance Report.	
iv	Self-Environmental audit shall be conducted	Self-audit is conducted annually and
	annually. Every three year third party	IRQS audit for EMS 14001:2015 are
	environmental audit shall be carried out.	conducted every three year.
	Miscellaneous	
i	The project proponent shall make public the	It has been complied
	environmental clearance granted for their project	-
	along with the environmental conditions and	
	safeguards at their cost by prominently	
	advertising it at least in two local newspaper of	
	District or State of which one shall be in the	
	vernacular language within seven days and in	
	addition this shall also be displayed in the	
	projects proponents website permanently.	

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ii	The copies of the environmental clearance shall be submitted by the projects proponents to the head of local bodies, panchayats and Municipal Bodies in addition to relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	It has been complied
iii	The project proponent shall upload the status of compliance of the Stipulated environment clearance conditions, including results of monitored data on their website and update the same on half yearly basis.	It has been noted and shall be complied
iv	The project proponent shall monitor the criteria pollutants level namely; MP10, So2, NOx (ambient level) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to public and put on the website of the company.	It has been complied
v	The project proponent shall submit six monthly monthly reports on the status of the compliance of stipulated environment conditions on the website of the Ministry of Environment, Forest and Climate Change at environmental clearance portal.	It has been noted and shall be complied
vi	The project proponent shall follow the mitigation measure provided in this Ministry's OM No. Z- 11013/5712014-IA.II (M) dated 29th October, 2014, Titled "Impact of mining activities on habitation - issues related to the mining projects wherein habitations and villages are the apart of mine lease areas or habitations and villages are surrounded by the mines lease area.	Adequate mitigation measures are in place for any impact on surrounding environment/ habitations.
vii	The project proponent shall submit the environmental statement for each financial year in FORM-V the concerned State pollution Control Board as prescribe under the Environment Rule, 1986 as amended subsequently and put on the Website of the company.	Environmental Statement has been submitted on time to the concerned authorities. vide letter no. JMB/ENV/ESSA/05/564/2024 on 27th September 2024.
viii	The project authorities shall inform to the regional Office of MoEF&CC regarding commencement of mining operations.	The mining activities are ongoing since more than 100 years.
ix	The project authorities must strictly adhere to the stipulation made by the State Pollution Control Board and the State Government.	Shall be complied
X	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during public hearing and also that during their	It has been noted and shall be complied

uuttu	1 July 11, 2022	· · · · · · · · · · · · · · · · · · ·
	presentation to the Expert Appraisal Committee.	
xi	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change.	It has been Agreed
xii	Concealing factual data or submission of false /fabricated data may result in revocation of this environmental clearance and attract action under this provision of Environment (Protection) Act, 1986.	It has been noted
xiii	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	It has been agreed
xiv	The Ministry reserve the right to stipulate additional condition if found necessary .The company in a time bound manner shall implement these conditions.	Agreed
XV	The Regional office of this Ministry shall monitor compliance of the stipulated conditions The project authorities should extend full cooperation to the officers of the Regional Office by furnishing the requisite data /information/monitoring reports.	Agreed
xvi	The above conditions shall be enforced, inter- alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1986, Hazardous and Other Waste (Managements and Trans- Boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders by the Hon'ble Supreme Court of India/ High Court and any other Court of Law relating to the subject matter.	It has been agreed
5	The Proponent shall abide by all the commitments and recommendation made in the EIA/EMP report and also that during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.	All the commitment and recommendations made as per Public hearing are under process of completion.
6	The proponent shall obtain all necessary Clarence /approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. Ministry or any other competent authority may stipulate any further condition for Environment protection.	It has been agreed

dated July 11, 2022		
7	Any appeal against this environmental clearance shall lie with the Green Tribunal if Preferred, with in a period of 30 day as prescribed under section 16 of the National Green Tribunal Act, 2010.	Not required
8	The coal company//project proponent shall be liable to pay compensation against the illegal mining, if any, and raised by the respective state Government at any point of time in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No114/2014 in the matter of Common Cause Vs Union of India & others.	Agreed
9	The concerned State Government shall ensure no mining operations to commence till the entire compensation for illegal mining if any is paid by the project proponents through their respective Department Of Mining & Geology, in strict compliance of judgement of Hon'ble Supreme Court.	It has been noted
10	This environmental clearance shall not be operational till time the project proponent complies with the above said judgement of Hon'ble Supreme Court, as applicable, and other statutory requirements.	Agreed
Statement showing measures taken for increasing tree and forest cover

Plantation activities are carried out in the barren land of the colliery leasehold area to increase the green cover as well as in the washery premises. Care is taken to plant only the native species so that native ecosystem is preserved. Following are the details of mass plantation in our leasehold area of Jharia Division for greenery development.

Year	No. of trees planted
FY14	10195
FY15	15800
FY16	10000
FY17	10900
FY18	8500
FY19	10000
FY20	50235
FY21	3000
FY22	10005
FY23	25117
FY24	12452
FY25	12313

Glimpses of plantation activities for FY25:







Before

After





Before

After





Before

After





Before

After





Before

After



Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

Statements :

1. The test report refers only to the particular item(s) submitted for testing.

2. The test results reported in this report are valid at the time of and under the stated condition of measurment.

DS	ISO/II		ting Labor BL ACCREDI Board of Quality	atory TED y Council of In	dia)	Jharkhand - Email ID: sir Website: ad Phone: 0326 Fax: 0326-2	strial Årea, arh, Dist - Dhanbao 828107 hdriaditi@gmail.com itimdservices.com 5-2952377 (O),
Ref. N	No.: - A	ARDS/24-25/ AAQ/2			Date	e: 04/12/20	024
		TEST RE	PORT OF A	MBIENT AI	R QUALITY		
•	Nam	e of the industry	TATA S	TA STEEL, J. TEEL LIMITI OBA GROUI DHANBAD (J	ED		
	Wor	k Order Ref. NO.:	: 4700126	557/932 Date	- 29/05/2024		
	Date	of Sample Collection	on : 26/11/202	4 to 27/11/2	024		
		of Testing		24 to 02/12/2			
		Procedure	: As per IS-				
18	1.1.1.1.1			54970			
			TEST	RESULTS			
		LOCATION	- OFFICERS	COLONY, 12	NO. DIGWADIH		
		Avg. Ambient Te	mperature	25°C	Avg. Humid	ity	46%
SIN	No.	Particulars		Value	NAAQ - CPC	B STAND	ARD
	1.	Particulate Matter (PM	l ₁₀), μg/m ³	76.58	100	µg/m³	
1	2.	Particulate Matter (PM	l _{2.5}), µg/m³	41.36	60	µg/m³	¥.
	3.	SO ₂ , µg/m ³		18.73	80	µg/m³	
4	4.	NO ₂ , µg/m ³	1.50	26.65	80	µg/m³	
	5.	Ozone, µg/m ³		16.76	180	µg/m³	
	6.	NH ₃ , µg/m ³		13.78	400	µg/m³	
	7.	CO, mg/m ³		0.71	4 n	na/m³	

NOTE: BDL - Below Detection Limit

Benzene, µg/m3

Benzoapyrene ng/m³

Pb, µg/m³

As, ng/m3

Ni, ng/m³

8.

9.

10.

11.

12.





BDL

BDL

BDL

BDL

BDL

Technical Manager Aditi R&D Services, Sindri

1 µg/m3

6 ng/m³

20 ng/m³

5 µg/m³

1 ng/m³

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NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

Statements :

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NOTE: BDL - Below Detection Limit





Technica anager Aditi R&D Services, Sindri

Statements :

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2. The test results reported in this report are valid at the time of and under the stated condition of measurment.

DS		Constit	Test NAI	& D S ing Lab BL ACCRI bard of Qu 01:2015,IS	oratory DITED ality Coun	cil of l	India)	P.O Don Jharkhan Email ID: Website: 0 Phone: 00 Fax: 0326	dustrial Area, ngarh, Dist Dhan d - 828107 sindriaditi@gmail. aditimdservices.cc 326-2952377 (O), i-2952377 3471358492, 0943
1								ONITORING	
	Ref. No	. & Date			N	AME	AND ADDRE	SS OF THE CL	ENT
ARI	DS/24-25/NOIS	E/1Date	: 04/12					L, JAMADOB	
	Date of N	Ionitori	ng					MADOBA GR D (JHARKHAN	
	25/11/2024 1	To 27/11	/2024		Avg. Ambient mperatur (°C)	1	Average Humidity (%)	Weather Condition	Status of the plant
	Work Order 4				25		49	Clear	Running
	Date:- 2	9/05/202	4	MONIT	ORING	RESU	LTS		1
SI. No	Place of Monitoring	(Day T 6 AM to Avg. d	10 PM)		10 PM	t Time to 6 AM) dB(A)	for Industr CPCB No (Regulatio (Amendme notified via Dt. 2	Ambient standard rial Area as per bise Pollution on and Control) nt) Rules, 2000 de S.O. 1046(E) 2.11.2020 n dB(A) Leg
				3.0				Day Time	Night Time
JAN	LOCATION ADOBA GROUP	MAX	MIN	AVG. dB(A Leq	MAX	MIN	AVERAGE dB(A) Leq	Industrial Area	Industrial Area
1.	Central Workshop Area	57.9	54.3	56.46	49.6	42.1	47.3	75	70
2.	6 & 7 Pits Colliery Office	59.7	51.9	57.36	46.8	40.6	44.72		
								Residential Area	Residential Area
3.	Officer Colony 12 No. Digwadih	53.4	49.6	51.9	45.6	42.7	44.39	65	55
							-	Silence Zone	Silence Zone
4.	Tata Central Hospital	47.2	42.8	45.53	39.4	36.4	38.15	50	40
	Sr. Chemi Aditi R&D		la la		The second secon		Tech Aditi R&I	nical Manag D Services, S	er Sindri

The test results reported in this report are valid at the time of and under the stated condition of measurment.
 This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory.



SI No.	Particulars	Miner	alogical (Compositi	on (%)
	그 가지 않는 것이 있는	SiO ₂	FeO	Al ₂ O ₃	CaO
1.	Central Work Shop Area, Jamadoba	1.90	0.14	1.41	2.8
2.	Officer Colony 12 No. Digwadih	1.87	0.12	1.35	2.36





Technical Aditi R&D Services, Sindri

Statements :

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2. The test results reported in this report are valid at the time of and under the stated condition of measurment.

R D S		ing Lai BL ACCE	boratory REDITED uality Council	of India)	Plot No I-B-17 (P) Sindri, Industrial Area, P.O Domgarh, Dist Dhanbai Jharkhand - 828107 Email ID: sindriaditi@gmail.co Website: aditimdservices.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 094315
Ref. N	lo.: - ARDS/24-25/SW/1				Date: 04/12/2024
	TEST R	EPORT	OF SURF	ACE WATE	R
	Name of the industry	: M/S	TATA STEE	L, JAMADOE	3A,
		TAT	A STEEL LI	MITED	
		JAN	ADOBA GR	OUP PLANT	
				D (JHARKH	•
		DIS			
•	Work Order Ref. NO.:	:		932 Date:- 29	
•	Sample Code			River Up St River Down	
	Date of Sample Collecti	on:	27/11/2024	River Down	Stream
	Date of Testing	:		To 03/12/202	24
	Test	:	pH, TDS, Tu	urbidity, DO,	BOD, CI, F, SO4
		т	ST RESULT		
		1.	ST RESULT		
SI.	PARAMETERS OF TE	ST	VA	LUE	Test
No.	1.00		Damodar River Up Stream	Damodar River Dn Stream	Method
1.	pH		7.2	7.3	IS-3025 (P-11): 1983
2.	Total Dissolved Solids	, mg/l	410	428	IS-3025 (P-16): 1984
3.	Turbidity, NTU		2	2	IS-3025 (P-10):1984
4.	Dissolved Oxygen, r	ng/l	5.6	5.8	IS-3025 (P-38):1989
5.	Bio chemical Oxyg Demand, mg/l	en	1.6	1.9	IS-3025 (P-44):1994
6.	Chloride as Cl, mg	g/l	28	27.5	IS-3025 (P-32):1988
7.	Fluoride as F, mg	/1	0.58	0.62	IS-3025 (P-60):2008





65.0

60.4

Technical Manager Aditi R&D Services, Sindri

IS-3025 (P-24):1986

Statements :

8.

1. The test report refers only to the particular item(s) submitted for testing.

Sulphate as SO₄, mg/l

2. The test results reported in this report are valid at the time of and under the stated condition of measurment.

	a la	DITIR			CES	Plot No I-B-17 (P) Sindri, Industrial Area P.O Domgarh, Dist -	
A	RDS		sting Labo	and the second se		Jharkhand - 828107 Email ID: sindriaditi@	
Con a	LARCENCE		ABL ACCRE		-	Website: aditimdservi	ices.com
		A Constituent		the second s		Phone: 0326-295237 Fax: 0326-2952377	7 (0), -
	ISO/IEC 170	25:2017, ISO 9	001:2015,ISC	(OHSAS) 4	5001:2018 C	Mobile: 09471358492	094315126
	Ref. No.: - ARDS/2			-		Date: 04/12/2024	
	1	TEST REP	ORTOFN	INE WA	TER DISC	HARGE	
	Name of the second s	e industry	T J	I/S TATA S ATA STEE AMADOB/ IST DHA	A GROUP)	
	 Work Orde 	r Ref. NO.:				29/05/2024	
	Sample C	ode			Jamadoba		
			2		Jamadoba		
			3		Pits Collie adih Collie		
	 Date of Sa Date of Te Test 	ample Collecter	: 2	5/11/2024 8/11/2024 H, TDS, TS	To 03/12/2	S. S	
SI.	 Date of Te Test 		: 2 : p	8/11/2024 H, TDS, TS T RESULT	To 03/12/2 SS, BOD, C	2024	
	Date of Te		: 2 : p <u>TES</u>	8/11/2024 H, TDS, TS T RESULT	To 03/12/2 SS, BOD, C	024 COD, OIL & GREASE.	
No.	Date of Te Test PARAMETERS OF	2 Pit Jamadoba	: 2 : P <u>TES</u> VALU 3 Pit Jamadoba	8/11/2024 H, TDS, TS <u>T RESULT</u> E 6 & 7 Pits	To 03/12/2 SS, BOD, C	024 COD, OIL & GREASE.	
No. 1.	Date of Te Test PARAMETERS OF TEST	2 Pit Jamadoba Colliery	: 2 : p <u>TES</u> VALU 3 Pit Jamadoba Colliery 7.7 839	8/11/2024 H, TDS, TS T RESULT E 6 & 7 Pits Colliery	To 03/12/2 SS, BOD, C Digwadih Colliery	2024 COD, OIL & GREASE. Test Method	
No. 1. 2.	Date of Te Test PARAMETERS OF TEST pH, Total Dissolved Solids, mg/l Total Suspended	2 Pit Jamadoba Colliery 7.5	: 2 : p <u>TES</u> VALU 3 Pit Jamadoba Colliery 7.7	8/11/2024 H, TDS, TS T RESULT E 6 & 7 Pits Colliery 7.5	To 03/12/2 SS, BOD, C Digwadih Colliery 7.4	2024 COD, OIL & GREASE. Test Method IS-3025 (P-11):1983	
No. 1. 2. 3.	Date of Te Test PARAMETERS OF TEST pH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l Bio chemical Oxygen Demand,	2 Pit Jamadoba Colliery 7.5 865	: 2 : p <u>TES</u> VALU 3 Pit Jamadoba Colliery 7.7 839	8/11/2024 H, TDS, TS T RESULT E 6 & 7 Pits Colliery 7.5 915	To 03/12/2 SS, BOD, C Digwadih Colliery 7.4 790	2024 COD, OIL & GREASE. Test Method IS-3025 (P-11):1983 IS-3025 (P-16):1984	
SI. No. 1. 2. 3. 4. 5.	Date of Te Test PARAMETERS OF TEST pH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l Bio chemical	2 Pit Jamadoba Colliery 7.5 865 39	: 2 : P <u>TES</u> VALU 3 Pit Jamadoba Colliery 7.7 839 42	8/11/2024 H, TDS, TS T RESULT E 6 & 7 Pits Colliery 7.5 915 46	To 03/12/2 SS, BOD, C Digwadih Colliery 7.4 790 38	2024 COD, OIL & GREASE. Test Method IS-3025 (P-11):1983 IS-3025 (P-16):1984 IS-3025(P-17): 1984	
No. 1. 2. 3. 4.	Date of Te Test PARAMETERS OF TEST PH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l Bio chemical Oxygen Demand, mg/l Chemical Oxygen	2 Pit Jamadoba Colliery 7.5 865 39 2.2	: 2 : p <u>TES</u> VALU 3 Pit Jamadoba Colliery 7.7 839 42 3.4	8/11/2024 H, TDS, TS T RESULT E 6 & 7 Pits Colliery 7.5 915 46 2.9	To 03/12/2 SS, BOD, C Digwadih Colliery 7.4 790 38 2.7	2024 COD, OIL & GREASE. Test Method IS-3025 (P-11):1983 IS-3025 (P-16):1984 IS-3025 (P-17): 1984 IS-3025 (P-4):1994	

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5 Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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- 3. This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory.

A R D	72	ng L	aboratory CREDITED	and the second second second		Piot No I-B-17 (P) Sindri, Industrial Area, P.O Domgarh, Dist - Dhanbad Jharkhand - 828107 Email ID: sindriadit@gmail.com Website: aditimdservices.com
¥	(A Constituent Bo ISO/IEC 17025:2017, ISO 900				artified	Phone: 0326-2952377 (0), * Fax: 0326-2952377
R	ef. No.: - ARDS/24-25/ETP/1	1.201	3,130 (011343)	45001.2010	- Contraction	Mobile: 09471358492, 09431512 te: 04/12/2024
	TES	RE	PORT OF	EFFLUEN	<u>1</u>	
	 Name of the industry 	:	TATA STI JAMADO	STEEL, JA EEL LIMITE BA GROUP IANBAD (JI	D PLANT,	
	Work Order Ref. NO.:	:	470012655	7/932 Date:-	29/05/20	24
	Sample Code	:	1. E.T.P. 0	Dutlet T.C.H		
			2. E.T.P. (Dutlet Garag	ge	
	Date of Sample Collection	on:	25/11/202	4 To 26/11	2024	
	 Date of Testing 	:	28/11/202	4 To 03/12	/2024	
	Test	:	pH, TDS,	TSS, BOD,	COD, OI	L & GREASE.
		1	TEST RESU	I		
SI. No.	PARAMETERS OF TEST			LUE		Test Method
NO.	-		E.T.P. Outlet T.C.H.	E.T.P. Outlet Garage		*
1.	pH,	-	8.2	8.0	IS-3025	5 (P-11): 1983
2.	Total Dissolved Solids, mg/	1	788	895	IS-3025	5 (P-16): 1984
3.	Total Suspended Solids, mg	n I	39	43	IS-3025	5(P-17) : 1984
4.	Bio chemical Oxygen Deman	d,	2.4	7.2	IS-302	5 (P-44):1994
5.	Chemical Oxygen Demand, m	g/l	58	89	IS-302	5 (P-58):2006
6.	Oil & Grease, mg/l	1.2	0.9	2.4	IS-302	5 (P-39):2021
N	ote : BDL - Below Detection Limit		ADI	95		
	Sr. Chemist Aditi R&D Services	(Manager vices, Sindri

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D S	Ì		g Labora ACCREDIT	tory ED		Sind P.O. Jhar Ema Web	khand - 82 il ID: sindri site: aditim	l Area, Dist Dhant
	ISO/IEC 17025:2		and the second se		and the second se		0326-2952 ile: 094713	2377 58492, 0943
Ref	. No.: - ARDS/24-2		EPORT OF	DRINKING	WATER	Date: 04	1/12/2024	с.,
	Name of the i	5	JAMADO DIST D	EEL LIMIT	ed Plant, Jharkh	AND)		
	Work Order R Sample Code		: 1. Ca	557/932 Da anteen- Ja anteen- Ja	madoba C	olliery		
			3. Ca 4. Ca	anteen- Di anteen- 68	gwadih Co 7 Pits Co	olliery		
	 Date of Samp Date of Testir Test 		22 SUD71	8.2024 To 8.2024 To		10583 -		
	Compound, Me	ercury, Cadmi	ium, Arsenie	c, Cyanide,				henolic
SI.		ercury, Cadmi	ium, Arsenio ity, Aluminiu	c, Cyanide, m & Boron. RESULT	Lead, Zin	litrate, Flu nc, Total	Coliform, per IS	henolic Total Test
SI. No	Compound, Me Chromium, Mine	ercury, Cadmi	ium, Arsenio ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba	c, Cyanide, m & Boron. RESULT	Lead, Zin	litrate, Flu ic, Total	Coliform, per IS	henolic Total Test
(T. S.	Compound, Me Chromium, Mine PARAMETERS	ercury, Cadmi eral Oil, Alkalin Canteen- Jamadoba	ium, Arsenie ity, Aluminiu <u>TEST R</u> VAL Canteen-	c, Cyanide, m & Boron. <u>RESULT</u> UE Canteen Digwadih	Lead, Zin Canteen- 6&7 Pits	litrate, Flu nc, Total IS as p 10500 Desirab	Coliform, per IS 2012 Permi	Total Total Test Metho IS 3025
No	Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour	Canteen- Jamadoba Colliery 1 Agreeable	ium, Arsenio ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1 Agreeable	c, Cyanide, m & Boron. <u>RESULT</u> UE Canteen Digwadih Colliery 1 Agreeable	Lead, Zin Canteen- 6&7 Pits Colliery 1 Agreeable	litrate, Flu nc, Total IS as p 10500 Desirab Ie 5.00 Agreeabl e	Coliform, per IS 2012 Permi ssible 15.0° Agree able	Test Test Method (P-4):202 IS 3025 (5):2018
No 1.	Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit)	Canteen- Jamadoba Colliery	ium, Arsenio ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1	c, Cyanide, Im & Boron. RESULT UE Canteen Digwadih Colliery 1	Lead, Zin Canteen- 6&7 Pits Colliery 1	litrate, Flu nc, Total IS as p 10500: Desirab le 5.00 Agreeabl e Agreeabl e	Coliform, per IS 2012 Permi ssible 15.0° Agree able	Test Test Method IS 3025 (P-4):202 IS 3025 (5):2018 IS 3025 (7):2017
No 1. 2.	Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour	Canteen- Jamadoba Colliery 1 Agreeable	ium, Arsenio ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1 Agreeable	c, Cyanide, m & Boron. <u>ESULT</u> UE Canteen Digwadih Colliery 1 Agreeable	Lead, Zin Canteen- 6&7 Pits Colliery 1 Agreeable	litrate, Flu nc, Total IS as p 10500 Desirab le 5.00 Agreeabl e Agreeabl	Coliform, per IS 2012 Permi ssible 15.0° Agree able Agree	Test Test Metho (P-4):203 (5):2018 IS 3025 (7):2017 IS 3025
No 1. 2. 3.	Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste	Canteen- Jamadoba Colliery 1 Agreeable Agreeable	ium, Arsenio ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1 Agreeable Agreeable	c, Cyanide, Im & Boron. ESULT UE Canteen Digwadih Colliery 1 Agreeable Agreeable	Lead, Zin Canteen- 6&7 Pits Colliery 1 Agreeable Agreeable	litrate, Flu nc, Total IS as p 10500: Desirab le 5.00 Agreeabl e 1.0 6.5-8.5	Coliform, ber IS 2012 Permi ssible 15.0° Agree able Agree able	Test Total Test Metho (P-4):207 (S 3025 (5):2018 (S 3025 (7):2017 (S 3025 (7):2017 (S 3025 (7):2017 (S 3025) (11):198
No 1. 2. 3. 4.	Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU	Canteen- Jamadoba Colliery 1 Agreeable Agreeable	ium, Arsenio ity, Aluminiu <u>TEST F</u> VAL Canteen- Jamadoba Washery 1 Agreeable Agreeable 0.8	c, Cyanide, Im & Boron. ESULT UE Canteen Digwadih Colliery 1 Agreeable Agreeable 0.2	Lead, Zin Canteen- 6&7 Pits Colliery 1 Agreeable Agreeable 3.0	litrate, Flu nc, Total IS as p 10500: Desirab le 5.00 Agreeabl e Agreeabl e 1.0	Coliform, ber IS 2012 Permi ssible 15.0° Agree able Agree able 5.0 No.	Test Total Test Metho (P-4):207 (S 3025 (7):2017 (S 3025 (7):2017 (S 3025 (7):2017 (S 3025 (7):2017 (S 3025 (11):198 (S 3025) (11):198
No 1. 2. 3. 4. 5.	Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU pH Total Hardness	Canteen- Jamadoba Colliery 1 Agreeable Agreeable 1.0 7.52	ium, Arsenio ity, Aluminiu <u>TEST F</u> VAL Canteen- Jamadoba Washery 1 Agreeable Agreeable 0.8 7.76	c, Cyanide, Im & Boron. ESULT UE Canteen Digwadih Colliery 1 Agreeable Agreeable 0.2 7.92	Lead, Zin Canteen- 6&7 Pits Colliery 1 Agreeable Agreeable 3.0 7.80	litrate, Flu nc, Total IS as p 10500: Desirab le 5.00 Agreeabl e 1.0 6.5-8.5	Coliform, Der IS 2012 Permi ssible 15.0° Agree able Agree able 5.0 No. Relax.	Test Total Test Method IS 3025 (P-4):207 IS 3025 (5):2018 IS 3025 (7):2017 IS 3025 (11):198 IS-3025 (21):200 IS 3025 (
No 1. 2. 3. 4. 5. 6.	Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU pH Total Hardness as CaCO ₃ , mg/l Chloride as Cl, mg/l Res. Free chlorine as Cl ₂ mg/l	Canteen- Jamadoba Colliery 1 Agreeable Agreeable 1.0 7.52 400	ium, Arsenio ity, Aluminiu <u>TEST F</u> VAL Canteen- Jamadoba Washery 1 Agreeable 0.8 7.76 580 80.81 NIL	c, Cyanide, Im & Boron. ESULT UE Canteen Digwadih Colliery 1 Agreeable Agreeable 0.2 7.92 540	Lead, Zin Canteen- 6&7 Pits Colliery 1 Agreeable Agreeable 3.0 7.80 304	litrate, Flu nc, Total IS as p 10500: Desirab le 5.00 Agreeabl e 1.0 6.5-8.5 200	Coliform, Der IS 2012 Permi ssible 15.0° Agree able Agree able 5.0 No. Relax. 600	henolic Total Total IS 3025 (P-4):207 IS 3025 (P-4):207 IS 3025 (5):2011 IS 3025 (7):2017 IS 3025 (11):198 IS-3025 (21):200 IS 3025 (32):198 IS 3025
No 1. 2. 3. 4. 5. 6. 7.	Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU pH Total Hardness as CaCO ₃ , mg/l Chloride as Cl, mg/l Res. Free chlorine as Cl ₂ mg/l Total Dissolved	Canteen- Jamadoba Colliery 1 Agreeable Agreeable 1.0 7.52 400 65.77	ium, Arsenio ity, Aluminiu <u>TEST F</u> VAL Canteen- Jamadoba Washery 1 Agreeable Agreeable 0.8 7.76 580 80.81	c, Cyanide, Im & Boron. ESULT UE Canteen Digwadih Colliery 1 Agreeable 0.2 7.92 540 67.65	Lead, Zin Canteen- 6&7 Pits Colliery 1 Agreeable Agreeable 3.0 7.80 304 33.82	litrate, Flu nc, Total IS as p 10500: Desirab le 5.00 Agreeabl e 1.0 6.5-8.5 200 250	Coliform, Der IS 2012 Permi ssible 15.0° Agree able 5.0 No. Relax. 600 1000	henolic Total Total IS 3025 (P-4):207 IS 3025 (5):2017 IS 3025 (5):2017 IS 3025 (7):2017 IS 3025 (11):198 IS 3025 (21):200 IS 3025 (32):198 IS 3025 (26):202
No 1. 2. 3. 4. 5. 6. 7. 8.	Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU pH Total Hardness as CaCO ₃ , mg/I Chloride as Cl, mg/I Res. Free chlorine as Cl ₂ mg/I Total Dissolved Solids, mg/I Calcium as	Canteen- Jamadoba Colliery 1 Agreeable Agreeable 1.0 7.52 400 65.77 NIL	ium, Arsenio ity, Aluminiu <u>TEST F</u> VAL Canteen- Jamadoba Washery 1 Agreeable 0.8 7.76 580 80.81 NIL	c, Cyanide, Im & Boron. ESULT UE Canteen Digwadih Colliery 1 Agreeable 0.2 7.92 540 67.65 NIL	Lead, Zin Canteen- 6&7 Pits Colliery 1 Agreeable 3.0 7.80 304 33.82 NIL	litrate, Flu nc, Total IS as p 10500: Desirab le 5.00 Agreeabl e 1.0 6.5-8.5 200 250 0.20	Coliform, ber IS 2012 Permi ssible 15.0° Agree able 5.0 No. Relax. 600 1000 1.0	henolic Total Total IS 3025 (P-4):207 IS 3025 (P-4):207 IS 3025 (0):198 IS 3025 (11):198 IS 3025 (21):200 IS 3025 (32):198 IS 3025 (26):202 IS 3025 (16):198 IS 3025 (16):198
No 1. 2. 3. 4. 5. 6. 7. 8. 9.	Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU pH Total Hardness as CaCO ₃ , mg/l Chloride as Cl, mg/l Res. Free chlorine as Cl ₂ mg/l Total Dissolved Solids, mg/l	Canteen- Jamadoba Colliery 1 Agreeable 1.0 7.52 400 65.77 NIL 535	ium, Arsenio ity, Aluminiu <u>TEST F</u> VAL Canteen- Jamadoba Washery 1 Agreeable 0.8 7.76 580 80.81 NIL 540	c, Cyanide, Im & Boron. ESULT UE Canteen Digwadih Colliery 1 Agreeable 0.2 7.92 540 67.65 NIL 595	Lead, Zin Canteen- 6&7 Pits Colliery 1 Agreeable 3.0 7.80 304 33.82 NIL 280	litrate, Flu ic, Total IS as p 10500: Desirab le 5.00 Agreeabl e 1.0 6.5-8.5 200 250 0.20 500	Coliform, ber IS 2012 Permi ssible 15.0° Agree able 5.0 No. Relax. 600 1000 1.0 2000	Test Test Method IS 3025 (P-4):202 IS 3025 (5):2018 IS 3025 (

