



By-Email

Ref.No.: MGM/P&E/225

Date: 27/05/2024

To,
The Additional Director,
Ministry of Environment and Forest & Climate Change,
Eastern Region Office,
A/3, Chandrasekharpur,
Bhubaneswar-751023

Subject: Submission of half-yearly compliance report on the stipulated environmental clearance terms and conditions in respect of Tiringpahar Iron and Manganese Mine of M/s TATA Steel Ltd., for the period from October'2023 to March'2024.

Reference:

- 1) MoEFCC's Letter Ref No: J-11015/87/2004-IA. II(M) dated 17th November 2005.
- 2) MoEFCC's notification vide S.O-5845 (E), dated 28th November 2018.

Respected Sir,

We are herewith submitting the six-monthly compliance report on the status of the implementation of the conditions stipulated in environmental clearance awarded to us vide MoEFCC's Letter Ref No: J-11015/87/2003-IA. II(M) dated 17th November 2005 in respect of Tiringpahar Iron and Manganese Mine of M/s TATA Steel Ltd. for the period from October'2023 to March'2024 for your kind perusal.

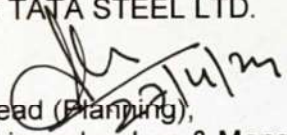
This is in reference to the above referred MoEFCC's notification, the six-monthly compliance report is being submitted only in soft copy mode, shared with your good office at e-mail @ roez.bsr-mef@nic.in.

We believe the above submission is in order.

Thanking You,

Yours Faithfully,

F: TATA STEEL LTD.


Head (Planning),
Tiringpahar Iron & Manganese Mines,
Ferro Alloys Mineral Division

Encl: As above.

Copy To:

- 1) Zonal Office Kolkata, Central Pollution Control Board, South end Conclave, Block 502, 5th and 6th Floors, 1582 Rajdanga Main Road, Kolkata, West Bengal 700107.
- 2) The Member Secretary, State Pollution Control Board, A/118, Nilakantha Nagar, Bhubaneswar, Odisha-751012.
- 3) The Regional Officer, State Pollution Control Board, Baniapat, DD College Road, Keonjhar, Odisha-758001.

TATA STEEL LIMITED

Ferro Alloys & Manganese Division, Manganese Group of Mines, At/P.O.: Bichhakundi, Via: Joda,

Dist: Keonjhar Odisha – 758 034 Tel.: 9238101370, email : mnminesadmin@tatasteel.com

Regd. Office : Bombay House, 24 Homi Modi Street, Mumbai – 400 001 Tel 912266658282, Fax 912266657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

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

Proposal No	IA/OR/MIN/11666/2005
Compliance ID	64121875
Compliance Number(For Tracking)	EC/M/COMPLIANCE/64121875/2024
Reporting Year	2024
Reporting Period	01 Jun(01 Oct - 31 Mar)
Submission Date	27-05-2024
IRO Name	ARTATRANA MISHRA
IRO Email	jhk109@ifs.nic.in
State	ODISHA
IRO Office Address	Integrated Regional Offices, Bhubaneswar

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

Half Yearly Compliance Report 2024 01 Jun(01 Oct - 31 Mar) Acknowledgment																			
Proposal Name		Tiringpahar Manganese Ore Mine of M/s Tata Steel, Dist. Keonjhar, State Odisha (Expansion in the Production of Manganese Ore from 0.43 LTPA to 0.85 LTPA)																	
Name of Entity / Corporate Office		Tata Steel																	
Village(s)		N/A																	
District		KENDUJHAR																	
<table><tr><td>Proposal No.</td><td>IA/OR/MIN/11666/2005</td></tr><tr><td>Plot / Survey / Khasra No.</td><td>N/A</td></tr><tr><td>State</td><td>ODISHA</td></tr><tr><td>MoEF File No.</td><td>J-11015/87/2004-IA.II(M)</td></tr></table>		Proposal No.	IA/OR/MIN/11666/2005	Plot / Survey / Khasra No.	N/A	State	ODISHA	MoEF File No.	J-11015/87/2004-IA.II(M)	<table><tr><td>Category</td><td>Non-Coal Mining</td></tr><tr><td>Sub-District</td><td>N/A</td></tr><tr><td>Entity's PAN</td><td>NA</td></tr><tr><td>Entity name as per PAN</td><td>NA</td></tr></table>		Category	Non-Coal Mining	Sub-District	N/A	Entity's PAN	NA	Entity name as per PAN	NA
Proposal No.	IA/OR/MIN/11666/2005																		
Plot / Survey / Khasra No.	N/A																		
State	ODISHA																		
MoEF File No.	J-11015/87/2004-IA.II(M)																		
Category	Non-Coal Mining																		
Sub-District	N/A																		
Entity's PAN	NA																		
Entity name as per PAN	NA																		
Compliance Reporting Details																			
Reporting Year	2024																		
Remarks (if any)	Six Monthly EC Compliance in respect of Tiringpahar iron & Mn Mine Project: Metal Mining (Open Cast) Project Proponent: Tata Steel Limited.																		
Reporting Period	01 Jun(01 Oct - 31 Mar)																		
Details of Production and Project Area																			
Name of Entity / Corporate Office	Tata Steel																		
	Project Area as per EC Granted	Annual Project Area in Possession																	
Private	0	1.311																	
Revenue Land	98.486	34.515																	
Forest	70.514	133.17																	
Others	0	0																	
Total	169	168.99599999999998																	
Production Capacity																			

Sr. no	Product Name	units	Valid Upto	Capacity	Production last year	Capacity as per CTO
1	Manganese Ore	Tons per Annum (TPA)	31/03/2025	85000	55803	85000

Conditions

Specific Conditions

Sr.No.	Condition Type	Condition Details
1	Statutory compliance	"Consent to Operate" should be obtained from SPCB before expanding mining activities.

PPs Submission: Complied

Consent to Operate for Production of Mn Ore for 85000 TPA and Operation of Mobile Screening Plant of 1X392 TPD and a mobile crushing plant of 1X50TPH has been accorded by SPCB, Odisha vide letter No. 536/IND/I/CON/190 dated 07-01-2022 which is valid up to 31/03/2025. A copy of the valid CTO is [enclosed herewith](#).

Date:
27/05/2024

2 Statutory compliance

A Conservation Plan for conservation of endangered fauna including the Indian Elephant found in and around the mine area shall be prepared and implemented in consultation with identified agencies/institutions and with the State Forest Department. The Plan should be dovetailed with that prepared/under implementation/proposed for the endangered fauna found in the Reserve Forest in the buffer zone of the project site. The costs for the specific activities/tasks should be earmarked in the Conservation Plan and shall not be diverted for any other purpose. Year wise status of the implementation of the Plan and the expenditure thereon should be reported to the Ministry of Environment & forests, RO, Bhubaneswar.

PPs Submission: Complied

A site-specific wildlife conservation plan has been approved by PCCF, Bhubaneswar, Odisha and Chief Wildlife Warden Odisha vide memo no. 7724/1WL-SSP-94/2015 dated 03.08.2015. Following funds have been deposited by PP to State Forest Dept till date for – • Rs. 240.47 lakhs for the implementation of various provisions of site-Specific wildlife conservation plan like avifauna monitoring, solar fencing and other • Rs 35.7 Lakhs by user agency • Rs 7267000/- for the implementation of regional wildlife conservation as per the demand notices. A copy of the approved site-specific wildlife conservation plan is [enclosed herewith](#).

Date:
27/05/2024

3 MINING PLAN

Mining will not intersect groundwater. Prior permission of the MOEF and CGWA shall be taken to mine below water table.

PPs Submission: Complied

As per the approved mining plan and status thereof, it is conclusive that ultimate pit depth of the mine at the end of mine plan period will not intercept the regional ground water table.

Date:
27/05/2024

4 MINING PLAN

A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

PPs Submission: Complied

A Final Mine Closure Plan (FMCP) shall be prepared in accordance with the provisions laid down under the "GUIDELINES FOR PREPARATION OF FINAL MINE CLOSURE PLANS" as prescribed by Indian Bureau of Mines. As per the said guideline, FMCP is required to be prepared 2 years in advance from the date of closure/life of the mine. However presently during the approval of Mine Plan, a progressive mine closure plan (PMCP) is being submitted for approval. During the

Date:
27/05/2024

<p>process of such approval, based on the “area put to use” for excavation and allied activities, we have deposited a sum of Rs. 5.6042 Cr to Indian Bureau of Mines (IBM) in the form of Bank Guarantees towards financial assurance for the implementation of measures of PMCP provisions. This approval was communicated to the Regional office , MoEF & CC, Bhubaneswar.</p>		
5	Statutory compliance	Mining shall not be undertaken in areas of forestland within the lease for which forestry clearance has not been obtained.
<p>PPs Submission: Complied</p> <p>The present leasehold area of Tiringpahar Iron & Manganese Mine is 169.0 ha. Out of which, forest land and non-forest land prevails over 133.174 ha and 35.826 ha respectively. Stage-II Forest clearance has been accorded vide letter no F. No. 8-80/2004-FC dated 28.03.2007 for 52.348 ha of forest land. FC for balance forest area of 80.826 ha has been applied. Presently mining is restricted to only 52.348 ha diverted forest land, non-forestland of 15.605 ha and some portions of the broken-up SABIK forestland.</p>		Date: 27/05/2024
6	GREENBELT	Topsoil should be stacked properly with proper slope at earmarked site(s) with adequate measures and should be used for reclamation and rehabilitation of mined out area.
<p>PPs Submission: Complied</p> <p>No topsoil generated during the period October 2023 to March 2024 since mining has not advanced into any virgin land. Whenever topsoil is generated, it will be stacked in a designated place earmarked for the same. Topsoil recovered during mining operation earlier has been concurrently used for plantation over matured dumps and for roadside avenue plantation.</p>		Date: 27/05/2024
7	WATER QUALITY MONITORING AND PRESERVATION	OB and other wastes should be stacked at earmarked sites only and should not be kept active for long periods of time. Plantation should be taken up for soil stabilization along the slopes of the dump and terraced after every 5-6 m of height and overall slope angle shall be maintained not exceeding 28°. Sedimentation pits shall be constructed at the corners of the garland drains. Retention/toe walls shall be provided at the base of the dumps.
<p>PPs Submission: Complied</p> <p>Mining and all its associated operational activities are ensured in line with the provisions of approved mining plan. Dedicated sites have been earmarked for storing overburden (OB) and other waste and/or minerals/ mineral rejects. The status thereof is updated in the surface plan on quarterly basis. All matured dumps are stabilized by bio-reclamation with the plantation of Vetiver grass on the slopes and native varieties of forestry saplings. The dump is terraced at every 5-6 mtrs and overall slope is maintained well within 28°. Environmental Protection Measures ensured at site especially for the dump management aspects are as follows: 1. Network of Garland Drains and/or Toe Walls 2. Intermittent Sedimentation tanks/settling pits 3. Slope stabilization by means of coir matting and/or vetiver grass plantation 4. Final rehabilitation measures by means of native varieties of forestry saplings both on the slope and benches of the dump. Copy of latest surface plan is enclosed herewith.</p>		Date: 27/05/2024
8	WATER QUALITY MONITORING AND PRESERVATION	Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The drains should be regularly desilted and maintained properly. Garland drains (size, gradient & length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Storm water return system should be provided. Storm water should not be allowed to go to the effluent treatment plant during high rainfall/super cyclone period. A separate storm water sump for this purpose should be created.

<p>PPs Submission: Complied</p> <p>Existing catch drains & garland drains have been constructed all along the periphery of dump at the toe, so that silt/sediments in the surface runoff can be arrested. Size, gradient and length of the drains and the ponds are adequately made with respect to the size of the same to take care of the peak flow during the rainy season. The garland drain, catch drains and sedimentation pits are periodically de-silted and maintained properly every year before the onset of monsoon. The storm water which gets collected in the lower most areas of the leasehold, during rains, is connected to a series of drains which lead to mine pit to store the water and also recharge the ground water table.</p>		Date: 27/05/2024
9	WATER QUALITY MONITORING AND PRESERVATION	Dimension of retaining wall at the toe of OB dumps and benches within the mine to check run-off and siltation should be based on the rainfall data.
<p>PPs Submission: Complied</p> <p>While designing network of garland drains, checkdams, retention walls and rain passes for slope protection as well as arresting silt and sediment during monsoon season, following factors are considered such as Rainfall (peak scenarios), catchment area, gradient slope and retention hours.</p>		Date: 27/05/2024
10	AIR QUALITY MONITORING AND PRESERVATION	Trace Metals such as Ni, Co, As and Hg should be analyzed in dust fall and soil samples for at least one year during summer, monsoon and winter seasons. If concentrations of these metals are found below the standards then with prior approval of MOEF this specific monitoring could be discontinued.
<p>PPs Submission: Complied</p> <p>Yearly monitoring of trace metals both in dust fall and soil samples for parameters like Ni, Co, As and Hg is being carried out. So far, no such trace mineral has been detected in the collected samples. An abstract of dust fall analysis carried out during year FY 24 is enclosed herewith.</p>		Date: 27/05/2024
11	AIR QUALITY MONITORING AND PRESERVATION	Mineral and OB transportation shall be in trucks/dumpers covered with tarpaulins. Vehicular emissions should be kept under control and regularly monitored. Suitable measures should be taken to check fugitive emissions from haulage roads & transfer points, etc.
<p>PPs Submission: Complied</p> <p>Mineral Transportation is ensured by tippers and all the trucks are covered with tarpaulins before issuance of transit permits for their onward transportation. All the despatch vehicles are mandatorily required to have "Pollution under Check (PuC)" certificate to enter the mine. To restrict the fugitive emissions from haul roads, the following measures have been taken up: -1. Fixed Sprinkling System for the Haul Roads 2. Mist Canons at sorting yards 3. Automatic Wheel wash facility at the exit point of the mines 4. Dust suppression by means of mobile water tanker (capacity 12KI) deployed for Haul Roads and other locations. 5. Fixed sprinkling arrangement at railway siding</p>		Date: 27/05/2024
12	GREENBELT	A green belt of adequate width and area of 1.9 ha should be raised by planting the native species around ML area, and in addition plantation should also be carried out along roads, OB dump sites (21.996 ha) and in other areas within the lease (47.774 ha) covering a total area of 71.67 ha in consultation with the local DFO/ Agriculture Department. The density of the trees should be not less than 2500 plants per ha.
<p>PPs Submission: Complied</p> <p>Plantation activities are ensured in accordance with the provisions of Progressive Mine Closure Plan (PMCP). Tata Steel Limited has developed a site-specific biodiversity management plan for implementation of measures for protection and conservation of biodiversity in and around the mine. Accordingly, emphasis on the principles of restoration is ensured by following scientific plantation strategies with the help of mixed varieties of native (non-exotic) forestry saplings in the scheme of plantation. So far, around 34.677 hectares of area (including waste dump, safety zone, back filled area and avenue plantation zones) have been covered under plantation with 1,86,756 nos of saplings</p>		Date: 27/05/2024

(approx.). In the process of afforestation, the mine has ensured rehabilitation of around 17.36 hectares over OB dump, 14.77 ha of Avenue Planation and 2.547 ha of Safety zone plantation where the saplings have attained self-sustaining stage. Glimpses of Greenbelt and associated afforestation measures undertaken at mine level is enclosed herewith .		
13	Statutory compliance	Groundwater shall not be used for mine operations. Prior approval of CGWA shall be obtained for using groundwater.
PPs Submission: Complied There is no ground water interaction for the mine. Neither any borewell water is being used; nor there is any mine associated ground water seepage. There is no interception of the ground water table. Water required for operations is sourced from the adjacent mine i.e. Bamebari Iron & Mn Mine (another mine of the company).		Date: 27/05/2024
14	WATER QUALITY MONITORING AND PRESERVATION	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers. The monitoring should be done for quantity four times a year in pre-monsoon (April / May), monsoon (August). Post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of Environment & Forests and the Central Ground Water Authority quarterly.
PPs Submission: Complied A network of open dug wells and bore wells have been identified for monitoring of GW levels and quality in and around the mine areas. A copy of the abstract of GW level recorded during the monitoring period is enclosed herewith .		Date: 27/05/2024
15	WATER QUALITY MONITORING AND PRESERVATION	Trace metals such as Fe, Cr+6, Cu, Se, As, Cd, Hg, Pb, Zn and Mn at specific locations for both surface water downstream and in ground water at lower elevations from mine area, shall be periodically monitored in consultation with the OSPCB and State Ground Water Board. Suitable treatment measures shall be undertaken in case levels are found to be higher than permissible limits.
PPs Submission: Complied Water Quality parameters are regularly tested for both surface water and ground water. Monitoring reports are submitted to SPCB from time to time. So far from the water quality analysis result of both surface and ground water attributes, no such adverse impacts have been observed when compared with applicable permissible limits/standards prescribed. An abstract of water quality assessment for Oct'23 to Mar'24 is enclosed herewith .		Date: 27/05/2024
General Conditions		
Sr.No.	Condition Type	Condition Details
1	MINING PLAN	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.
PPs Submission: Complied There is no change in the mining technology and scope of working of the mines. Mining is carried out as proposed by using shovel-dumper combination. Dry mobile screening is carried out with the help of a 1X392 TPD screen plant with 1X50TPH crushing plant.		Date: 27/05/2024
2	MINING PLAN	No change in the calendar plan including excavation, quantum of manganese ore and waste should be made.