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								3
SI. No.	PARAMETERS OF TEST	Canteen-	VALI	JE Canteen	Canteen		per IS 0:1991	Test Method
NO.	1231	Jamadoba Colliery	Jamadoba Washery	Digwadih Colliery	- 6&7 Pits Colliery	Desira ble	Permis sible	Method
12.	Manganese as Mn, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.10	0.30	IS 3025 (I 59):2006
13.	Sulphate as SO4, mg/l	48.10	41.70	51.4	42.6	200	400	IS 3025 (I 24):1986
14.	Nitrate as NO ₃ , mg/l	3.3	5.6	4.9	4.2	45	No. Relax	IS 3025 (I 34):1988
15.	Fluoride as F, mg/l	0.34	0.30	0.32	0.37	1.0	1.5	IS 3025 (I 60):2008
16.	Phenolic Compound as (C6H5OH) mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.001	0.002	IS 3025 (I 43):1992
17.	Mercury as Hg, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.001	No. Relax	IS 3025 (I 48):1994
18.	Cadmium as Cd, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.003	No. Relax	IS 3025 (I 41):1992
19.	Arsenic as As, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.01	No. Relax	IS 3025 (I 37):1988
20.	Cyanide as CN, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.05	No. Relax	IS 3025 (I 27):1980
21.	Lead as Pb, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.01	No. Relax	IS 3025 (I 47):1994
22.	Zinc as Zn, mg/l,	0.12	0.18	0.23	0.16	5	15	IS 3025 (I 42):1992
23.	Total Coliform, No./100ml	Absent B.D.L	Absent B.D.L	Absent	Absent	Absen t	Absent	IS 3025 (1 49):1994
24.	Total Chromium as Cr, mg/l			B.D.L	B.D.L	0.05	No. Relax	IS 3025 (I 52):2003
25.	Mineral Oil, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.5	No. Relax	IS 3025 (I 39):1989
26.	Alkalinity as CaCO ₃ , mg/l,	424	388	400	568	200	600	IS 3025 (I 23):1983
27.	Aluminium as Al, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.03	0.2	IS 3025 (1 55):2003
28.	Boron as B, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.5	1.0	IS 3025 (I 57):2005

Sr. Chemist Aditi R&D Services



Technical Manager

Aditi R&D Services, Sindri

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	Ref. No.: - A	RDS/24-2		TREPOR	TOFOE			Date: 0	4/12/202	24
	• Name	of the in		: M/ST TATA JAM/	TATA ST A STEEL ADOBA (EEL, JAM/ LIMITED GROUP PL BAD (JHA	ADOBA,			
		Order R	ef. NO.	: 4700 :	126557/9 1. Purna 2. Digwa 3. Kali M 4. Upper	032 Date:- adih (Jorap adih 10 No Iela Kali M r Dungari uadih Bast	29/05/202 okhar) F&J. andir			
	Date	of Samn	le Collect		6. 6&7 P	its (Ayodh 24 to 26/1	ya Nagri)			
		of Testir		:	28/11/20	024 To 04/ Odour, Taste	12/2024	, pH, To	tal Hardr	1855,
	Date Test PARAMETER			:	28/11/20 Colour, C Iron, Chk Solids, C Fluoride, Arsenic,	024 To 04/ Odour, Taste oride, Res. alcium, Cop Phenolic C Cyanide, Le m, Mineral (12/2024 e, Turbidity Free chlori oper, Mang ompound, ad, Zinc, 1	ne, Tota ganese, Mercury Total Col ity, Alum	I Dissolv Sulphate /, Cadmin liform, ninium 8 per IS	red 9, Nitrate, um,
	• Date • Test			:	28/11/20 Colour, C Iron, Chlo Solids, C Fluoride, Arsenic, Chromiu ST RES	024 To 04/ Odour, Taste oride, Res. alcium, Cop Phenolic C Cyanide, Le m, Mineral (12/2024 e, Turbidity Free chlori oper, Mang ompound, ad, Zinc, 1	ne, Tota ganese, Mercury Total Col ity, Alum	I Dissolv Sulphate /, Cadmin liform, hinium &	ed , Nitrate, um, & Boron.
No 1.	Date Test PARAMETER S OF TEST Colour, (Hazen Unit)	Purnad ih 2	Digwadih 10 NoF&J. 1	: : <u>TE</u> V Kali Mela KaliMandir 2	28/11/20 Colour, C Iron, Chi Solids, C Fluoride, Arsenic, Chromiu <u>ST RES</u> /ALUE Upper Dungari 2	24 To 04/ Dour, Tastroride, Res. I salcium, Cop Phenolic C Cyanide, Le m, Mineral C <u>ULT</u> Kenduadih Basti 1	12/2024 e, Turbidity Free chlori oper, Mang ompound, ad, Zinc, 1 Dil, Alkalini 6 & 7Pit (Ayodhya Nagri) 1	ne, Tota janese, S Mercury Total Col ity, Alum IS as 1050 Desir - able 5	I Dissolv Sulphate 7, Cadmin liform, ninium 8 per IS 0:1991 Permi- ssible 15	red , Nitrate, um, & Boron. Test Method IS 3025 (P- 4):2021
No 1. 2.	Date Test PARAMETER S OF TEST Colour, (Hazen Unit) Temperature "C Electrical Conductivity,	Purnad ih	Digwadih 10 NoF&J.	: : <u>TE</u> V Kali Mela KaliMandir	28/11/20 Colour, C Iron, Chk Solids, C Fluoride, Arsenic, Chromiu ST RES /ALUE Upper Dungari	24 To 04/ Odour, Taste oride, Res. alcium, Cop Phenolic C Cyanide, Le m, Mineral C ULT Kenduadih Basti	412/2024 e, Turbidity Free chlori opper, Mang ompound, ad, Zinc, 1 Dil, Alkalini 6 & 7Pit (Ayodhya Nagri)	ne, Tota ganese, S Mercury Total Col ity, Alum IS as 1050 Desir - able	I Dissolv Sulphate 7, Cadmin liform, ninium 8 per IS 0:1991 Permi- ssible	ed , Nitrate, um, & Boron. Test Method IS 3025 (P-
No 1. 2. 3.	• Date • Test • Test PARAMETER S OF TEST Colour, (Hazen Unit) Temperature "C Electrical Conductivity, µmhos/cm Total Dissolved	Purnad ih 2 25	Digwadih 10 NoF&J. 1 24	: : <u>TE</u> V Kali Mela Kali Mandir 2 25	28/11/20 Colour, C Iron, Chi Solids, C Fluoride, Arsenic, Chromiu ST RES /ALUE Upper Dungari 2 2	24 To 04/ Dodour, Taste oride, Res. I salcium, Cop Phenolic C Cyanide, Le m, Mineral G SULT Kenduadih Basti 1 25	12/2024 e, Turbidity Free chlori oper, Mang ompound, ad, Zinc, 1 Dil, Alkalini 6 & 7Pit (Ayodhya Nagri) 1 24	ne, Tota janese, S Mercury Total Col ity, Alum IS as 1050 Desir - able 5	I Dissolv Sulphate 7, Cadmin liform, ninium 8 per IS 0:1991 Permi- ssible 15	ed , Nitrate, um, & Boron. Test Method IS 3025 (P- 4):2021
No 1. 2. 3. 4.	• Date • Test • Test PARAMETER S OF TEST Colour, (Hazen Unit) Temperature "C Electrical Conductivity, µmhos/cm	Purnad ih 2 25 1414	Digwadih 10 NoF&J. 1 24 1390	: : <u>TE</u> Kali Mela KaliMandir 2 25 1070	28/11/20 Colour, C Iron, Chi Solids, C Fluoride, Arsenic, Chromiu <u>ST RES</u> /ALUE Upper Dungari 2 24 590	24 To 04/ Dour, Tastroride, Res. I alcium, Cop Phenolic C Cyanide, Le m, Mineral G ULT Kenduadih Basti 1 25 780	(12/2024 e, Turbidity Free chlori oper, Mang ompound, ad, Zinc, 1 Dil, Alkalini 6 & 7Pit (Ayodhya Nagri) 1 24 810	ne, Tota janese, S Mercury fotal Col ity, Alum IS as 1050 Desir - able 5 -	I Dissolv Sulphate 7, Cadmin liform, ninium & per IS 0:1991 Permi- ssible 15 -	ed , Nitrate, um, & Boron. Test Method IS 3025 (P- 4):2021
No 1. 2. 3. 4. 5.	• Date • Test • Test PARAMETER S OF TEST Colour, (Hazen Unit) Temperature "C Electrical Conductivity, µmhos/cm Total Dissolved Solids, mg/l pH Total Hardness as CaCO ₃ , mg/l	Purnad ih 2 25 1414 710 7.9 575	Digwadih 10 NoF&J. 1 24 1390 680 7.8 480	: : <u>TE</u> V Kali Mela KaliMandir 2 25 1070 513	28/11/20 Colour, C Iron, Chil Solids, C Fluoride, Arsenic, Chromiu ST RES /ALUE Upper Dungari 2 24 590 539	24 To 04/ Dour, Taste oride, Res. Lalcium, Cop Phenolic C Cyanide, Le m, Mineral G ULT Kenduadih Basti 1 25 780 577 7.3 380	12/2024 e, Turbidity Free chlori oper, Mang ompound, ead, Zinc, T Dil, Alkalini 6 & 7Pit (Ayodhya Nagri) 1 24 810 510 7.8 362	ne, Tota janese, S Mercury Total Col ity, Alum IS as 10500 Desir - able 5 - 500 6.5- 8.5 200	I Dissolv Sulphate 7, Cadmin liform, ninium 8 0:1991 Permi- ssible 15 - 2000 No	ed , Nitrate, um, & Boron. Test Method IS 3025 (P- 4):2021 - - IS 3025(P- 16):1984 IS-3025(P- 11):1983 IS 3025(P- 21):2009
No 1. 2. 3. 4. 5. 6. 7.	• Date • Test • Test PARAMETER S OF TEST Colour, (Hazen Unit) Temperature "C Electrical Conductivity, µmhos/cm Total Dissolved Solids, mg/l pH Total Hardness as CaCO ₃ , mg/l Calcium as Ca, mg/l	of Testir Purnad ih 2 25 1414 710 7.9 575 155.2	Digwadih 10 NoF&J. 1 24 1390 680 7.8 480 163.4	: : Kali Mela Kali Mandir 2 25 1070 513 7.4 496 95	28/11/20 Colour, C Iron, Chi Solids, C Fluoride, Arsenic, Chromiu ST RES /ALUE Upper Dungari 2 24 590 539 7.7 336 144	24 To 04/ Dour, Taste oride, Res. I salcium, Cop Phenolic C Cyanide, Le m, Mineral G ULT Kenduadih Basti 1 25 780 577 7.3 380 78	12/2024 e, Turbidity Free chlori oper, Mang compound, ead, Zinc, 1 Dil, Alkalini 6 & 7Pit (Ayodhya Nagri) 1 24 810 510 7.8 362 67.5	ne, Tota janese, S Mercury Total Col ity, Alum IS as 10500 Desir - able 5 - 500 6.5- 8.5 200 75	I Dissolv Sulphate 7, Cadmin liform, ninium 8 per IS 0:1991 Permi- ssible 15 - 2000 No Relax 600 200	ed , Nitrate, um, & Boron. Test Method IS 3025 (P- 4):2021 - - IS 3025(P- 16):1984 IS-3025(P- 11):1983 IS 3025(P- 21):2009 IS 3025(P- 40):1991
No 1. 2. 3. 4. 5. 6. 7. 8.	• Date • Test • Test PARAMETER S OF TEST Colour, (Hazen Unit) Temperature "C Electrical Conductivity, µmhos/cm Total Dissolved Solids, mg/l PH Total Hardness as CaCO ₃ , mg/l Calcium as Ca, mg/l Magnesium as Mg, mg/l	of Testir Purnad ih 2 25 1414 710 7.9 575 155.2 50.4	ng Digwadih 10 NoF&J. 1 24 1390 680 7.8 680 7.8 480 163.4 20.2	: : Kali Mela Kali Mandir 2 25 1070 513 7.4 496 95 62.8	28/11/20 Colour, C Iron, Chi Solids, C Fluoride, Arsenic, Chromiu ST RES /ALUE Upper Dungari 2 24 590 539 7.7 336 144 48.2	024 To 04/ Odour, Taste oride, Res. I salcium, Cop Phenolic C Cyanide, Le m, Mineral G <u>ULT</u> Kenduadih Basti 1 25 780 577 7.3 380 78 43.5	(12/2024 e, Turbidity Free chlori oper, Mang ompound, ad, Zinc, 1 Dil, Alkalini (Ayodhya Nagri) 1 24 810 510 7.8 362 67.5 48.4	ne, Tota janese, S Mercury Total Col ity, Alum IS as 10500 Desir - able 5 - 500 6.5- 8.5 200 75 30	I Dissolv Sulphate 7, Cadmin liform, ninium 8 per IS 0:1991 Permi- ssible 15 - 2000 No Relax 600 200 100	ed , Nitrate, um, & Boron. Test Method IS 3025 (P- 4):2021 - - - IS 3025(P- 16):1984 IS-3025(P- 11):1983 IS 3025(P- 21):2009 IS 3025(P- 21):2009 IS 3025(P- 40):1991 IS 3025(P- 46):1994
	• Date • Test • Test PARAMETER S OF TEST Colour, (Hazen Unit) Temperature "C Electrical Conductivity, µmhos/cm Total Dissolved Solids, mg/l pH Total Hardness as CaCO ₃ , mg/l Calcium as Ca, mg/l Magnesium as	of Testir Purnad ih 2 25 1414 710 7.9 575 155.2	Digwadih 10 NoF&J. 1 24 1390 680 7.8 480 163.4	: : Kali Mela Kali Mandir 2 25 1070 513 7.4 496 95	28/11/20 Colour, C Iron, Chi Solids, C Fluoride, Arsenic, Chromiu ST RES /ALUE Upper Dungari 2 24 590 539 7.7 336 144	24 To 04/ Dour, Taste oride, Res. I salcium, Cop Phenolic C Cyanide, Le m, Mineral G ULT Kenduadih Basti 1 25 780 577 7.3 380 78	12/2024 e, Turbidity Free chlori oper, Mang compound, ead, Zinc, 1 Dil, Alkalini 6 & 7Pit (Ayodhya Nagri) 1 24 810 510 7.8 362 67.5	ne, Tota janese, S Mercury Total Col ity, Alum IS as 10500 Desir - able 5 - 500 6.5- 8.5 200 75	I Dissolv Sulphate 7, Cadmin liform, ninium 8 per IS 0:1991 Permi- ssible 15 - 2000 No Relax 600 200	ed , Nitrate, um, & Boron. Test Method IS 3025 (P- 4):2021 - - IS 3025 (P- 16):1984 IS-3025 (P- 11):1983 IS 3025 (P- 21):2009 IS 3025 (P- 40):1991 IS 3025 (P-

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	R D S	(A Const	Testing NABL ituent Boar	D SE g Labora ACCREDIT d of Quality 2015,ISO (O	ED Council	of India)		Jharkhand Email ID: s Website: a Phone: 03 Fax: 0326-	ustrial Area garh, Dist. - 828107 indriaditi@ ditimdserv 26-295237 2952377	- Dhanbad gmail.com ices.com
					2.					
SI. No	PARAMETERS OF TEST			VAI	LUE			IS as 10500	per IS :1991	Test Method
•		Purnadih	Digwadih 10 NoF&J.	KaliMela KaliMandir	Upper Dungari	Kenduadi h Basti	6 & 7Pit (Ayodhya Nagri)	Desir- able	Perm is- sible	1000000
11	Sulphate as SO ₄ , mg/l	47.2	53.4	59.0	52.0	54.80	39.2	200	400	IS 3025(P 24):1986
12.	Nitrate as NO ₃ , mg/l	7.2	7.9	8.4	7.5	8.0	7.8	45	No. Relax	IS 3025(P 34):1988
13.	Alkalinity as CaCO ₃ , mg/l,	15.0	16.0	5.8	4.8	7.0	418	200	600	IS 3025(P 23):1983
14.	Lead as Pb, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	B.D.L.	0.01	No. Relax	IS 3025(P 47):1994
15.	Zinc as Zn, mg/l,	0.19	0.12	0.13	0.2	0.18	0.19	5	15	IS 3025(P 42):1992
16.	Iron a Fe, mg/l	0.13	0.20	0.24	0.22	0.25	0.12	1.0	No. Relax	IS 3025(P 53):2003
17.	Copper as Cu, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	B.D.L.	0.05	1.5	IS3025 (P 42):1992
18.	Mercury as Hg, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	B.D.L.	0.001	No. Relax	IS 3025(P 48):1994
19.	Cadmium as Cd, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	B.D.L.	0.003	No. Relax	IS 3025(P 41):1992
20.	Nickel as Ni, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	B.D.L.	0.02	[°] No. Relax	IS 3025(P 37):1992
21.	Arsenic as As, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	B.D.L.	0.01	No. Relax	IS 3025(P 37):1988
22.	Cyanide as CN, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	B.D.L.	0.05	No. Relax	IS 3025(P 27):1986
23.	Total Chromium as Cr. mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	B.D.L.	0.05	No. Relax	IS 3025(P 52):2003

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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ISO/II	ADITI R&D SE Testing Labora NABL ACCREDIT (A Constituent Board of Quality CC 17025:2017, ISO 9001:2015,ISO (O	tory ED Council of Inc	dia) 2018 Certified	Plot No I-B-17 (P Sindri, Industrial Ar P.O Domgarh, Dis Jharkhand - 82810 Email ID: sindriadit Website: aditimdse Phone: 0326-2952377 Mobile: 094713584	rea, st - Dhanbad 17 Il@gmail.com srvices.com 377 (O), * 7
Ref. No.:	- ARDS/24-25/AAQ/1		Dat	e: 19/02/2025	
	TEST REPORT OF		IR QUALITY		
	TATA S JAMAD DIST	OBA GROU			
			e:- 29/05/2024		
Da	te of Sample Collection : 12/02/20	25 To 13/02/2	025		
	te of Testing : 14/02/20 st Procedure : As per IS	25 To 18/02/3 -5182	2025		
	st Procedure : As per IS <u>TEST</u>	-5182 RESULTS			
	st Procedure : As per IS TEST LOCATION - 6 & 7	-5182 RESULTS PITS COLLIE	RY OFFICE		
Te	st Procedure : As per IS <u>TEST</u> LOCAT/ON - 6 & 7 Avg. Ambient Temperature	-5182 RESULTS PITS COLLIE 29 ⁰ C	RY OFFICE Avg. Humid		
Te SI No.	st Procedure : As per IS <u>TEST</u> LOCATION - 6 & 7 Avg. Ambient Temperature Particulars	-5182 RESULTS PITS COLLIE 29 ⁰ C Value	RY OFFICE Avg. Humid NAAQ - CPC	BSTANDARD	
Te SI No. 1.	st Procedure : As per IS <u>TEST</u> LOCATION - 6 & 7 Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³	-5182 RESULTS PITS COLLIE 29 ⁰ C Value 79.78	RY OFFICE Avg. Humid NAAQ - CPC 100	B STANDARD	
Te SI No.	st Procedure : As per IS <u>TEST</u> LOCAT/ON - 6 & 7 Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³	-5182 RESULTS PITS COLLIE 29°C Value 79.78 46.06	RY OFFICE Avg. Humid NAAQ - CPC 100 60	B STANDARD µg/m ³ µg/m ³	
Te SI No. 1. 2. 3.	st Procedure : As per IS <u>TEST</u> LOCATION - 6 & 7 Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³	-5182 RESULTS PITS COLLIE 29 ⁰ C Value 79.78 46.06 18.33	RY OFFICE Avg. Humid NAAQ - CPC 100 60 80	B STANDARD µg/m ³ µg/m ³ µg/m ³	
Te SI No. 1. 2. 3. 4.	st Procedure : As per IS <u>TEST</u> LOCATION - 6 & 7 Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³	-5182 RESULTS PITS COLLIE 29 ⁰ C Value 79.78 46.06 18.33 26.74	RY OFFICE Avg. Humid NAAQ - CPC 100 60 80 80	B STANDARD µg/m ³ µg/m ³ µg/m ³ µg/m ³	
Te SI No. 1. 2. 3. 4. 5.	st Procedure : As per IS <u>TEST</u> LOCAT/ON - 6 & 7 Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ Ozone, µg/m ³	-5182 RESULTS PITS COLLIE 29°C Value 79.78 46.06 18.33 26.74 15.42	RY OFFICE Avg. Humid NAAQ - CPC 100 60 80 80 180	B STANDARD µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³	
Te SI No. 1. 2. 3. 4. 5. 6.	st Procedure : As per IS <u>TEST</u> LOCAT/ON - 6 & 7 Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ Ozone, µg/m ³ NH ₃ , µg/m ³	-5182 RESULTS PITS COLLIE 29°C Value 79.78 46.06 18.33 26.74 15.42 12.81	RY OFFICE Avg. Humid NAAQ - CPC 100 60 80 80 180 400	B STANDARD µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³	
Te SI No. 1. 2. 3. 4. 5. 6. 7.	st Procedure : As per IS <u>TEST</u> LOCATION - 6 & 7 Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ Ozone, µg/m ³ NH ₃ , µg/m ³ CO, mg/m ³	-5182 RESULTS PITS COLLIE 29°C Value 79.78 46.06 18.33 26.74 15.42 12.81 0.74	RY OFFICE Avg. Humid NAAQ - CPC 100 60 80 80 180 400 4 m	EB STANDARD µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³	
Te SI No. 1. 2. 3. 4. 5. 6.	st Procedure : As per IS <u>TEST</u> LOCAT/ON - 6 & 7 Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ Ozone, µg/m ³ NH ₃ , µg/m ³ CO, mg/m ³ Pb, µg/m ³	-5182 RESULTS PITS COLLIE 29°C Value 79.78 46.06 18.33 26.74 15.42 12.81 0.74 BDL	RY OFFICE Avg. Humid NAAQ - CPC 100 60 80 80 180 400 4 m 1 µ	EB STANDARD µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ ng/m ³	
Te SI No. 1. 2. 3. 4. 5. 6. 7. 8.	st Procedure : As per IS <u>TEST</u> LOCATION - 6 & 7 Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ Ozone, µg/m ³ NH ₃ , µg/m ³ CO, mg/m ³ Pb, µg/m ³ As, ng/m ³	-5182 RESULTS PITS COLLIE 29°C Value 79.78 46.06 18.33 26.74 15.42 12.81 0.74 BDL BDL	RY OFFICE Avg. Humid NAAQ - CPC 100 60 80 80 180 400 4 m 1 µ 6 m	B STANDARD µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³	
Te SI No. 1. 2. 3. 4. 5. 6. 7. 8. 9.	st Procedure : As per IS <u>TEST</u> LOCAT/ON - 6 & 7 Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ Ozone, µg/m ³ NH ₃ , µg/m ³ CO, mg/m ³ Pb, µg/m ³	-5182 RESULTS PITS COLLIE 29°C Value 79.78 46.06 18.33 26.74 15.42 12.81 0.74 BDL	RY OFFICE Avg. Humid NAAQ - CPC 100 60 80 80 180 400 4 m 1 µ 6 m	EB STANDARD µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ µg/m ³ ng/m ³	

Sr. Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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R D S		ADITI R&D SE Testing Laborat NABL ACCREDIT (A Constituent Board of Quality 17025:2017, ISO 9001:2015,ISO (Of	tory ED Council of Ind	P.O Jhari Emai Web Vieb 018 Certified Fax:	No I-B-17 (P) i, Industrial Area, Domgarh, Dist Dhanbad chand - 828107 I ID: sindriaditi@gmail.com site: aditimdservices.com le: 0326-2952377 (O), 0326-2952377 le: 09471358492, 0943151260		
	Ref. No.:	- ARDS/24-25/ AAQ/2		Date: 1	9/02/2025		
		TEST REPORT OF					
	• Da	DIST ork Order Ref. NO.: : 4700126 te of Sample Collection : 12/02/20	6557/932 Dat 025 to 13/02/ 025 to 18/02/	JHARKHAND) e:- 29/05/2024 2025			
			RESULTS				
	-	LOCATION - OFFICERS		Concernence of the output of the			
	01.01	Avg. Ambient Temperature	29°C	Avg. Humidity	28%		
	SI No.	Particulars	Value	NAAQ - CPCB			
	2.	Particulate Matter (PM ₁₀), µg/m ³	72.75	100 µg			
	3.	Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ µg/m ³	39.29	60 µg/			
	4.	NO ₂ , µg/m ³	17.79	80 µg/			
	5.	Ozone, µg/m ³	25.32	80 µg/i			
	6.	NH ₃ , µg/m ³	15.92 13.09	180 µg			
	7.	CO, mg/m ³	0.67	400 µg/ 4 mg/n			
				-			
	8.	Pb, µg/m ³	BDL	1 unin	1 µg/m ³		

Sr. Chemist

Aditi R&D Service

As, ng/m³

Ni, ng/m³

Benzene, µg/m3

NOTE: BDL - Below Detection Limit

Benzoapyrene ng/m³

9.

10.

11.

12.



BDL

BDL

BDL

BDL

Technical Manager Aditi R&D Services, Sindri

6 ng/m³

20 ng/m3

5 µg/m³

1 ng/m³

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ARDS	Testing NABL A (A Constituent Board	D SERVICES Laboratory ACCREDITED of Quality Council of India) 015,ISO (OHSAS) 45001:2018 Certified	Plot No I-B-17 (P) Sindri, Industrial Area, P.O Dorngarh, Dist Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditimdservices.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 0943151260
F	ef. No.: - ARDS/24-25/ AAQ/3	D	ate: 19/02/2025
	TEST REPO	ORT OF AMBIENT AIR QUALITY	
	Name of the industry	: M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST DHANBAD (JHARKHAND	2)
	Work Order Ref. NO.	: 4700126557/932 Date:- 29/05/2024	
•	Date of Sample Collection	: 11/02/2025 to 12/02/2025	
•	Date of Testing	: 14/02/2025 to 18/02/2025	
•	Test Procedure	: As per IS-5182	
		TEST RESULTS	
	LOCATION - CE	ENTRAL WORKSHOP AREA , JAMAD	OPA

	Avg. Ambient Temperature	29°C	Avg. Humidity	28%
SI No.	Particulars	Value	NAAQ - CPCB STAND	ARD
1.	Particulate Matter (PM10), µg/m3	82.45	100 µg/m ³	
2.	Particulate Matter (PM2.5), µg/m3	46.79	60 µg/m ³	1
3.	SO ₂ , µg/m ³	20.69	80 µg/m ³	
4.	NO ₂ , µg/m ³	28.46	80 µg/m ³	
5.	Ozone, µg/m³	17.89	180 µg/m ³	
6.	NH3, µg/m3	15.92	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

Sr. Chemist Aditi R&D Service



Technical Manager Aditi R&D Services, Sindri

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AN S		ADITI R&D SE Testing Laborat NABL ACCREDITI (A Constituent Board of Quality O C 17025:2017, ISO 9001:2015,ISO (OH	ED Council of Ind	ia)	P.O Dom Jharkhand Email ID: s Website: a Phone: 03 Fax: 0326	ustrial Årea, garh, Dist Dr I - 828107 sindriaditi@gm ditimdservices 26-2952377 ((nail.com s.com O), L
	Ref. No.: ·	ARDS/24-25/ AAQ/4		Da	te: 19/02	/2025	
		TEST REPORT OF A	MBIENT A	R QUALITY			
		ork Order Ref. NO.: : 4700126		JHARKHAND) e:- 29/05/2024	8		
	• Da	st Procedure : As per IS	25 to 18/02/: 3-5182 RESULTS	2025			
	• Da	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST I</u> LOCATION - TATA	25 to 18/02/2 5-5182 RESULTS A CENTRAL F	2025 HOSPITAL		201/	
	• Da • Te:	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST I</u> LOCATION – TATA Avg. Ambient Temperature	25 to 18/02/2 5-5182 RESULTS CENTRAL 1 29°C	2025 HOSPITAL Avg. Humi	State State State State	28%	
	Da Tes SI No.	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST I</u> LOCATION – TATA Avg. Ambient Temperature Particulars	25 to 18/02/2 S-5182 RESULTS A CENTRAL H 29°C Value	10SPITAL Avg. Humi NAAQ - CP	CB STAN		
	Da Tes SI No. 1.	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST I</u> LOCATION – TATA Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³	25 to 18/02/2 S-5182 RESULTS CENTRAL 1 29°C Value 66.31	AVG. Humi NAAQ - CP	CB STAN 0 µg/m³	NDARD	
	 Da Tes SI No. 1. 2. 	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST</u> LOCATION – TATA Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³	25 to 18/02/2 S-5182 RESULTS CENTRAL H 29°C Value 66.31 36.81	10SPITAL Avg. Humi NAAQ - CP 10	CB STAN 0 µg/m ³ 0 µg/m ³		
	Da Tes SI No. 1.	te of Testing : 14/02/202 st Procedure : As per IS <u>TEST I</u> LOCATION - TATA Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³	25 to 18/02/2 S-5182 RESULTS CENTRAL 1 29°C Value 66.31	HOSPITAL Avg. Humi NAAQ - CP 10 60 80	CB STAN O µg/m ³ O µg/m ³ O µg/m ³	NDARD	
	 Da Tes SI No. 1. 2. 3. 4. 	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST I</u> LOCATION - TATA Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³	25 to 18/02/2 S-5182 RESULTS CENTRAL 1 29°C Value 66.31 36.81 15.56 25.06	Avg. Humi NAAQ - CP 10 60 80 80 80	CB STAN O µg/m ³ O µg/m ³ O µg/m ³ O µg/m ³	NDARD	
	 Da Tes SI No. 1. 2. 3. 	te of Testing : 14/02/202 st Procedure : As per IS <u>TEST I</u> LOCATION – TATA Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ Ozone, µg/m ³	25 to 18/02/2 S-5182 A CENTRAL M 29°C Value 66.31 36.81 15.56	2025 HOSPITAL Avg. Humi NAAQ - CP 10 60 80 80 80 80 81 81	CB STAN 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³	NDARD	
	 Da Tes SI No. 1. 2. 3. 4. 5. 	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST I</u> LOCATION - TATA Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³	25 to 18/02/2 S-5182 RESULTS CENTRAL 1 29°C Value 66.31 36.81 15.56 25.06 16.86	2025 HOSPITAL Avg. Humi NAAQ - CP 10 60 80 80 80 80 80 80 80 80 80 80 80 80 80	CB STAN O µg/m ³ O µg/m ³ O µg/m ³ O µg/m ³	NDARD	
	 Da Tes SI No. 1. 2. 3. 4. 5. 6. 	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST I</u> LOCATION - TATA Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ NO ₂ , µg/m ³ NH ₃ , µg/m ³	25 to 18/02/2 S-5182 RESULTS CENTRAL H 29°C Value 66.31 36.81 15.56 25.06 16.86 14.85	2025 HOSPITAL Avg. Humi NAAQ - CP 10 60 80 80 80 80 80 80 80 80 80 80 80 80 80	CB STAN 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³	NDARD	
	 Da Tes SI No. 1. 2. 3. 4. 5. 6. 7. 	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST I</u> LOCATION - TATA Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ Ozone, µg/m ³ NH ₃ , µg/m ³ CO, mg/m ³	25 to 18/02/2 S-5182 RESULTS CENTRAL 1 29°C Value 66.31 36.81 15.56 25.06 16.86 14.85 0.79	2025 HOSPITAL Avg. Humi NAAQ - CP 10 60 80 80 80 80 80 80 80 80 80 80 80 80 80	CB STAN 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ mg/m ³	NDARD	
	 Da Tes SI No. 1. 2. 3. 4. 5. 6. 7. 8. 	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST I</u> LOCATION - TATA Avg. Ambient Temperature Particulars Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ Ozone, µg/m ³ NH ₃ , µg/m ³ CO, mg/m ³ Pb, µg/m ³	25 to 18/02/2 S-5182 RESULTS CENTRAL 1 29°C Value 66.31 36.81 15.56 25.06 16.86 14.85 0.79 BDL	2025 HOSPITAL Avg. Humi NAAQ - CP 10 60 80 80 80 80 80 80 80 80 80 80 80 80 80	CB STAN 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ mg/m ³ µg/m ³	NDARD	
	 Da Tes SI No. 1. 2. 3. 4. 5. 6. 7. 8. 9. 	te of Testing : 14/02/20 st Procedure : As per IS <u>TEST I</u> LOCATION - TATA Avg. Ambient Temperature Particulars Particulate Matter (PM ₁₀), µg/m ³ Particulate Matter (PM _{2.5}), µg/m ³ SO ₂ , µg/m ³ NO ₂ , µg/m ³ Ozone, µg/m ³ NH ₃ , µg/m ³ CO, mg/m ³ Pb, µg/m ³ As, ng/m ³	25 to 18/02/3 S-5182 RESULTS CENTRAL 1 29°C Value 66.31 36.81 15.56 25.06 16.86 14.85 0.79 BDL BDL	2025 HOSPITAL Avg. Humi NAAQ - CP 10 60 80 80 80 80 80 80 80 80 80 80 80 80 80	CB STAN 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ 0 µg/m ³ mg/m ³ i ng/m ³	NDARD	

emis Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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S	(A C ISO/IEC 17025:	onstitu 2017, IS	NABL ent Boar SO 9001		DIT ality 0 (OI	tory ED Counc HSAS)	il of Inc 45001:	dia) 2018 Certifi	P.O Domy Jharkhand Email ID: s Website: a Phone: 032 Fax: 0326-	ustrial Area, garh, Dist Dhant - 828107 indriaditi@gmail. ditImdservices.co 26-2952377 (O), 2952377 471358492, 0943
-	Ref. N	o. & Dat	e		-		NAME		SS OF THE CL	IENT
AR	DS/24-25/NOIS	E/1Dat	e: 19/02	/2025	-	-10	No. of Concession, Name of Street, or other		L, JAMADOB	
	Date of	Monitor	ing		TA	TA ST		and the second	MADOBA GR	OUP PLANT,
	11/02/2025	To 13/0	2/2025	,	An Temp	Avg. nbient peratu (°C)	H	Average lumidity (%)	Weather Condition	Status of the plant
	Work Order			8		29		30	Clear	Running
-	Date:- /	29/05/20	24	MON	ITO	RING	RESU	TS		
SI. No	Place of Monitoring		Day Ti (6 AM to Avg. d	10 PM)			Night (10 PM t Avg. d	o 6 AM)	for Industr CPCB No (Regulatio (Amendme notified vio Dt. 2	Ambient standar rial Area as per oise Pollution in and Control) nt) Rules, 2000 de S.O. 1046(E) 2.11.2020 n dB(A) Leg
									Day	Night
JAN	LOCATION MADOBA GROUP	MAX	MIN	AVG. dB Leq	(A)	MAX	MIN	AVERAGE dB(A) Leq	Industrial Area	Industrial
1.	Central Workshop Area	62.68	57.01	60.71		52.08	44.21	49.73	75	. 70
2.	6 & 7 Pits Colliery Office	60.79	54.49	58.69		49.14	42.63	47.01		10
						ti			Residential Area	Residential Area
3.	Officer Colony 12 No. Digwadih	56.07	58.87	57.69		47.88	44.83	46.62	65	55
									Silence Zone	Silence Zone
4.	Tata Central Hospital	48.56	49.5	49.06		41.37	38.22	40.07	50	40
		sty	49.5	49.06	(= p. p. p.)=	41.37	38.22			40 Hager

			Annexure-
A R D S	Testin NABL (A Constituent Boa	ACCREDITED rd of Quality Council of India) :2015,ISO (OHSAS) 45001:2018 Certified	Plot No I-B-17 (P) Sindri, Industrial Area, P.O Domgarh, Dist Dhanbad Jharkhand - 828107 Email ID: sindriaditi@gmail.com Website: aditirndservices.com Phone: 0326-2952377 (O), Fax: 0326-2952377 Mobile: 09471358492, 09431512608
Re	f. No.: - ARDS/24-25/MINER./1	D	ate: 19/02/2025
	TEST REPORT	T OF MINERALOGICAL COMPOSI	TION
	<u>0</u>	F PARTICULATE MATTER	
•	Name of the industry	: M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED JAMADOBA GROUP PLANT, DIST DHANBAD (JHARKHAND	»
	Work Order Ref. NO.	: 4700126557/932 Date:- 29/05/2024	·*··
•	and a second second second second	n : 12/02/2025 and 13/02/2025	
•	Date of Testing	: 14/02/2025 To 18/02/2025	
		TEST RESULTS	
	SI No. Particulars	Mineralogical C	omposition (%)

SI No.	Particulars	Mineralogical Composition (%)					
		SiO ₂	FeO	Al ₂ O ₃	ĊaO		
1.	6 & 7 Pits Colliery Office	1.81	0.13	1.34	2.70		
2.	Tata Central Hospital	1.78	0.11	1.28	2.24		

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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IS	ADITI R&D Testing La NABL ACC (A Constituent Board of C O/IEC 17025:2017, ISO 9001:2015,I	boratory REDITED tuality Counc	il of India)	P.O - Jhan Emai Web Phon	No I-B-17 (P) ri, Industrial Area, Domgarh, Dist Dhanbai khand - 828107 il ID: sindriaditi@gmail.com site: aditimdservices.com re: 0326-2952377 (O), 0326-2952377 le: 09471358492, 094315
Ref.	No.: - ARDS/24-25/SW/1			Date: 1	9/02/2025
	TEST REPO	RT OF SU	RFACE V	VATER	
	Name of the industry : N	S TATA ST	TEEL, JAM	ADOBA,	
	т	ATA STEE	L LIMITED		
	J	AMADOBA	GROUP P	LANT,	
	D	IST DHAN	NBAD (JHA	RKHAND)	
	Work Order Ref. NO.: :	4700126	557/932 Da	te:- 29/05/2024	
		24 2000000	dar River I	Jp Stream	
•	Sample Code :			and the second se	
•		2. Damo	dar River	own Stream	
•	Date of Sample Collection: Date of Testing :	2. Damo 11/02/20 14/02/20	dar River I 25 25 To 18/0	own Stream 2/2025	5.00
•	Date of Sample Collection: Date of Testing : Test :	2. Damo 11/02/20 14/02/20 pH, TDS TEST RESI	odar River E 125 125 To 18/0 9, Turbidity, <u>ULT</u>	own Stream 2/2025 DO, BOD, CI,	, F, SO₄
SI. No.	Date of Sample Collection: Date of Testing :	2. Damo 11/02/20 14/02/20 pH, TDS TEST RESI VAI Damodar River Up	odar River E 25 25 To 18/0 5, Turbidity, ULT LUE Damodar River Dn	own Stream 2/2025	F, SO₄ Test Method
100000000000000000000000000000000000000	Date of Sample Collection: Date of Testing : Test :	2. Damo 11/02/20 14/02/20 pH, TDS <u>TEST RESI</u> VAI Damodar	odar River E 25 25 To 18/0 5, Turbidity, ULT LUE Damodar	2/2025 DO, BOD, CI, Limit as per IS 2296	Test Method
No.	Date of Sample Collection: Date of Testing : Test : PARAMETERS OF TEST	2. Damo 11/02/20 14/02/20 pH, TDS TEST RESI VAI Damodar River Up Stream	odar River D 25 25 To 18/0 5, Turbidity, ULT LUE Damodar River Dn Stream	2/2025 DO, BOD, CI, Limit as per IS 2296 Class - C	Test Method IS-3025 (P-11): 1983
No.	Date of Sample Collection: Date of Testing : Test : PARAMETERS OF TEST PH	2. Damo 11/02/20 14/02/20 pH, TDS TEST RESI VAI Damodar River Up Stream 7.9	odar River E 25 25 To 18/03 5, Turbidity, ULT LUE Damodar River Dn Stream 7.6	Limit as per IS 2296 Class - C 6.5 -8.5	Test Method IS-3025 (P-11): 1983 IS-3025 (P-16): 1984
No. 1. 2.	Date of Sample Collection: Date of Testing : Test : PARAMETERS OF TEST pH Total Dissolved Solids, mg/I	2. Damo 11/02/20 14/02/20 pH, TDS TEST RESI VAI Damodar River Up Stream 7.9 434	odar River E 25 25 To 18/0 5, Turbidity, ULT LUE Damodar River Dn Stream 7.6 532	Limit as per IS 2296 Class - C 6.5 -8.5	Test Method IS-3025 (P-11): 1983 IS-3025 (P-16): 1984 IS-3025 (P-10):1984
No. 1. 2. 3.	Date of Sample Collection: Date of Testing : Test : PARAMETERS OF TEST PH Total Dissolved Solids, mg/l Turbidity, NTU	2. Damo 11/02/20 14/02/20 pH, TDS TEST RESI VAI Damodar River Up Stream 7.9 434 1	odar River E 25 25 To 18/03 5, Turbidity, ULT LUE Damodar River Dn Stream 7.6 532 1	2/2025 DO, BOD, CI, Limit as per IS 2296 Class - C 6.5 -8.5 1500	Test
No. 1. 2. 3. 4.	Date of Sample Collection: Date of Testing : Test : PARAMETERS OF TEST PH Total Dissolved Solids, mg/l Turbidity, NTU Dissolved Oxygen, mg/l Bio chemical Oxygen	2. Damo 11/02/20 14/02/20 pH, TDS TEST RESI VAI Damodar River Up Stream 7.9 434 1 5.1	odar River E 25 25 To 18/0 5, Turbidity, ULT Damodar River Dn Stream 7.6 532 1 5.2	2/2025 DO, BOD, CI, Limit as per IS 2296 Class - C 6.5 -8.5 1500 -	Test Method IS-3025 (P-11): 1983 IS-3025 (P-16): 1984 IS-3025 (P-10):1984 IS-3025 (P-38):1989 IS-3025 (P-44):1994
No. 1. 2. 3. 4. 5.	Date of Sample Collection: Date of Testing : Test : PARAMETERS OF TEST PH Total Dissolved Solids, mg/l Turbidity, NTU Dissolved Oxygen, mg/l Bio chemical Oxygen Demand, mg/l	2. Damo 11/02/20 14/02/20 pH, TDS TEST RESI VAI Damodar River Up Stream 7.9 434 1 5.1 1.7	odar River D 25 25 To 18/03 5, Turbidity, ULT LUE Damodar River Dn Stream 7.6 532 1 5.2 2.2	2/2025 DO, BOD, CI, Limit as per IS 2296 Class - C 6.5 -8.5 1500 - 4.0 (Min) 3.0	Test Method IS-3025 (P-11): 1983 IS-3025 (P-16): 1984 IS-3025 (P-10):1984 IS-3025 (P-38):1989

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R D	5	NAE onstituent Bo	ng Labora BL ACCREDI and of Quality	atory TED Council of	f India)	S P. J. E V P	lot No I-B-17 (P) indri, Industrial Area, O Domgarh, Dist Dhanba harkhand - 828107 mail ID: sindriaditi@gmail.co /ebsite: aditimdservices.com hone: 0326-2952377 (O), ax: 0326-2952377 lobile: 09471358492, 094315	m
	Ref. No.: - ARDS/	24-25/MWD/1				Date	: 21/02/2025	
		TEST REP	ORTOF	INE WA	TER DIS	CHARG	E	
	Name of th		T J D	I/S TATA S ATA STEI AMADOB/ IST DHA	EL LIMITE A GROUP ANBAD (JI	ED PLANT, HARKHAI	ND)	
	 Work Orde Sample C 	r Ref. NO.: ode	: 4 : 1 2 3 4	. 3 Pit . 6 & 7	Jamadob Jamadob Pits Colli	a Colliery a Colliery ery		
			-	. Digw	adih Colli	ery		
	 Date of Sa Date of Te Test 	ample Colle esting	ction: 1 : 1 : p	1/02/2025 4/02/2025 H, TDS, TS	To 12/02/ To 18/02/ SS, BOD, 0	2025 2025	& GREASE.	
51	 Date of Te Test 		ction: 1 : 1 : p <u>TES</u>	1/02/2025 4/02/2025 H, TDS, TS <u>T RESULT</u>	To 12/02/ To 18/02/ SS, BOD, 0	2025 2025 COD, OIL		
SI. No.	Date of Te		ction: 1 : 1 : p	1/02/2025 4/02/2025 H, TDS, TS <u>T RESULT</u>	To 12/02/ To 18/02/ SS, BOD, 0	2025 2025	& GREASE. Test Method	
	Date of Te Test PARAMETERS OF	2 Pit Jamadoba	ction: 1 : 1 : p <u>TES</u> VALU 3 Pit Jamadoba	1/02/2025 4/02/2025 H, TDS, TS <u>T RESULT</u> E 6 & 7 Pits	To 12/02/ To 18/02/ SS, BOD, 0	2025 2025 COD, OIL Limit as per IS-2296 Class B (For	Test	
No.	Date of Te Test PARAMETERS OF TEST PH, Total Dissolved Solids, mg/l	2 Pit Jamadoba Colliery	ction: 1 : 1 : p <u>TES</u> VALU 3 Pit Jamadoba Colliery 7.6	1/02/2025 4/02/2025 H, TDS, TS <u>T RESULT</u> E 6 & 7 Pits Colliery	To 12/02/ To 18/02/ SS, BOD, 0	2025 2025 COD, OIL Limit as per IS-2296 Class B (For Bathing)	Test Method IS-3025 (P-11):	
No. 1. 2. 3.	Date of Te Test PARAMETERS OF TEST pH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l	2 Pit Jamadoba Colliery 7.9 1209 22	ction: 1 : 1 : p <u>TES</u> VALU <u>3 Pit</u> Jamadoba Colliery 7.6 897 25	1/02/2025 4/02/2025 H, TDS, TS <u>T RESULT</u> E 6 & 7 Pits Colliery 7.9 624 27	To 12/02/ To 18/02/ SS, BOD, 0 Digwadih Colliery 7.8 987 29	2025 2025 COD, OIL Limit as per IS-2296 Class B (For Bathing) 6.5-8.5	Test Method IS-3025 (P-11): 1983 IS-3025 (P-16): 1984 IS-3025(P-17) : 1984	
No. 1. 2.	Date of Te Test PARAMETERS OF TEST pH, Total Dissolved Solids, mg/l Total Suspended	2 Pit Jamadoba Colliery 7.9 1209	ction: 1 : 1 : p <u>TES</u> VALU 3 Pit Jamadoba Colliery 7.6	1/02/2025 4/02/2025 H, TDS, TS <u>T RESULT</u> E 6 & 7 Pits Colliery 7.9 624	To 12/02/ To 18/02/ SS, BOD, 0 Digwadih Colliery 7.8 987	2025 2025 COD, OIL Limit as per IS-2296 Class B (For Bathing) 6.5-8.5	Test Method IS-3025 (P-11): 1983 IS-3025 (P-16): 1984 IS-3025(P-17)	
No. 1. 2. 3.	Date of Te Test PARAMETERS OF TEST PH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l Bio chemical Oxygen Demand,	2 Pit Jamadoba Colliery 7.9 1209 22	ction: 1 : 1 : p <u>TES</u> VALU <u>3 Pit</u> Jamadoba Colliery 7.6 897 25	1/02/2025 4/02/2025 H, TDS, TS <u>T RESULT</u> E 6 & 7 Pits Colliery 7.9 624 27	To 12/02/ To 18/02/ SS, BOD, 0 Digwadih Colliery 7.8 987 29	2025 2025 COD, OIL Limit as per IS-2296 Class B (For Bathing) 6.5-8.5	Test Method IS-3025 (P-11): 1983 IS-3025 (P-16): 1984 IS-3025 (P-17) : 1984 IS-3025 (P-	