PPs Submission: Complied Production and excavation quantum is regulated by the Mine Plan approved by Indian bureau of Mines (IBM). No change in the calendar plan has been made. Total annual production achieved from the mine is well within the EC limit of 0.85 Lakh tonnes per annum.		Date: 27/05/2024
3	AIR QUALITY MONITORING AND PRESERVATION	Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM. SPM, SO ₂ , NO _x . monitoring. Location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Data on ambient air quality (RPM, SPM, SO ₂ & NO _x .) should be regularly submitted to the Ministry including its Regional office at Bhubaneswar and the State Pollution Control Board I Central Pollution Control Board once in six months.
PPs Submission: Complied In consultation with Regional Office, State Pollution Control Board (Keonjhar Region), 04 nos of dedicated Ambient Air Quality monitoring station have been established and regular monitoring is being carried out twice a week. Photographs of fixed type platforms properly geotagged with the spatial coordinates have been shared with State Pollution Control Board and the same was accepted to SPCB during renewal of CTO. In addition to this, 12 nos of locations have also been identified in the buffer zone for regular monitoring. Abstract of Ambient Air Quality monitoring result for the period during October 2023 to March 2024 is enclosed herewith .		Date: 27/05/2024
4	AIR QUALITY MONITORING AND PRESERVATION	Drills should be wet operated or with dust extractors and controlled blasting should be practiced.
PPs Submission: Complied Wet drilling concept is already in place and practiced. Exploratory drills have been provided with inbuilt DE system. Controlled blasting technique with NONEL is in practice. Ground vibrations are being checked for every blasts done in the mine. Blasting parameters are assessed periodically by engaging agency like CIMFR, Dhanbad. Based on the recommendation of such assessments, the blasting rounds are designed and fired.		Date: 27/05/2024
5	AIR QUALITY MONITORING AND PRESERVATION	Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangements on haul roads, wagon loading, dumpers/ trucks, loading & unloading points should be provided and properly maintained.
PPs Submission: Complied Following measures are ensured for containment of fugitive dust emission: 1. Mobile water tanker (cap-12KI) for Haul Roads, Dump yards and other locations) 2. Mist Canons (30 LPH) for sorting yards and screening plants 3. Fixed Sprinkling system for static haul roads 4. Automatic Wheel wash facility at Railway Siding and exit point of the mines. Photographs of the fugitive dust pollution control measures deployed at the mine are enclosed herewith .		Date: 27/05/2024
6	Noise Monitoring & Prevention	Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc. should be provided with ear plugs/ muffs.
PPs Submission: Complied Ear plugs & Earmuffs are provided to the workers working in mining operation & DG operations and other high noise generating equipment's. Provision of acoustic enclosures are invariably ensured before the installation of such noise generating instruments. Following monitoring measures are ensured for the regulation of noise pollution associated impacts: 1. Monitoring of Noise level (both ambient noise survey) and workplace noise survey is carried out on monthly basis using an integrated sound level meter. 2. Occupational Noise Exposure assessment is also carried out for the persons engaged in high noise generating areas on quarterly basis by sampling individual workers		Date: 27/05/2024

over eight-hour durations. Noise level monitoring data for the period during October 2023 to March 2024 is enclosed herewith .			
7	WATER QUALITY MONITORING AND PRESERVATION	In Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	
PPs Submission: Complied For effective management of effluent following mitigative measures are ensured at the mine level: 1. Effluents from Workshop/Garage: Vehicle washing system and associated operational activities are provided with separate catchment drains and finally the effluents are collected in Oil-Water Separation system having skimming arrangements for oil and grease 2. Wastewater/runoff collected from the mine pits: Since there is no wet process thus no wastewater is generated at any stage from any process. 3. Surface runoff is channelized and accumulated in the mine pit. After adequate retention period, the same is pumped to water storage tank for sprinkling purposes. 4. Periodically water samples from mine pits and oil-water separation system are collected and analysed by an NABL accredited agency for checking compliance w.r.t applicable standards.			Date: 27/05/2024
8	MISCELLANEOUS	Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.	
PPs Submission: Complied Environmental Monitoring services are carried out by engaging an NABL Accredited agency having it's laboratory recognized by Ministry of Environment, Forest & Climate Change. Though no captive laboratory has been established at site but the entire services is outsourced to the third party who have an environmental laboratory within 20 Kms from the mine.			Date: 27/05/2024
9	Human Health Environment	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	
PPs Submission: Complied Personnel Protective Equipment's (PPEs) are being mandatorily used by all the workers as per applicability. It is regularly ensured at the entry points. Safe Operating Procedure based training is imparted to all the workers apart from the initial VT training. Periodical Medical Examination of employees (departmental & contractual) are conducted as per prescribed norms of Mines Rule, 1955. Besides, Occupational health surveillance assessment as mentioned below are also carried out: 1. Personal Dust Sampling & Free Silica exposure assessment by a DGMS approved agency. 2. Hand-Arm Vibration & Whole Body Vibration Exposure Assessment report by a DGMS approved laboratory 3. Mn Poisoning test (periodic) by a medical laboratory. Copy of the Manganese Testing report carried out in July 2023 is enclosed herewith .			Date: 27/05/2024
10	Corporate Environmental Responsibility	A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.	
PPs Submission: Complied The company has made a robust arrangement for reviewing and monitoring the implementation of Environment management plan. A Centralized Environmental Management Department has been set up headed by the Chief (Environment) and supporting staff. The operation and legal sections at mine level include Head (Mine & Production Planning), Head (Environment), Senior Manager - Mine Planning, Area Manager (RM Environment), Environment Engineer, Chemists, etc.			Date: 27/05/2024

11	Corporate Environmental Responsibility	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.
PPs Submission: Complied A dedicated cost Centre for maintaining all environmental expenditure is maintained in a separate GL account having a unique cost centre mapped in the SAP system. All sorts of environmental protection related expenditures are booked in the said cost centre for accounting purpose. The details of expenditure incurred during the last 3 financial years is as under: • FY-2021-22: Rs. 164.7 Lakhs • FY-2022-23: Rs. 163.75 Lakhs • FY-2023-24: Rs. 227.00 Lakhs		Date: 27/05/2024
12	MISCELLANEOUS	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/ information/ monitoring reports.
PPs Submission: Complied The company has been extending full co-operation to the officers of the Regional Office and other statutory agencies by furnishing the requisite data / information / monitoring reports as and when required. The same shall be continued in future as well.		Date: 27/05/2024
13	PUBLIC HEARING	A copy of clearance letter will be marked to the concerned Panchayat/local NGO, if any, from whom suggestion/ representation has been received while processing the proposal.
PPs Submission: Complied The clearance letter has been uploaded on the website of the Company. Copy of the clearance letter marked to Sarpanch, Gram Panchayat, Jajang on 12.01.2006.		Date: 27/05/2024
14	Statutory compliance	The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.
PPs Submission: Complied The EC documents was displayed in the office of Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office for 30 days.		Date: 27/05/2024
15	Statutory compliance	The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular of the locality concerned within seven days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at Web Site of the Ministry of Environment & Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.
PPs Submission: Complied A copy of Environmental Clearance with regard to Tiringpahar Manganese Mine was published in Oriya News Papers Anupam Bharat & Aam Khabar dated 10.01.2006.		Date: 27/05/2024
Visit Remarks		
Last Site Visit Report Date:		N/A
Additional Remarks:		



BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ODISHA

A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012

Phone-2561909, Fax: 2562822, 2560955 E-mail: paribesh1@ospcboard.org, Website: www.ospcboard.org

CONSENT ORDER

No. 536 / IND-I-CON-190

Dt. 07.01.2022

CONSENT ORDER NO. 115

Sub : **Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the plant under section 21 of Air (PCP) Act, 1981.**

Ref: Your online application No. 3235235, Dated 20-12-2020 and Online reply dated 30.12.2021, Letter No. MGM/P&E/305/21 dated 31.1.2021

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry: TIRINGPAHAR MANGANESE MINE OF M/S. TATA STEEL LTD.

Name of the Occupier & Designation **SRI AWNISH KUMAR, CHIEF AND AGENT**

Address: AT/ PO: BAMEBARI, VIA: JODA, DIST: KEONJHAR

This consent order is valid for the period up to **31/03/2025** from the date of issue of this order.

This consent order supersedes the earlier consent order issued vide letter No. 3741 dated 12.03.2021.

Details of Products Manufactured

Sl. No	Product	Quantity
01.	Manganese Ore	0.085 MTPA

Details of Mineral Handling Plants /Units

01	Operation of mobile screening plant 1 X 392 TPD
02	Operation of mobile crushing plant 1 x 50 TPH

This consent order is valid for the specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein.



A. Discharge permitted through the following outlet subject to the standard

Out let No.	Description of outlet	Point of discharge	Quantity of discharge KL/hr	Pre-scribed Standard			
				pH	TSS (mg/l)	Oil & Grease (mg/l)	BOD (mg/l)
01	Septic tank (Domestic effluent)	Soak pit	-	5.5-9.0	200	--	100
02	Mine drainage water/ surface runoff/other wastewater	On land / inland surface water body.	4754 (max)	5.5-9.0	100 (Rainy day)	10	-
					50 (Non-Rainy day)		

B. Emission permitted through the following stack subject to the prescribed standard

Chimney Stack No.	Description of Stack	Stack height (m)	Quantity of emission	Prescribed Standard			
				PM (mg/Nm ³)	SO ₂	NO _x	
					--	--	

C. Disposal of solid waste permitted in the following manner

Sl. No.	Type of Solid waste	Quantity generated (TPD)	Quantity to be reused on site (TPD)	Quantity to be reused off site (TPD)	Quantity disposed off (TPD)	Description of disposal site.
01	Top soil & over burden	As per approved mining plan	--	--	--	As per approved mining plan



D. GENERAL CONDITIONS FOR ALL UNITS

1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alternation or deviation made in actual practice from the particulars furnished in the application will also be the ground liable for review/variation/revocation of the consent order under section 27 of the Act of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.
2. The industry would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material / and products / manufacturing process or quantity / quality of the effluent rate of emission / air pollution control equipment / system etc.
3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.
4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. In case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law/Act.
5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.
6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.
7. This consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.
8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.
9. An inspection book shall be opened and made available to Board's Officers during the visit to the factory.
10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system / air pollution control system / stack monitoring system any other particulars as may be pertinent to preventing and controlling pollution of Water / Air.
11. Meters must be affixed at the entrance of the water supply connection so that such meters are easily accessible for inspection and maintenance and for other purposes of the Act provided that the place where it is affixed shall in no case be at a point before which water has been tapped by the consumer for utilization for any purposes whatsoever.
12. Separate meters with necessary pipe-line for assessing the quantity of water used for each of the purposes mentioned below:
 - a) Industrial cooling, spraying in mine pits or boiler feed,
 - b) Domestic purpose
 - c) Process
13. The applicant shall display suitable caution board at the place where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.
14. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.
15. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
16. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems install or used by him to achieve with the term(s) and conditions of the consent.
17. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed with sides and bottom made impervious.
18. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by overflow.
19. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.
20. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the industry must adopt alternate satisfactory treatment and disposal measures.
21. The sludge from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank.
22. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.
23. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling and provide electrical outlet points and other arrangements for chimneys/stacks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Act or Rules made therein.
24. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.
25. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.
26. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.



CONSENT ORDER
TIRINGPAHAR MANGANESE MINE OF M/S. TATA STEEL LTD

Page 4 of 13

27. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner and to ion of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).
28. The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.
29. There shall not be any fugitive or episodal discharge from the premises.
30. In case of such episodal discharge/emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in conditions/stop the operation of the plant. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.
31. The applicant shall keep the premises of the industrial plant and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.
32. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board by fax / speed post within 24 hours of its occurrence.
33. The industry has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.
34. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the industrial plants shall be disposed off scientifically to the satisfaction of the Board, so as no to cause fugitive emission, dust problems through leaching etc., of any kind.
35. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by -
 - i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
 - ii) Controlled incineration, wherever possible in case of combustible organic material.
 - iii) Composting, in case of bio-degradable material.
36. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.
37. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.
38. The applicant, his/heirs/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.
39. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.
40. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.
41. The conditions imposed as above shall continue to be in force until revoked under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.
42. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.
43. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/ stipulate additional conditions as deemed appropriate.

GENERAL CONDITIONS FOR UNITS WITH INVESTMENT OF MORE THAN Rs 50 CRORES, AND 17 CATEGORIES OF HIGHLY POLLUTING INDUSTRIES (RED A).

1. The applicant shall analyse the emissions every month for the parameters indicated in TABLE .B & C as mentioned in this order and shall furnish the report thereof to the Board by the 10th of the succeeding month.
2. The applicant shall provide and maintain at his own cost three ambient air quality monitoring stations for monitoring Suspended Particulate Matter, Sulphur Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monoxide and monitor the same once in a day/week/fortnight/month. The data collected shall be maintained in a register and a monthly extract be furnished to the Board.
3. The applicant shall provide and maintain at his own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and the daily reading shall be recorded and the extract sent to the Board once in a month.
4. The applicant shall forward the following information to the Member Secretary, State Pollution Control Board, Odisha, Bhubaneswar regularly.
 - a. Report of analysis of stack monitoring, ambient air quality monitoring meteorological data as required every month.
 - b. Progress on planting of trees quarterly.
5. The applicant shall install mechanical composite sampling equipment and continuous flow measuring / recording devices on the effluent drains of trade as well as domestic effluent. A record of daily discharge shall be maintained.
6. The following information shall be forwarded to the Member Secretary on or before 10th of every month.
 - a. Performance / progress of the treatment plant.
 - b. Monthly statement of daily discharge of domestic and/or trade effluent.



7. Non-compliance with effluent limitations

- a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.
- i) Causes of non-compliance
 - ii) A description of the non-compliance discharge including its impact on the receiving waters.
 - iii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.
 - iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and
 - v) Steps to be taken by the applicant too prevent the condition of non-compliance.
- b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.
- c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.

8. The applicant shall at his own cost get the effluent samples collected both before and after treatment and get them analysed at an approval laboratory every month for the parameters indicated in Part-D and shall submit in duplicate the report thereof to the Board.
9. The addition of various treatment chemicals should be done only with mechanical dosers and proper equipment for regulation of correct dosages determined daily and for proper uniform feeding. Crude practices such as dumping of chemicals in drains or sumps or trickling of acids or alkalies arbitrarily and utilizing poles for stirring etc. should not be resorted to.
10. In the disposal of treated effluent on land for irrigation, the industry shall keep in view of the need for;
- Rotation of crops
 - Change of point of application of effluent on land
 - A portion of land kept fallow.
11. The adoption of these would avoid soil becoming sick or slate, the industry may ensure this in consultation with the Agriculture Department.
12. It is the sole responsibility of the industry to ensure that there are no complaints at any time from the royats in the surrounding areas as a result of discharge of sewage or trade effluent if any.
13. Proper housekeeping shall be maintained by a dedicated team.
14. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned. Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.

E. SPECIAL CONDITIONS :

- 1) This consent order is subject to compliance of orders of the Hon'ble Supreme Court of India in the matter of W. P. (Civil) 114/2014.
- 2) This consent order is subject to permission from MoEF & CC, Govt. of India and Steel and Mines Department, Government of Odisha for continuing of mining operation.
- 3) Mining operation is subject to availability of all other statutory clearances.
- 4) Drills shall either be operated with dust extractors or equipped with water injection system to minimize dust generation in the work environment.
- 5) Controlled blasting shall be practiced to minimize generation of dust and fly rocks.
- 6) Regular water sprinkling shall be carried out in critical areas prone to air pollution such as around crushing and screening plant. Water sprinkling shall also be carried out on haul roads at frequent interval so that it should always remain in wet condition. Haulage roads shall be devoid of ruts and potholes and shall be maintained properly to avoid generation of dust during movement of vehicles.
- 7) The 50 TPH crusher plant shall be installed with its pollution control measures and shall be informed to Board for verification. The commissioning of the crusher plant shall be done only after the verification of adopted pollution control measures by Regional Officer, Keonjhar and permission from Board.
- 8) Dust suppression measures preferably dry fog system shall be provided at all appropriate places of mineral handling plants (crushing and screening plant). Loading the unloading areas including all the transfer points shall also have efficient dust suppression arrangements (dry fog system). These shall be properly maintained and operated.
- 9) Mechanized wheel washing facility for the ore transport vehicles shall be provided at the exit point of the mine. The wheel washing facility shall be integrated with complete recirculation system.
- 10) The vehicles carrying ore for transportation from the mine shall be covered with tarpaulin (both bottom & top).
- 11) Regular water sprinkling on mineral transportation roads passing through the habitation area as well as other strategic point on the National Highway shall be done jointly by the mining lessees in consultation with the Regional Officer.
- 12) Atleast four Ambient Air Quality Monitoring Stations shall be established in core zone and buffer zone for monitoring of ambient air quality at the locations of the



stations as decided in consultation with the Regional Officer, State Pollution Control Board based on the metrological data, topographical features and environmentally and ecologically sensitive targets

- 13) The monitoring of ambient air quality shall be carried out twice in a week (24 hourly) at a particular site and the consolidated data shall be submitted to the State Pollution Control Board, once in a year.
- 14) The ambient air quality shall remain within prescribed national ambient air quality standards.
- 15) The top soil generated shall be stored at earmarked site (s) only and stabilized with plantation or shall be used for land reclamation and plantation.
- 16) The overburden generated during the course of mining shall be stacked at earmarked dump site (s) and stabilized with plantation or used for reclamation of excavated land followed by plantation.
- 17) The project proponent shall ensure that no natural watercourse and / or water resources are obstructed due to any mining operations.
- 18) Check dams and check weirs shall be constructed at appropriate places of the mine lease area to prevent direct flow of runoff to nearby water bodies. The surface runoff water from the existing runoff management system shall meet the prescribed standards as stated in Part A (SI No. 2) of the consent order.
- 19) Retention wall shall be constructed at the toe of topsoil dump and OB dump. Garland drain shall be constructed around topsoil dumps, over burden dumps and mineral stack yards terminating at settling pit to prevent direct disposal of runoff to nearby water bodies.
- 20) Garland drain and sedimentation pit shall be de-silted after monsoon or as and when required. The runoff discharge quality from runoff management system shall meet the prescribed standards as stated in Part A (SI No. 2) of the consent order.
- 21) Domestic effluents shall be treated in a sewage treatment plant (STP) and or shall be discharged to soak pit via septic tank constructed as BIS specification. The treated wastewater quality of STP shall remain within the following standards and shall be used for plantation:

pH	-	6.5 -9.0
TSS	-	<100 mg/l
BOD	-	30 mg/l
Fecal Coliform	-	<1000 MPN/100 ml.