Technical Manager Aditi R&D Services, Sindri

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R D S		Laborate ACCREDITE	D D	dia)	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, 094315126
	Ref. No.: - ARDS/24-25/ETP/1			D	ate: 19/02/2025
	TEST	REPORT	OF EF	FLUENT	
	Name of the industry	TA	TA STEEL	EEL, JAMADO LIMITED GROUP PLAN IBAD (JHARKH	т,
	Work Order Ref. NO.:	: 470	0126557/93	32 Date:- 29/05/	2024
	Sample Code	: 1.6	E.T.P. Out	et T.C.H.	
	 Date of Sample Collection Date of Testing Test 	: 14/ : pH	02/2025 T	o 12/02/2025 o 18/02/2025 S, BOD, COD, C	DIL & GREASE.
SI.	PARAMETERS OF TEST	VAL	States -	Canami	Test
No.	PARAMETERS OF TEST	E.T.P. Outlet T.C.H.	E.T.P. Outlet Garage	General Standard for discharge of Environmental Pollutants, Inland Surface water by the MoEF&C	Method
1.	pH,	8.5	8.3	5.5-9.0	IS-3025 (P-11): 1983
2.	Total Dissolved Solids, mg/l	845	715		IS-3025 (P-16): 1984
3.	Total Suspended Solids, mg/l	26	65	100	IS-3025(P-17) : 1984
4.	Bio chemical Oxygen Demand, mg/l	5.0	7.0	30	IS-3025 (P-44):1994
5.	Chemical Oxygen Demand, mg/l	40	56	250	IS-3025 (P-58):2006
6.	Oil & Grease, mg/l	1.6	3.2	10	IS-3025 (P-39):2021

Note : BDL - Below Detection Limit

Sr Aditi R&D Services



Technical Mahager Aditi R&D Services, Sindri

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	ADIT				ES	Sindri, I P.O D		rea, st Dhanbad
•)		Testing L	aborato	ry			and - 8281(D: sindriadi)7 ti@gmail.com
/			CREDITED			Website		ervices.com
	(A Constit	tuent Board o	f Quality Co	uncil of Ind	ia)	Emr 07	26-295237	7
15	SO/IEC 17025:2017,	ISO 9001:201	5,ISO (OHS/	AS) 45001.2	ora cerune	Mobile	09471300	492, 0943151
Ref.	. No.: - ARDS/24-2			-		Date: 21	/02/2025	
		TESTR	EPORT OF	DRINKING	WATER			
	 Name of the in 	ndustry	JAMADO	BA GROU				
	• Work Order R	ef. NO.:	: 4700126					
	 Sample Code 		2. Ca	anteen- Ja	madoba C madoba V gwadih Co	Vashery		
	 Date of Samp Date of Testin 		n: 11/0		7 Pits Col 12/02/20	25		
SI.	Test Colour, Odour, T Dissolved Solid Compound, Me Chromium, Mine PARAMETERS	Taste, Turbidii Is, Calcium, Ircury, Cadm Iral Oil, Alkalir	: y, pH, Total Copper, M ium, Arsenid ity, Aluminiu <u>TEST R</u> VAL	Hardness, li langanese, c, Cyanide, im & Boron. <u>RESULT</u> UE	ron, Chlorid Sulphate, M Lead, Zir	e, Res. Fre Nitrate, Flu nc, Total	oride, P Coliform	henolic , Total Test
	 Test Colour, Odour, 1 Dissolved Solid Compound, Me Chromium, Mine 	Taste, Turbidit Is, Calcium, rcury, Cadm	: y, pH, Total Copper, M ium, Arsenid ity, Aluminiu TEST R	Hardness, li anganese, c, Cyanide, im & Boron. RESULT UE Canteen	ron, Chlorid Sulphate, M Lead, Zir	e, Res. Fre Nitrate, Flu nc, Total	oride, P Coliform	henolic , Total
SI. No	Test Colour, Odour, T Dissolved Solid Compound, Me Chromium, Mine PARAMETERS OF TEST	Taste, Turbidit Is, Calcium, Froury, Cadm Fral Oil, Alkalin Canteen- Jamadoba Colliery	: y, pH, Total Copper, M ium, Arsenid ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery	Hardness, li anganese, c, Cyanide, im & Boron. <u>RESULT</u> UE Canteen Digwadih Colliery	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits Colliery	e, Res. Fre Nitrate, Flu nc, Total IS as p 10500: Desirab Ie	er IS 2012 Permi ssible	henolic , Total Test Method
SI.	Test Colour, Odour, T Dissolved Solid Compound, Me Chromium, Mine PARAMETERS	Taste, Turbidii Is, Calcium, Frcury, Cadm Fral Oil, Alkalin Canteen- Jamadoba	: y, pH, Total Copper, M ium, Arsenid ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba	Hardness, li anganese, c, Cyanide, im & Boron. RESULT UE Canteen Digwadih	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits	e, Res. Fre Nitrate, Flu nc, Total IS as p 10500: Desirab	er IS 2012 Permi	henolic , Total Test Method IS 3025 (P-4):2021
SI. No	Test Colour, Odour, T Dissolved Solid Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen	Taste, Turbidit Is, Calcium, Froury, Cadm Fral Oil, Alkalin Canteen- Jamadoba Colliery	: y, pH, Total Copper, M ium, Arsenid ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery	Hardness, li anganese, c, Cyanide, im & Boron. <u>RESULT</u> UE Canteen Digwadih Colliery	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits Colliery	e, Res. Fre Nitrate, Flu nc, Total IS as p 10500: Desirab Ie	er IS 2012 Permi ssible	henolic , Total Test Method IS 3025 (P-4):2021 IS 3025 (P- 5):2018
SI. No 1.	Test Colour, Odour, T Dissolved Solid Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit)	Taste, Turbidit Is, Calcium, ercury, Cadm eral Oil, Alkalin Canteen- Jamadoba Colliery 1	: y, pH, Total Copper, M ium, Arsenid ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1	Hardness, li anganese, c, Cyanide, im & Boron. <u>RESULT</u> UE Canteen Digwadih Colliery 1	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits Colliery 1	e, Res. Fre Nitrate, Flu nc, Total IS as p 10500: Desirab Ie 5.00 Agreeabl	er IS 2012 Permi ssible 15.0	henolic , Total Test Method IS 3025 (P-4):2021 IS 3025 (P- 5):2018 IS 3025 (P-
SI. No 1. 2.	Test Colour, Odour, ¹ Dissolved Solid Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour	Taste, Turbidit Is, Calcium, rrcury, Cadm rral Oil, Alkalin Canteen- Jamadoba Colliery 1 Agreeable	: y, pH, Total Copper, M ium, Arsenid ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1 Agreeable	Hardness, II anganese, c, Cyanide, im & Boron. <u>RESULT</u> UE Canteen Digwadih Colliery 1 Agreeable	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits Colliery 1 Agreeable	e, Res. Fre Nitrate, Flu nc, Total IS as p 10500: Desirab Ie 5.00 Agreeabl e Agreeabl	er IS 2012 Permi ssible 15.0 Agree able Agree	henolic , Total Test Method IS 3025 (P-4):2021 IS 3025 (P- 5):2018 IS 3025 (P- 7):2017 IS 3025 (P- 7):2017
SI. No 1. 2. 3.	Test Colour, Odour, T Dissolved Solid Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste	Taste, Turbidit Is, Calcium, Ircury, Cadm Iral Oil, Alkalin Canteen- Jamadoba Colliery 1 Agreeable Agreeable	: y, pH, Total Copper, M ium, Arseniu ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1 Agreeable Agreeable	Hardness, Ir anganese, c, Cyanide, im & Boron. <u>RESULT</u> UE Canteen Digwadih Colliery 1 Agreeable Agreeable	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits Colliery 1 Agreeable Agreeable	e, Res. Fre Nitrate, Flu nc, Total IS as p 10500: Desirab Ie 5.00 Agreeabl e Agreeabl e	er IS 2012 Permi ssible 15.0 Agree able Agree able 5.0 No.	henolic , Total Test Method IS 3025 (P-4):2021 IS 3025 (P- 5):2018 IS 3025 (P- 7):2017 IS 3025 (P- 10):1984 IS-3025 (P-
SI. No 1. 2. 3.	Test Colour, Odour, T Dissolved Solid Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU pH Total Hardness	Taste, Turbidit Is, Calcium, incury, Cadm ral Oil, Alkalin Canteen- Jamadoba Colliery 1 Agreeable Agreeable 2	: y, pH, Total Copper, M ium, Arseniu ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1 Agreeable Agreeable 2	Hardness, Ir anganese, c, Cyanide, im & Boron. <u>RESULT</u> UE Canteen Digwadih Colliery 1 Agreeable Agreeable	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits Colliery 1 Agreeable Agreeable	e, Res. Fre Nitrate, Flu nc, Total IS as p 10500: Desirab Ie 5.00 Agreeabl e Agreeabl e 1.0	er IS 2012 Permi ssible 15.0 Agree able 5.0	henolic , Total Test Method IS 3025 (P-4):2021 IS 3025 (P- 5):2018 IS 3025 (P- 7):2017 IS 3025 (P- 10):1984 IS-3025 (P- 11):1983 IS 3025 (P-
SI. No 1. 2. 3. 4. 5.	Test Colour, Odour, Dissolved Solid Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU pH Total Hardness as CaCO ₃ , mg/l Chloride as CI,	Taste, Turbidit Is, Calcium, ercury, Cadmeral Oil, Alkalin Canteen- Jamadoba Colliery 1 Agreeable Agreeable 2 7.8	: y, pH, Total Copper, M ium, Arseniu ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1 Agreeable Agreeable 2 7.7	Hardness, II anganese, c, Cyanide, im & Boron. <u>RESULT</u> UE Canteen Digwadih Colliery 1 Agreeable Agreeable	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits Colliery 1 Agreeable Agreeable 1 7.9	e, Res. Fre Nitrate, Flu nc, Total IS as p 10500: Desirab Ie 5.00 Agreeabl e Agreeabl e 1.0 6.5-8.5	er IS 2012 Permi ssible 15.0 Agree able Agree able 5.0 No. Relax.	henolic , Total Test Method IS 3025 (P-4):2021 IS 3025 (P- 5):2018 IS 3025 (P- 7):2017 IS 3025 (P- 10):1984 IS-3025 (P- 11):1983 IS 3025 (P- 21):2009
SI. No 1. 2. 3. 4. 5. 6.	Test Colour, Odour, T Dissolved Solid Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU pH Total Hardness as CaCO ₃ , mg/l Chloride as Cl, mg/l Res. Free chlorine as Cl ₂	Taste, Turbidit Is, Calcium, ircury, Cadm irral Oil, Alkalin Ganteen- Jamadoba Colliery 1 Agreeable Agreeable 2 7.8 583.8	: y, pH, Total Copper, M ium, Arsenid ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1 Agreeable 2 7.7 567.0	Hardness, II anganese, c, Cyanide, im & Boron. <u>RESULT</u> UE Canteen Digwadih Colliery 1 Agreeable Agreeable 1 7.9 441.0	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits Colliery 1 Agreeable Agreeable 1 7.9 344.4	e, Res. Fre Nitrate, Flu nc, Total IS as p 10500: Desirab Ie 5.00 Agreeabl e Agreeabl e 1.0 6.5-8.5 200	er IS 2012 Permi ssible 15.0 Agree able Agree able 5.0 No. Relax. 600	henolic , Total Test Method IS 3025 (P-4):2021 IS 3025 (P- 5):2018 IS 3025 (P- 7):2017 IS 3025 (P- 10):1984 IS 3025 (P- 11):1983 IS 3025 (P- 21):2009 IS 3025 (P- 32):1988
SI. No 1. 2. 3. 4. 5. 6. 7.	Test Colour, Odour, T Dissolved Solid Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU pH Total Hardness as CaCO ₃ , mg/l Chloride as Cl, mg/l Res. Free chlorine as Cl ₂ mg/l Total Dissolved	Taste, Turbidit Is, Calcium, ircury, Cadm irral Oil, Alkalin Ganteen- Jamadoba Colliery 1 Agreeable 2 7.8 583.8 71.8	: y, pH, Total Copper, M ium, Arseniu ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1 Agreeable 2 7.7 567.0 74.0	Hardness, II anganese, c, Cyanide, im & Boron <u>RESULT</u> UE Canteen Digwadih Colliery 1 Agreeable Agreeable 1 7.9 441.0 75.0	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits Colliery 1 Agreeable 1 7.9 344.4 40.7	e, Res. Fre Nitrate, Flu Ic, Total IS as p 10500: Desirab le 5.00 Agreeabl e 1.0 6.5-8.5 200 250 0.20	er IS 2012 Permi ssible 15.0 Agree able Agree able 5.0 No. Relax. 600	henolic , Total Test Method IS 3025 (P-4):2021 IS 3025 (P- 5):2018 IS 3025 (P- 7):2017 IS 3025 (P- 10):1984 IS 3025 (P- 21):2009 IS 3025 (P- 21):2009 IS 3025 (P- 32):1988 IS 3025 (P- 32):1988
SI. No 1. 2. 3. 4. 5. 6. 7. 8.	Test Colour, Odour, T Dissolved Solid Compound, Me Chromium, Mine PARAMETERS OF TEST Colour, (Hazen Unit) Odour Taste Turbidity, NTU pH Total Hardness as CaCO ₃ , mg/l Chloride as Cl, mg/l Res. Free chlorine as Cl ₂ mg/l	Taste, Turbidit Is, Calcium, ircury, Cadmeral Oil, Alkalin Canteen- Jamadoba Colliery 1 Agreeable 2 7.8 583.8 71.8 NIL	: y, pH, Total Copper, M ium, Arseniu ity, Aluminiu <u>TEST R</u> VAL Canteen- Jamadoba Washery 1 Agreeable 2 7.7 567.0 74.0 NIL	Hardness, II anganese, c, Cyanide, im & Boron. <u>RESULT</u> UE Canteen Digwadih Colliery 1 Agreeable 1 7.9 441.0 75.0 NIL	ron, Chlorid Sulphate, M Lead, Zir Canteen- 6&7 Pits Colliery 1 Agreeable 1 7.9 344.4 40.7 NIL	e, Res. Fre Nitrate, Flu Ic, Total IS as p 10500: Desirab le 5.00 Agreeabl e 1.0 6.5-8.5 200 250 0.20	er IS 2012 Permi ssible 15.0 Agree able Agree able 5.0 No. Relax. 600 1000	henolic , Total Test Method IS 3025 (P-4):2021 IS 3025 (P- 5):2018 IS 3025 (P- 7):2017 IS 3025 (P- 10):1984 IS-3025 (P- 11):1983 IS 3025 (P- 21):2009 IS 3025 (P- 26):2021 IS 3025 (P- 26):2021



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 measurment.

	Te	sting La	uality Coun	cil of India)	Sind P.O. Jhan Ema Web Pho	khand - 828 II ID: sindria site: aditimo ne: 0326-29 0326-2952	Area, Dist Dhanbad 1107 Iditi@gmail.con dservices.com 52377 (O),
			- 2	! -				
SI.	PARAMETERS OF		VAL	JE		IS as	per IS	Test
No.	TEST	Canteen-	Canteen	Canteen	Canteen	1050	0:1991	Method
		Jamadoba Colliery	Jamadoba Washery	Digwadih Colliery	- 6&7 Pits Colliery	Desira ble	Permis sible	
12.	Manganese as Mn, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.10	0.30	IS 3025 (P 59):2006
13.	Sulphate as SO ₄ , mg/l	35.6	37.8	34.8	38.6	200	400	IS 3025 (P 24):1986
14.	Nitrate as NO ₃ , mg/l	5.4	5.3	5.2	5.0	45	No. Relax	IS 3025 (P 34):1988
15.	Fluoride as F, mg/l	0.3	0.4	0.2	0.2	1.0	1.5	IS 3025 (P 60):2008
16.	Phenolic Compound as (C6H5OH) mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.001	0.002	IS 3025 (P 43):1992
17.	Mercury as Hg, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.001	No. Relax	IS 3025 (P 48):1994
18.	Cadmium as Cd, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.003	No. Relax	IS 3025 (P 41):1992
19.	Arsenic as As, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.01	No. Relax	IS 3025 (P 37):1988
20.	Cyanide as CN, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.05	No. Relax	IS 3025 (P 27):1986
21.	Lead as Pb, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.01	No. Relax	IS 3025 (P 47):1994
22.	Zinc as Zn, mg/l,	2	3	2	2	5	15	IS 3025 (P 42):1992
23.	Total Coliform, No./100ml	Absent	Absent	Absent	Absent	Absen t	Absent	IS 3025 (P 49):1994
24.	Total Chromium as Cr, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.05	No. Relax	IS 3025 (P 52):2003
25.	Mineral Oil, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.5	No. Relax	IS 3025 (P 39):1989
26.	Alkalinity as CaCO ₃ , mg/l,	448	424	400	184	200	600	IS 3025 (P 23):1983
27.	Aluminium as Al, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.03	0.2	IS 3025 (P 55):2003
28.	Boron as B, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	0.5	1.0	IS 3025 (P 57):2005

Sr. emist Aditi R&D Services



Technical' Manager Aditi R&D Services, Sindri

Statements :

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2. The test results reported in this report are valid at the time of and under the stated condition of measurment.

Weather Status of	S OF THE CLI ., JAMADOB MADOBA GR (JHARKHAN	A, OUP PLANT,			
ARDS/23-24/S/1 Date: 20/02/2025 M/S TATA STEEL Date of Sample Collection 14/02/2025 DIST DHANBAD Date of Testing Nature of Sampling Collection: IS 17/02/2025 to 18/02/2025 Weather condition	., JAMADOB MADOBA GR (JHARKHAN	A, OUP PLANT,			
Date of Sample Collection TATA STEEL LIMITED, JAN 14/02/2025 DIST DHANBAD Date of Testing Nature of Sampling Collection: IS 17/02/2025 to 18/02/2025 Weather Status of condition	ADOBA GR	OUP PLANT,			
17/02/2025 to 18/02/2025 Weather Status of the Plant	O - KINETIC				
17/02/2025 to 18/02/2025 condition the Plant	Nature of Sampling Collection: ISO - KINETIC SAMPLING				
Clear Running	Ambient Temperature (⁰ C)	R.Humidity (%)			
	28	49			
GENERAL INFORMATION					
1. Nature of the Plant	M.S.	The second second			
2. Capacity of DG Set 2.0+2.0-	+2.0 MVA (6.0	0 MVA)			
3. Location Central Wor	kshop Area,	Jamadoba			
4. No. of Stack	1				
5. Stack Height from G.L. in Meter	30				
 Inner Shape & Size of Stack (in meter)φ 	2.5				
7 Stack attached to	DG Set				
8. Type of Fuel used	HSD				
GASEOUS EMISSION ANALYSIS RESULTS					
SI. No Particulars Method Value	As p	er CPCB ARD mg/Nm ³			

51. NO	Particulars	Method	Value	As per CPCB STANDARD mg/Nm ³
1.	Flue gas temperature (⁰ C)	IS: 11255 (Part-3)	103	-
2.	Velocity of flue gas (m/sec)	IS: 11255 (Part-3)	9.2	-
3.	Flow Rate of Flue gas (Nm ³ /Hr)	IS: 11255 (Part-3)	128903.11	
4.	Concentration of Particulate Matter (mg/ Nm ³) at 15% O ₂	IS: 11255 (Part-1)	62.36	75
5.	Concentration of SOX as SO ₂ (mg/ Nm ³) at 15% O ₂	IS : 11255 (Part-2)	54.76	
6.	Concentration of NOX as NO ₂ (mg/ Nm ³) at 15% O ₂	IS: 11255 (Part-7)	126.41	360
7.	Non Methane Hydrocarbon (NMHC) at 15% O ₂	IS : 13270	46.79	100
8.	Carbon Monoxide (CO) (mg/Nm)3	IS: 13270	37.2	150

Sr Cl emis Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

Statements :

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- 2. The test results reported in this report are valid at the time of and under the stated condition of measurment.
- 3. This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory.

Annexure- II ADITI R&D SERVICES Plot No. - I-B-17 (P) Sindri, Industrial Area, P.O.- Domgarh, Dist.- Dhanbad ARD Testing Laboratory Jharkhand - 828107 Email ID: sindriaditi@gmail.com NABL ACCREDITED Website: aditimdservices.com (A Constituent Board of Quality Council of India) Phone: 0326-2952377 (O). Fax: 0326-2952377 ISO/IEC 17025:2017, ISO 9001:2015,ISO (OHSAS) 45001:2018 Certified Mobile: 09471358492, 09431512608 TEST REPORT OF NOISE (AMBIENT) LEVEL MONITORING Ref. No. & Date NAME AND ADDRESS OF THE CLIENT ARDS/23-24/N/S/1 Date: 20/02/2025 M/S TATA STEEL, JAMADOBA, TATA STEEL LIMITED, JAMADOBA GROUP PLANT, Date of Monitoring DIST. - DHANBAD (JHARKHAND) Avg. Average Weather Status of Humidity (%) 12/02/2025 Ambient Condition the plant Temperature (°C) Work Order 4700092573/932 28 49 Clear Running Dt. 20.07.2021 MONITORING RESULTS Noise level (Ambient standard) SI. Place of for Industrial Area as per CPCB **Day Time** No Monitoring Noise Pollution (Regulation and Control) (Amendment) Rules . (6 AM to 10 PM) 2000 notified vide S.O. 1046(E) dB(A) Dt. 22.11.2020 Limit in dB(A) Leq Day Time **Night Time** LOCATION MAX JAMADOBA GROUP MIN Industrial Area **Industrial Area** Central Workshop Area 71.2 66.4 Jamadoba near DG Set 75 70 Remarks: Noise level is well within the standard specified limit for Industrial Area. Sr. Technician Technic al-Manager Aditi R&D Service Aditi R&D Services, Sindri Statements :

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 measurment.