CONSENT ORDER

TIRINGPAHAR MANGANESE MINE OF M/S. TATA STEEL LTD

Page 8 of 13

- 22) ETP shall be operated at all time for workshop and wastewater generated during mining operation, if any. The quality of the treated wastewater shall conform to the prescribed standard as stated in Part A (Sl No. 2) of the consent order.
- 23) Regular monitoring of water quality of upstream and downstream of surface water bodies existed if any within 5 Km shall be carried out once in every month and record shall be maintained and submitted to the State Pollution Control Board once in every year. Monitoring shall be carried out through MoEF& CC accredited laboratory.
- 24) Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), monsoon (August), post-monsoon (November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly.
- 25) The mine shall take necessary action for compliance with the air and water quality standards as stipulated in this order.
- 26) Adequate measures shall be taken for control of noise levels in the work environment of mine area so that noise levels at the boundary line of mining lease area shall not exceed 75 dB(A) during day time (6.00 AM to 9.00 PM) and 70 dB(A) during night time (9.00 PM to 6 AM).
- 27) Adequate noise barriers shall be provided surrounding the crushing and screening plants to control noise pollution and avoid impact on wildlife due to operation of crushing and screening plants during night hours.
- 28) Online noise monitoring system shall be installed to monitor noise level during night hours.
- 29) Protective barriers shall be provided for the lights to prevent illumination towards the forest area during night hours.
- 30) Ambient air quality monitoring data, noise monitoring data and water / wastewater quality monitoring data shall be electronically displayed at the entry point of the mine or at a suitable location of the mine.
- 31) Plantation of trees shall be undertaken in the colony/ township, over top soil dumps, OB dumps, along the side of haul road and in other areas of the mines not being utilized for mining activities. The mine shall take up avenue plantation and plantation in nearby village areas in consultation with DFO/Horticulture Department.



The annual plantation details shall be submitted to the Board by 30th April every year.

- 32) A copy of the annual return (annual return submitted to IBM, Govt. of India/ Directorate of Mines, Govt. of Odisha) shall be submitted to this Board every year.
- 33) The environmental statement report for the financial year ending 31st March shall be submitted to the Board in Form -V on or before 30th September every year.

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ODISHA

To,

**SRI AWNISH KUMAR, CHIEF AND AGENT,
TIRINGPAHAR MANGANESE MINE,
M/S TATA STEEL LTD.,
AT/PO: BAMEBARI, VIA: JODA,
DIST: KEONJHAR. PIN-758034.**

Memo No. _____ /Dt. _____ /

Copy forwarded to :

- i) Regional Officer, State Pollution Control Board, Keonjhar.
- ii) District Collector, Keonjhar
- iii) Director of Mines, Govt. of Odisha, Bhubaneswar
- iv) Director, Environment-cum-Special Secretary, F & E. Dept. Govt. of Odisha, Bhubaneswar.
- v) D.F.O, Keonjhar
- vi) Deputy Director of Mines, Joda
- vii) Additional Chief Env. Engineer, Central Lab. SPCB, Bhubaneswar
- viii) Additional Chief Env. Engineer, (Hazardous waste management cell)
- ix) Consent Register

CHIEF ENV. ENGINEER (M)
STATE POLLUTION CONTROL BOARD, ODISHA



**GENERAL STANDARDS FOR DISCHARGE OF
ENVIRONMENTAL POLLUTANTS**



GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS PART -A : EFFLUENTS

Sl.No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Coastal Areas
		(a)	(b)	(c)	(d)
1.	Colour&odour	Colourless/Odourless as far as practicable	-----	See 6 of Annex-1	See 6 of Annex-1
2.	Suspended Solids (mg/l)	100	600	200	For process wastewater – 100 b. For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	-----	-----	
5.	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	Shall not exceed 5°C above the receiving water temperature	-----	-----	Shall not exceed 5°C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	----	-----	1.0
9.	Ammonical nitrogen (as N) mg/l max.	50	50	-----	50
10.	Total Kjeldahl nitrogen (as NH ₃) mg/l max.	100	----	-----	100
11.	Free ammonia (as NH ₃) mg/l max.	5.0	----	-----	5.0
12.	Biochemical Oxygen Demand (5 days at 20°C) mg/l max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/l max.	250	----	-----	250
14.	Arsenic (as As) mg/l max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg) mg/l max.	0.01	0.01	-----	0.001
16.	Lead (as pb) mg/l max.	01.	1.0	-----	2.0

**CONSENT ORDER**

TIRINGPAHAR MANGANESE MINE OF M/S. TATA STEEL LTD

Page 12 of 13

17.	Cadmium (as Cd) mg/l max.	2.0	1.0	-----	2.0
18.	Hexavalent Chromium (as Cr + 6) mg/l max.	0.1	2.0	-----	1.0
19.	Total Chromium (as Cr) mg/l max.	2.0	2.0	-----	2.0
20.	Copper (as Cu) mg/l max.	3.0	3.0	-----	3.0
21.	Zinc (as Zn) mg/l max.	5.0	15	-----	15
22.	Selenium (as Se) mg/l max.	0.05	0.05	-----	0.05
23.	Nickel (as Ni) mg/l max.	3.0	3.0	-----	5.0
24.	Cyanide (as CN) mg/l max.	0.2	2.0	0.2	0.02
25.	Fluoride (as F) mg/l max.	2.0	15	-----	15
26.	Dissolved Phosphates (as P) mg/l max.	5.0	-----	-----	-----
27.	Sulphide (as S) mg/l max.	2.0	-----	-----	5.0
28.	Phenolic compounds as (C ₆ H ₅ OH) mg/l max.	1.0	5.0	-----	5.0
29.	Radioactive materials a. Alpha emitter micro curie/ml. b. Beta emitter micro curie/ml.	10 ⁷ 10 ⁶	10 ⁷ 10 ⁶	10 ⁸ 10 ⁷	10 ⁷ 10 ⁶
30.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
31.	Manganese (as Mn)	2 mg/l	2 mg/l	-----	2 mg/l
32.	Iron (Fe)	3 mg/l	3 mg/l	-----	3 mg/l
33.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	-----	0.2 mg/l
34.	Nitrate Nitrogen	10 mg/l	-----	-----	20 mg/l



NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO ₂), µg/m ³	Annual * 24 Hours **	50 80	20 80	-Improved west and Gaeke - Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO ₂), µg/m ³	Annual * 24 Hours **	40 80	30 80	- Modified Jacob &Hochheiser (Na-Arsenite) - Chemiluminescence
3.	Particulate Matter (size less than 10µm) or PM ₁₀ µg/m ³	Annual * 24 Hours **	60 100	60 100	-Gravimetric - TOEM - Beta Attenuation
4.	Particulate Matter (size less than 2.5µm) or PM _{2.5} µg/m ³	Annual * 24 Hours **	40 60	40 60	-Gravimetric - TOEM - Beta Attenuation
5.	Ozone (O ₃) µg/m ³	8 Hours ** 1 Hours **	100 180	100 180	- UV Photometric - Chemiluminescence - Chemical Method
6.	Lead (Pb) µg/m ³	Annual * 24 Hours **	0.50 1.0	0.50 1.0	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper. - ED-XRF using Teflon filter
7.	Carbon Monoxide (CO) mg/m ³	8 Hours ** 1 Hours **	02 04	02 04	- Non Dispersive Infra Red (NDIR) Spectroscopy
8.	Ammonia (NH ₃) µg/m ³	Annual* 24 Hours**	100 400	100 400	-Chemiluminescence - Indophenol Blue Method
9.	Benzene (C ₆ H ₆) µg/m ³	Annul *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)-Particulate phase only, ng/m ³	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), ng/m ³	Annual*	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel (Ni),ng/m ³	Annual*	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

** Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (WILDLIFE)
& CHIEF WILDLIFE WARDEN, ODISHA, BDA APARTMENT, 5TH FLOOR,
PRAKRUTI BHAWAN, NILAKANTHA NAGAR, BHUBANESWAR-12
Ph. No.0674-2564587, FAX No.0674-2565062
(Website:odishawildlife.org, E. mail: odishawildlife@gmail.com)

Memo No. **7724** / 1 WL-SSP-94/2015 Dated, Bhubaneswar, the **3** / Aug, 2015

To

The Principal Chief Conservator of Forests, Odisha,
Bhubaneswar

Sub: Approval of Site Specific Wildlife Conservation Plan in respect of Tiringpahar Manganese Mines of TATA Steel Ltd. in Keonjhar Forest Division

It is to inform you that M/s TATA Steel Ltd. has to implement a Site Specific Wildlife Conservation Plan for its Tiringpahar Manganese mines in Keonjhar district in compliance to Specific Condition No.(xiv) stipulated in the Environment Clearance granted by Govt. of India, MoEF vide their letter No. J-11015/87/2004-IA.II(M) dated 17.11.2005 and condition No.(ix) & (x) of the Forest Clearance granted by Govt. of India, MoEF vide their letter No. 8-80/2004-FC dated 28.3.2007.

2. The Site Specific Wildlife Conservation Plan in respect of the above project has been approved by the undersigned with financial forecast of **₹276.17 lakh** (Rupees two crore seventy-six lakh seventeen thousand) only for the following activities.

a.	For activities to be implemented by the user agency in project area	₹35.70 lakh
b.	For activities to be implemented by DFO, Keonjhar Division in project impact area	₹240.47 lakh
Grand Total:		₹276.17 lakh

3. Various activities in the lease hold area will be executed by the Project proponent under the guidance of the Divisional Forest Officer, Keonjhar Division. A sum of ₹240.47 lakh only may be deposited in the CAMPA fund meant for the purpose for implementation of various activities within the project impact area by the Forest Deptt. as envisaged in the plan.

4. The User Agency may be advised to note the following conditions for future compliance.

- This Plan may be revisited after 5 years and the User Agency will give undertaking to contribute towards the revised cost of the conservation plan till the project period, if any.

P.T.O.

- The project proponent has to prepare and submit the Conservation Plan for the next 10 years of their lease period (balance period for which forest land remains diverted) at least one year before the expiry of the present Conservation Plan and deposit the outlay amount upon its approval. In case of delay, it will be dealt as per law for violations of Forest Conservation Act, 1980 and Environment (Protection) Act, 1986.
- The project proponent has to give an undertaking to bear the differential cost in case of enhancement of wage rate during the time of implementation of this plan.

**Encl: 2 copies of approved
site specific WL Conservation Plan**

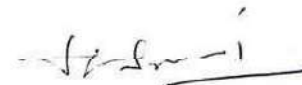


**Principal Chief Conservator of Forests (WL)
& Chief Wildlife Warden, Odisha**

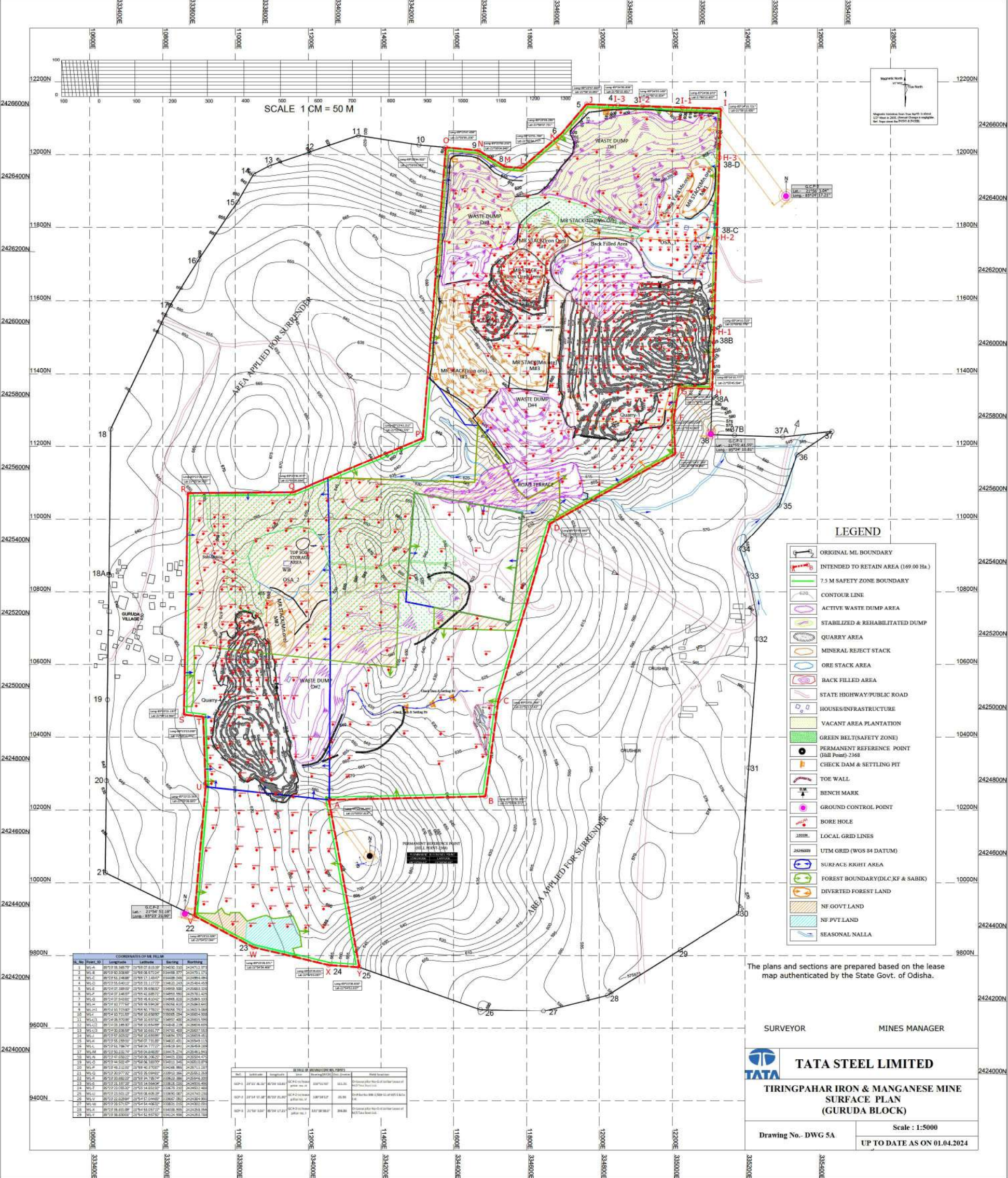
Memo No. 7725 /date 31-08-2015

Copy forwarded for information and necessary action to –

1. Special Secretary to Govt. of Odisha, F&E Deptt., Bhubaneswar
2. Regional Chief Conservator of Forests, Rourkela Circle with reference to memo No.5703 dt 16.7.2015 of the DFO, Keonjhar Division
3. Divisional Forest Officer, Keonjhar Division with reference to his memo No.5702 dt 16.7.2015 alongwith a copy of the approved site specific wildlife conservation plan
- ✓ 4. The Head, M/s Tiringpahar Manganese Mines (TATA Steel Ltd.), At/PO- Joda, Dist. – Keonjhar alongwith a copy of the approved site specific wildlife conservation plan



**Principal Chief Conservator of Forests (WL)
& Chief Wildlife Warden, Odisha**



COORDINATES OF ALL BUILT				
Sl. No.	Point ID	Longitude	Latitude	Remarks
1	ML-1	82°52' 56.5800"	24°52' 56.5800"	1000000
2	ML-2	82°52' 56.5800"	24°52' 56.5800"	1000000
3	ML-3	82°52' 56.5800"	24°52' 56.5800"	1000000
4	ML-4	82°52' 56.5800"	24°52' 56.5800"	1000000
5	ML-5	82°52' 56.5800"	24°52' 56.5800"	1000000
6	ML-6	82°52' 56.5800"	24°52' 56.5800"	1000000
7	ML-7	82°52' 56.5800"	24°52' 56.5800"	1000000
8	ML-8	82°52' 56.5800"	24°52' 56.5800"	1000000
9	ML-9	82°52' 56.5800"	24°52' 56.5800"	1000000
10	ML-10	82°52' 56.5800"	24°52' 56.5800"	1000000
11	ML-11	82°52' 56.5800"	24°52' 56.5800"	1000000
12	ML-12	82°52' 56.5800"	24°52' 56.5800"	1000000
13	ML-13	82°52' 56.5800"	24°52' 56.5800"	1000000
14	ML-14	82°52' 56.5800"	24°52' 56.5800"	1000000
15	ML-15	82°52' 56.5800"	24°52' 56.5800"	1000000
16	ML-16	82°52' 56.5800"	24°52' 56.5800"	1000000
17	ML-17	82°52' 56.5800"	24°52' 56.5800"	1000000
18	ML-18	82°52' 56.5800"	24°52' 56.5800"	1000000
19	ML-19	82°52' 56.5800"	24°52' 56.5800"	1000000
20	ML-20	82°52' 56.5800"	24°52' 56.5800"	1000000
21	ML-21	82°52' 56.5800"	24°52' 56.5800"	1000000
22	ML-22	82°52' 56.5800"	24°52' 56.5800"	1000000
23	ML-23	82°52' 56.5800"	24°52' 56.5800"	1000000
24	ML-24	82°52' 56.5800"	24°52' 56.5800"	1000000
25	ML-25	82°52' 56.5800"	24°52' 56.5800"	1000000
26	ML-26	82°52' 56.5800"	24°52' 56.5800"	1000000
27	ML-27	82°52' 56.5800"	24°52' 56.5800"	1000000
28	ML-28	82°52' 56.5800"	24°52' 56.5800"	1000000
29	ML-29	82°52' 56.5800"	24°52' 56.5800"	1000000
30	ML-30	82°52' 56.5800"	24°52' 56.5800"	1000000
31	ML-31	82°52' 56.5800"	24°52' 56.5800"	1000000
32	ML-32	82°52' 56.5800"	24°52' 56.5800"	1000000
33	ML-33	82°52' 56.5800"	24°52' 56.5800"	1000000
34	ML-34	82°52' 56.5800"	24°52' 56.5800"	1000000
35	ML-35	82°52' 56.5800"	24°52' 56.5800"	1000000
36	ML-36	82°52' 56.5800"	24°52' 56.5800"	1000000
37	ML-37	82°52' 56.5800"	24°52' 56.5800"	1000000
38	ML-38	82°52' 56.5800"	24°52' 56.5800"	1000000
39	ML-39	82°52' 56.5800"	24°52' 56.5800"	1000000
40	ML-40	82°52' 56.5800"	24°52' 56.5800"	1000000
41	ML-41	82°52' 56.5800"	24°52' 56.5800"	1000000
42	ML-42	82°52' 56.5800"	24°52' 56.5800"	1000000
43	ML-43	82°52' 56.5800"	24°52' 56.5800"	1000000
44	ML-44	82°52' 56.5800"	24°52' 56.5800"	1000000
45	ML-45	82°52' 56.5800"	24°52' 56.5800"	1000000
46	ML-46	82°52' 56.5800"	24°52' 56.5800"	1000000
47	ML-47	82°52' 56.5800"	24°52' 56.5800"	1000000
48	ML-48	82°52' 56.5800"	24°52' 56.5800"	1000000
49	ML-49	82°52' 56.5800"	24°52' 56.5800"	1000000
50	ML-50	82°52' 56.5800"	24°52' 56.5800"	1000000

DETAILS OF SURFACE DRAINAGE SYSTEM				
Sl. No.	Area/Point	Longitude	Latitude	Remarks
1	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
2	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
3	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
4	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
5	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
6	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
7	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
8	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
9	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
10	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
11	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
12	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
13	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
14	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
15	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
16	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
17	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
18	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
19	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
20	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
21	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
22	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
23	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
24	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
25	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
26	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
27	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
28	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
29	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
30	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
31	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
32	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
33	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
34	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
35	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
36	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
37	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
38	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
39	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
40	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
41	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
42	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
43	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
44	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
45	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
46	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
47	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
48	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
49	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000
50	Area/Point	82°52' 56.5800"	24°52' 56.5800"	1000000

The plans and sections are prepared based on the lease map authenticated by the State Govt. of Odisha.

TATA STEEL LIMITED

TIRINGPAHAR IRON & MANGANESE MINE

SURFACE PLAN

(GURUDA BLOCK)

Drawing No.- DWG 5A

Scale : 1:5000

UP TO DATE AS ON 01.04.2024

SURVEYOR

MINES MANAGER

DUST FALL ANALYSIS RESULT ABSTARCT

DUST FALL ANALYSIS (WINTER SEASON - FEBRUARY'24)										
Location	Heavy Metal concentrations (g/m ² -mo)									
	Arsenic	Cadmium	Copper	Hexavalent Chromium	Iron	Lead	Manganese	Mercury	Selenium	Zinc
Guruda Pit Office, TIMM	<0.0003	<0.0003	0.046	<0.0003	1.835	<0.0003	0.546	<0.0003	<0.0003	0.0045
Guruda Dumping Yard, TIMM	<0.0003	<0.0003	0.0283	<0.0003	2.86	<0.0003	0.547	<0.0003	<0.0003	0.0077
Haul Road, Guruda, TIMM	<0.0007	<0.0007	0.0582	<0.0007	15.409	<0.0007	4.034	<0.0007	<0.0007	0.0473
Guruda Shorting Yard, TIMM	<0.0010	<0.0010	0.0576	<0.0010	14.009	<0.0010	6.637	<0.0010	<0.0010	0.0968
Guruda Screen Plant, TIMM	<0.0005	<0.0005	0.0765	<0.0005	5.993	<0.0005	1.718	<0.0005	<0.0005	0.0262
Near Stock Yard, Guruda, TIMM	<0.0023	<0.0023	0.0237	<0.0023	31.608	<0.0023	6.993	<0.0023	<0.0023	0.0501

Photographs of Plantation areas of Tiringpahar Mine





**Anacon
Laboratories**

Anacon Laboratories Pvt. Ltd. Nagpur Lab
9 FP-34, 35, Food Park, Five Star Industrial Estate,
MIDC Butibori, Nagpur, Maharashtra, India - 441 122
☎ + 91 8045685558 ✉ Email : info@anacon.in
🌐 https://www.anaconlaboratories.com

Test Report

Sl. No.	Village Name	Date of Measurement	Details of location	Static Water Level from Measuring Point in Mtrs. (Level in mbmp)	Measuring Point i.e. MP distance above ground level in Mtrs. (magl)	Water level Below Ground Level in Mtrs. = mbmp - magl
1	Ganua Village	17/10/2023	Dugwell near road (Mr. Keshar Patra)	3.81	0.53	3.28
2	Guruda Village	17/10/2023	Dugwell near Club	4.26	0.65	3.61
3	Khondbond Village	17/10/2023	Dugwell in field (Mr. Mothua Munda)	3.64	0.70	2.94
4	OMC Colony	17/10/2023	Dugwell near road	3.27	0.50	2.77

M/s Khondbond Iron & Manganese Mine

(M/s TATA Steel Limited)

District - Kendujhar,

State - Odisha-758 034.

Ground Water Table Measurement

October-2023

Chemist:- *Sanj*

-----End of Report-----

Authorized Signatory

Sanj





**Anacon
Laboratories**

Anacon Laboratories Pvt. Ltd. Nagpur Lab

Q FP-34, 35, Food Park, Five Star Industrial Estate,
MIDC Butibori, Nagpur, Maharashtra, India - 441 122

+ 91 8045685558 ✉ Email : irifo@anacon.in

https://www.anaconlaboratories.com

Test Report

M/s Khondbond Iron & Manganese Mine

(M/s TATA Steel Limited)

District - Kendujhar,

State - Odisha-758 034.

Ground Water Table Measurement

November-2023

Sl. No.	Village Name	Date of Measurement	Details of location	Static Water Level from Measuring Point in Mtrs. (Level in mbmp)	Measuring Point i.e. MP distance above Ground level in Mtrs. (magl)	Water level Below Ground Level in Mtrs. = mbmp - magl
1	Ganua Village	17/11/2023	Dugwell near road (Mr. Keshar Patra)	3.93	0.53	3.40
2	Guruda Village	17/11/2023	Dugwell near Club	4.53	0.65	3.88
3	Khondbond Village	17/11/2023	Dugwell in field (Mr. Mothua Munda)	3.78	0.70	3.08
4	OMC Colony	17/11/2023	Dugwell near road	3.61	0.50	3.11

Chemist:- *SNM*

-----End of Report-----

Authorized Signatory

Signature





**Anacon
Laboratories**

Anacon Laboratories Pvt. Ltd. Nagpur Lab

Q FP-34, 35, Food Park, Five Star Industrial Estate,
MIDC Butibori, Nagpur, Maharashtra, India - 441122

+ 91 8045685558 ✉ Email : info@anacon.in

https://www.anaconlaboratories.com

Test Report

M/s Khondbond Iron & Manganese Mine

(M/s TATA Steel Limited)

District - Kendujhar,

State - Odisha-758 034.

Ground Water Table Measurement

December-2023

Sl. No.	Village Name	Date of Measurement	Details of location	Static Water Level from Measuring Point in Mtrs. (Level in mbmp)	Measuring Point i.e. MP distance above ground level in Mtrs. (magl)	Water level Below Ground Level in Mtrs. = mbmp - magl
1	Gannua Village	15/12/2023	Dugwell near road (Mr. Keshar Patra)	4.16	0.53	3.63
2	Guruda Village	15/12/2023	Dugwell near Club	4.72	0.65	4.07
3	Khondbond Village	15/12/2023	Dugwell in field (Mr. Mothua Munda)	3.91	0.70	3.21
4	OMC Colony	15/12/2023	Dugwell near road	3.84	0.50	3.34

Chemist:-

SPM

-----End of Report-----

Authorized Signatory

Dr. Anil




Test Report

M/s Khondbond Iron & Manganese Mine

(M/s TATA Steel Limited)

District - Kendujhar,

State - Odisha-758 034.

Ground Water Table Measurement

January-2024

Sl. No.	Village Name	Date of Measurement	Details of location	Static Water Level from Measuring Point in Mtrs. (Level in mbmp)	Measuring Point i.e. MP distance above ground level in Mtrs. (magl)	Water level Below Ground Level in Mtrs. = mbmp - magl
1	Ganua Village	20/01/2024	Dugwell near road (Mr. Keshar Patra)	4.57	0.53	4.04
2	Guruda Village	20/01/2024	Dugwell near Club	5.14	0.65	4.49
3	Khondbond Village	20/01/2024	Dugwell in field (Mr. Mothua Munda)	4.16	0.70	3.46
4	OMC Colony	20/01/2024	Dugwell near road	3.92	0.50	3.42

Chemist:-

Authorized Signatory

-----End of Report-----

Thank you for instilling your trust and faith in our services. We cherish our relationship with you, and we put in a lot of hard work in making sure that you get a seamless experience at every stage of your interaction with us. In our constant endeavor towards ensuring that your next experience will be significantly better than the current one, we welcome your feedback on feedback@anacon.in.





**Anacon
Laboratories**

Anacon Laboratories Pvt. Ltd. Nagpur Lab

FP-34, 35, Food Park, Five Star Industrial Estate,

MIDC Butibori, Nagpur, Maharashtra, India - 441 122

+ 91 8045685558 Email : info@anacon.in

https://www.anaconlaboratories.com

Test Report

Sl. No.	Village Name	Date of Measurement	Details of location	Static Water Level from Measuring Point in Mtrs. (Level in mbmp)	Measuring Point i.e. MP distance above ground level in Mtrs. (magl)	Water level Below Ground Level in Mtrs. = mbmp - magl
1	Ganna Village	13/02/2024	Dugwell near road (Mr. Keshar Patra)	4.62	0.53	4.09
2	Guruda Village	13/02/2024	Dugwell near Club	5.47	0.65	4.82
3	Khondbond Village	13/02/2024	Dugwell in field (Mr. Mothua Munda)	4.26	0.70	3.56
4	OMC Colony	13/02/2024	Dugwell near road	4.19	0.50	3.69

M/s Khondbond Iron & Manganese Mine

(M/s TATA Steel Limited)

District - Kendujhar,

State - Odisha-758 034.

Ground Water Table Measurement

February-2024

Chemist:-

Signature

-----End of Report-----

Authorized Signatory

Signature



Thank you for instilling your trust and faith in our services. We cherish our relationship with you, and we put in a lot of hard work in making sure that you get a seamless experience at every stage of your interaction with us. In our constant endeavor towards ensuring that your next experience will be significantly better than the current one, we welcome your feedback on feedback@anacon.in.



**Anacon
Laboratories**

Anacon Laboratories Pvt. Ltd. Nagpur Lab

FP-34, 35, Food Park, Five Star Industrial Estate,
MIDC Butibori, Nagpur, Maharashtra, India - 441 122

+ 91 8045685558 Email : info@anacon.in

https://www.anaconlaboratories.com

Test Report

M/s Khondbond Iron & Manganese Mine
(M/s TATA Steel Limited)
District - Kendujhar,
State - Odisha-758 034.

Ground Water Table Measurement

March-2024

Sl. No.	Village Name	Date of Measurement	Details of location	Static Water Level from Measuring Point in Mtrs. (Level in mbmp)	Measuring Point i.e. MP distance above ground level in Mtrs. (magl)	Water level Below Ground Level in Mtrs. = mbmp - magl
1	Ganua Village	20/03/2024	Dugwell near road (Mr. Keshar Patra)	4.68	0.53	4.15
2	Guruda Village	20/03/2024	Dugwell near Club	5.51	0.65	4.86
3	Khondbond Village	20/03/2024	Dugwell in field (Mr. Mothua Munda)	4.37	0.70	3.67
4	OMC Colony	20/03/2024	Dugwell near road	4.26	0.50	3.76

Chemist:-

[Signature]

Authorized Signatory

[Signature]

-----End of Report-----



Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002271F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/FD/2023-24/74FA5B

Date :

12/02/2024

Sample No. :

MSKNB/FD/2023-24/02/14322B

Date of receipt of sample:

03/02/2024

Date(s) of performance:

03/02/2024 - 12/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	Surface Water
3. Unique Identification of sample(if any)	NA
4. Date of sampling	02/02/2024
5. Place of sampling	Palasa (KHA) Pond
6. Environmental conditions during sampling & Transport	(2 - 5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS 17614 (P-23) 2021
8. Identification of the personnel performing sampling by MSK	Mukesh Haiburu, Akash Ku. Sethy, Pratik Ku. Mantri

Report No. : MSKPL/FD/2023-24/74FA5B

Sample No. : MSKNB/FD/2023-24/02/14322B

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Result
1	Arsenic as As	mg/l	IS 3025 (Part 2)	BDL(DL:0.005)
2	Boron as B	mg/l	IS 3025 (Part 2)	BDL(DL:0.25)
3	Cadmium as Cd	mg/l	IS 3025 (Part 2)	BDL(DL:0.001)
4	Colour	Hazen	IS 3025 (Part 4)	BDL(DL:1.0)
5	Copper as Cu	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)
6	Cyanide as CN	mg/l	IS 3025 (Part 27) Sec1	BDL(DL:0.02)
7	Fluoride as F	mg/l	IS 3025 (Part 60)	1.02
8	Hexavalent Chromium (as Cr+6)	mg/l	IS 3025 (Part 52) Sec2	BDL(DL:0.01)
9	Lead as Pb	mg/l	IS 3025 (Part 2)	BDL(DL:0.005)
10	Manganese as Mn	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)
11	Mercury as Hg	mg/l	IS 3025 (Part 48)	BDL(DL:0.0002)
12	Nitrate as NO3	mg/l	APHA (24th EDITION) 4500-NO3- B	1.05
13	Zinc as Zn	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)

Opinion : NA

Statement of Conformity NA

----- END -----

Reviewed By:

Signature

Name : Ms. Atayee Saha, Ms. Piali Ganguly

Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature

Name : Dr. Soumyadeep Mukhopadhyay

Designation : Lab In charge

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com




TC-6950



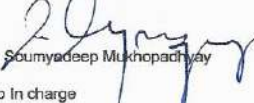
Scan for Portal

ULR: TC-695024000002271F

Reviewed By:

Signature : 
Name : Ms. Atrayee Saha, Ms. Piali Ganguly
Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature : 
Name : Dr. Soumyadeep Mukhopadhyay
Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002271F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/FD/2023-24/74FA5B

Date :

12/02/2024

Sample No. :

MSKNB/FD/2023-24/02/14322B

Date of receipt of sample:

03/02/2024

Date(s) of performance:

03/02/2024 - 08/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Biological

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	Surface Water
3. Unique Identification of sample(if any)	NA
4. Date of sampling	02/02/2024
5. Place of sampling	Palasa (KHA) Pond
6. Environmental conditions during sampling & Transport	(2 - 5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS 17614 (P-25) 2022
8. Identification of the personnel performing sampling by MSK	Mukesh Haiburu, Akash Ku. Sethy, Pratik Ku. Mantri

Report No. : MSKPL/FD/2023-24/74FA5B

Sample No. : MSKNB/FD/2023-24/02/14322B

RESULT

Micro Biology

Sl No.	Parameter	UOM	Method	Result
1	Total coliform	MPN/100ml	Standard methods for the examination of water & waste water, 24th edtn, 9221B	4.5

Opinion : NA

Statement of Conformity NA

----- END -----

Reviewed By:

Signature :

Name : Ms. Maitreyee Chakraborty

Designation : Executive Microbiologist

Authorized Signatory:

Signature :

Name : Ms. Maitreyee Chakraborty

Designation : Executive Microbiologist

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037

T : +91 94370 09815, 94370 09820, 94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com



Report No. MSKGL/ED/2023-24/005025

Date: 16.02.2024

ANALYSIS REPORT OF SURFACE WATER

Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	Bamebari Iron & Manganese Mines (BIMM)
Date of sampling	02.02.2024
Location	Palasa Kha Village Pond (BIMM)

CHEMICAL ANALYSIS OF WATER

Sl. No.	Test Parameters	Unite	Method	Max. Tolerance Limit as per CPCB	Results
1	Biochemical Oxygen Demand (as BOD)	mg/l	APHA (24th Edition), 5210B	30	9.1
2	Calcium (as CaCo3)	mg/l	APHA (24th Edition), 2340 C	---	36
3	Chemical Oxygen Demand (COD)	mg/l	APHA (24th Edition), 5220B	250	32
4	Chloride (as Cl)	mg/l	APHA (24th Edition), 4500 -Cl B	---	72
5	DO	mg/l	APHA 24th Edition, 2023 4500-O-C/G	---	5.6
6	Electrical conductivity	us/cm	APHA (24th Edition), 2510B	---	580
7	Iron (as Fe)	mg/l	APHA (24th Edition), 3500 Fe B	3	0.37
8	Magnesium (as Mg)	mg/l	APHA (24th Edition), 3500 Mg B	---	22
9	Odour	mg/l	APHA (24th Edition), 2150B	Agreeable	Agreeable
10	Oil and Grease	mg/l	APHA (24th Edition), 5520B	10	<5.0
11	Phenolic Compounds (as C6H5OH)	mg/l	APHA (24th Edition), 5530C (Chloroform Extraction)	1	<0.001
12	Salinity	PSU	APHA (24th Edition), 2520B	---	0.300
13	Sulphate (as SO4)	mg/l	APHA (24th Edition), 4500 SO42-E	---	17.3
14	Total Alkalinity	mg/l	APHA (24th Edition), 5210B	---	190
15	Total Dissolved Solids (as TDS)	mg/l	APHA (24th Edition), 2540C	---	344
16	Total Hardness (as CaCO3)	mg/l	APHA (24th Edition), 2340 C	---	128
17	Total Suspended Solid (as TSS)	mg/l	APHA (24th Edition), 2540D	50/100	60
18	pH value at 19.2 deg C	None	APHA 24th Edition, 2023 4500-H+B	5.5-9.0	7.6