RD	lin		&D SI		CES		Plot No I-B-17 (P Sindri, Industrial An P.O Domgarh, Dis Jharkhand - 82810	ea, et Dhanbad 7
-	13	NA	BL ACCRED	TED			Email ID: sindriaditi Website: aditimdse	
GLABON	(A Co	nstituent Bo	oard of Quality	y Council o	f India)		Phone: 0326-29523	377 (O),
	ISO/IEC 17025:2		01:2015,ISO (0	OHSAS) 450	001:2018 0	ertified	Fax: 0326-2952377 Mobile: 094713584	
	Ref. No.: - ARD6/24		EST REPO	RT OF S	SEWAG	10 M	te: 21/02/2025	
	 Name of the 	1.1	: M T J	I/S TATA S ATA STE AMADOB/ IST DHA	STEEL, J El limit A grouf	amadoe Ted P plant	;	
	Work Order	Ref NO .		700126557/				
	Sample Co		S	. STP Out				
	Date of Sar	nple Colle	3 4 5	STP Outl STP Outl STP Outl STP Outl 1/02/2025	et -Digw et- Jmb. et- JCPP	adih 12 N Canteen Canteer		lony flat
	 Date of Tes 	ting	: 1	4/02/2025	To 18/0	2/205		
	• Test		a		Coliform,		L & GREASE, trogen, Total	
				T RESULT				
SI.	PARAMETERS OF		TES				As per	Test
SI. No.	PARAMETERS OF TEST	STP Outlet Railway Colony	TES	T RESULT VALUE STP Outlet Digwadi h 12 No. Supervis		STP Outlet- JCPP Cantee n	As per MoEF&CC Notification for Sewage Treatment Plant	Test Method
102/02		Outlet Railway	TES STP Outlet Digwadih 12 No Officers	T RESULT VALUE STP Outlet Digwadi h 12 No.	STP Outlet Jmb. Cantee	Outlet- JCPP Cantee	MoEF&CC Notification for Sewage Treatment	Method IS-3025(P-
No.	PH, Total Dissolved	Outlet Railway Colony	TES STP Outlet Digwadih 12 No Officers Colony	T RESULT VALUE STP Outlet Digwadi h 12 No. Supervis or flat	STP Outlet Jmb. Cantee n	Outlet- JCPP Cantee n	MoEF&CC Notification for Sewage Treatment Plant	Method IS-3025(P- 11):1983 IS-3025(P-
No.	TEST pH,	Outlet Railway Colony 7.6	TES STP Outlet Digwadih 12 No Officers Colony 8.1	T RÉSULT VALUE STP Outlet Digwadi h 12 No. Supervis or flat 7.8	STP Outlet Jmb. Cantee n 7.6	Outlet- JCPP Cantee n 8.3	MoEF&CC Notification for Sewage Treatment Plant	Method IS-3025(P- 11):1983
No. 1. 2.	PH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l Bio chemical Oxygen Demand, mg/l	Outlet Railway Colony 7.6 1306.5	TES STP Outlet Digwadih 12 No Officers Colony 8.1 916.5	T RÉSULT VALUE STP Outlet Digwadi h 12 No. Supervis or flat 7.8 1144	STP Outlet Jmb. Cantee n 7.6 1105 15 9.0	Outlet- JCPP Cantee n 8.3 760.5 19 9.8	MoEF&CC Notification for Sewage Treatment Plant 5.5-9.0. - 20 10	Method IS-3025(P- 11):1983 IS-3025(P- 16):1984 IS-3025(P- 17):1984 IS-3025(P- 44):1994
No. 1. 2. 3.	PH, PH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l Bio chemical Oxygen Demand, mg/l Chemical Oxygen Demand, mg/l	Outlet Railway Colony 7.6 1306.5 12 8.2 30	TES STP Outlet Digwadih 12 No Officers Colony 8.1 916.5 10 6.5 45	T RÉSULT VALUE STP Outlet Digwadi h 12 No. Supervis or flat 7.8 1144 20 8.0 48	STP Outlet Jmb. Cantee n 7.6 1105 15 9.0 48.8	Outlet- JCPP Cantee n 8.3 760.5 19 9.8 47.6	MoEF&CC Notification for Sewage Treatment Plant 5.5-9.0- - 20	Method IS-3025(P- 11):1983 IS-3025(P- 16):1984 IS-3025(P- 17):1984 IS-3025(P- 44):1994 IS-3025(P- 58):2006
No. 1. 2. 3. 4. 5. 6.	PH, PH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l Bio chemical Oxygen Demand, mg/l Chemical Oxygen Demand, mg/l Oil & Grease, mg/l	Outlet Railway Colony 7.6 1306.5 12 8.2 30 1.3	TES STP Outlet Digwadih 12 No Officers Colony 8.1 916.5 10 6.5 45 1.5	T RÉSULT VALUE STP Outlet Digwadi h 12 No. Supervis or flat 7.8 1144 20 8.0 48 1.9	STP Outlet Jmb. Cantee n 7.6 1105 15 9.0 48.8 2.3	Outlet- JCPP Cantee n 8.3 760.5 19 9.8 47.6 2.5	MoEF&CC Notification for Sewage Treatment Plant 5.5-9.0. - 20 10 50	Method IS-3025(P- 11):1983 IS-3025(P- 16):1984 IS-3025(P- 17):1984 IS-3025(P- 44):1994 IS-3025(P- 58):2006 IS-3025(P- 39):2021
No. 1. 2. 3. 4. 5.	PH, PH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l Bio chemical Oxygen Demand, mg/l Chemical Oxygen Demand, mg/l	Outlet Railway Colony 7.6 1306.5 12 8.2 30	TES STP Outlet Digwadih 12 No Officers Colony 8.1 916.5 10 6.5 45	T RÉSULT VALUE STP Outlet Digwadi h 12 No. Supervis or flat 7.8 1144 20 8.0 48	STP Outlet Jmb. Cantee n 7.6 1105 15 9.0 48.8 2.3 128	Outlet- JCPP Cantee n 8.3 760.5 19 9.8 47.6	MoEF&CC Notification for Sewage Treatment Plant 5.5-9.0. - 20 10	Method IS-3025(P- 11):1983 IS-3025(P- 16):1984 IS-3025(P- 17):1984 IS-3025(P- 44):1994 IS-3025(P- 58):2006 IS-3025(P- 39):2021 IS - 1622
No. 1. 2. 3. 4. 5. 6.	PH, PH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l Bio chemical Oxygen Demand, mg/l Chemical Oxygen Demand, mg/l Oil & Grease, mg/l Fecal Coliform (FC) (MPN/100ml) Total Nitrogen as N, mg/l	Outlet Railway Colony 7.6 1306.5 12 8.2 30 1.3 1.3 125 8.2	TES STP Outlet Digwadih 12 No Officers Colony 8.1 916.5 10 6.5 45 1.5 116 7.7	T RÉSULT VALUE STP Outlet Digwadi h 12 No. Supervis or flat 7.8 1144 20 8.0 48 1.9 122 8.9	STP Outlet Jmb. Cantee n 7.6 1105 15 9.0 48.8 2.3 128 7.8	Outlet- JCPP Cantee n 8.3 760.5 19 9.8 47.6 2.5 136 8.0	MoEF&CC Notification for Sewage Treatment Plant 5.5-9.0- - 20 10 50 - Desirable 100 & Permissible 230 10	Method IS-3025(P- 11):1983 IS-3025(P- 16):1984 IS-3025(P- 17):1984 IS-3025(P- 44):1994 IS-3025(P- 58):2006 IS-3025(P- 39):2021 IS - 1622 IS - 3025 (P-34):1988
No. 1. 2. 3. 4. 5. 6. 7.	PH, PH, Total Dissolved Solids, mg/l Total Suspended Solids, mg/l Bio chemical Oxygen Demand, mg/l Chemical Oxygen Demand, mg/l Oil & Grease, mg/l Fecal Coliform (FC) (MPN/100ml) Total Nitrogen as N,	Outlet Railway Colony 7.6 1306.5 12 8.2 30 1.3 1.3	TES STP Outlet Digwadih 12 No Officers Colony 8.1 916.5 10 6.5 45 1.5 116	T RÉSULT VALUE STP Outlet Digwadi h 12 No. Supervis or flat 7.8 1144 20 8.0 48 1.9 122	STP Outlet Jmb. Cantee n 7.6 1105 15 9.0 48.8 2.3 128	Outlet- JCPP Cantee n 8.3 760.5 19 9.8 47.6 2.5 136	MoEF&CC Notification for Sewage Treatment Plant 5.5-9.0- - 20 10 50 - Desirable 100 & Permissible 230	Method IS-3025(P- 11):1983 IS-3025(P- 16):1984 IS-3025(P- 17):1984 IS-3025(P- 44):1994 IS-3025(P- 58):2006 IS-3025(P- 39):2021 IS - 1622 IS - 3025

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 measurment.
- 3. This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory.

Annexure- II ADITI R&D SERVICES Plot No. - I-B-17 (P) Sindri, Industrial Area. P.O.- Domgarh, Dist.- Dhanbad Testing Laboratory ARD Jharkhand - 828107 Email ID: sindriaditi@gmail.com NABL ACCREDITED Website: aditimdservices.com (A Constituent Board of Quality Council of India) Phone: 0326-2952377 (O). Fax: 0326-2952377 ISO/IEC 17025:2017, ISO 9001:2015,ISO (OHSAS) 45001:2018 Certified Mobile: 09471358492, 09431512608 Ref. No.: - ARDS/23-24/GW/1 Date: 21/02/2025 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. : 4700126557/932 Date:- 29/05/2024 Sample Code 1. Jorapokhar Kustand 2. Bhowra 13 No. 3. Mohalbani Basti 4. Lower Dungari 5. Jamadoba 3 No. Date of Sample Collection : 11/02/2025 to 12/02/2025 Date of Testing 14/02/2025 to 20/02/2025 Test Colour, Odour, Taste, Turbidity, pH, Total Hardness, 1 Iron, Chloride, Res. Free chlorine, Total Dissolved Solids, Calcium, Copper, Manganese, Sulphate, Nitrate, Fluoride, Phenolic Compou'nd, Mercury, Cadmium, Arsenic, Cyanide, Lead, Zinc, Total Coliform, Chromium, Mineral Oil, Alkalinity, Aluminium & Boron. TEST RESULT SI. PARAME-TERS VALUE IS as per IS Test No OF TEST 10500:1991 Method Jorapokhar Bhowra 13 Mohalbani Lower Jama Desir-Permi-Kustand No. Basti Dungari doba able ssible 3 No 1. Colour, 2 2 2 2 5 1 15 IS 3025 (P-(Hazen Unit) 4):2021 Temperature [®]C 2. 27 28 27 28 27 3. Electrical 2030 730 1030 660 840 Conductivity, µmhos/cm 4. Total Dissolved 1308 460 650 415 546 500 2000 IS 3025(P-Solids, mg/l 16):1984 5. pH 7.8 7.5 7.1 6.7 7.3 6 5-No IS-3025(P-11):1983 8.5 Relax 6. **Total Hardness** 399 281.4 340.2 298.2 310 200 600 IS 3025(Pas CaCO3, mg/l 21):2009 7. Calcium as Ca, 124 86.6 116.0 67.2 80.4 75 200 IS 3025(Pmg/l 40):1991 8. Magnesium as 21.4 16.2 12.0 31.2 26.2 30 100 IS 3025(P-Mg, mg/l 46):1994 9. Chloride as CI, 248 64 106.7 85.3 72.6 250 1000 IS 3025(P mg/l 32):1988 10. Fluoride as F, 0.2 0.2 0.5 0.2 0.1 1.0 1.5 IS 3025(Pmg/l 60):2008 Continued on Page -2

Statements :

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- 3. This particular test report cannot be reproduced except in full, without prior written permission of Quality Manager of the laboratory.

R D	ADITIR&DSERVICES Testing Laboratory NABL ACCREDITED (A Constituent Board of Quality Council of India) ISO/IEC 17025:2017, ISO 9001:2015,ISO (OHSAS) 45001:2018 Certified 2											
SI. No	PARAMETERS OF TEST				per IS 0:1991	Test Metho						
+	OF TEST	Jorapokhar Kustand	Bhowra 13 No.	Mohalbani Basti	Lower Dungari	Jamado ba 3 No	Desir - able	Permis -sible				
11	Sulphate as SO ₄ , mg/l	45.5	40.6	50.6	45.2	56.4	200	400	IS 3025(P- 24):1986			
12.	Nitrate as NO ₃ , mg/l	4.9	4.8	5.6	4.8	4.9	45	No. Relax	IS 3025(P- 34):1988			
13.	Alkalinity as CaCO ₃ , mg/l,	676	252	236	168	268	200	600	IS 3025(P- 23):1983			
14.	Lead as Pb, mg/l	B.D.L	B.D.L	B.D.L	B.D.L.	B.D.L.	0.01	No. Relax	IS 3025(P- 47):1994			
15.	Zinc as Zn, mg/l,	3	3	3 .	2	2	5	15	IS 3025(P- 42):1992			
16.	Iron a Fe, mg/I	0.17	0.15	0.15	0.17	0.18	1.0	No. Relax	IS 3025(P- 53):2003			
17.	Copper as Cu, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	0.05	1.5	IS3025 (P- 42):1992			
18.	Mercury as Hg, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	0.001	No. Relax	IS 3025(P- 48):1994			
19.	Cadmium as Cd, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	0.003	No. Relax	IS 3025(P- 41):1992			
20.	Nickel as Ni, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	0.02	No. Relax	IS 3025(P- 37):1992			
21.	Arsenic as As, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	0.01	No. Relax	IS 3025(P- 37):1988			
22.	Cyanide as CN, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	0.05	No. Relax	IS 3025(P- 27):1986			
23.	Total Chromium as Cr, mg/l	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L.	0.05	No. Relax-	IS 3025(P- 52):2003			

NOTE: BDL - Below Detection Limit

Sr. nist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

Statements :

1. The test report refers only to the particular item(s) submitted for testing.

2. The test results reported in this report are valid at the time of and under the stated condition of measurment.

TATA STEEL LIMITED JHARIA DIVISION

Area. Manager, Digwadih Colliery Area. Manager, 6 & 7 Pits Colliery Head, Jamadoba Coal Washery CMO, Tata Central Hospital, Jamadoba

Ref: JMB /ENV /LAB /02 / 687 / 24 Date: 12 / 11 / 2024

Re: AIR QUALITY REPORT

We wish to inform you that Air Quality Monitoring was carried out in JAMADOBA GROUP in the month of OCTOBER'2024. The results are as given below.

Core zone (as per Ambient Air quality standards for coal mines notified vide notification G.S.R. 742(E) dated-25.09.2000

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	SPM 24 Hourly Limit-700 µg/m ³	RSPM 24 Hourly Limit-300 µg/m ³	SO2 24 Hourly Limit-120 µg/m ³	NOx 24 Hourly Limit-120 µg/m ³
1	6&7 Pits Kalimandir area	23°43'15" N/ 86°24'12" E	04.10.24	Cloudy	190.7	66.3	17.8	20.5

Buffer zone (as per NAAQS 2009 for Ambient Air quality standards)

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	PM 10 24 Hourly Limit-100 µg/m ³	PM 2.5 24 Hourly Limit- 60 µg/m ³	SO ₂ 24 Hourly Limit-80 μg/m ³	NOx 24 Hourly Limit-80 µg/m ³
1	Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	03.10.24	Cloudy	70.6	35.8	16.5	19.2
2	Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	07.10.24	Clear	86.3	42.8	17.2	20.8
3	New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	08.10.24	Clear	80.1	40.7	18.6	21.1
4	Tata Central Hospital	23°42'36" N/ 86°24'10.4"E	09.10.24	Clear	76.2	38.5	15.4	18.3

Note: PM 10 - Less than 10-micron Particulate Matter PM2.5 - Less than 2.5-micron Particulate Matter

μg - Microgram

This is for your information and necessary action please.

Ponahato

Lab. Assistant (Environment)

Area Manager (Environment)

Ambient Air Quality, Ambient Noise Quality, Effluent Water and Groundwater Quality Report (Period- October'24 to March'25)

Annexure- II

TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area. Manager, Digwadih Colliery Area. Manager, 6 & 7 Pits Colliery Head, Jamadoba Coal Washery CMO, Tata Central Hospital, Jamadoba

Ref: JMB /ENV /LAB /02 / 770 / 24 Date: 09 / 12. / 2024

Re: AIR QUALITY REPORT

We wish to inform you that Air Quality Monitoring was carried out in JAMADOBA GROUP in the month of NOVEMBER'2024. The results are as given below.

Core zone (as per Ambient Air quality standards for coal mines notified vide notification G.S.R. 742(E) dated-25.09.2000

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	SPM 24 Hourly Limit-700 µg/m ³	RSPM 24 Hourly Limit-300 µg/m ³	SO2 24 Hourly Limit-120 µg/m ³	NOx 24 Hourly Limit-120 µg/m ³
1	6&7 Pits Kalimandir area	23°43'15" N/ 86°24'12" E	12.11.24	Clear	216.9	84.6	15.2	17.0

Buffer zone (as per NAAQS 2009 for Ambient Air quality standards)

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	PM 10 24 Hourly Limit-100 µg/m ³	PM 2.5 24 Hourly Limit- 60 µg/m ³	SO2 24 Hourly Limit-80 µg/m ³	NOx 24 Hourly Limit-80 µg/m ³
1	Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	12.11.24	Clear	90.2	54.6	19.7	22.3
2	Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	12.11.24	Clear	82.5	41.3	16.1	18.4
3	New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	13.11.24	Clear	78.4	37.5	17.8	20.4-
4	Tata Central Hospital	23°42'36" N/ 86°24'10.4"E	13.11.24	Clear	80.6	39.2	18.3	21.7

Note: PM 10 - Less than 10-micron Particulate Matter

PM2.5 - Less than 2.5-micron Particulate Matter

μg - Microgram

This is for your information and necessary action please.

Emahats Lab. Assistant (Environment)

Manager (Environment)

ENVIRONMENT CELL LABORATORY, JAMADOBA AUTHORIZED VIDE LETTER NO. B – 3922 DATED- 30.08.2012 BY JHARKHAND STATE POLLUTION CONTROL BOARD, RANCHL

TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area. Manager, Digwadih Colliery Area. Manager, 6 & 7 Pits Colliery Head, Jamadoba Coal Washery CMO, Tata Central Hospital, Jamadoba

Ref: JMB /ENV /LAB /02 / \$10 / 24 Date: \$1/ 12 / 2024

Re: AIR QUALITY REPORT

We wish to inform you that Air Quality Monitoring was carried out in JAMADOBA GROUP in the month of DECEMBER'2024. The results are as given below.

Core zone (as per Ambient Air quality standards for coal mines notified vide notification G.S	.R.
742(E) dated-25.09.2000	

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	SPM 24 Hourly Limit-700 µg/m ³	RSPM 24 Hourly Limit-300 µg/m ³	SO2 24 Hourly Limit-120 µg/m ³	NOx 24 Hourly Limit-120 µg/m ³
1	6&7 Pits Kalimandir area	23°43'15" N/ 86°24'12" E	06.12.24	Clear	248.9	82.5	16.8	18.3

Buffer zone (as per NAAQS 2009 for Ambient Air quality standards)

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	PM 10 24 Hourly Limit-100 µg/m ³	PM 2.5 24 Hourly Limit- 60 µg/m ³	SO2 24 Hourly Limit-80 µg/m ³	NOx 24 Hourly Limit-80 µg/m ³
1	Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	06,12.24	Clear	88.7	47.5	17.2	19.1
2	Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	06.12.24	Clear	80.6	39.7	18.2	20.3
3	New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	10.12.24	Clear	76.2	32.1	15.9	17.2
4	Tata Central Hospital	23°42'36" N/ 86°24'10.4"E	10.12.24	Clear	92.5	51.8	19.7	22.4

Note: PM 10 - Less than 10-micron Particulate Matter

PM2.5 - Less than 2.5-micron Particulate Matter

μg - Microgram

This is for your information and necessary action please.

Pmahato

Lab. Assistant (Environment)

Manager (Environment)
TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area. Manager, Digwadih Colliery Area. Manager, 6 & 7 Pits Colliery Head, Jamadoba Coal Washery CMO, Tata Central Hospital, Jamadoba

Ref: JMB /ENV /LAB /02 / 4/4 / 25 Date: 3/ / 0/ / 2025

Re: AIR QUALITY REPORT

We wish to inform you that Air Quality Monitoring was carried out in JAMADOBA GROUP in the month of JANUARY'2025. The results are as given below.

Core zone (as per Ambient Air	quality standards for coa	I mines notified vide notification G.S.R.
	742(E) dated-25.09.2	000

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	SPM 24 Hourly Limit-700 µg/m ³	RSPM 24 Hourly Limit-300 µg/m ³	SO2 24 Hourly Limit-120 µg/m ³	NOx 24 Hourly Limit-120 µg/m ³
1	6&7 Pits Kalimandir area	23°43'15" N/ 86°24'12" E	07.01.25	Clear	239.5	80.3	17.2	20,4

Buffer zone (as per NAAQS 2009 for Ambient Air quality standards)

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	PM 10 24 Hourly Limit-100 µg/m ³	PM 2.5 24 Hourly Limit- 60 µg/m ³	SO2 24 Hourly Limit-80 µg/m ³	NOx 24 Hourly Limit-80 µg/m ³
1	Jamadoba Group Office	23°42'15.3" N/ 86°24"11" E	07.01.25	Clear	86.5	42.1	16.8	18.3
2	Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	07.01.25	Clear	82.1	40.3	15.9	17.6
3	New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	08.01.25	Clear	70.8	30.9	17.3	19.5
4	Tata Central Hospital	23°42'36" N/ 86°24'10.4"E	08.01.25	Clear	90.4	46.7	18.2	21.3

Note: PM 10 - Less than 10-micron Particulate Matter

PM_{2.5} - Less than 2.5-micron Particulate Matter µg - Microgram

This is for your information and necessary action please.

Crechet.

Lab. Assistant (Environment)

Manager (Environment)

TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area. Manager, Digwadih Colliery Area. Manager, 6 & 7 Pits Colliery Head, Jamadoba Coal Washery CMO, Tata Central Hospital, Jamadoba

Ref: JMB /ENV /LAB /02 / 29 / 25 Date: 28/ 92 / 2025

Re: AIR QUALITY REPORT

We wish to inform you that Air Quality Monitoring was carried out in JAMADOBA GROUP in the month of FEBRUARY'2025. The results are as given below.

Core zone (as per Ambient Air quality standards for coal mines notified vide notification G.S.R. 742(E) dated-25.09.2000

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	SPM 24 Hourly Limit-700 µg/m ³	RSPM 24 Hourly Limit-300 µg/m ³	SO2 24 Hourly Limit-120 µg/m ³	NOx 24 Hourly Limit-120 µg/m ³
1	6&7 Pits Kalimandir area	23°43'15" N/ 86°24'12" E	11.02.25	Clear	231.7	84.6	18.3	21.7

Buffer zone (as per NAAQS 2009 for Ambient Air quality standards)

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	PM 10 24 Hourly Limit-100 µg/m ³	PM 2.5 24 Hourly Limit- 60 µg/m ³	SO2 24 Hourly Limit-80 µg/m ³	NOx 24 Hourly Limit-80 µg/m ³
1	Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	11.02.25	Clear	78.9	37.2	15.0	17.2
2	Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	11.02.25	Clear	80.6	39.5	17.2	19.1
3	New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	12.02.25	Clear	76.2	33.1	16.4	18.
4	Tata Central Hospital	23°42'36" N/ 86°24'10.4"E	12.02.25	Clear	87.5	42.2	19.2	22.4

Note: PM 10 - Less than 10-micron Particulate Matter

PM2.5 - Less than 2.5-micron Particulate Matter

μg - Microgram

This is for your information and necessary action please.

Lab. Assistant (Environment)



Annexure- II

TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area. Manager, Digwadih Colliery Area. Manager, 6 & 7 Pits Colliery Head, Jamadoba Coal Washery CMO, Tata Central Hospital, Jamadoba

Ref: JMB /ENV /LAB /02 / 153 / 25 Date: 07/04 / 2025

Re: AIR QUALITY REPORT

We wish to inform you that Air Quality Monitoring was carried out in JAMADOBA GROUP in the month of MARCH'2025. The results are as given below.

Core zone (as per Ambient Air quality standards for coal mines notified vide notification G.S.R.
747(F) datad-25.09.2000

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	SPM 24 Hourly Limit-700 μg/m ³	RSPM 24 Hourly Limit-300 µg/m ³	SO2 24 Hourly Limit-120 µg/m ³	NOx 24 Hourly Limit-120 µg/m ³
1	6&7 Pits Kalimandir area	23°43'15" N/ 86°24'12" E	05.03.25	Clear	247.6	86.2	19.1	22.6

Buffer zone (as per NAAQS 2009 for Ambient Air quality standards)

S.No	Location	Latitude/ Longitude	Date of Sampling	Weather Condition	PM 10 24 Hourly Limit-100 µg/m ³	PM 2.5 24 Hourly Limit- 60 µg/m ³	SO2 24 Hourly Limit-80 µg/m ³	NOx 24 Hourly Limit-80 µg/m ³
I	Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	05.03.25	Clear	92.4	51.6	18.2	21.7
2	Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	05.03.25	Clear	84.5	42.3	16.8	18.3
3	New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	06.03.25	Clear	78.6	36.5	15.1	17.4
4	Tata Central Hospital	23°42'36" N/ 86°24'10.4"E	06.03.25	Clear	83.1	40.9	17.8	20.1

Note: PM 10 - Less than 10-micron Particulate Matter

PM2.5 - Less than 2.5-micron Particulate Matter μg - Microgram

This is for your information and necessary action please.

Emphal.