Checked by:-

For Mitra S. K. Private Limited

Authorized Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-69502400003014F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/FD/2023-24/3GFCBG

Date :

26/02/2024

Sample No. :

MSKNB/FD/2023-24/02/1T12AA

Date of receipt of sample:

15/02/2024

Date(s) of performance:

15/02/2024 - 26/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	Drinking Water
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/02/2024
5. Place of sampling	Guruda shorting yard (TIMM) R O water
6. Environmental conditions during sampling & Transport	(2 -5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS:17614(P-5) 2022
8. Identification of the personnel performing sampling by MSK	PRANAB SETHI

Report No. : MSKPL/FD/2023-24/3GFCBG

Sample No. : MSKNB/FD/2023-24/02/1T12AA

RESULT

Chemical						
Sl No.	Parameter	UOM	Method	Acceptable Limit	Permissible Limit	Result
1	Cadmium as Cd	mg/l	IS 3025 (Part 2)	0.003	No Relaxation	BDL(DL:0.001)
2	Arsenic as As	mg/l	IS 3025 (Part 2)	0.01	No Relaxation	BDL(DL:0.005)
3	Copper as Cu	mg/l	IS 3025 (Part 2)	0.05	1.5	BDL(DL:0.02)
4	Cyanide as CN	mg/l	IS 3025 (Part 27) Sec1	0.05	No Relaxation	BDL(DL:0.02)
5	Fluoride as F	mg/l	IS 3025 (Part 60)	1.0	1.5	BDL(DL:0.2)
6	Lead as Pb	mg/l	IS 3025 (Part 2)	0.01	No Relaxation	BDL(DL:0.005)
7	Manganese as Mn	mg/l	IS 3025 (Part 2)	0.1	0.3	BDL(DL:0.02)
8	Mercury as Hg	mg/l	IS 3025 (Part 48)	0.001	No Relaxation	BDL(DL:0.0002)
9	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No Relaxation	BDL(DL:0.01)
10	Nitrate as NO3	mg/l	APHA (24th EDITION) 4500-NO3- B	45	No Relaxation	0.78
11	Selenium as Se	mg/l	IS 3025 (Part 2)	0.01	No Relaxation	BDL(DL:0.005)
12	Silica (as SiO2)	mg/l	IS 3025 (Part 35)	Not Specified	Not Specified	BDL(DL:0.1)
13	Silver as Ag	mg/l	IS 3025 (Part 2)	0.1	No Relaxation	BDL(DL:0.005)
14	Total Chromium as Cr	mg/l	IS 3025 (Part 2)	0.05	No Relaxation	BDL(DL:0.01)
15	Zinc as Zn	mg/l	IS 3025 (Part 2)	5	15	BDL(DL:0.02)
16	Colour	Hazen	IS 3025 (Part 4)	5	15	BDL(DL:1.0)

Reviewed By:

Signature : *Atsuke Saha P. Ganguly*
Name : Ms. Atsuke Saha, Ms. Piali Ganguly

Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature : *Dr. Sourinadeep Mukhopadhyay*
Name : Dr. Sourinadeep Mukhopadhyay
Designation : Lab In charge

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003014F

Opinion : Acceptable limit & Permissible limit are as per IS:10500:2012

Statement of Conformity NA

----- END -----

Reviewed By:

Signature : *Atrayee Saha P. Ganguly*
Name : Ms. Atrayee Saha, Ms. Piali Ganguly
Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature : *Dr. Souryadeep Mukhopadhyay*
Name : Dr. Souryadeep Mukhopadhyay
Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Mitra S. K. Private Limited

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950

Doc No.: MSK/GEN/19/07



Scan for Portal

ULR: TC-69502400003014F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West
At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

Date :

Sample No. :

Date of receipt of sample:

Date(s) of performance:

Location of performance of

Reference No. & Date :

Discipline:

MSKPL/FD/2023-24/3GFCBG

26/02/2024

MSKNB/FD/2023-24/02/1T12AA

15/02/2024

15/02/2024 - 16/02/2024

Permanent Facility

3000156017/056, Date - 16/09/2023

Biological

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	Drinking Water
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/02/2024
5. Place of sampling	Guruda shorting yard (TIMM) R O water
6. Environmental conditions during sampling & Transport	(2 -5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS:17614(P-25) 2022
8. Identification of the personnel performing sampling by MSK	PRANAB SETHI

Report No. : MSKPL/FD/2023-24/3GFCBG

Sample No. : MSKNB/FD/2023-24/02/1T12AA

RESULT

Micro Biology

Sl No.	Parameter	UOM	Method	Acceptable Limit	Permissible Limit	Result
1	Total Coliform Bacteria	/100ml	IS 15185	Not Detectable	Not Applicable	Not Detected
2	E. coli	/100ml	IS 15185	Not Detectable	Not Applicable	Not Detected

Opinion : Acceptable limit & Permissible limit are as per IS:10500:2012

Statement of Conformity NA

----- END -----

Reviewed By:

Signature :

Name : Ms. Maitreyee Chakraborty

Designation : Executive Microbiologist

Authorized Signatory:

Signature :

Name : Ms. Maitreyee Chakraborty

Designation : Executive Microbiologist

These results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shrahi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Report No. MSKGL/ED/2023-24/005028


Date: 25.02.2024

ANALYSIS REPORT OF DRINKING WATER

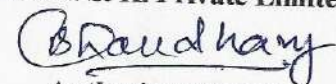
Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	TIRINGPAHAR IRON & MANGANESE MINES (TIMM)
Date of sampling	14.02.2024
Location	Guruda Shorting Yard R O Water

CHEMICAL ANALYSIS OF WATER AS PER IS: 10500 - 2012

Sl. No.	Test Parameters	Unite	Method	Norms as per IS: 10500-2012		Results
				Desirable Limit	Permissible Limit	
1	Ammonical Nitrogen	mg/l	APHA (24th Edition), 4500-NH3-F	0.5	No Relaxation	<1.0
2	Calcium (as Ca)	mg/l	APHA (24th Edition), 3500 Ca B	75	200	29
3	Chloride (as Cl)	mg/l	APHA (24th Edition), 4500 -Cl B	250	1000	22
4	Odour	Hazen	3025 (Part-5)-1983; Rffm:2012	Agreeable	Agreeable	Agreeable
5	Electrical conductivity	us/cm	APHA (24th Edition), 2510B	---	---	250
6	Iron (as Fe)	mg/l	APHA (24th Edition), 3500 Fe B	0.3	No Relaxation	<0.05
7	Magnesium (as Mg)	mg/l	APHA (24th Edition), 3500 Mg B	30	100	9
8	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA (24th Edition), 5530C (Chloroform Extraction)	0.001	0.002	<0.001
9	Potassium (as K)	mg/l	APHA (24th Edition), 3500 K B	---	---	<1.0
10	Salinity	PSU	APHA (24th Edition), 2520B	---	---	0.128
11	Sodium (as Na)	mg/l	APHA (24th Edition), 3500 Na B	---	---	3.9
12	Sulphate (as SO ₄)	mg/l	APHA (24th Edition) 4500 SO ₄ -E	200	400	<1.0
13	Taste	None	IS 3025 (Part 8)-1983 Rffm:2012_(O)	Agreeable	Agreeable	Agreeable
14	Total Alkalinity (as CaCO ₃)	mg/l	APHA (24th Edition), 2320B	200	600	92
15	Total Dissolved Solids (as TDS)	mg/l	APHA (24th Edition), 2540C	500	2000	150
16	Total Hardness (as CaCO ₃)	mg/l	APHA (24th Edition), 2340 C	200	600	108
17	Total Suspended Solid (as TSS)	mg/l	APHA (24th Edition), 2540D	---	---	<2.5
18	Turbidity	N.T.U	APHA (24th Edition), 2130B	1	5	<1.0
19	pH value at 18.2 deg C	None	APHA 24th Edition, 2023, 4500, H+B	6.5-8.5	No Relaxation	7.44

Checked by:- 

For Mitra S. K. Private Limited


Authorized Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003015F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/FD/2023-24/QMFCBD

Date :

26/02/2024

Sample No. :

MSKNB/FD/2023-24/02/8R1292

Date of receipt of sample:

15/02/2024

Date(s) of performance:

15/02/2024 - 26/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	Drinking Water
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/02/2024
5. Place of sampling	B S Mineing rest shelter guruda (TIMM) R O water
6. Environmental conditions during sampling & Transport	(2 -5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS:17614(P-5) 2022
8. Identification of the personnel performing sampling by MSK	PRANAB SETHI

Report No. : MSKPL/FD/2023-24/QMFCBD

Sample No. : MSKNB/FD/2023-24/02/8R1292

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Acceptable Limit	Permissible Limit	Result
1	Arsenic as As	mg/l	IS 3025 (Part 2)	0.01	No Relaxation	BDL(DL:0.005)
2	Zinc as Zn	mg/l	IS 3025 (Part 2)	5	15	BDL(DL:0.02)
3	Colour	Hazen	IS 3025 (Part 4)	5	15	BDL(DL:1.0)
4	Copper as Cu	mg/l	IS 3025 (Part 2)	0.05	1.5	BDL(DL:0.02)
5	Cyanide as CN	mg/l	IS 3025 (Part 27) Sec1	0.05	No Relaxation	BDL(DL:0.02)
6	Fluoride as F	mg/l	IS 3025 (Part 60)	1.0	1.5	BDL(DL:0.2)
7	Lead as Pb	mg/l	IS 3025 (Part 2)	0.01	No Relaxation	BDL(DL:0.005)
8	Manganese as Mn	mg/l	IS 3025 (Part 2)	0.1	0.3	BDL(DL:0.02)
9	Mercury as Hg	mg/l	IS 3025 (Part 48)	0.001	No Relaxation	BDL(DL:0.0002)
10	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No Relaxation	BDL(DL:0.01)
11	Nitrate as NO3	mg/l	APHA (24th EDITION) 4500-NO3- B	45	No Relaxation	0.58
12	Selenium as Se	mg/l	IS 3025 (Part 2)	0.01	No Relaxation	BDL(DL:0.005)
13	Silica (as SiO2)	mg/l	IS 3025 (Part 35)	Not Specified	Not Specified	BDL(DL:0.1)
14	Silver as Ag	mg/l	IS 3025 (Part 2)	0.1	No Relaxation	BDL(DL:0.005)
15	Total Chromium as Cr	mg/l	IS 3025 (Part 2)	0.05	No Relaxation	BDL(DL:0.01)
16	Cadmium as Cd	mg/l	IS 3025 (Part 2)	0.003	No Relaxation	BDL(DL:0.001)

Reviewed By:

Signature

Atrayee Saha P. Ganguly

Name : Ms. Atrayee Saha, Ms. Piali Ganguly

Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature

Name : Dr. Soumyadeep Mukhopadhyay

Designation : Lab In charge

Head Office:

Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003015F

Opinion : Acceptable limit & Permissible limit are as per IS:10500:2012

Statement of Conformity NA

----- END -----

Reviewed By:

Signature : *Atayee Saha* *P. Ganguly*
Name : Ms. Atayee Saha, Ms. Piali Ganguly
Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature : *Dr. Soumyadeep Mukhopadhyay*
Name : Dr. Soumyadeep Mukhopadhyay
Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shraachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Mitra S. K. Private Limited

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950

Doc No.: MSK/GEN/19/07



Scan for Portal

ULR: TC-695024000003015F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

Date :

Sample No. :

Date of receipt of sample:

Date(s) of performance:

Location of performance of

Reference No. & Date :

Discipline:

MSKPL/FD/2023-24/QMFCBD

26/02/2024

MSKNB/FD/2023-24/02/8R1292

15/02/2024

15/02/2024 - 16/02/2024

Permanent Facility

3000156017/056, Date - 16/09/2023

Biological

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	Drinking Water
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/02/2024
5. Place of sampling	B S Mineing rest shelter guruda (TIMM) R O water
6. Environmental conditions during sampling & Transport	(2 -5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS:17614(P-25) 2022
8. Identification of the personnel performing sampling by MSK	PRANAB SETHI

Report No. : MSKPL/FD/2023-24/QMFCBD

Sample No. : MSKNB/FD/2023-24/02/8R1292

RESULT

Micro Biology

Sl No.	Parameter	UOM	Method	Acceptable Limit	Permissible Limit	Result
1	Total Coliform Bacteria	/100ml	IS 15185	Not Detectable	Not Applicable	Not Detected
2	E. coli	/100ml	IS 15185	Not Detectable	Not Applicable	Not Detected

Opinion : Acceptable limit & Permissible limit are as per IS:10500:2012

Statement of Conformity NA

----- END -----

Reviewed By:

Signature :

Name : Ms. Maitreyee Chakraborty

Designation : Executive Microbiologist

Authorized Signatory:

Signature :

Name : Ms. Maitreyee Chakraborty

Designation : Executive Microbiologist

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shradhi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Mitra S. K. Private Limited

A/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037

T : +91 94370 09815, 94370 09820, 94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com



Report No. MSKGL/ED/2023-24/005029

Date: 25.02.2024

ANALYSIS REPORT OF DRINKING WATER

Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	TIRINGPAHAR IRON & MANGANESE MINES (TIMM)
Date of sampling	14.02.2024
Location	BS Mining Rest Shelter R O Water

CHEMICAL ANALYSIS OF WATER AS PER IS: 10500 - 2012

Sl. No.	Test Parameters	Unite	Method	Norms as per IS: 10500-2012		Results
				Desirable Limit	Permissible Limit	
1	Ammonical Nitrogen	mg/l	APHA (24th Edition), 4500-NH3-F	0.5	No Relaxation	<1.0
2	Calcium (as Ca)	mg/l	APHA (24th Edition), 3500 Ca B	75	200	27
3	Chloride (as Cl)	mg/l	APHA (24th Edition), 4500 -Cl B	250	1000	12
4	Odour	Hazen	3025 (Part-5)-1983; Rffm:2012	Agreeable	Agreeable	Agreeable
5	Electrical conductivity	us/cm	APHA (24th Edition), 2510B	---	---	249
6	Iron (as Fe)	mg/l	APHA (24th Edition), 3500 Fe B	0.3	No Relaxation	0.07
7	Magnesium (as Mg)	mg/l	APHA (24th Edition), 3500 Mg B	30	100	11
8	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA (24th Edition), 5530C (Chloroform Extraction)	0.001	0.002	<0.001
9	Potassium (as K)	mg/l	APHA (24th Edition), 3500 K B	---	---	<1.0
10	Salinity	PSU	APHA (24th Edition), 2520B	---	---	0.127
11	Sodium (as Na)	mg/l	APHA (24th Edition), 3500 Na B	---	---	3.9
12	Sulphate (as SO ₄)	mg/l	APHA (24th Edition) 4500 SO ₄ -E	200	400	<1.0
13	Taste	None	IS 3025 (Part 8)-1983 Rffm:2012_(O)	Agreeable	Agreeable	Agreeable
14	Total Alkalinity (as CaCO ₃)	mg/l	APHA (24th Edition), 2320B	200	600	96
15	Total Dissolved Solids (as TDS)	mg/l	APHA (24th Edition), 2540C	500	2000	148
16	Total Hardness (as CaCO ₃)	mg/l	APHA (24th Edition), 2340 C	200	600	112
17	Total Suspended Solid (as TSS)	mg/l	APHA (24th Edition), 2540D	---	---	2.7
18	Turbidity	N.T.U	APHA (24th Edition), 2130B	1	5	<1.0
19	pH value at 18.2 deg C	None	APHA 24 th Edition, 2023, 4500, H+B	6.5-8.5	No Relaxation	7.84

Checked by:-

For Mitra S. K. Private Limited

Authorized Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003016F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West
At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/FD/2023-24/P1FCB6

Date :

26/02/2024

Sample No. :

MSKNB/FD/2023-24/02/EB128K

Date of receipt of sample:

15/02/2024

Date(s) of performance:

15/02/2024 - 26/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	Drinking Water
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/02/2024
5. Place of sampling	Guruda pit office (TIMM) R O water
6. Environmental conditions during sampling & Transport	(2 -5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS:17614(P-5) 2022
8. Identification of the personnel performing sampling by MSK	PRANAB SETHI

Report No. : MSKPL/FD/2023-24/P1FCB6

Sample No. : MSKNB/FD/2023-24/02/EB128K

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Acceptable Limit	Permissible Limit	Result
1	Arsenic as As	mg/l	IS 3025 (Part 2)	0.01	No Relaxation	BDL(DL:0.005)
2	Zinc as Zn	mg/l	IS 3025 (Part 2)	5	15	BDL(DL:0.02)
3	Colour	Hazen	IS 3025 (Part 4)	5	15	BDL(DL:1.0)
4	Copper as Cu	mg/l	IS 3025 (Part 2)	0.05	1.5	BDL(DL:0.02)
5	Cyanide as CN	mg/l	IS 3025 (Part 27) Sec1	0.05	No Relaxation	BDL(DL:0.02)
6	Fluoride as F	mg/l	IS 3025 (Part 60)	1.0	1.5	BDL(DL:0.2)
7	Lead as Pb	mg/l	IS 3025 (Part 2)	0.01	No Relaxation	BDL(DL:0.005)
8	Manganese as Mn	mg/l	IS 3025 (Part 2)	0.1	0.3	BDL(DL:0.02)
9	Mercury as Hg	mg/l	IS 3025 (Part 48)	0.001	No Relaxation	BDL(DL:0.0002)
10	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No Relaxation	BDL(DL:0.01)
11	Nitrate as NO3	mg/l	APHA (24th EDITION) 4500-NO3- B	45	No Relaxation	0.64
12	Selenium as Se	mg/l	IS 3025 (Part 2)	0.01	No Relaxation	BDL(DL:0.005)
13	Silica (as SiO2)	mg/l	IS 3025 (Part 35)	Not Specified	Not Specified	BDL(DL:0.1)
14	Silver as Ag	mg/l	IS 3025 (Part 2)	0.1	No Relaxation	BDL(DL:0.005)
15	Total Chromium as Cr	mg/l	IS 3025 (Part 2)	0.05	No Relaxation	BDL(DL:0.01)
16	Cadmium as Cd	mg/l	IS 3025 (Part 2)	0.003	No Relaxation	BDL(DL:0.001)

Reviewed By:

Signature : *Atrayee Saha P. Ganguly*

Name : Ms. Atrayee Saha, Ms. Piali Ganguly

Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature : *Dr. Souryadeep Mukhopadhyay*

Name : Dr. Souryadeep Mukhopadhyay

Designation : Lab In charge

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003016F

Opinion : Acceptable limit & Permissible limit are as per IS:10500:2012

Statement of Conformity NA

----- END -----

Reviewed By:

Signature : *Atrayee Saha P. Ganguly*

Name : Ms. Atrayee Saha, Ms. Piali Ganguly

Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Soumyadeep Mukhopadhyay

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003016F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :**Date :****Sample No. :****Date of receipt of sample:****Date(s) of performance:****Location of performance of****Reference No. & Date :****Discipline:**

MSKPL/FD/2023-24/P1FCB6

26/02/2024

MSKNB/FD/2023-24/02/EB128K

15/02/2024

15/02/2024 - 16/02/2024

Permanent Facility

3000156017/056, Date - 16/09/2023

Biological

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	Drinking Water
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/02/2024
5. Place of sampling	Guruda pit office (TIMM) R O water
6. Environmental conditions during sampling & Transport	(2 -5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS:17614(P-25) 2022
8. Identification of the personnel performing sampling by MSK	PRANAB SETHI

Report No. : MSKPL/FD/2023-24/P1FCB6**Sample No. :** MSKNB/FD/2023-24/02/EB128K

RESULT

Micro Biology

SI No.	Parameter	UOM	Method	Acceptable Limit	Permissible Limit	Result
1	Total Coliform Bacteria	/100ml	IS 15185	Not Detectable	Not Applicable	Not Detected
2	E. coli	/100ml	IS 15185	Not Detectable	Not Applicable	Not Detected

Opinion : Acceptable limit & Permissible limit are as per IS:10500:2012

Statement of Conformity NA

----- END -----

Reviewed By:

Signature :

Name : Ms. Maitreyee Chakraborty

Designation : Executive Microbiologist

Authorized Signatory:

Signature :

Name : Ms. Maitreyee Chakraborty

Designation : Executive Microbiologist

The results relate only to the item(s) tested.
This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.
The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.
The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.
The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shraichi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037

T : +91 94370 09815, 94370 09820, 94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com



Report No. MSKGL/ED/2023-24/005032

Date: 25.02.2024

ANALYSIS REPORT OF DRINKING WATER

Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	TIRINGPAHAR IRON & MANGANESE MINES (TIMM)
Date of sampling	14.02.2024
Location	Guruda Pit Office R O Water

CHEMICAL ANALYSIS OF WATER AS PER IS: 10500 - 2012

Sl. No.	Test Parameters	Unite	Method	Norms as per IS: 10500-2012		Results
				Desirable Limit	Permissible Limit	
1	Ammonical Nitrogen	mg/l	APHA (24th Edition), 4500-NH3-F	0.5	No Relaxation	<1.0
2	Calcium (as Ca)	mg/l	APHA (24th Edition), 3500 Ca B	75	200	32
3	Chloride (as Cl)	mg/l	APHA (24th Edition), 4500 -Cl B	250	1000	22
4	Odour	Hazen	3025 (Part-5)-1983; Rffm:2012	Agreeable	Agreeable	Agreeable
5	Electrical conductivity	us/cm	APHA (24th Edition), 2510B	---	---	286
6	Iron (as Fe)	mg/l	APHA (24th Edition), 3500 Fe B	0.3	No Relaxation	<0.05
7	Magnesium (as Mg)	mg/l	APHA (24th Edition), 3500 Mg B	30	100	6
8	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA (24th Edition), 5530C (Chloroform Extraction)	0.001	0.002	<0.001
9	Potassium (as K)	mg/l	APHA (24th Edition), 3500 K B	---	---	<1.0
10	Salinity	PSU	APHA (24th Edition), 2520B	---	---	0.136
11	Sodium (as Na)	mg/l	APHA (24th Edition), 3500 Na B	---	---	4
12	Sulphate (as SO ₄)	mg/l	APHA (24th Edition), 4500 SO ₄ -E	200	400	<1.0
13	Taste	None	IS 3025 (Part 8)-1983 Rffm:2012 (0)	Agreeable	Agreeable	Agreeable
14	Total Alkalinity (as CaCO ₃)	mg/l	APHA (24th Edition), 2320B	200	600	96
15	Total Dissolved Solids (as TDS)	mg/l	APHA (24th Edition), 2540C	500	2000	158
16	Total Hardness (as CaCO ₃)	mg/l	APHA (24th Edition), 2340 C	200	600	104
17	Total Suspended Solid (as TSS)	mg/l	APHA (24th Edition), 2540D	---	---	<2.5
18	Turbidity	N.T.U	APHA (24th Edition), 2130B	1	5	<1.0
19	pH value at 18.2 deg C	None	APHA 24 th Edition, 2023, 4500, H+B	6.5-8.5	No Relaxation	7.65

Checked by:-

For Mitra S. K. Private Limited

Authorized Signatory

WATER QUALITY MONITORING REPORT

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002010F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/FD/2023-24/TTED63

Date :

07/02/2024

Sample No. :

MSKNB/FD/2023-24/01/2PA22Y

Date of receipt of sample:

05/01/2024

Date(s) of performance:

05/01/2024 - 15/01/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	SURFACE WATER
3. Unique Identification of sample(if any)	NA
4. Date of sampling	04/01/2024
5. Place of sampling	BBL-4363 Jalahari Nala Jarouli Water
6. Environmental conditions during sampling & Transport	(2 - 5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS 17614 (P-23) 2021
8. Identification of the personnel performing sampling by MSK	Akash Kr Sethi,Pratik Kr. Mantri

Report No. : MSKPL/FD/2023-24/TTED63

Sample No. : MSKNB/FD/2023-24/01/2PA22Y

RESULT

Chemical				
Sl No.	Parameter	UOM	Method	Result
1	Arsenic as As	mg/l	IS 3025 (Part 2)	BDL(DL:0.005)
2	Boron as B	mg/l	IS 3025 (Part 2)	BDL(DL:0.25)
3	Cadmium as Cd	mg/l	IS 3025 (Part 2)	BDL(DL:0.001)
4	Colour	Hazen	IS 3025 (Part 4)	BDL(DL:1.0)
5	Copper as Cu	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)
6	Cyanide as CN	mg/l	IS 3025 (Part 27) Sec1	BDL(DL:0.02)
7	Fluoride as F	mg/l	IS 3025 (Part 60)	0.38
8	Hexavalent Chromium (as Cr+6)	mg/l	IS 3025 (Part 52) Sec2	BDL(DL:0.01)
9	Lead as Pb	mg/l	IS 3025 (Part 2)	BDL(DL:0.005)
10	Manganese as Mn	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)
11	Mercury as Hg	mg/l	IS 3025 (Part 48)	BDL(DL:0.0002)
12	Nitrate as NO3	mg/l	APHA (24th EDITION) 4500-NO3- B	0.80
13	Zinc as Zn	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)

Opinion : NA

Statement of Conformity NA

----- END -----

Reviewed By:

Signature :

Name : Ms. Atrayee Saha, Ms. Piali Ganguly

Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Soumyadeep Mukhopadhyay

Designation : Lab In charge

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002010F

Reviewed By:

Signature

Name : Ms. Atrayee Saha, Ms. Piali Ganguly

Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature

Name : Dr. Soumyadeep Mukhopadhyay

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S. K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

Head Office:

Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.

Tel : 91 33 40143000 / 22650007 Fax: 91 33 22650008

Email : info@mitrask.com Website : www.mitrask.com

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002010F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West
At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/FD/2023-24/TTED63

Date :

07/02/2024

Sample No. :

MSKNB/FD/2023-24/01/2PA22Y

Date of receipt of sample:

05/01/2024

Date(s) of performance:

05/01/2024 - 10/01/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Biological

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	SURFACE WATER
3. Unique Identification of sample(if any)	NA
4. Date of sampling	04/01/2024
5. Place of sampling	BBL-4363 Jalahari Nala Jarouli Water
6. Environmental conditions during sampling & Transport	(2 - 5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS 17614 (P-25) 2022
8. Identification of the personnel performing sampling by MSK	Akash Kr Sethi,Pratik Kr. Mantri

Report No. : MSKPL/FD/2023-24/TTED63

Sample No. : MSKNB/FD/2023-24/01/2PA22Y

RESULT

Micro Biology

Sl No.	Parameter	UOM	Method	Result
1	Total coliform	MPN/100ml	Standard methods for the examination of water & waste water, 24th edtn, 9221B	14

Opinion : NA

Statement of Conformity NA

----- END -----

Reviewed By:

Signature :

Name : Mr. Sukanta Palui

Designation : Technical In charge

Authorized Signatory:

Signature :

Name : Mr. Sukanta Palui

Designation : Technical In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.

Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008

Email : info@mitrask.com Website : www.mitrask.com

Report No. MSKGL/ED/2023-24/004436


Date: 10.02.2024

ANALYSIS REPORT OF SURFACE WATER

Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	Tiringpahar Iron & Manganese Mines (TIMM)
Date of sampling	04.01.2024
Location	Jalhari Nala Jurudi (TIMM)

CHEMICAL ANALYSIS OF WATER

Sl. No.	Test Parameters	Unit	Method	Max. Tolerance Limit as per CPCB	Results
1	Biochemical Oxygen Demand (as BOD)	mg/l	APHA (24th Edition), 5210B	30	<2.0
2	Calcium (as CaCO ₃)	mg/l	APHA (24th Edition), 2340 C	---	16
3	Chemical Oxygen Demand (COD)	mg/l	APHA (24th Edition), 5220B	250	<4.0
4	Chloride (as Cl ⁻)	mg/l	APHA (24th Edition), 4500 -Cl B	---	6
5	DO	mg/l	APHA 24th Edition, 2023 4500-O-C/G	---	5.4
6	Electrical conductivity	us/cm	APHA (24th Edition), 2510B	---	122
7	Iron (as Fe)	mg/l	APHA (24th Edition), 3500 Fe B	3	0.45
8	Magnesium (as Mg)	mg/l	APHA (24th Edition), 3500 Mg B	---	6.7
9	Odour	mg/l	APHA (24th Edition), 2150B	Agreeable	Agreeable
10	Oil and Grease	mg/l	APHA (24th Edition), 5520B	10	<5.0
11	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	APHA (24th Edition), 5530C (Chloroform Extraction)	1	<0.001
12	Salinity	PSU	APHA (24th Edition), 2520B	---	0.063
13	Sulphate (as SO ₄)	mg/l	APHA (24th Edition), 4500 SO ₄ -E	---	<1.0
14	Total Alkalinity	mg/l	APHA (24th Edition), 5210B	---	48
15	Total Dissolved Solids (as TDS)	mg/l	APHA (24th Edition), 2540C	---	76
16	Total Hardness (as CaCO ₃)	mg/l	APHA (24th Edition), 2340 C	---	68
17	Total Suspended Solid (as TSS)	mg/l	APHA (24th Edition), 2540D	50/100	6.3
18	pH value at 19.2 deg C	None	APHA 24th Edition, 2023 4500-H+B	5.5-9.0	6.02

Checked by:- 

For Mitra S. K. Private Limited


Authorized Signatory


Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002012F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/FD/2023-24/JHED6F

Date :

07/02/2024

Sample No. :

MSKNB/FD/2023-24/01/TAP205

Date of receipt of sample:

05/01/2024

Date(s) of performance:

05/01/2024 - 15/01/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	SURFACE WATER
3. Unique Identification of sample(if any)	NA
4. Date of sampling	04/01/2024
5. Place of sampling	BBL-4365 Tindharia Down Stream Baitarni Riiver
6. Environmental conditions during sampling & Transport	(2 - 5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS 17614 (P-23) 2021
8. Identification of the personnel performing sampling by MSK	Akash Kr Sethi,Pratik Kr. Mantri

Report No. : MSKPL/FD/2023-24/JHED6F

Sample No. : MSKNB/FD/2023-24/01/TAP205

RESULT

Chemical				
Sl No.	Parameter	UOM	Method	Result
1	Arsenic as As	mg/l	IS 3025 (Part 2)	BDL(DL:0.005)
2	Boron as B	mg/l	IS 3025 (Part 2)	BDL(DL:0.25)
3	Cadmium as Cd	mg/l	IS 3025 (Part 2)	BDL(DL:0.001)
4	Colour	Hazen	IS 3025 (Part 4)	BDL(DL:1.0)
5	Copper as Cu	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)
6	Cyanide as CN	mg/l	IS 3025 (Part 27) Sec1	BDL(DL:0.02)
7	Fluoride as F	mg/l	IS 3025 (Part 60)	BDL(DL:0.2)
8	Hexavalent Chromium (as Cr+6)	mg/l	IS 3025 (Part 52) Sec2	BDL(DL:0.01)
9	Lead as Pb	mg/l	IS 3025 (Part 2)	BDL(DL:0.005)
10	Manganese as Mn	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)
11	Mercury as Hg	mg/l	IS 3025 (Part 48)	BDL(DL:0.0002)
12	Nitrate as NO3	mg/l	APHA (24th EDITION) 4500-NO3- B	0.94
13	Zinc as Zn	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)

Opinion : NA

Statement of Conformity NA

----- END -----

Reviewed By:

Signature

Name

Designation

Atrayee Saha P. Ganguly
: Ms. Atrayee Saha, Ms. Piali Ganguly
: Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature

Name

Designation

Dr. Soumyadeep Mukhopadhyay
: Lab In charge

Head Office:

Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002012F

Reviewed By:

Signature : *Atrayee Saha P. Ganguly*
Name : Ms. Atrayee Saha, Ms. Piali Ganguly
Designation : Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature : *Dr. Sourinadeep Mukhopadhyay*
Name : Dr. Sourinadeep Mukhopadhyay
Designation : Lab In charge

The results relate only to the item(s) tested.
This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.
The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.
The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.
The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002012F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/FD/2023-24/JHED6F

Date :

07/02/2024

Sample No. :

MSKNB/FD/2023-24/01/TAP205

Date of receipt of sample:

05/01/2024

Date(s) of performance:

05/01/2024 - 10/01/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Biological

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	SURFACE WATER
3. Unique Identification of sample(if any)	NA
4. Date of sampling	04/01/2024
5. Place of sampling	BBL-4365 Tindharia Down Stream Baitarni River
6. Environmental conditions during sampling & Transport	(2 - 5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS 17614 (P-25) 2022
8. Identification of the personnel performing sampling by MSK	Akash Kr Sethi,Pratik Kr. Mantri

Report No. : MSKPL/FD/2023-24/JHED6F

Sample No. : MSKNB/FD/2023-24/01/TAP205

RESULT

Micro Biology

SI No.	Parameter	UOM	Method	Result
1	Total coliform	MPN/100ml	Standard methods for the examination of water & waste water, 24th edtn, 9221B	17

Opinion : NA

Statement of Conformity NA

----- END -----

Reviewed By:

Signature :

Name : Mr. Sukanta Palui

Designation : Technical In charge

Authorized Signatory:

Signature :

Name : Mr. Sukanta Palui

Designation : Technical In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

Head Office: Shraichi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.

Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008

Email : info@mitrask.com Website : www.mitrask.com

Report No. MSKGL/ED/2023-24/004439

Date: 10.02.2024

ANALYSIS REPORT OF SURFACE WATER

Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	Tiringpahar Iron & Manganese Mines (TIMM)
Date of sampling	04.01.2024
Location	Tindharia Down Stream Baitarani River (TIMM)

CHEMICAL ANALYSIS OF WATER

Sl. No.	Test Parameters	Unite	Method	Max. Tolerance Limit as per CPCB	Results
1	Biochemical Oxygen Demand (as BOD)	mg/l	APHA (24th Edition), 5210B	30	<2.0
2	Calcium (as CaCo ₃)	mg/l	APHA (24th Edition), 2340 C	---	9.6
3	Chemical Oxygen Demand (COD)	mg/l	APHA (24th Edition), 5220B	250	<4.0
4	Chloride (as Cl)	mg/l	APHA (24th Edition), 4500 -Cl B	---	4.0
5	DO	mg/l	APHA 24th Edition, 2023 4500-O-C/G	---	5.5
6	Electrical conductivity	us/cm	APHA (24th Edition), 2510B	---	83
7	Iron (as Fe)	mg/l	APHA (24th Edition), 3500 Fe B	3	0.48
8	Magnesium (as Mg)	mg/l	APHA (24th Edition), 3500 Mg B	---	3.8
9	Odour	mg/l	APHA (24th Edition), 2150B	Agreeable	Agreeable
10	Oil and Grease	mg/l	APHA (24th Edition), 5520B	10	<5.0
11	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	APHA (24th Edition), 5530C (Chloroform Extraction)	1	<0.001
12	Salinity	PSU	APHA (24th Edition), 2520B	---	0.38
13	Sulphate (as SO ₄)	mg/l	APHA (24th Edition), 4500 SO ₄ -E	---	<1.0
14	Total Alkalinity	mg/l	APHA (24th Edition), 5210B	---	32
15	Total Dissolved Solids (as TDS)	mg/l	APHA (24th Edition), 2540C	---	50
16	Total Hardness (as CaCO ₃)	mg/l	APHA (24th Edition), 2340 C	---	40
17	Total Suspended Solid (as TSS)	mg/l	APHA (24th Edition), 2540D	50/100	5.1
18	pH value at 19.2 deg C	None	APHA 24th Edition, 2023 4500-H+B	5.5-9.0	6.67

Checked by:-



For Mitra S. K. Private Limited



Authorized Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002014F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/FD/2023-24/1AED6T

Date :

07/02/2024

Sample No. :

MSKNB/FD/2023-24/01/ZNA1EV

Date of receipt of sample:

05/01/2024

Date(s) of performance:

05/01/2024 - 15/01/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Water & Residue in Water
2. Description of sample	SURFACE WATER
3. Unique Identification of sample(if any)	NA
4. Date of sampling	04/01/2024
5. Place of sampling	BBL-4367 Gurruda Baitarni River Water
6. Environmental conditions during sampling & Transport	(2 - 5) deg C Cold chain maintained
7. Sampling Plan & Method used	IS 17614 (P-23) 2021
8. Identification of the personnel performing sampling by MSK	Akash Kr Sethi,Pratik Kr. Mantri

Report No. : MSKPL/FD/2023-24/1AED6T

Sample No. : MSKNB/FD/2023-24/01/ZNA1EV

RESULT

Chemical				
Sl No.	Parameter	UOM	Method	Result
1	Arsenic as As	mg/l	IS 3025 (Part 2)	BDL(DL:0.005)
2	Boron as B	mg/l	IS 3025 (Part 2)	BDL(DL:0.25)
3	Cadmium as Cd	mg/l	IS 3025 (Part 2)	BDL(DL:0.001)
4	Colour	Hazen	IS 3025 (Part 4)	BDL(DL:1.0)
5	Copper as Cu	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)
6	Cyanide as CN	mg/l	IS 3025 (Part 27) Sec1	BDL(DL:0.02)
7	Fluoride as F	mg/l	IS 3025 (Part 60)	BDL(DL:0.2)
8	Hexavalent Chromium (as Cr+6)	mg/l	IS 3025 (Part 52) Sec2	BDL(DL:0.01)
9	Lead as Pb	mg/l	IS 3025 (Part 2)	BDL(DL:0.005)
10	Manganese as Mn	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)
11	Mercury as Hg	mg/l	IS 3025 (Part 48)	BDL(DL:0.0002)
12	Nitrate as NO3	mg/l	APHA (24h EDITION) 4500-NO3- B	0.85
13	Zinc as Zn	mg/l	IS 3025 (Part 2)	BDL(DL:0.02)

Opinion : NA

Statement of Conformity NA

----- END -----

Reviewed By:

Signature

Name

Designation

Atrayee Saha P. Ganguly

Ms. Atrayee Saha, Ms. Piali Ganguly

Sr. Exe. Chemist, Executive Chemist

Authorized Signatory:

Signature

Name

Designation

Dr. Soumyadeep Mukhopadhyay
Lab In charge

AMBIENT AIR MONITORING REPORT

Address of Laboratory :

Building No. P-48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-69502400004676F

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

TEST REPORT

Report No. :

Date :

Sample No. :

Date of receipt of sample:

Date(s) of performance:

Location of performance of

Reference No. & Date :

Discipline:

MSKPL/ED/2023-24/R1517G

20/03/2024

MSKNB/ED/2023-24/03/Q1143F

11/03/2024

11/03/2024 - 20/03/2024

Permanent Facility

3000156017/056, Date - 16/09/2023

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	07/03/2024
5. Place of sampling	Guruda Pit Office
6. Environmental conditions during sampling & Transport	1) Temperature :14-27 deg C 2) Barometric Pressure: 713 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN NAYAK
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/R1517G

Sample No. : MSKNB/ED/2023-24/03/Q1143F

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700015, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005418

Date :

21/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00328

Reference No. & Date :

3000156017/066, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	07/03/2024
5. Place of sampling	Near Guruda PTT Office TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005418

Sample No. : MSKGL/ED/2023-24/03/00328

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	14.3
2	Carbon Monoxide (CO)	mg/m3	IS: 5182 (Part 10) (O)	2 8HR.	0.46
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS: 5182 (Part 6) (O)	80 24 HR.	22.5
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m3	IS: 5182 (Part 23) (O)	100 24 HR.	167
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24) 2019 (O)	60 24 HR.	83
7	Sulphur Dioxide (SO2)	micro gm/m3	IS: 5182 (Part 2) (O)	80 24 HR.	6.9

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-8950



Scan for Portal

ULR: TC-895024000004674F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po:- Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/81517D

Date :

20/03/2024

Sample No. :

MSKNB/ED/2023-24/03/BQ147V

Date of receipt of sample:

11/03/2024

Date(s) of performance:

11/03/2024 - 20/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	07/03/2024
5. Place of sampling	Guruda View Point
6. Environmental conditions during sampling & Transport	1) Temperature :14-27 deg C 2) Barometric Pressure: 713 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN NAYAK
9. Field Equipments Used	MSK/BBU/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/81517D

Sample No. : MSKNB/ED/2023-24/03/BQ147V

RESULT

Chemical					
Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.33
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	18.7

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700015, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005408

Date :

21/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00326

Reference No. & Date :

3000158017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	07/03/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005408**Sample No. :** MSKGL/ED/2023-24/03/00326**RESULT****Analysis Result of Ambient Air**


Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.4
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.45
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	23.3
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL 20.0)
5	Particulate Matter (<10 _{um})	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	175
6	Particulate Matter (<2.5 _{um})	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	87
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.5

— END —

Report Verified By



For Mitra S. K. Private Limited


Authorized Signatory

Address of Laboratory :

Building No. P-48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000004671F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM), Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/81517X

Date :

20/03/2024

Sample No. :

MSKNB/ED/2023-24/03/0K145G

Date of receipt of sample:

11/03/2024

Date(s) of performance:

11/03/2024 - 20/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 18/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	07/03/2024
5. Place of sampling	Guruda Shorting Yard
6. Environmental conditions during sampling & Transport	1) Temperature :14-27 deg C 2) Barometric Pressure: 713 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN NAYAK
9. Field Equipments Used	MSK/BBU/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/81517X**Sample No. :** MSKNB/ED/2023-24/03/0K145G

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.13
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

The Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650006
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

TEST REPORT

Report No. :

Date :

Sample No. :

Reference No. & Date :

MSKGL/ED/2023-24/005413

21/03/2024

MSKGL/ED/2023-24/03/00325

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	07/03/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005413

Sample No. : MSKGL/ED/2023-24/03/00325

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	14.5
2	Carbon Monoxide (CO)	mg/m3	IS: 5182 (Part 10), (O)	2 8HR.	0.48
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS: 5182 (Part 6), (O)	80 24 HR.	19.4
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	BOL(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m3	IS: 5182 (Part 23), (O)	100 24 HR.	192
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24),2019 (O)	60 24 HR.	101
7	Sulphur Dioxide (SO2)	micro gm/m3	IS: 5182 (Part 2), (O)	80 24 HR.	7.8

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000004681F

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd (MGM), Joda West

Al/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/L1517K

Date :

20/03/2024

Sample No. :

MSKNB/ED/2023-24/03/CK141T

Date of receipt of sample:

11/03/2024

Date(s) of performance:

11/03/2024 - 20/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	08/03/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :15-32 deg C 2) Barometric Pressure: 713 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Setti, Mukesh Highburu
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/L1517K**Sample No. :** MSKNB/ED/2023-24/03/CK141T**RESULT****Chemical**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.04
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.36
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	41.5

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature:

Name: Dr. Devottam Banerjee

Designation: Technical in Charge

Authorized Signatory

Signature:

Name: Dr. Devottam Banerjee

Designation: Technical in Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700018, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGN) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005411

Date :

21/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00335

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpohar Iron & Mn. Mines (TIMM)
4. Date of sampling	08/03/2024
5. Place of sampling	Near Gunuda PIT Office TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005411

Sample No. : MSKGL/ED/2023-24/03/00335

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	14.8
2	Carbon Monoxide (CO)	mg/m3	IS: 5182 (Part 10) (O)	2 8HR.	0.44
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS: 5182 (Part 6) (O)	80 24 HR.	19.7
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	BOL(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m3	IS: 5182 (Part 23) (O)	100 24 HR.	176
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24).2019 (O)	60 24 HR.	79
7	Sulphur Dioxide (SO2)	micro gm/m3	IS: 5182 (Part 2) (O)	80 24 HR.	7.5

— END —

Report Verified By

(Signature)

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000004679F

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

TEST REPORT

Report No. :

MSKPL/ED/2023-24/G15171

Date :

20/03/2024

Sample No. :

MSKNB/ED/2023-24/03/BU1458

Date of receipt of sample:

11/03/2024

Date(s) of performance:

11/03/2024 - 20/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 18/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	08/03/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :15-32 deg C 2) Barometric Pressure: 713 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Setti, Mukesh Highburu
9. Field Equipments Used	MSK/BBU/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/G15171

Sample No. : MSKNB/ED/2023-24/03/BU1458

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.23
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	6.6

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700015, West Bengal, India.

Tel. : 91 33 40143000 / 22850007 Fax : 91 33 22850008

Email : info@mitrask.com Website : www.mitrask.com

Mitra S. K. Private Limited

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

Name & Address of Customer :

Tata Steel Ltd (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

TEST REPORT

Report No. :

Date :

Sample No. :

Reference No. & Date :

MSKGL/ED/2023-24/005415

21/03/2024

MSKGL/ED/2023-24/03/00333

3000156017/058, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpohar Iron & Mn. Mines (TIMM)
4. Date of sampling	08/03/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005415

Sample No. : MSKGL/ED/2023-24/03/00333

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	16.2
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.50
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	21.8
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL 20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	185
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24).2019 (O)	60 24 HR.	93
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.7

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Head Office: Shreeji Centre (9th Floor), 748, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrasak.com Website : www.mitrask.com

Page 1 of 1

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-69502400004678F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

A/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/Y1517E

Date :

20/03/2024

Sample No. :

MSKNB/ED/2023-24/03/29142Y

Date of receipt of sample:

11/03/2024

Date(s) of performance:

11/03/2024 - 20/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	08/03/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :15-32 deg C 2) Barometric Pressure: 713 mm of Hg 3) Rain fall : No. & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Setti, Mukesh Highburu
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/Y1517E

Sample No. : MSKNB/ED/2023-24/03/29142Y

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.13
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005414

Date :

21/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00332

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tingpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	08/03/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005414

Sample No. : MSKGL/ED/2023-24/03/00332

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.2
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.53
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	21.3
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	166
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	94
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.2

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950

Doc No.: MSK/GEN/1907



Scan for Portal

ULR: TC-695024000005204F

Name & Address of Customer :

Tata Steel Ltd. (MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

TEST REPORT

Report No. :

Date :

Sample No. :

Date of receipt of sample:

Date(s) of performance:

Location of performance of

Reference No. & Date :

Discipline:

MSKPU/ED/2023-24/X1604E

26/03/2024

MSKNB/ED/2023-24/03/KE250X

18/03/2024

18/03/2024 - 26/03/2024

Permanent Facility

3000156017/056, Date - 16/09/2023

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/03/2024
5. Place of sampling	Near Guruda PIT Office (TIMM)
6. Environmental conditions during sampling & Transport	1) Temperature :19-34 deg C 2) Barometric Pressure: 709 mm of Hg 3) Rain fall :
7. Sampling Plan & Method used	No & Cold Chain Maintained
8. Identification of the personnel performing sampling by MSK	IS:5182(P-11,12) & USEPA
9. Field Equipments Used	Akash Kumar Setti
	MSK/BBL/FIELD/FDS-10

Report No. : MSKPU/ED/2023-24/X1604E

Sample No. : MSKNB/ED/2023-24/03/KE250X

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Ms. Pooja Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature

Name

Designation : Lab In charge

he results relate only to the item(s) tested.

he Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

he reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days

on the date of issue of the Test Report.

he reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

he reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

lead Office:

Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

TEST REPORT

Report No. :

Date :

Sample No. :

Reference No. & Date :

MSKGL/ED/2023-24/005564

27/03/2024

MSKGL/ED/2023-24/03/00617

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Water
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn, Mines (TIMM)
4. Date of sampling	14/03/2024
5. Place of sampling	Near Guruda PIT Office (TIMM)
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005564

Sample No. : MSKGL/ED/2023-24/03/00617

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	15.2
2	Carbon Monoxide (CO)	mg/m3	IS: 5182 (Part 10) (O)	2 8HR.	0.48
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS: 5182 (Part 6) (O)	80 24 HR.	21.8
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m3	IS: 5182 (Part 23) (O)	100 24 HR.	173
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24),2019 (O)	60 24 HR.	85
7	Sulphur Dioxide (SO2)	micro gm/m3	IS: 5182 (Part 2) (O)	60 24 HR.	7.8

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P-48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel.: +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000005203F

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

TEST REPORT

Report No. :

MSKPL/ED/2023-24/S1604C

Date :

26/03/2024

Sample No. :

MSKNB/ED/2023-24/03/JM24CV

Date of receipt of sample:

18/03/2024

Date(s) of performance:

18/03/2024 - 26/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/03/2024
5. Place of sampling	Near Guruda Shorting Yard (TIMM)
6. Environmental conditions during sampling & Transport	1) Temperature : 19-34 deg C 2) Barometric Pressure: 709 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Akash Kumar Setti
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/S1604C

Sample No. : MSKNB/ED/2023-24/03/JM24CV

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.13
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity : NA

— END —

Reviewed By:

Signature : P. Ganguly

Name : Mr. Pail Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Soumyadeep Mahapatra

Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Solid, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India
Tel.: 91 33 40143000 / 22650007 Fax: 91 33 22650008
Email: info@mitrask.com Website: www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005559

Date :

27/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00616

Reference No. & Date :

3000158017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	14/03/2024
5. Place of sampling	Near Guruda Shoring Yard. (TIMM)
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005559

Sample No. : MSKGL/ED/2023-24/03/00616

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	14.2
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.52
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	22.1
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BOL(DL-20.0)
5	Particulate Matter (<10µm)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	207
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	98
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.5

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Mitra S. K. Private Limited

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950

Doc No.: MSK/GEN/19/07



Scan for Portal

ULR: TC-695024000005202F

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

TEST REPORT

Report No. :

Date :

Sample No. :

Date of receipt of sample:

Date(s) of performance:

Location of performance of

Reference No. & Date :

Discipline:

MSKPL/ED/2023-24/Y1604Y

26/03/2024

MSKNB/ED/2023-24/03/H524D7

18/03/2024

18/03/2024 - 26/03/2024

Permanent Facility

3000156017/056, Date - 16/09/2023

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/03/2024
5. Place of sampling	Near Guruda View Point (TIMM)
6. Environmental conditions during sampling & Transport	1) Temperature : 19-34 deg C 2) Barometric Pressure: 709 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Akash Kumar Sethi
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/Y1604Y

Sample No. : MSKNB/ED/2023-24/03/H524D7

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.05
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.33
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	5.5

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature : P. Ganguly

Name : Ms. Preet Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature : Dr. Soumyadip Mukhopadhyay

Name : Dr. Soumyadip Mukhopadhyay

Designation : Lab In charge

his results relate only to the item(s) tested.

his Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

he reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days on the date of issue of the Test Report.

he reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

he reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

lead Office:

Shyami Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650006
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. : Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005568

Date :

27/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00615

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Water
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	14/03/2024
5. Place of sampling	Near Guruda View Point (TIMM)
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005568**Sample No. :** MSKGL/ED/2023-24/03/00615**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	16.1
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.52
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	22.8
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10µm)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	182
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	88
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.6

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000005211F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/J1604X

Date :

26/03/2024

Sample No. :

MSKNB/ED/2023-24/03/NM24BC

Date of receipt of sample:

18/03/2024

Date(s) of performance:

18/03/2024 - 26/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	15/03/2024
5. Place of sampling	Near Guruda PIT Office (TIMM)
6. Environmental conditions during sampling & Transport	1) Temperature :18-33 deg C 2) Barometric Pressure: 711 mm of Hg 3) Rain fall :
7. Sampling Plan & Method used	No & Cold Chain Maintained
8. Identification of the personnel performing sampling by MSK	IS:5182(P-11,12) & USEPA
9. Field Equipments Used	Lalin Kumar Naik
	MSK/BBU/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/J1604X

Sample No. : MSKNB/ED/2023-24/03/NM24BC

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name :

Designation : Executive Chemist

P. Ganguly

Mr. Pankaj Ganguly

Authorized Signatory:

Signature :

Name :

Designation : Lab In charge

Dr. Soumitra Das Mukhopadhyay

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Bhadrach Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM) Joda West

As/Pl. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

Date :

Sample No. :

Reference No. & Date :

MSKGL/ED/2023-24/005569

27/03/2024

MSKGL/ED/2023-24/03/00624

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Air
2. Description of sample	Ambient Water
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	15/03/2024
5. Place of sampling	Near Guruda PTT Office (TIMM)
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005569

Sample No. : MSKGL/ED/2023-24/03/00624

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.6
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.43
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	21.9
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	178
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	68
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.7

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Page 1 of 1

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000005210F

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

TEST REPORT

Report No. :

Date :

Sample No. :

Date of receipt of sample:

Date(s) of performance:

Location of performance of

Reference No. & Date :

Discipline:

MSKPL/ED/2023-24/R1604K

26/03/2024

MSKNB/ED/2023-24/03/E124DP

18/03/2024

18/03/2024 - 26/03/2024

Permanent Facility

3000156017/056, Date - 16/09/2023

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	15/03/2024
5. Place of sampling	Near Guruda Shorting Yard (TIMM)
6. Environmental conditions during sampling & Transport	1) Temperature :18-33 deg C 2) Barometric Pressure: 711 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Lalin Kumar Naik
9. Field Equipments Used	MSK/BBU/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/R1604K

Sample No. : MSKNB/ED/2023-24/03/E124DP

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.14
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By

Signature : P. Ganguly

Name : Mr. Pail Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name :

Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office:

Shreya Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005572

Date :