Lab. Assistant (Environment)

Manager (Environment)

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Colliery Head, Jamadoba Coal Washery Sr. Manager, Digwadih Colliery Sr. Manager, 6 & 7 Pits Colliery

Ref : JMB/ ENV/ LAB/ 05/ 64/ /24 Dated: 01 / 11 / 2024

Re: Ambient Noise Level Report

We wish to inform you that Ambient Noise Level Monitoring was carried out in JAMADOBA GROUP in the month of OCTOBER'2024. The results are as given below:

S.No	March Street	Det	Day (06.00 - 22.00 Hrs.) CPCB Standard- 55			Night (22.00-06.00 Hrs) CPCB Standard- 45		
9.140	Monitoring Station	Date						
	Residential Area (Buffer Zone)		Min.	Max.	Avg.	Min.	Max.	Avg
1	Digwadih 12 No. Colony	24.10.24	42.2	44.5	43.4	34.3	36.7	35.5
2	New Village Colony, Jamadoba	24.10.24	43.5	45.7	44.6	35.7	37.8	36.8
3	6&7 Pits Kalimandir Colony	24.10.24	42.4	44.7	43.6	34.5	36.4	35.5
4	Digwadih 10 No. Colony	24.10.24	43.1	45.6	44.4	35.3	37.5	36.4

0.51-	Manitanian Station	Data	Day (0	5.00 - 22.	00 Hrs.)	Night	(22.00-06.	00 Hrs)
S.No	Monitoring Station	Date	CPCB Standard- 75			CPCB Standard- 70		
	Industrial Area (Core Zone)	1.2	Min.	Max.	Avg.	Min.	Max.	Avg.
1	2 Pit Main Gate Security Post	24.10.24	53.4	56.7	55.1	45.2	48.4	46.8
2	2 Pit Top Kalimandir, Jamadoba	24.10.24	52.1	55.4	53.8	44.3	47.6	46.0
3	Weigh Bridge, Digwadih	24.10.24	49.7	52.6	51.2	41.5	44.7	43.1
4	Canteen Complex, Digwadih	24.10.24	46.4	47.7	47.1	38.1	40.3	39.2
5	Head Office Complex, Digwadih	24.10.24	46.2	48.5	47.4	38,4	40.6	39.5
6	Check Post Security Gate, 6&7 Pits	24.10.24	50.5	53.8	52.2	42.7	45.9	44.3
7	Canteen Complex, 6&7 Pits	24.10.24	46.3	47.6	47.0	38.5	40.7	39.6
8	Fan house- Nitrogen Plant, 6&7 Pits	24.10.24	72.3	73.5	72.9	64.2	65.6	64.9
9	Joota Gate, JCPP	24.10.24	58.8	61.9	60.4	50.6	53.4	52.0
10	Main Gate Stores, JCPP	24.10.24	53.6	56.4	55.0	45.4	48.6	47.0
11	Railway Siding Yard, JCPP	24.10.24	50.4	53.7	52.1	42.7	45.4	44.1

Analysis: All the values are within permissible limit.

This is for your information please.

Lab. Assistant (Environment)

Copy to: Specialist (OH). TCH

Area Manager (Environment)

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ENVIRONMENT CELL LABORATORY, JAMADOBA AUTHORIZED VIDE LETTER NO. B – 3922 DATED- 30.08,2012 BY JHARKHAND STATE POLLUTION CONTROL BOARD, RANCHI.

1.4

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Colliery Head, Jamadoba Coal Washery Sr. Manager, Digwadih Colliery Sr. Manager, 6 & 7 Pits Colliery

Ref : JMB/ENV/LAB/05/731/24 Dated: 04/12/2024

Re: Ambient Noise Level Report

We wish to inform you that Ambient Noise Level Monitoring was carried out in JAMADOBA GROUP in the month of NOVEMBER'2024. The results are as given below:

	Monitoring Station	Dete	Day (06.00 - 22.00 Hrs.) CPCB Standard- 55			Night (22.00-06.00 Hrs) CPCB Standard- 45		
S.No		Date						
	Residential Area (Buffer Zone)		Min.	Max.	Avg.	Min.	Max.	Avg.
1	Digwadih 12 No. Colony	22.11.24	42.4	44.7	43.6	34.7	36.5	35.6
2	New Village Colony, Jamadoba	22.11.24	43.1	45.3	44.2	35.3	37.6	36.5
3	6&7 Pits Kalimandir Colony	22.11.24	42.3	44.5	43.4	34.5	36.3	35.4
4	Digwadih 10 No. Colony	22.11.24	43.5	45.7	44.6	35.2	37.4	36.3

		Dista	Day (00	5.00 - 22.	00 Hrs.)	Night	(22.00-06.	00 Hrs)
S.No	Monitoring Station	Date	CPCB Standard- 75			CPCB Standard- 70		
	Industrial Area (Core Zone)		Min.	Max.	Avg.	Min.	Max.	Avg.
1	2 Pit Main Gate Security Post	22.11.24	51.5	54.8	53.2	43.3	46.5	44.9
2	2 Pit Top Kalimandir, Jamadoba	22.11.24	50.3	53.5	51.9	42.4	45.7	44.1
3	Weigh Bridge, Digwadih	22.11.24	48.4	50.7	49.6	40.2	42.5	41.4
4	Canteen Complex, Digwadih	22.11.24	44.2	46.4	45.3	36.5	38.6	37.6
5	Head Office Complex, Digwadih	22.11.24	44.1	46.3	45.2	36.3	38.5	37.4
6	Check Post Security Gate, 6&7 Pits	22.11.24	50.4	52.6	51.5	42.6	44.8	43.7
7	Canteen Complex, 6&7 Pits	22.11.24	44.4	46.7	45.6	36.2	38.6	37.4
8	Fan house- Nitrogen Plant, 6&7 Pits	22.11.24	72.2	73.4	72.8	64.2	65.7	65.0
9	Joota Gate, JCPP	22.11.24	56.5	59.7	58.1	48.7	51.9	50.3
10	Main Gate Stores, JCPP	22.11.24	52.4	55.6	54.0	44.5	47.8	46.2
11	Railway Siding Yard, JCPP	22.11.24	50.1	53.3	51.7	42.3	45.4	43.9

Analysis: All the values are within permissible limit.

This is for your information please.

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Lab. Assistant (Environment)

Copy to: Specialist (OH). TCH

Manager Environment)

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ENVIRONMENT CELL LABORATORY, JAMADOBA AUTHORIZED VIDE LETTER NO. B – 3922 DATED- 30.08.2012 BY JHARKHAND STATE POLLUTION CONTROL BOARD, RANCHI.

Annexure- II

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Colliery Head, Jamadoba Coal Washery Sr. Manager, Digwadih Colliery Sr. Manager, 6 & 7 Pits Colliery

Ref : JMB/ ENV/ LAB/ 05/ 817/24 Dated: 31/12/2024

Re: Ambient Noise Level Report

We wish to inform you that Ambient Noise Level Monitoring was carried out in JAMADOBA GROUP in the month of DECEMBER'2024. The results are as given below:

		D	Day (0	6.00 - 22.	00 Hrs.)	Night (22.00-06.00 Hr			
S.No	Monitoring Station	Date	CPCB Standard- 55			CPCB Standard- 45			
	Residential Area (Buffer Zone)		Min.	Max.	Avg.	Min.	Max.	Avg.	
1	Digwadih 12 No. Colony	20.12.24	42.2	44.5	43.4	34.4	36.7	35.6	
2	New Village Colony, Jamadoba	20.12.24	44.3	45.7	45.0	36.5	38.8	37.7	
3	6&7 Pits Kalimandir Colony	20.12.24	42.7	44.6	43.7	34.3	36.5	35.4	
4	Digwadih 10 No. Colony	20.12.24	43.1	45.3	44.2	35.6	37.9	36.8	

	Martin Charles	Dete	Day (0	5.00 - 22.	00 Hrs.)	Night (22.00-06.	00 Hrs)	
S.No	Monitoring Station	Date	CPCI	3 Standa	rd- 75	CPCB Standard- 70			
	Industrial Area (Core Zone)		Min.	Max.	Avg.	Min.	Max.	Avg.	
1	2 Pit Main Gate Security Post	20.12.24	52.2	55.6	53.9	44.5	47.8	46.2	
2	2 Pit Top Kalimandir, Jamadoba	20.12.24	50.5	53.7	52.1	42.1	45.5	43.8	
3	Weigh Bridge, Digwadih	20.12.24	48.2	50.4	49.3	40.3	42.6	41.5	
4	Canteen Complex, Digwadih	20.12.24	44.7	45.6	45.2	36.2	38.4	37.3	
5	Head Office Complex, Digwadih	20.12.24	44.4	46.5	45.5	36.5	38.7	37.6	
6	Check Post Security Gate, 6&7 Pits	20.12.24	51.3	53.2	52.3	43.1	45.3	44.2	
7	Canteen Complex, 6&7 Pits	20.12.24	44.6	45.4	45.0	36.4	38.7	37.6	
8	Fan house- Nitrogen Plant, 6&7 Pits	20.12.24	72.3	73.5	72.9	64.4	65.6	65.0	
9	Joota Gate, JCPP	20.12.24	57.4	60.7	59.1	49.5	52.8	51.2	
10	Main Gate Stores, JCPP	20.12.24	51.6	54.9	53.3	43.2	46.5	44.9	
11	Railway Siding Yard, JCPP	20.12.24	50.3	53.6	52.0	42.5	45.7	44.1	

Analysis: All the values are within permissible limit.

This is for your information please.

Co

Lab. Assistant (Environment)

Copy to: Specialist (OH). TCH

Manager (Environment)

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Colliery Head, Jamadoba Coal Washery Sr. Manager, Digwadih Colliery Sr. Manager, 6 & 7 Pits Colliery

Ref : JMB/ ENV/ LAB/ 05/ 57/ /25 Dated: 31/01/2025

Re: Ambient Noise Level Report

We wish to inform you that Ambient Noise Level Monitoring was carried out in JAMADOBA GROUP in the month of JANUARY'2025. The results are as given below:

S.No	Manitarian Station	Station Data		6.00 - 22.	00 Hrs.)	Night (22.00-06.00 Hrs)			
5.NO	Monitoring Station	Date	CPCB Standard- 55 CPCB Standard- 4		Date CPCB Standard- 55		rd- 45		
	Residential Area (Buffer Zone)		Min.	Max.	Avg.	Min.	Max.	Avg.	
1	Digwadih 12 No. Colony	13.01.25	41.7	43.4	42.6	33.5	35.8	34.7	
2	New Village Colony, Jamadoba	13.01.25	42.5	44.6	43.6	34.3	36.5	35.4	
3	6&7 Pits Kalimandir Colony	13.01.25	42.3	44.5	43.4	34.6	36.8	35.7	
4	Digwadih 10 No. Colony	13.01.25	43.6	45.8	44.7	35.4	37.6	36.5	

C Ma	Monitoring Station	Data	Day (0	6.00 - 22.	00 Hrs.)	Night	(22.00-06.	00 Hrs)	
S.No	Monitoring Station	Date	CPCI	B Standa	rd- 75	CPCB Standard- 70			
	Industrial Area (Core Zone)	1.2	Min.	Max.	Avg.	Min.	Max.	Avg.	
1	2 Pit Main Gate Security Post	13.01.25	52.6	55.8	54.2	44.5	47.7	46.1	
2	2 Pit Top Kalimandir, Jamadoba	13.01.25	51.4	54.6	53.0	43.2	46.4	44.8	
3	Weigh Bridge, Digwadih	13.01.25	49.7	51.5	50.6	41.6	43.8	42.7	
4	Canteen Complex, Digwadih	13.01.25	45.2	47.5	46.4	37.3	39.6	38.5	
5	Head Office Complex, Digwadih	13.01.25	44.8	46.6	45.7	36.5	38.7	37.6	
6	Check Post Security Gate, 6&7 Pits	13.01.25	52.5	54.8	53.7	44.7	46.8	45.8	
7	Canteen Complex, 6&7 Pits	13.01.25	44.1	46.3	45.2	36.3	38.5	37.4	
8	Fan house- Nitrogen Plant, 6&7 Pits	13.01.25	72.4	73.6	73.0	64.5	65.7	65.1	
9	Joota Gate, JCPP .	13.01.25	56.7	59.9	58.3	48.4	51.6	50.0	
10	Main Gate Stores, JCPP	13.01.25	52.5	55.7	54.1	44.2	47.5	45.9	
11	Railway Siding Yard, JCPP	13.01.25	51.4	54.5	53.0	43.5	46.7	45.1	

Analysis: All the values are within permissible limit.

This is for your information please.

alto

Lab. Assistant (Environment)

Copy to: Specialist (OH). TCH

Manager (Environment)

ENVIRONMENT CELL LABORATORY, JAMADOBA AUTHORIZED VIDE LETTER NO. B – 3922 DATED- 30.08.2012 BY JHARKHAND STATE POLLUTION CONTROL BOARD, RANCHI.

Annexure- II

10.14

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Colliery Head, Jamadoba Coal Washery Sr. Manager, Digwadih Colliery Sr. Manager, 6 & 7 Pits Colliery

Ref : JMB/ ENV/ LAB/ 05/ / 0 ユ /25 Dated: . 2. g / 0 ユ / 2025

Re: Ambient Noise Level Report

We wish to inform you that Ambient Noise Level Monitoring was carried out in JAMADOBA GROUP in the month of FEBRUARY'2025. The results are as given below:

	No. 11. 1. 10. 11.	Dete	Day (0	6.00 - 22.	00 Hrs.)	Night (22.00-06.00 Hrs			
S.No	Monitoring Station	Date	CPCB Standard- 55			CPCB Standard- 45			
	Residential Area (Buffer Zone)		Min.	Max.	Avg.	Min.	Max.	Avg.	
1	Digwadih 12 No. Colony	26.02.25	44.8	46.5	45.7	36.4	38.6	37.5	
2	New Village Colony, Jamadoba	26.02.25	42.4	44.6	43.5	34.6	36.8	35.7	
3	6&7 Pits Kalimandir Colony	26.02.25	48.4	50.2	49.3	40.3	42.5	41.4	
4	Digwadih 10 No. Colony	26.02.25	45.6	47.7	46.7	37.5	39.8	38.7	

		Det	Day (0	6.00 - 22.	00 Hrs.)	Night ((22.00-06.	00 Hrs)
S.No	Monitoring Station	Date	CPCI	B Standa	rd- 75	CPCI	B Standa	rd- 70
	Industrial Area (Core Zone)		Min.	Max.	Avg.	Min.	Max.	Avg.
1	2 Pit Main Gate Security Post	26.02.25	56.5	59.7	58.1	48.3	51.5	49.9
2	2 Pit Top Kalimandir, Jamadoba	26.02.25	52.2	55.1	53.7	44.5	47.7	46.1
3	Weigh Bridge, Digwadih	26.02.25	50.4	52.6	51.5	42.2	44.5	43.4
4	Canteen Complex, Digwadih	26.02.25	48.6	50.4	49.5	40.4	42.7	41.6
5	Head Office Complex, Digwadih	26.02.25	43.2	45.5	44.4	35.5	37.6	36.6
6	Check Post Security Gate, 6&7 Pits	26.02.25	50.1	53.3	51.7	42.3	45.5	43.9
7	Canteen Complex, 6&7 Pits	26.02.25	47.4	49.6	48.5	39.6	41.8	40.7
8	Fan house- Nitrogen Plant, 6&7 Pits	26.02.25	61.7	63.8	62.8	53.4	52.6	53.0
9	Joota Gate, JCPP	26.02.25	59.3	62.5	60.9	51.2	54.4	52.8
10	Main Gate Stores, JCPP	26.02.25	54.6	57.7	56.2	46.4	49.5	48.0
11	Railway Siding Yard, JCPP	26.02.25	52.1	55.3	53.7	44.5	47.7	46.1

Analysis: All the values are within permissible limit.

This is for your information please.

at

Lab. Assistant (Environment)

Copy to: Specialist (OH). TCH

Manager (Environment)

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Colliery Head, Jamadoba Coal Washery Sr. Manager, Digwadih Colliery Sr. Manager, 6 & 7 Pits Colliery

Ref : JMB/ ENV/ LAB/ 05/ 149 /25 Dated: 07 /04/ 2025

Re: Ambient Noise Level Report

We wish to inform you that Ambient Noise Level Monitoring was carried out in JAMADOBA GROUP in the month of MARCH'2025. The results are as given below:

	Manifestine Station	Dete	Day (0	5.00 - 22.	00 Hrs.)	Night (22.00-06.00 Hrs			
S.No	Monitoring Station	Date	CPCB Standard- 55			CPCB Standard- 45			
	Residential Area (Buffer Zone)		Min.	Max.	Avg.	Min.	Max.	Avg.	
1	Digwadih 12 No. Colony	24.03.25	42.3	44.6	43.5	34.5	36.7	35.6	
2	New Village Colony, Jamadoba	24.03.25	43.5	45.8	44.7	35.3	37.5	36.4	
3	6&7 Pits Kalimandir Colony	24.03.25	46.7	48.5	47.6	38.4	40.7	39.6	
4	Digwadih 10 No. Colony	24.03.25	44.5	46.7	45.6	36.7	38.9	37.8	

	and the standard standard	Du	Day (0	5.00 - 22.	00 Hrs.)	Night (22.00-06.00 Hrs)			
S.No	Monitoring Station	Date	CPCI	Max. 60.5 54.7 51.6 50.2 44.7 52.5 50.1 60.3 63.5 55.6	Standard- 75		CPCB Standard- 70		
	Industrial Area (Core Zone)		Min.	Max.	Avg.	Min.	Max.	Avg.	
1	2 Pit Main Gate Security Post	24.03.25	57.2	60.5	58.9	49.4	52.7	51.1	
2	2 Pit Top Kalimandir, Jamadoba	24.03.25	51.4	54.7	53.1	43.1	46.3	44.7	
3	Weigh Bridge, Digwadih	24.03.25	49.8	51.6	50.7	41.5	43.7	42.6	
4	Canteen Complex, Digwadih	24.03.25	48.3	50.2	49.3	40.4	42.5	41.5	
5	Head Office Complex, Digwadih	24.03.25	42.6	44.7	43.7	34.3	36.6	35.5	
6	Check Post Security Gate, 6&7 Pits	24.03.25	50.3	52.5	51.4	42.5	44.8	43.7	
7	Canteen Complex, 6&7 Pits	24.03.25	48.2	50.1	49.2	40.1	42.4	41.3	
8	Fan house- Nitrogen Plant, 6&7 Pits	24.03.25	58.4	60.3	59.4	50.6	52.7	51.7	
9	Joota Gate, JCPP .	24.03.25	60.2	63.5	61.9	52.4	55.6	54.0	
10	Main Gate Stores, JCPP	24.03.25	52.7	55.6	54.2	44.5	47.8	46.2	
11	Railway Siding Yard, JCPP	24.03.25	52.4	54.7	53.6	44.2	46.5	45.4	

Analysis: All the values are within permissible limit.

This is for your information please.

Lab. Assistant (Environment)

Copy to: Specialist (OH). TCH

Manager (Environment)

Annexure- II

194

TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area Manager, Digwadih Colliery Area Manager,6&7 Pits Colliery

Ref. No. - JMB / ENV / LAB / 03 / 681 / 2024 Dated - 12/11 / 2024

Sub: MINE WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of OCTOBER'2024. The results are as given below:

	Location	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point) (Mine's Water)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/1	250 mg/l	10 mg/l
1	2 Pit Jamadoba Colliery	24.10.24	05:05 PM	30	7.7	20	773	2.4	68	0.5
2	3 Pit Jamadoba Colliery	24.10.24	04:50 PM	31	7.2	16	793	2.5	56	0.3
3	2 Incline Jamadoba Colliery	24.10.24	04:15 PM	2		No	Discharge			
4	6 & 7 Pits Colliery	24.10.24	02:20 PM	30	7.3	14	724	2.8	92	0
5	Digwadih Colliery	24.10.24	02:40 PM	A No Discharge						

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All the parameters are within the limit, and you are requested to maintain the same. This is for your information and necessary action please.

Lab.Assistant (Environment)

Area Manager (Environment)

Annexure- II

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery Area Manager Digwadih Colliery

Ref. No. - JMB / ENV / LAB / 03 / 680 / 2024 Dated - 12/11 / 2024

Sub: STP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of OCTOBER'2024. The results are as given below:

1227	Location	Sampling	Sampling	Temp	pН	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	STP, Jmb. Canteen- Inlet	24.10.24	12:30 PM	27	7.8	145	1024	31.8	290	2.5
2	STP, Jmb. Canteen- Outlet	24.10.24	12:35 PM	26	7.5	24	726	7.0	84	0.7
3	STP, JCPP Canteen- Inlet	24.10.24	01:40 PM	27	7.9	137	924	32.9	306	3.7
4	STP, JCPP Canteen- Outlet	24.10.24	01:45 PM	26	7.6	20	654	5.2	70	0.4
5	STP, Railway Colony- Inlet	24.10.24	03:45 PM	28	8.4	178	1067	34.8	319	3.1
6	STP, Railway Colony-Outlet	24.10.24	03;50 PM	27	8.1	36	953	6.9	52	1.4
7	STP, Digwadih 12 No. Officer's colony-Inlet	24.10.24	03:15 PM	27	8.0	117	921	33.7	284	2.9
8	STP, Digwadih 12 No. Officer's colony- Outlet	24.10,24	03:20 PM	26	7.7	39	637	4.6	102	1.3
9	STP,Digwadih 12 No. Supervisor flat - Inlet	24.10.24	02:55 PM	27	7.8	122	974	29.8	332	3.2
10	STP,Digwadih 12 No. Supervisor flat -Outlet	24.10.24	03:00 PM	26	7.6	18	735	6.2	64	0.9

All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Emphato.

Area Manager (Environment)

Annexure- II

10.00

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery C.M.O, TCH, Jamadoba

Ref. No. - JMB / ENV / LAB / 03 / 682 / 2024 Dated - 12 / 11 / 2024

Sub: ETP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of OCTOBER'2024. The results are as given below:

	Location	Sampling	Sampling	Temp	pН	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point)	Date	Time	< 40 ⁰ C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/1	250 mg/l	10 mg/l
1	ETP, TCH- Inlet	24.10.24	02:00 PM	27	8.3	98	742	28.2	260	1.5
2	ETP, TCH- Outlet	24,10,24	02:05 PM	26	8.1	19	675	6.4	52	0.3
3	ETP, Garage- Inlet	24.10.24	12:45 PM	27	8.2	161	972	31.2	326	3.8
4	ETP, Garage- Outlet	24,10.24	12:50 PM	26	7.8	34	816	7.2	94	1.6
5	Final Settling Pond JCPP	24.10.24	04:35 PM				Dry Pond			

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All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Conchato

Lab.Assistant (Environment)

Area Manager (Environment)

Annexure- II

10.04

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery C.M.O, TCH, Jamadoba

Ref. No. - JMB / ENV / LAB / 03 / 766 / 2024 Dated - 09/12 / 2024

Sub: ETP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of NOVEMBER*2024. The results are as given below:

	Location Sampling Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease		
S. No	(Final Discharge Point)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	ETP, TCH- Inlet	22.11.24	12:25 PM	28	8.4	116	736	27.8	294	1.8
2	ETP, TCH- Outlet	22.11.24	12:30 PM	27	8.2	26	658	5.2	48	0.7
3	ETP, Garage- Inlet	22.11.24	01:30 PM	27	8.1	139	928	29.1	316	4.1
4	ETP, Garage- Outlet	22.11.24	01:35 PM	26	7.9	27	821	6.9	102	1.7
5	Final Settling Pond JCPP	22.11.24	09:55 AM				Dry Pond			

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All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Emphato

Manager (Environment)

Annexure- II

TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area Manager, Digwadih Colliery Area Manager,6&7 Pits Colliery

Ref. No. - JMB / ENV / LAB / 03 / 768 / 2024 Dated - 09 /12 / 2024

Sub: MINE WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of NOVEMBER'202-The results are as given below:

S. No	Location (Final Discharge Point)	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
3, 140	(Mine's Water)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	2 Pit Jamadoba Colliery	22.11.24	09:25 AM			No	Discharge			
2	3 Pit Jamadoba Colliery	22.11.24	09:40 AM	30	7.5	23	806	2.9	68	0.6
3	2 Incline Jamadoba Colliery	22.11.24	10:15 AM	1		No	I Discharg	e		
4	6 & 7 Pits Colliery	22.11.24	12:10 PM	31	7.7	32	789	2.6	74	0.4
5	Digwadih Colliery	22.11.24	11:50 AM	M No Discharge						

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All the parameters are within the limit, and you are requested to maintain the same. This is for your information and necessary action please.

Enchado ' Lab.Assistant (Environment)

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Manager (Environment)

Annexure- II

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery Area Manager Digwadih Colliery

Ref. No. - JMB / ENV / LAB / 03 / 767 / 2024 Dated - 09/12 / 2024

Sub: STP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of NOVEMBER'2024 The results are as given below:

	Location	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	STP, Jmb. Canteen- Inlet	22.11.24	01:10 PM	27	8.0	137	916	34.6	316	2.6
2	STP, Jmb. Canteen- Outlet	22.11.24	01:15 PM	26	7.7	31	694	6.9	72	0.5
3	STP, JCPP Canteen- Inlet	22.11.24	12:50 PM	27	8.1	126	896	33.1	294	3.4
4	STP, JCPP Canteen- Outlet	22.11.24	12:55 PM	26	7.8	34	672	6.2	108	0.6
5	STP, Railway Colony- Inlet	22.11.24	10:35 AM	28	8.2	156	1025	33.2	332	2.9
6	STP, Railway Colony-Outlet	22.11.24	10:40 AM	27	8.0	27	876	7.1	85	1.3
7	STP, Digwadih 12 No. Officer's colony-Inlet	22.11.24	11:05 AM	28	8.1	124	936	34.1	310	3.2
8	STP, Digwadih 12 No. Officer's colony- Outlet	22.11.24	11:10 AM	27	7.8	21	716	5.4	54	1.0
9	STP,Digwadih 12 No. Supervisor flat – Inlet	22.11.24	11:25 AM	27	8.0	167	963	32.5	296	3.5
10	STP,Digwadih 12 No. Supervisor flat -Outlet	22.11.24	11:30 AM	26	7.7	26	769	5.8	78	1.2

All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Emchat . Lab.Assistant (Environment)

Manager (Environment)

20.52

TATA STEEL LIMITED JHARIA DIVISION

Well Water Quality Report of Jamadoba Group for the month of NOVEMBER'2024

S.No	Date	Location	Time	Depth in meter	рН	Electrical Conductivity µS/m
1	22.11.24	Purnadih (Jorapokhar)	01:15 PM	4.13	7.3	1243
2	22.11.24	Bhowra 13 No	12:55 PM	1.27	7.4	1014
3	22.11.24	Mohalbani Basti	02:25 PM	2.13	7.3	1041
4	22.11.24	Digwadih 10 No F & J	12:10 PM	1.52	7.1	1639
5	22.11.24	Kalimela Shivmandir	11:05 AM	0.98	7.2	917
6	22.11.24	Kalimela Kalimandir	11:20 AM	3.13	7.5	1358
7	22.11.24	Lower Dungari	10:45 AM	3.67	7.3	725
8	22.11.24	Upper Dungari	10:25 AM	1.72	7.2	756
9	22.11.24	Pattia Basti	10:00 AM	3.48	7.0	894
10	22.11.24	Kenduadih Basti	09:35 AM	1.32	7.2	972
11	22.11.24	Jorapokhar Kushtand	01:55 PM	3.84	7.4	1637
12	22.11.24	6&7 Pits (Ayodhya Nagri)	11:45 AM	1.76	7.2	1242
13	22.11.24	Jorapokhar Basti Chhattand	12:25 PM	1.13	7.4	1384
14	22.11.24	Jorapokhar Babu Basa	01:30 PM	2.11	7.1	1169

JAMADOBA GROUP

Lab.Assistant (Environment)

Manager (Environment)

Annexure- II

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TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery C.M.O, TCH, Jamadoba

Ref. No. - JMB / ENV / LAB / 03 / 2/2 / 2024 Dated - 3/ / /2 / 2024

Sub: ETP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of DECEMBER'2024. The results are as given below:

	Location (Final Discharge Point)	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point)	Date	Time	< 40 ⁰ C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	ETP, TCH- Inlet	20.12.24	12:30 PM	26	8.3	164	816	29.1	264	1.4
2	ETP, TCH- Outlet	20.12.24	12:35 PM	25	8,1	39	786	4.9	54	0.5
3	ETP, Garage- Inlet	20.12.24	01:35 PM	25	8.3	142	941	30.5	310	3.6
4	ETP, Garage- Outlet	20.12.24	01:40 PM	24	8.0	32	894	7.1	88	1.6
5	Final Settling Pond JCPP	20.12.24	09:55 AM				Dry Pond			

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All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Conchat .

Manager (Environment)

Annexure- II

TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area Manager, Digwadih Colliery Area Manager,6&7 Pits Colliery

Ref. No. - JMB / ENV / LAB / 03 / / 2024 Dated - / / 2024

Sub: MINE WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of DECEMBER'2024 The results are as given below:

. N	Location (Final Discharge Point)	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point) (Mine's Water)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	2 Pit Jamadoba Colliery	20.12.24	09:30 AM			No	Discharge	1		
2	3 Pit Jamadoba Colliery	20.12.24	09:45 AM	32	7.7	36	837	3.4	42	0.9
3	2 Incline Jamadoba Colliery	20.12.24	10:20 AM	*		No	Discharg	e		
4	6 & 7 Pits Colliery	20.12.24	12:15 PM	30	7.5	21	912	2.8	68	0.8
5	Digwadih Colliery	20.12.24	11:55 AM	M No Discharge						

All the parameters are within the limit, and you are requested to maintain the same. This is for your information and necessary action please.

Emchat* Lab.Assistant (Environment) Manager (Environment)

Annexure- II

1.14

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery Area Manager Digwadih Colliery

Ref. No. - JMB / ENV / LAB / 03 / *\$13* / 2024 Dated - *31* / / 2. / 2024

Sub: STP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of DECEMBER'2024 The results are as given below:

	Location	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	STP, Jmb. Canteen- Inlet	20.12.24	01:15 PM	25	7.9	126	924	35.7	338	2.9
2	STP, Jmb. Canteen- Outlet	20.12.24	01:20 PM	24	7.6	34	810	4.8	65	0.9
3	STP, JCPP Canteen- Inlet	20.12.24	12:55 PM	25	8.0	135	873	32.4	284	3.5
4	STP, JCPP Canteen- Outlet	20.12.24	01:00 PM	24	7.5	29	712	6.4	72	0.8
5	STP, Railway Colony- Inlet	20.12.24	10:40 AM	26	8.1	143	987	30.1	294	3.5
6	STP, Railway Colony-Outlet	20.12.24	10:45 AM	25	7.9	22	855	5.2	87	1.0
7	STP, Digwadih 12 No. Officer's colony-Inlet	20.12.24	11:10 AM	26	8.0	167	987	36.4	316	3.7
8	STP, Digwadih 12 No. Officer's colony- Outlet	20.12.24	11:15 AM	25	7.7	36	845	5.9	79	0.8
9	STP,Digwadih 12 No. Supervisor flat – Inlet	20.12.24	11:30 AM	25	8.2	128	1016	34.0	284	3.7
10	STP,Digwadih 12 No. Supervisor flat -Outlet	20.12.24	11:35 AM	24	7.8	31	910	7.2	90	0.9

All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Enchato.

Manager (Environment)

Annexure- II

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery C.M.O, TCH, Jamadoba

Ref. No. - JMB / ENV / LAB / 03 / 31 / 2025 Dated - 31 / 61 / 2025

Sub: ETP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of JANUARY'2025. The results are as given below:

	Location (Final Discharge Point)	Location (Final Discharge Point)	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point)	Date	Time	<40 [®] C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l	
1	ETP, TCH- Inlet	13.01.25	10:45 AM	27	8.2	108	824	28.6	276	1.6	
2	ETP, TCH- Outlet	13.01.25	10:50 AM	26	8	32	774	5.1	72	0.4	
3	ETP, Garage- Inlet	13.01.25	01:20 PM	26	8.1	135	976	31.3	284	, 3.8	
4	ETP, Garage- Outlet	13.01.25	01:25 PM	25	7.9	29	872	6.8	76	1.2	
5	Final Settling Pond JCPP	13.01.25	09:50 AM				Dry Pond				

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All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Ems hel

Manager (Environment)

Annexure- II

TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area Manager, Digwadih Colliery Area Manager,6&7 Pits Colliery

Ref. No. - JMB / ENV / LAB / 03 / 30 / 2025 Dated - 31 / 01 / 2025

Sub: MINE WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of JANUARY'2025. The results are as given below:

6 N-	Location (Final Discharge Point)	Sampling	Sampling	Тетр	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point) (Mine's Water)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	2 Pit Jamadoba Colliery	13.01.25	09:20 AM			No	Discharge			
2	3 Pit Jamadoba Colliery	13.01.25	09:35 AM	32	7.6	23	796	3.2	72	0.7
3	2 Incline Jamadoba Colliery	13.01.25	10:05 AM	-		No	Discharge	8		
4	6 & 7 Pits Colliery	13.01.25	11:10 AM	30	7.7	21	874	2.5	62	0.5
5	Digwadih Colliery	13.01.25	12:15 PM	32	7.8	36	916	2.7	80	0

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All the parameters are within the limit, and you are requested to maintain the same. This is for your information and necessary action please.

Manager (Environment)

Annexure- II

200

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery Area Manager Digwadih Colliery

Ref. No. - JMB / ENV / LAB / 03 / 29 / 2025 Dated - 31 / 01 / 2025

Sub: STP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of JANUARY'2025. The results are as given below:

6 N.	Location	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/1	250 mg/l	10 mg/l
1	STP, Jmb. Canteen- Inlet	13.01.25	01:05 PM	26	8.1	122	918	34.8	332	3.1
2	STP, Jmb. Canteen- Outlet	13.01.25	01:10 PM	25	7.8	25	779	4.5	84	0.7
3	STP, JCPP Canteen- Inlet	13.01.25	12:40 PM	26	7.9	164	857	31.2	296	3.2
4	STP, JCPP Canteen- Outlet	13.01.25	12:45 PM	25	7.6	26	772	5.7	102	0.3
5	STP, Railway Colony- Inlet	13.01.25	10:25 AM	27	8.3	128	971	32.2	319	3.8
6	STP, Railway Colony-Outlet	13.01.25	10:30 AM	26	8.0	36	832	5.8	98	1.2
7	STP, Digwadih 12 No. Officer's colony-Inlet	13.01.25	11:30 AM	27	8.0	141	974	34.2	260	3.5
8	STP, Digwadih 12 No. Officer's colony- Outlet	13.01.25	11:35 AM	26	7.6	34	836	5.7	62	0.2
9	STP,Digwadih 12 No. Supervisor flat – Inlet	13.01.25	11:50 AM	26	8.1	152	987	33.6	324	3.8
10	STP,Digwadih 12 No. Supervisor flat -Outlet	13.01.25	11:55 AM	25	7.9	22	896	6.9	106	0.7

All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Pm

Manager (Environment)

TATA STEEL LIMITED JHARIA DIVISION

Well Water Quality Report of Jamadoba Group for the month of JANUARY'2025

S.No	Date	Location	Time	Depth in meter	рН	Electrical Conductivity µS/m
1	24.01.25	Purnadih (Jorapokhar)	09:55 AM	4.45	7.2	1236
2	24.01.25	Bhowra 13 No	10:15 AM	1.82	7.3	1024
3	24.01.25	Mohalbani Basti	02:10 PM	2.46	7.4	1082
4	24.01.25	Digwadih 10 No F & J	10:40 AM	1.95	7.5	1726
5	24.01.25	Kalimela Shivmandir	01:30 PM	1.13	7.3	908
6	24.01.25	Kalimela Kalimandir	01:45 PM	3.47	7.4	1339
7	24.01.25	Lower Dungari	01:10 PM	3.85	7.2	762
8	24.01.25	Upper Dungari	12:45 PM	1.98	7.4	768
9	24.01.25	Pattia Basti	12:25 PM	3.72	7.2	905
10	24.01.25	Kenduadih Basti	12:05 PM	1.67	7.3	968
11	24.01.25	Jorapokhar Kushtand	11:20 AM	4.15	7.2	1708
12	24.01.25	6&7 Pits (Ayodhya Nagri)	11:40 AM	1.97	7.3	1216
13	24.01.25	Jorapokhar Basti Chhattand	10:55 AM	1.27	7.2	1372
14	24.01.25	Jorapokhar Babu Basa	09:40 AM	2.21	7.4	1176

JAMADOBA GROUP

Emphalo. Lab.Assistant (Environment)

Manager (Environment)

Annexure- II

10.5

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery C.M.O, TCH, Jamadoba

Ref. No. - JMB / ENV / LAB / 03 / \$7 / 2025 Dated - 28 / 02_ / 2025

Sub: ETP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of FEBRUARY'2025. The results are as given below:

	Location	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	ETP, TCH- Inlet	26.02.25	10:50 AM	28	8.2	135	914	29.8	294	1.3
2	ETP, TCH- Outlet	26.02.25	10:55 AM	27	7.9	29	846	5.6	72	1.0
3	ETP, Garage- Inlet	26.02.25	01:25 PM	27	8.0	163	872	30.2	306	3.1
4	ETP, Garage- Outlet	26.02.25	01:30 PM	26	7.8	33	715	7.2	74	1.7
5	Final Settling Pond JCPP	26.02.25	09:55 AM				Dry Pond			

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All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

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Manager (Environment)

Annexure- II

TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area Manager, Digwadih Colliery Area Manager,6&7 Pits Colliery

Ref. No. - JMB / ENV / LAB / 03 / 85 / 2025 Dated - 28/02 / 2025

Sub: MINE WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of FEBRUARY'202 The results are as given below:

0 N.	Location (Final Discharge Point)	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Mine's Water)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	2 Pit Jamadoba Colliery	26.02.25	09:25 AM			No	Discharge			
2	3 Pit Jamadoba Colliery	26.02.25	09:40 AM	30	7.5	20	896	2.1	86	1.2
3	2 Incline Jamadoba Colliery	26.02.25	10:10 AM	*		No	Discharge	•		
4	6 & 7 Pits Colliery	26.02.25	11:15 AM	No Discharge						
5	Digwadih Colliery	26.02.25	12:20 PM	1 No Discharge						

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All the parameters are within the limit, and you are requested to maintain the same. This is for your information and necessary action please.

heto Lab.Assistant (Environment)

Manager (Environment)

Annexure- II

10.04

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery Area Manager Digwadih Colliery

Ref. No. - JMB / ENV / LAB / 03 / 86 / 2025 Dated - 28 / 02 / 2025

Sub: STP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of FEBRUARY'2025 The results are as given below:

S. No	Location	Sampling	Sampling		рН	TSS	TDS	BOD	COD	Oil & Grease
	(Final Discharge Point)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	STP, Jmb. Canteen- Inlet	26.02.25	01:10 PM	27	8.0	154	998	36.1	320	2
2	STP, Jmb. Canteen- Outlet	26.02.25	01:15 PM	26	7.6	38	906	8.7	98	1.4
3	STP, JCPP Canteen- Inlet	26.02.25	12:45 PM	28	8.1	132	836	33.4	327	2.9
4	STP, JCPP Canteen- Outlet	26.02.25	12:50 PM	27	7.8	25	760	7.4	144	1.7
5	STP, Railway Colony- Inlet	26.02.25	10:30 AM	28	8.0	167	1036	35.4	336	3.4
6	STP, Railway Colony-Outlet	26.02.25	10:35 AM	27	7.6	41	996	8.9	82	1.5
7	STP, Digwadih 12 No. Officer's colony-Inlet	26.02.25	11:35 AM	28	8.2	127	1016	33.1	290	3.8
8	STP, Digwadih 12 No. Officer's colony- Outlet	26.02.25	11:40 AM	27	8.0	32	910	6.5	68	1.3
9	STP,Digwadih 12 No. Supervisor flat - Inlet	26.02.25	11:55 AM	27	8.2	173	1038	31.9	296	2.9
10	STP,Digwadih 12 No, Supervisor flat -Outlet	26.02.25	12:05 PM	26	7.8	39	987	7.8	84	1.9

All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Ponchate

Manager (Environment)

Annexure- II

1.1.1

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery C.M.O, TCH, Jamadoba

Ref. No. - JMB / ENV / LAB / 03 / 145 / 2025 Dated - 07 / 04 / 2025

Sub: ETP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of MARCH'2025. The results are as given below:

	Location	Sampling	Sampling	Тетр	pН	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point)	Date	Time	< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l
1	ETP, TCH- Inlet	24.03.25	02:00 PM	27	8.3	147	935	31.7	286	2.1
2	ETP, TCH- Outlet	24.03.25	02:05 PM	26	8.0	39	822	5.2	98	1.2
3	ETP, Garage- Inlet	24.03.25	12:45 PM	27	8.1	163	867	29.5	316	3.5
4	ETP, Garage- Outlet	24.03.25	12:50 PM	26	7.9	24	754	6.8	106	1.3
5	Final Settling Pond JCPP	24.03.25	04:35 PM	Dry Pond						

All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Lab.Assistant (Environment)

Manager (Environment)

5

TATA STEEL LIMITED JHARIA DIVISION

Area Manager, Jamadoba Colliery Area Manager, Digwadih Colliery Area Manager,6&7 Pits Colliery

Ref. No. - JMB / ENV / LAB / 03 / 147 / 2025 Dated - 07 / 04 / 2025

Sub: MINE WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of MARCH'2025. The results are as given below:

	Location	Sampling	Sampling Time	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point) (Mine's Water)	Date		< 40°C	5.5 - 9.0	100 mg/l	2100 mg/l	30 mg/l	250 mg/l	10 mg/l	
1	2 Pit Jamadoba Colliery	24.03.25	05.05 PM	No Discharge							
2	3 Pit Jamadoba Colliery	24.03.25	04:50 PM	32	7.6	26	874	2.3	84	1.4	
3	2 Incline Jamadoba Colliery	24.03.25	04:15 PM	No Discharge							
4	6 & 7 Pits Colliery	24.03.25	02:20 PM	No Discharge							
5	Digwadih Colliery	24.03.25	02:40 PM	No Discharge							

2

All the parameters are within the limit, and you are requested to maintain the same.

This is for your information and necessary action please.

Lab.Assistant (Environment)

Manager (Environment)

TATA STEEL LIMITED JHARIA DIVISION

Head, Jamadoba Coal Preparation Plant Area Manager Jamadoba Colliery Area Manager Digwadih Colliery

Ref. No. - JMB / ENV / LAB / 03 / 146 / 2025 Dated - 07/04 / 2025

Sub: STP WATER ANALYSIS REPORT.

We wish to inform you that Trade Effluent Sampling was carried out in JAMADOBA GROUP in the month of MARCH'2025. The results are as given below:

22223	Location	Sampling	Sampling	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease
S. No	(Final Discharge Point)	Date	Time	< 40°C	5.5 - 9.0	100 mg/1	2100 mg/l	30 mg/1	250 mg/l	10 mg/l
1	STP, Jmb. Canteen- Inlet	24.03.25	12:30 PM	28	7.9	133	954	35.2	316	3.9
2	STP, Jmb. Canteen- Outlet	24.03.25	12:35 PM	27	7.5	28	872	7.2	116	0.8
3	STP, JCPP Canteen- Inlet	24.03.25	01:40 PM	28	8.0	143	824	35.1	298	3.5
4	STP, JCPP Canteen- Outlet	24.03.25	01:45 PM	27	7.7	31	728	6.9	112	1.4
5	STP, Railway Colony- Inlet	24.03.25	03:45 PM	27	8.1	141	936	36.8	328	3.6
6	STP, Railway Colony-Outlet	24.03.25	03:50 PM	26	7.7	21	872	8.2	86	1.0
7	STP, Digwadih 12 No. Officer's colony-Inlet	24.03.25	03:15 PM	27	8.0	164	974	35.5	312	2.9
8	STP, Digwadih 12 No. Officer's colony- Outlet	24.03.25	03:20 PM	26	7.8	27	873	6.4	114	1.5
9	STP,Digwadih 12 No. Supervisor flat – Inlet	24.03.25	02:55 PM	27	7,9	135	1024	33.1	260	2.5
10	STP,Digwadih 12 No. Supervisor flat -Outlet	24.03.25	03:00 PM	26	7.6	34	946	7.3	94	1.2

All the parameters are within the limit, and you are requested to maintain the same.

4

This is for your information and necessary action please.

Emahado . Lab.Assistant (Environment)

Manager (Environment)

ENVIRONMENT CELL LABORATORY, JAMADOBA AUTHORIZED VIDE LETTER NO. B – 3922 DATED- 30.08.2012 BY JHARKHAND STATE POLLUTION CONTROL BOARD, RANCHI.

5

Land Use & Land Cover Study of Jamadoba Colliery



Applicant: Tata Steel Jharia Division



Prepared by:

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LAND USE & LAND COVER STUDY OF JAMADOBA COLLIERY

1. Introduction:

1.1 Location

Jamadoba colliery is in the south-eastern part of Jharia Coalfield and is a part of Jamadoba Mining lease owned by Tata Steel Limited. Jamadoba Mining lease is a part of Jamadoba Mouza in Dhanbad district of the state of Jharkhand. Total leasehold area of Jamadoba colliery is 927.17 Ha and it lies in the Survey of India Toposheet no.73-I/6. The nearest railway station is Bhaga which is situated at a distance of 3 km from Jamadoba colliery. Jharia is the nearest town located at a distance of 6 km and district town Dhanbad is about 12 km away from the block.

Digwadih Colliery, owned by Tata Steel Limited is falling along the eastern boundary of the lease. In all other directions, this lease is surrounded with several leases/ collieries of Bharat Coking Coal Limited (BCCL).

1.2 Objective of the study

The purpose of this study is to understand and predict, Land Use and Land Cover (LULC) change using remote sensing and GIS techniques in core zone of Jamadoba Group of Collieries (Combined mining lease area of Jamadoba Colliery, Digwadih Colliery and 6&7 Pit Colliery: 1410 ha) and buffer zone (10 km from the mining lease boundary). The Jamadoba Group consists of three units, namely -

- i) Jamadoba Colliery and Washery
- ii) Digwadih Colliery and
- iii) 6&7 Pits Colliery

All these collieries are adjacent to each other for which separate LULC report are being submitted.

1.3 Physiography and Drainage

Topography of the lease area is mildly undulating. Surface elevation varies from the highest at 178 m to the lowest at 140 m above Mean Sea Level (MSL). General slope is grading towards Southerly and Westerly as per the meandering flow of Damodar River.

There are two jores – Kari/ Puttiya and Dungri jore. Kari/ Puttiya jore flows through North-East part of the lease and falls into Damodar River. Dungri jore flows centrally from the north side of the lease to south side where it meet Damodar River near Bhowrah North Colliery boundary.

1.4 Climate, Temperature and Rainfall

The climate of Jharia coalfield is typical monsoon type with maximum precipitation in the month of June to September. Annual rainfall varied from 772 mm to 1704 mm during 1992 - 2010. Average annual rainfall during this period is ~ 1200 mm. The lowest recorded temperature is $5^{\circ} - 7^{\circ}$ during winter (December-January) and the highest temperature is $46^{\circ} - 48^{\circ}$ during peak summer (May-June). Predominant wind direction is Westerly and North-westerly other than monsoon season.

2. Remote Sensing Concepts and Methodology:

2.1 Remote sensing

Remote sensing is the science and art of obtaining information about an object or area through the analysis of data acquired by a device that is not in physical contact with the object or area under investigation. The term remote sensing is commonly restricted to methods that employ electro-magnetic energy (such as light, heat and radio waves) as the means of detecting and measuring object characteristics. All physical objects on the earth surface continuously emit electromagnetic radiation because of the oscillations of their atomic particles. Remote sensing is largely concerned with the measurement of electro-magnetic energy from the SUN, which is reflected, scattered, or emitted by the objects on the surface of the earth.



Figure 2.1: Radiation System

2.2 Electromagnetic Spectrum

The electromagnetic (EM) spectrum is the continuum of energy that ranges from meters to nanometres in wavelength and travels at the speed of light. Different objects on the earth surface reflect different amounts of energy in various wavelengths of the EM spectrum. The EM spectrum ranges from the very short wavelengths of the gamma-ray region to the long wavelengths of the radio region. The visible region (0.4-0.7µm wavelengths) occupies only a small portion of the entire EM spectrum. Energy reflected from the objects on the surface of the earth is recorded as a function of wavelength. During daytime, the maximum amount of energy is reflected at 0.5µm wavelengths, which corresponds to the green band of the visible region and is called the reflected energy peak (Figure 2.2). The earth also radiates energy both day and night, with the maximum energy 9.7µm wavelength. This radiant energy peak occurs in the thermal band of the IR region.



Figure 2.1: Electromagnetic spectrum



Figure 2.1: Expanded diagram of the visible and infrared regions (upper) and the microwave regions (lower) showing atmospheric windows.Wavelength bands commonly used remote sensing system are indicated. Gases responsible for atmospheric absorption are shown.

Table 2.1: Electromagnetic Spectral Regions

Region	Wavelength	Remarks
Gamma ray	< 0.03 nm	Incoming radiation is completely absorbed by the upper atmosphere and is not available for remote sensing.
X-ray	0.03 to 3.00 nm	Completely absorbed by atmosphere. Not employed in remote sensing.
Region	Wavelength	Remarks
-------------------------	-------------------------------------	---
Ultraviolet	0.03 to 0.40 um	Incoming wavelengths less than 0.3mm are completely absorbed by Ozone in the upper atmosphere.
Photographic UV band	0.30 to 0.40 um	Transmitted through atmosphere. Detectable with film and photo detectors, but atmospheric scattering is severe.
Visible	0.40 to 0.70 um	Imaged with film and photo detectors. Includes reflected energy peak of earth at 0.5mm.
Infrared	0.70 to 100.00 um	Interaction with matter varies with wavelength. Absorption bands separate atmospheric transmission windows.
Reflected IR band	0.70 to 3.00 um	Reflected solar radiation that contains no information about thermal properties of materials. The band from 0.7-0.9 mm is detectable with film and is called the photographic IR band.
Thermal IR band	3.00 to 5.00 um 8.00 to 14.00 um	Principal atmospheric windows in the thermal region. Images at these wavelengths are acquired by optical- mechanical scanners and special Videocon systems but not by film.
Microwave	0.10 to 30.00 cm	Longer wavelengths can penetrate clouds, fog, and rain. Images may be acquired in the active or passive mode.
Radar	0.10 to 30.00 cm	Active form of microwave remote sensing
Radio	>30.00 cm	Longest wavelength portion of electromagnetic spectrum. Some classified radar with very long wavelength operate in this region.

The earth's atmosphere absorbs energy in the gamma-ray, X-ray and most of the ultraviolet (UV) region; therefore, these regions are not used for remote sensing. Wavelength regions with high transmission are called atmospheric windows and are used to acquire remote sensing data. Detection and measurement of the recorded energy enables identification of surface objects (by their characteristic wavelength patterns or spectral signatures), both from air-borne and space-borne platforms.

2.3 Scanning System

The sensing device in a remotely placed platform (aircraft/satellite) records EM radiation using a scanning system. In scanning system, a sensor, with a narrow field of view is employed; this sweeps across the terrain to produce an image. The sensor receives electromagnetic energy radiated or reflected from the terrain and converts them into signal that is recorded as numerical data. In a remote sensing satellite, multiple arrays of linear sensors are used, with each array recording simultaneously a separate band of EM energy. The array of sensors employs a spectrometer to disperse the incoming energy into a spectrum. Sensors (or detectors) are positioned to record specific wavelength bands of energy. The information received by the sensor is suitably manipulated and transported back to the ground receiving station. The data are reconstructed on ground into digital images. The digital image data on magnetic/optical media consist of picture elements arranged in regular rows and columns. The position of any picture element, pixel, is determined on a x-y co-ordinate system. Each pixel has a numeric value, called digital number (DN) that records the intensity of electromagnetic energy measured for the ground resolution cell represented by that pixel. The range of digital numbers in an image data are further processed to produce master images of the study area. By analysing the digital data/imagery,

digitally/visually, it is possible to detect, identify and classify various objects and phenomenon on the earth surface.

Remote sensing technique (airborne/satellite) in conjunction with traditional techniques harbours in an efficient, speedy, and cost-effective method for natural re-source management due to its inherited capabilities of being multispectral, repetitive, and synoptic areal coverage. Generation of environmental 'Data Base' on land use, soil, forest, surface and subsurface water, topography and terrain characteristics, settlement, and transport network, etc., and their monitoring in near real - time is very useful for environmental management planning; this is possible only with remote sensing data.

2.4 Data Source

• Primary Data

Remote Sensing Satellite data viz. Resourcesat-2A of February 2025 having 5.0 m. spatial resolution was used in the present study.

• Secondary Data

Secondary (ancillary) and ground data constitute important baseline information in remote sensing, as they improve the interpretation accuracy and reliability of remotely sensed data by enabling verification of the interpreted details and by supplementing it with the information that cannot be obtained directly from the remotely sensed data. For Jamadoba colliery, Survey of India toposheet no. 73I/5 (F45C5), 73I/6 (F45C6), 73I/9 (F45C9) & 73I/10 (F45C10) have been utilised for lease as well as Buffer zone of 10 km.

2.5 Characteristics of Satellite/Sensor

The basic properties of a satellite's sensor system can be summarised as:

- (a) Spectral coverage/resolution, i.e., band locations/width;
- (b) spectral dimensionality: number of bands;
- (c) radiometric resolution: quantisation;
- (d) spatial resolution/instantaneous field of view or IFOV; and
- (e) temporal resolution.

Table 2.2: Table illustrates the basic properties of Resourcesat-2A satellite sensor that was used in the present study.

Platform	Sensor	Spectral Bands in µm	Radiometric Res-	Spatial Resolution	Temporal Resolution	Country
Re- source- sat- 2	LISS- IV	B2 0.52 - 0.59 Green B3 0.62 - 0.68 Red B4 0.77 - 0.86 NIR	16-bit	5.0 m	24 days	India

2.6 Data Processing

The details of data processing carried out in the present study are shown in Figure 2.4. The processing methodology involves the following major steps:

- a) Geometric correction, rectification and geo-referencing
- b) Image enhancement
- c) Training set selection
- d) Signature generation and classification
- e) Creation/overlay of vector database
- f) Validation of classified image
- g) Final thematic map preparation



Figure 2.1: Data processing flowchart

2.6.1 Geometric correction, rectification, and geo-referencing

Inaccuracies in digital imagery may occur due to 'systematic errors' attributed to earth curvature and rotation as well as 'non-systematic errors' attributed to intermittent sensor malfunctions, etc. Systematic errors are corrected at the satellite receiving station itself while non-systematic errors/ random errors are corrected in pre-processing stage. In spite of 'System / Bulk correction' carried out at supplier end; some residual errors in respect of attitude attributes remains even after correction. Therefore, fine tuning is required for correcting the image geometrically using ground control points (GCP).

Raw digital images contain geometric distortions, which make them unusable as maps. A map is defined as a flat representation of part of the earth's spheroidal surface that should conform to an internationally accepted type of cartographic projection, so that any measurements made on the map will be accurate with those made on the ground. Any map has two basic characteristics: (a) scale and (b) projection. While scale is the ratio between reduced depiction of geographical features on a map and the geographical features in the real world, projection is the method of transforming map information from a sphere (round Earth) to a flat (map) sheet. Therefore, it is essential to transform the digital image data from a generic co-ordinate system (i.e., from line and pixel co-ordinates) to a projected co-ordinate system. In the present study georeferencing was done with the help of Survey of India (SoI) topo-sheets so that information from various sources can be compared and integrated on a GIS platform, if required.

An understanding of the basics of projection system is required before selecting any transformation model. While maps are flat surfaces, Earth however is an irregular sphere, slightly flattened at the poles and bulging at the Equator. Map projections are systemic methods for "flattening the orange peel" in measurable ways. When transferring the Earth and its irregularities onto the plane surface of a map, the following three factors are involved: (a) geoid (b) ellipsoid and (c) projection. Figure 2.5 illustrates the relationship between these three factors. The geoid is the rendition of the irregular spheroidal shape of the Earth; here the variations in gravity are considered. The observation made on the geoid is then transferred to a regular geometric reference surface, the ellipsoid. Finally, the geographical relationships of the ellipsoid (in 3-D form) are transformed into the 2-D plane of a map by a transformation process called map projection. As shown in the Figure 2.5 most projections are based upon cones, cylinders and planes.



Figure 2.1: Geoid – Ellipsoid – Projection Relationship

In the present study, *UTM projection* along with *WGS 1984 Coordinate system* was used to prepare the map compatible with the SoI topo-sheets. Maps prepared using these projections are a compromise of many properties; it is neither conformal perspective nor equal area. Distances, areas, and shapes are true only along central meridian. Distortion increases away from central meridian. Image transformation from generic co-ordinate system to a projected co-ordinate system was carried out using IMAGINE v.2022 digital image processing system.

2.6.2 Image enhancement

To improve the interpretability of the raw data, image enhancement is necessary. Most of the digital image enhancement techniques are categorised as either point or local operations. Point operations modify the value of each pixel in the image data independently. However, local operations modify the value of each pixel based on brightness value of neighbouring pixels. Contrast manipulations/ stretching technique based on local operation was applied on the image data using IMAGINE s/w.

Training set selection

The image data were analysed based on the interpretation keys. These keys are evolved from certain fundamental image-elements such as tone/colour, size, shape, texture, pattern, location, association and shadow. Based on the image-elements and other geo-technical elements like landform, drainage pattern and physiography; training sets were selected/identified for each land use/cover class. Field survey was carried out by taking selective traverses to collect the ground information (or reference data) so that training sets are selected accurately in the image. This was intended to serve as an aid for classification. Based on the variability of land use/cover condition and terrain characteristics and accessibility, nearly 150 points were selected to generate the training sets.

2.6.3 Signature generation and classification

Image classification was carried out using the maximum likelihood algorithm. The classification proceeds through the following steps:

- Calculation of statistics [i.e., signature generation] for the identified training areas, and
- The decision boundary of maximum probability based on the mean vector, variance, covariance and correlation matrix of the pixels.

After evaluating the statistical parameters of the training sets, reliability test of training sets was conducted by measuring the statistical separation between the classes that resulted from computing divergence matrix. The overall accuracy of the classification was finally assessed with reference to ground truth data. The aerial extent of each land use class in the coalfield was determined using ERDAS IMAGINE s/w. The Land use / Land Cover map of core zone and buffer zone of Jamadoba Colliery for the year 2025 for are shown in Figure no. 3.1 and 3.5 respectively.

2.6.4 Creation/overlay of vector database

Plan showing coal block boundary are superimposed on the image as vector layer in the Arc GIS database. Road network, rail network and drainage network are also digitised on Arc GIS database and superimposed on the classified image.

2.6.5 Final land use/land cover map preparation

Final land use/land cover map of core zone and buffer zone of Jamadoba Colliery was printed using HP Design jet 4500 Colour Plotter. The maps are prepared on 1:5000 scale but plotted on scale "Fit to A3 Size".

3. Detailed Land Use and Land Cover estimation of Jamadoba Collieries:

3.1 Introduction:

It is expected that by understanding the spatial phenomenon of Land Use-Land Cover (LULC) and developing and applying techniques to detect and predict changes in LULC using remote sensing and GIS, it will be possible to reduce the misallocation of resources and mismanagement of land use in the study area. It is anticipated that this study will be great assistance in formulation of polices that will help in improving land use planning and land resources management in study area. It is being carried out reveal how much of a region is covered by forests, wetlands, impervious surfaces, agriculture, and other land and water types. As explained above, Land use and land cover map of Jamadoba Colliery comprises of Jamadoba mining lease area including Jamadoba Coal washery of Tata Steel Limited in Jharkhand state. The detailed objectives of this study area are as follows:

- 1) Preparation of land use land cover classification report with likely land uses such as -
 - Agriculture;
 - Forest;
 - Mining/ Built-up area:
 - Wasteland with and without vegetation,
 - Waterlogged (inland wetland));
 - Habitation (Urban area delineation with approx. buffer zone) and water body (including rivers and streams), roads and other distinctly visible feature classes if any.
- 2) To detect and determine land use-land cover change dynamics using remote sensing techniques by preparation of time series land use map.
- 3) To analyze the spatial dimension of LULC change dynamics associated with demographic pressure, economic and physical environment.
- 4) Generation of shape files of all units for submission.
- 5) To comply specific condition no. 26 of EC conditions that states "For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1:5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MoEF and its concerned Regional office.

The broad classification alongwith the description is given in Table 3.1, as per the of framework of Land Use Land Cover by NRSC/ ISRO. The areas under each of these classes shall be estimated on the basis of the pixel grid cell process in Erdas Imagine software following the rules of NRSC/ISRO Land Use and Cover Monitoring.

SI. No.	Description - 1	Description - 2	Remarks
1	Built-up area	Urban	Residential, mixed built up, Public / Semi Public, Communication, Public utilities /facility, Commercial, Transportation, Reclaimed land, Vegetated Area, Recreational, Industrial, Industrial / Mine dump, Ash/ Cooling pond.
		Rural	Rural
		Mining	Mine / Quarry, Abandoned Mine Pit, Land fill area

Table 3.1: Descriptions of land use and land cover classes (Source- NRSC/ISRO)

SI. No.	Description - 1	Description - 2	Remarks			
2	Agriculture land	Crop land	Kharif, Rabi, Zaid, Two cropped, More than two cropped			
		Plantation	Plantation-Agricultural, Horticultural, Agro Horticultural.			
		Fallow	Current and Long Fallow			
		Current Shifting Cultivation	Current Shifting cultivation.			
3	Forest Land	Evergreen/Semi	Dense / Closed and Open category of Evergreen / Semi			
		evergreen	evergreen.			
		Deciduous	Dense / Closed and Open category of Deciduous and			
			Tree Clad Area.			
		Forest Plantation	Forest Plantation			
		Scrub Forest	Scrub Forest, Forest Blank, Current & Abandoned Shifting Cultivation.			
		Swamp/Mangroves	Dense / Closed & Open Mangrove			
4	Grass/ grazing	Grass/ grazing	Grassland: Alpine / Sub-Alpine, Temperate / Sub tropical, Tropical / Desertic			
5	Barren/	Salt affected land	Slight, Moderate & Strong Salt Affected Land			
	uncultivable/	Scrub land	Dense. Closed and Open category of scrub land			
	Waste land	Sandy area	Desertic, Coastal, Riverine sandy area.			
		Barren rocky	Barren rocky			
		Rann	Rann			
6	Wetlands/	Inland wetland	Inland Natural and Inland Manmade wetland			
	Water bodies	Coastal wetland	Coastal Natural and Coastal Manmade wetland			
		River / Stream / canals	Perennial & Dry River/stream and line & unlined canal/ drain			
		Water bodies	Perennial, Dry, Kharif, Rabi &Zaid extent of lake/pond and reservoir and tanks			

Definitions of all the major classes are mentioned below:

• Built-up land:

It is an area of human habitation developed due to non-agricultural use and that has a cover of buildings, transport and communication, utilities in association with water, vegetation and vacant land. LULC map consists of 3 classes under built-up viz., urban, rural and mining.

• Agricultural land:

These are the lands primarily used for farming and for production of food, fiber, and other commercial and horticultural crops. Agricultural Land may be defined broadly as land used primarily for production of food and fiber. These are the areas with standing crop as on the date of Satellite overpass. Cropped areas appear in bright red to red in colour with varying shape and size in a contiguous to non-contiguous pattern. They are widely distributed indifferent terrains; prominently appear in the irrigated are as irrespective of the source of irrigation. It includes Kharif, Rabi and Zaid croplands along with areas under double or triple crops.

• Forest:

The term forest is used to refer to land with a tree canopy cover of more than 10 percent and area of more than 0.5 ha. Forests are determined by both the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 m. The two categories i.e., open forest and dense forest is predominant in Jamadoba Colliery.

• Wetland:

Wetlands are those areas where the water table is at, near, or above the land surface for a significant part of most years. The hydrologic regime is such that aquatic or hydrophyte vegetation usually is established, although alluvial and tidal flats may be no vegetated. Wastelands frequently are associated and topographic lows, even in mountainous regions.

• Water body:

This category comprises areas with surface water in the form of ponds, river, lakes, tanks and reservoirs. Rivers/streams are natural course of water flowing on the land surface along a definite channel/slope regularly or intermittently towards a sea in most cases or into a lake or an inland basin in desert areas or a marsh or another river. Canals are artificial watercourse constructed for irrigation, navigation or to drain out excess water from agricultural lands.

3.2 Land use and Land cover mapping of Jamadoba Colliery:

Land use and land cover mapping for the year 2025 -

The Jamadoba colliery (927.17 ha) was classified for land use and land cover mapping by using supervised classification technique. Six classes are identified over the study area namely built-up (195.378 ha), mining (65.633 ha), grazing/scrub land (25.143 ha), agricultural land (469.857 ha), water body (86.425 ha) and barren land/waste land (74.884 ha) shown in Figure 3.1 below.





Sl.	Description	Year – 2018*	Year - 2021*	Year - 2025
no.				
1	Built-up land	204.200	205.166	195.378
2	Built-up Mining land	65.633	65.633	65.633
3	Dense forest	0.000	0.000	0.000
4	Grazing/Scrub land	37.743	24.677	25.143
5	Agriculture land	404.204	450.874	469.857
6	Agricultural Fallow land	18.581	8.812	9.850
7	Water Body/ River	81.120	81.120	86.425
8	Barren land/waste land	115.689	90.888	74.884
Total		927.17	927.17	927.17

Table 3.2: Assessment of Land use/Land cover of Jamadoba colliery on yearly basis

*Study report prepared by Indian Institute of Technology - ISM in March'2021



Figure 3.2: LULC distribution of Jamadoba colliery (Year 2018)



Figure 3.3: LULC distribution of Jamadoba colliery (Year 2021)



Figure 2.1: LULC distribution of Jamadoba colliery (Year 2025)

3.3 Land use and Land cover mapping of Jamadoba colliery with 10 km buffer zone:

Land use and land cover map for the year 2025 -

The Jamadoba colliery with 10 km buffer zone (47358.068 ha) was classified for land use and land cover mapping by using supervised classification technique. Nine classes are identified over the study area namely built-up (7655.100 ha), mining (4256.855 ha), dense forest (6700.195 ha), open forest (2328.085 ha), grazing/scrub land (1417.223 ha), agricultural land (15125.053 ha), agricultural fallow land (3504.380 ha), water body (1019.935 ha) and barren land/waste land (5351.243 ha). The land use/ land cover map of Jamadoba colliery with 10KM buffer zone is shown in Figure-3.5.



Figure 2.1: LULC map of Jamadoba colliery including Jamadoba Washery with 10km buffer zone in year 2025

Table 3.3:	Assessment of Land use/Land cover with the Buffer Zone of Jamadoba colliery on yearly
basis	

Sl.	Description	Year – 2018*	Year – 2021*	Year - 2025
no.				
1	Built-up land	9899.919	9955.544	7655.100
2	Built-up Mining land	4526.092	4513.832	4256.855
3	Dense forest	1259.534	1227.004	6700.195
4	Open forest	568.416	564.446	2328.085
5	Grazing/Scrub land	37.743	44.767	1417.2225
6	Agriculture land	23130.762	23033.217	15125.053
7	Agricultural fallow land	1477.343	1533.789	3504.380
8	Water Body/ River	1249.206	1257.946	1019.935
9	Barren land/waste land	5206.498	5224.968	5351.2425
Total		47355.513	47355.513	47358.068



*Study report prepared by Indian Institute of Technology - ISM in March'2021

Figure 2.1: LULC distribution of Buffer Zone of Jamadoba colliery (Year 2018)



Figure 2.1: LULC distribution of Buffer Zone of Jamadoba colliery (Year 2021)



Figure 2.1: LULC distribution of Buffer Zone of Jamadoba colliery (Year 2025)

3.4 Change Detection:

In the core zone of Jamadoba collieries overall built-up area is reduced from 205.166 Ha to 195.378 Ha. No change on Built-up area of Mining land is observed. Small amount of enhancement over grazing land has observed from 24.677 Ha to 25.143 Ha. Agricultural land is also observed to be increased from 450.874 Ha to 469.857 Ha. Increase over waterbody area is observed from 81.120 ha to 86.425 ha. Reduction in Barren/ Waste land is observed from 90.888 Ha to 74.884 Ha.

In the buffer zone of Jamadoba collieries Built-up land is observed to be reduced from 9955.5 Ha to 7655.1 Ha; Mining built-up area has been reduced from 4513.83 Ha to 4256.85 Ha; Dense forest has been increased from 1227.0 Ha to 6700.19 Ha; Open forest also has been increased significantly from 564.44 Ha to 2328.08 Ha; Grazing/ Scrub land increased from 44.76 Ha to 1417.22 Ha; Agricultural land has been reduced from 23033.217 Ha to 15125.05 Ha; Small amount of reduction over waterbodies is observed from 1257.94 Ha to 1019.935 Ha and meagre enhancement over barren land is observed from 5224.96 Ha to 5351.24 Ha.

4. Conclusions:

- In the present study, land use/ vegetation cover mapping has been carried out based on Resourcesat 2A satellite sensor data of February'2025 in order to monitor the impact of coal mining on land environment which may help in formulating the mitigation measures required, if any.
- Technical limitation of the analysis process lies with the resolution of the Satellite image which is usually available at 5m resolution. Therefore, sometimes it is difficult to assess the land classification remotely in case of Agricultural land with low vegetation Scrub land or Barren land through False Colour Composite (FCC) of remote sensing.

PH ACTION PLAN

Annexure - IV

Issues raised by Public	Commitment by the Proponent/ Action Plan	Timeline	Financial provisions	Status
Tree Plantation and increase in green cover .	We will ensure maximum tree plantation and its care. Saplings will be made available for planting in available lands in nearby villages.	Continuous	10 lakhs per annum	Ongoing as per the commitment
Measures for controlling underground mine temperature and dust	Underground mine is regularly and continuously ventilated. Sufficient water is sprinkled at underground mine. Transportation of coal will be done through underground conveyor belt. Apart from this, temperature, dust and other parameters are regularly being checked in suitable periodicals and these are kept in controlling with in the specified standards.	Continuous	4.09 Crores per annum (for operation and maintenance)	Completed. Mines operation has been suspended since January 2024.
Water sprinkling arrangements to check dust pollution.	Regular water sprinkling is done on approach roads , village roads etc to check air pollution and this shall be increased as per requirement. Further, avenue plantation shall be enhanced.	Continuous	7.20 Lakhs per annum	Ongoing as per the commitment
Solid Waste Management (Domestic Waste)	A dedicated work contract is there to take care of the solid waste generated from domestic sources, horticultural wastes etc. Solid waste is disposed as per the provisions of Solid Waste Management Rules, 2016.	Continuous	11.76 lakhs per annum	Ongoing as per the commitment
Mine Water Management	Mine water after proper sedimentation in the water reservoirs are provided to the villages for irrigation and other purposes. For this TATA Steel Rural Development Society (TSRDS) has constructed irrigation channels.	FY 21-22 (Patiya) FY22-23 (Lower Dungri)	Irrigation channels at Patiya (100m) and Lower Dungri (125 m)- 4.50 lakhs	Completed

PH ACTION PLAN

Issues raised by Public	Commitment by the Proponent/ Action Plan	Timeline	Financial provisions	Status
Provision of employment to local people & contractors	 Local people are given jobs as per the rules and regulations of the Company. Apart from this, young local people are associated with employment opportunities through various programmes for their skill development. Coordinating and facilitating for attending the Govt. assistance programmes for youths (30-40persons/year) such as Chef training, training on hospitality management etc TATA Vocational Training Institute(JNTVTI) is in already operation in Jharia for Industrial Training. Training in fishery is being imparted to those people who are involved in fishery. 	Continuous	1 Lakh per annum for facilitation cost	Ongoing as per the commitment. Skill development training has been started in collaboration with NIIT foundation covering 300 youths annually – 7.5 lakhs is ongoing since FY 20-21 onwards till today
	The mine water is treated and converted into drinking water and supplied to the colonies through pipe line. Around 5700 meter pipe line was laid in the last 5 years, for supplying water through Tata Steel Rural Development Society (TSRDS). Around, 1500 houses are linked through this. Extension of 160 m pipe line to Niche Tola , Jhajtand shall be done • Electricity works will be taken up with the help of Jharkand State Electricity Board (JSEB). Infrastructural support for rural electrification (poles and wires) shall be provided in Petiya area	FY 21-22	Extension of pipeline - 2.5 lakhs Infrastructural support for rural electrification– 1.5 lakhs	Commitment fulfilled. FY 21-22 Extension of pipeline (775 m) to Niche Tola, Jahajtand- 3.3 lakhs. Infrastructural support provided for rural electrification at Petiya and Lahargora and with support of JSEB– 1.56 lakhs.
Provision for education of children from poorer families, assistance in providing books and study materials	Company extends co-operation for the education of children of poorest families. Every year around 3000 poorest family children are given pre- matric coaching in the field of education. Apart from this, 240 children are given Jyothi Fellowship every year, along with providing text books and note books.	Continuous	12.00 Lakhs	Ongoing as per the commitment. Pre matriculation coaching and jyoti fellowship for needy students- 25.00 laks every year from (FY20-21 to FY 24- 25)
Assistance to SHGs	Self help groups have been formed for needy women groups and free training is being imparted for employment. Women groups will be connected with Government programmes like National Rural Livelihood Mission (NRLM) and National Urban livelihood Mission (NULM) so that they can get more assistance. Trainings were imparted on mushroom cultivation, vegetable cultivation etc 4 batches of 50 women each are imparted training every year	Continuous	Mushroom cultivation-0.5 lakhs	Ongoing as per the commitment .

PH ACTION PLAN

Issues raised by Public	Commitment by the Proponent/ Action Plan	Timeline	Financial provisions	Status
Construction of village roads	Company constructed 4367 mtr PCC road, 593 metre Paber Block road, and 680 mtr., Bitumen Road in the last 5 years. These type of constructions will be continued in future also.		Construction of 100 meter approach road at Patiya basti- 3.00 Lakhs	Commitment fulfilled. Approach road 75.50 Mtr. Aam Tola Patia and 556 Mtr. At Suyankanali has been completed.
Construction of new ponds, bathing ghats and renovation of old ponds	 Around 28 ponds for rain water harvesting have been constructed during the last 5 years and new ponds shall be constructed in villages Every year cleaning of ponds is being taken up under planned programme. Company has constructed 15 Ghatts during the last 5 years and two new ghats shall be developed at Petiya and Lahargora 	FY 21-22 Continuous FY 20-21 FY21-22	New pond-4.00 Lakh Cleaning of old ponds -1.5 Lakh/annum Bathing ghat at Petiya-0.5 Lakh Bathing ghat at Lahargora-0.5 Lakh	Completed as per the commitment made. Construction and renovation of pond is taken up every year in the nearby villages.
Sports and extra curricular activities	 Training is provided for football, archery and athletics. Dedicated coaches are available to train the children. Sports equipment along with nutritious supplement/snacks are also provided to children. Regular events are organized to create awareness on the fitness and coordination is also done for participants in state and national levels 	Continuous	10 Lakhs per Annum	Ongoing as per the commitment
Provision of Medical facility to villagers	Company is operating a Mobile Medical Unit. (MMU) to meet the medical requirements in surrounding villages. This will be more expanded. Other medical services are also provided such as SPARSH (leprosy treatment) and related illness. Further every year cataract camps are organized and nearly 300 patients are treated for cataract	Continuous	12 Lakhs/annum- MMU 24 Lakhs/annum- SPARSH 18 lakhs/annum- Cataract treatment	Ongoing as per the commitment