27/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00623

Reference No. & Date :

3000156017/036, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	15/03/2024
5. Place of sampling	Near Guruda Shoring Yard (TIMM)
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005572

Sample No. : MSKGL/ED/2023-24/03/00623

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	14.8
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.57
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	22.4
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL 20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	202
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	100
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.4

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 46, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044035120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000005209F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/V16044

Date :

26/03/2024

Sample No. :

MSKNB/ED/2023-24/03/D524CF

Date of receipt of sample:

18/03/2024

Date(s) of performance:

18/03/2024 - 26/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	15/03/2024
5. Place of sampling	Near Guruda View Point (TIMM)
6. Environmental conditions during sampling & Transport	1) Temperature : 18-33 deg C 2) Barometric Pressure: 711 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	LalIn Kumar Naik
9. Field Equipments Used	MSK/BBUFIELD/FDS-7

Report No. : MSKPL/ED/2023-24/V16044

Sample No. : MSKNB/ED/2023-24/03/D524CF

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.27
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature : P. Ganguly

Name : Mr. Priit Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Saumyadev Mukhopadhyay

Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005565

Date :

27/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00622

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Water
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	15/03/2024
5. Place of sampling	Near Guruda View Point (TIMM)
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005565**Sample No. :** MSKGL/ED/2023-24/03/00622**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.9
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.57
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	22.4
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10 _{um})	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	186
6	Particulate Matter (<2.5 _{um})	micro gm/m ³	IS 5182 (PT-24).2019 (O)	60 24 HR.	90
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.8

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000005979F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2024-25/HZF22V

Date :

03/04/2024

Sample No. :

MSKNB/ED/2023-24/03/MS36F4

Date of receipt of sample:

26/03/2024

Date(s) of performance:

26/03/2024 - 03/04/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	21/03/2024
5. Place of sampling	Near Guruda PIT Office (TIMM)
6. Environmental conditions during sampling & Transport	1) Temperature :19-31 deg C 2) Barometric Pressure: 712 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Mukesh Highburu
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2024-25/HZF22V**Sample No. :** MSKNB/ED/2023-24/03/MS36F4

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.09
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:**Signature :****Name :** Mr. Pali Ganguly**Designation :** Executive Chemist**Authorized Signatory:****Signature :****Name :** Dr. Soumyajit Mukhopadhyay**Designation :** Lab Incharge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005629

Date :

30/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00878

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	21/03/2024
5. Place of sampling	Near Guruda PIT Office (TIMM)
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005629

Sample No. : MSKGL/ED/2023-24/03/00878

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.3
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.49
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	22.3
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	80L(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	179
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	80 24 HR.	93
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	<6.0

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000005978F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

A/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2024-25/R4E226

Date :

03/04/2024

Sample No. :

MSKNB/ED/2023-24/03/K536C7

Date of receipt of sample:

26/03/2024

Date(s) of performance:

26/03/2024 - 03/04/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	21/03/2024
5. Place of sampling	Near Guruda Shoring Yard (TIMM)
6. Environmental conditions during sampling & Transport	1) Temperature : 19-31 deg C 2) Barometric Pressure: 712 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS: 5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Mukesh Highburu
9. Field Equipments Used	MSK/BBU/FIELD/RDS-9

Report No. : MSKPL/ED/2024-25/R4E226

Sample No. : MSKNB/ED/2023-24/03/K536C7

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.13
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name :

Designation :

P. Ganguly
Ms. Prial Ganguly

Executive Chemist

Authorized Signatory:

Signature :

Name :

Designation :

Dr. Soumyadevi Mukhopadhyay
Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shrachi Centre (5th Floor), 748, A.J.C. Bose Road, Kolkata - 700018, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650006
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005628

Date :

30/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00877

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines (TIMM)
4. Date of sampling	21/03/2024
5. Place of sampling	Near Gunuda Shoring Yard (TIMM)
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005628**Sample No. :** MSKGL/ED/2023-24/03/00877**RESULT****Analysis Result of Ambient Air**


Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	14.9
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.49
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	22.6
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BOL(DL-20.0)
5	Particulate Matter (<10 _{um})	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	211
6	Particulate Matter (<2.5 _{um})	micro gm/m ³	IS 5182 (PT-24) 2019 (O)	60 24 HR.	109
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	8.0

— END —

Report Verified By



For Mitra S. K. Private Limited



Authorised Signatory

AMBIENT AIR QUALITY MONITORING REPORT

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003064F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/F13113

Date :

27/02/2024

Sample No. :

MSKNB/ED/2023-24/02/KJ1CEV

Date of receipt of sample:

15/02/2024

Date(s) of performance:

15/02/2024 - 27/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	12/02/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :13-26 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Lalin Naik, Dhambudhar Das
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/F13113

Sample No. : MSKNB/ED/2023-24/02/KJ1CEV

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name :

Designation :

P. Ganguly
Ms. Palli Ganguly

Executive Chemist

Authorized Signatory:

Signature :

Name :

Designation :

Dr. Saumadeep Mukhopadhyay
Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650009
Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004935

Date :

22/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00496

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	12/02/2024
5. Place of sampling	Near Gunuda PIT Office TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004935

Sample No. : MSKGL/ED/2023-24/02/00496

RESULT

Analysis Result of Ambient Air					
Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	16.1
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.54
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	21.3
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	149
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	71
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.5

— END —

Report Verified By



For Mitra S. K. Private Limited



Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayaniab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-69502400003063F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/D1311H

Date :

27/02/2024

Sample No. :

MSKNB/ED/2023-24/02/E61CCE

Date of receipt of sample:

15/02/2024

Date(s) of performance:

15/02/2024 - 27/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	12/02/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 13-26 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Lalin Naik, Dhambrudhar Das
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/D1311H**Sample No. :** MSKNB/ED/2023-24/02/E61CCE

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.14
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Ms. Piali Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Subinidip Mukherjee

Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreechi Centre (5th Floor), 748, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004922

Date :

22/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00497

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	12/02/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004922

Sample No. : MSKGL/ED/2023-24/02/00497

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.2
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.51
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	19.8
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	218
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24).2019 (O)	60 24 HR.	105
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.4

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003062F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

AU/PO. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/U1311C

Date :

27/02/2024

Sample No. :

MSKNB/ED/2023-24/02/DE1CFG

Date of receipt of sample:

15/02/2024

Date(s) of performance:

15/02/2024 - 27/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	12/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :13-26 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Lalin Naik, Dhambudhar Das
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/U1311C**Sample No. :** MSKNB/ED/2023-24/02/DE1CFG

RESULT

Chemical

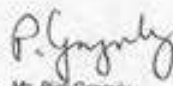
Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.36
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	20.1

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature : 
Name : Ms. Piali Ganguly
Designation : Executive Chemist

Authorized Signatory:

Signature : 
Name : Dr. Soumyadeep Mukhopadhyay
Designation : Lab In charge

he results relate only to the item(s) tested.

his Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

he reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days on the date of issue of the Test Report.

he reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

he reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Lead Office: Shraoch Centre (5th Floor), 748, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India
Tel. : 91 33 40143000 / 22950007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Piri

Report No. :

MSKGL/ED/2023-24/004937

Date :

22/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00496

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	12/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004937

Sample No. : MSKGL/ED/2023-24/02/00496

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	18.6
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.37
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	24.3
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	192
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	94
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.8

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-8950



Scan for Portal

ULR: TC-895024000003069F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/N1311M

Date :

27/02/2024

Sample No. :

MSKNB/ED/2023-24/02/BT1F2P

Date of receipt of sample:

15/02/2024

Date(s) of performance:

15/02/2024 - 27/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	13/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :16-29 deg C 2) Barometric Pressure: 712 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Akash Kr. Setty Pratik Kr. Mantri
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/N1311M

Sample No. : MSKNB/ED/2023-24/02/BT1F2P

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.36
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	41.6

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Ms. Palli Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Sourajdeep Mukhopadhyay

Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.

Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008

Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Taba Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004925

Date :

22/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00503

Reference No. & Date :

3000158017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	13/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004925**Sample No. :** MSKGL/ED/2023-24/02/00503**RESULT****Analysis Result of Ambient Air**

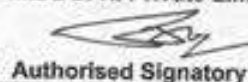
Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	17.9
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.55
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	25.7
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10 _{um})	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	192
6	Particulate Matter (<2.5 _{um})	micro gm/m ³	IS 5182 (PT-24).2019 (O)	60 24 HR.	94
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.8

— END —

Report Verified By



For Mitra S. K. Private Limited



Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003070F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/V1312Q

Date :

27/02/2024

Sample No. :

MSKNB/ED/2023-24/02/CD1EDT

Date of receipt of sample:

15/02/2024

Date(s) of performance:

15/02/2024 - 27/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	13/02/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :16-29 deg C 2) Barometric Pressure: 712 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Akash Kr. Setty Pratick Kr. Mantri
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/V1312Q

Sample No. : MSKNB/ED/2023-24/02/CD1EDT

RESULT

Chemical					
Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.13
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Ms. Palli Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Soumyadeep Mukhopadhyay

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shradha Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004926

Date :

22/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00504

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	13/02/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004926**Sample No. :** MSKGL/ED/2023-24/02/00504**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	14.3
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.49
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	19.8
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10 _{um})	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	185
6	Particulate Matter (<2.5 _{um})	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	91
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.3

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003071F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM), Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/L13124

Date :

27/02/2024

Sample No. :

MSKNB/ED/2023-24/02/DK1EE7

Date of receipt of sample:

15/02/2024

Date(s) of performance:

15/02/2024 - 27/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000158017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	13/02/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 16-29 deg C 2) Barometric Pressure: 712 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Akash Kr. Setty Pratick Kr. Mantri
9. Field Equipments Used	MSK/BBU/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/L13124

Sample No. : MSKNB/ED/2023-24/02/DK1EE7

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BOL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name :

Designation :

P. Genguly
Ms. Pall Genguly

Executive Chemist

Authorized Signatory:

Signature :

Name :

Designation :

Souryadeep Mukhopadhyay
Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office:

Shyami Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650006
Email : info@mitrask.com Website : www.mitrask.com

Page 1 of 1

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004932

Date :

22/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00505

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpohar Iron & Mn. Mines
4. Date of sampling	13/02/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004932

Sample No. : MSKGL/ED/2023-24/02/00505

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	<10.0
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.61
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	20.9
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10µm)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	168
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	82
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.9

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003197F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/013A91

Date :

02/03/2024

Sample No. :

MSKNB/ED/2023-24/02/X1372U

Date of receipt of sample:

22/02/2024

Date(s) of performance:

22/02/2024 - 02/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	19/02/2024
5. Place of sampling	Near Guruda Pit Office-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 19-29 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kumar Mantri
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/013A91

Sample No. : MSKNB/ED/2023-24/02/X1372U

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical in charge

Authorized Signatory:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.

Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008

Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004955

Date :

26/02/2024

Sample No. :

MSKGL/ED/2023-24/00881

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringohar Iron & Mn. Mines
4. Date of sampling	19/02/2024
5. Place of sampling	Near Gunuda Pit Office-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004955

Sample No. : MSKGL/ED/2023-24/00881

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	12.1
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.58
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	20.8
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10µm)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	157
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	75
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	8.9

— END —

Report Verified By



For Mitra S. K. Private Limited


 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003196F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/513A9Z

Date :

02/03/2024

Sample No. :

MSKNB/ED/2023-24/02/RL36CD

Date of receipt of sample:

22/02/2024

Date(s) of performance:

22/02/2024 - 02/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	19/02/2024
5. Place of sampling	Near Guruda Shorting Yard-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :19-29 deg C 2) Barometric Pressure: 703 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kumar Mantri
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/513A9Z

Sample No. : MSKNB/ED/2023-24/02/RL36CD

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.10
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In charge

Authorized Signatory:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700015, West Bengal, India
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004954

Date :

28/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00880

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	19/02/2024
5. Place of sampling	Near Guruda Shorting Yard-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004954

Sample No. : MSKGL/ED/2023-24/02/00880

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.3
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.53
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	19.4
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10 _{um})	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	198
6	Particulate Matter (<2.5 _{um})	micro gm/m ³	IS 5182 (PT-24).2019 (O)	60 24 HR.	95
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.5

— END —

Report Verified By



For Mitra S. K. Private Limited



Authorised Signatory

Head Office:

 Shashi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
 Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
 Email : info@mitrask.com Website : www.mitrask.com

Page 1 of 1

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003195F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/Q13A9C

Date :

02/03/2024

Sample No. :

MSKNB/ED/2023-24/02/KP36F1

Date of receipt of sample:

22/02/2024

Date(s) of performance:

22/02/2024 - 02/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	19/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 19-29 deg C 2) Barometric Pressure: 707 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kumar Mantri
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/Q13A9C

Sample No. : MSKNB/ED/2023-24/02/KP36F1

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.04
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.30
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature

Name : Dr. Devottam Banerjee

Designation : Technical in charge

Authorized Signatory:

Signature

Name : Dr. Devottam Banerjee

Designation : Technical in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office:

Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22050007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Page 1 of 1

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004953

Date :

26/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00879

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	19/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004953

Sample No. : MSKGL/ED/2023-24/02/00879

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	17.4
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.48
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	23.6
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	184
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	88
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	8.3

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P-48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003204F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/P13A9N

Date :

02/03/2024

Sample No. :

MSKNB/ED/2023-24/02/SP370H

Date of receipt of sample:

22/02/2024

Date(s) of performance:

22/02/2024 - 02/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	20/02/2024
5. Place of sampling	Near Guruda Pit Office-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :20-30 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Sethi
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/P13A9N

Sample No. : MSKNB/ED/2023-24/02/SP370H

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical in charge

Authorized Signatory:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004963

Date :

27/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00900

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	20/02/2024
5. Place of sampling	Near Guruda Pit Office-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004963

Sample No. : MSKGL/ED/2023-24/02/00900

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	11.1
2	Arsenic (As)	ng/m ³	TPM/MSK/ENV(AP)/01/15 (O)	6 ANNUAL	NA
3	Benzene (C ₆ H ₆)	micro gm/m ³	IS: 5182 (Part 11) (O)	5 ANNUAL	NA
4	Benzo(a)Pyrene (BaP)	ng/m ³	IS: 5182 (Part 12) (O)	1 ANNUAL	NA
5	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.52
6	Lead (Pb)	micro gm/m ³	EPA -IO3.2 June,1999 (O)	1 24 HR.	NA
7	Nickel (Ni)	ng/m ³	EPA-IO3.2 June,1999 (O)	20 ANNUAL	NA
8	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	20.2
9	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
10	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	143
11	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	70
12	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.2

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003203F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/Y13A9X

Date :

02/03/2024

Sample No. :

MSKNB/ED/2023-24/02/MY36C5

Date of receipt of sample:

22/02/2024

Date(s) of performance:

22/02/2024 - 02/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	20/02/2024
5. Place of sampling	Near Guruda Shorting Yard-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :20-29 deg C 2) Barometric Pressure: 703 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Sethi
9. Field Equipments Used	MSK/BBL/FIELD/ROS-9

Report No. : MSKPL/ED/2023-24/Y13A9X

Sample No. : MSKNB/ED/2023-24/02/MY36C5

RESULT

Chemical					
Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.11
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In charge

Authorized Signatory

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700096, West Bengal, India
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbel Di Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

AtPo. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004964

Date :

27/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00899

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	20/02/2024
5. Place of sampling	Near Guruda Shorting Yard-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004964

Sample No. : MSKGL/ED/2023-24/02/00899

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.6
2	Arsenic (As)	ng/m ³	TPMMSK/ENV(AP)/01/15 (O)	6 ANNUAL	NA
3	Benzene (C ₆ H ₆)	micro gm/m ³	IS: 5182 (Part 11) (O)	5 ANNUAL	NA
4	Benzo(a)Pyrene (BaP)	ng/m ³	IS: 5182 (Part 12) (O)	1 ANNUAL	NA
5	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.42
6	Lead (Pb)	micro gm/m ³	EPA -IO3.2 June,1999 (O)	1 24 HR.	NA
7	Nickel (Ni)	ng/m ³	EPA-IO3.2 -June,1999 (O)	20 ANNUAL	NA
8	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	19.7
9	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
10	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	201
11	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	80 24 HR.	98
12	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.2

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-8950



Scan for Portal

ULR: TC-895024000003202F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/113A9D

Date :

02/03/2024

Sample No. :

MSKNB/ED/2023-24/02/MP36DE

Date of receipt of sample:

22/02/2024

Date(s) of performance:

22/02/2024 - 02/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	20/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :20-29 deg C 2) Barometric Pressure: 707 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Sethi
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/113A9D

Sample No. : MSKNB/ED/2023-24/02/MP36DE

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (ss Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.25
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature

Name : Dr. Devottam Banerjee

Designation : Technical in charge

Authorized Signatory

Signature

Name : Dr. Devottam Banerjee

Designation : Technical in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline 3 (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shradhi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004962

Date :

27/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00898

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Teingsahar Iron & Mn. Mines
4. Date of sampling	20/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004962

Sample No. : MSKGL/ED/2023-24/02/00898

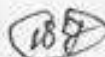
RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	17.8
2	Arsenic (As)	ng/m ³	TPM/MSK/ENV/APY01/15 (O)	6 ANNUAL	NA
3	Benzene (C ₆ H ₆)	micro gm/m ³	IS: 5182 (Part 11) (O)	5 ANNUAL	NA
4	Benzo(a)Pyrene (BaP)	ng/m ³	IS: 5182 (Part 12) (O)	1 ANNUAL	NA
5	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.51
6	Lead (Pb)	micro gm/m ³	EPA -IO3.2 June,1999 (O)	1 24 HR.	NA
7	Nickel (Ni)	ng/m ³	EPA-IO3.2 -June,1999 (O)	20 ANNUAL	NA
8	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	24.8
9	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
10	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	191
11	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	93
12	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.9

— END —

Report Verified By



For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P-48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003541F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

Al/Po. - Joda; Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/M13C14

Date :

06/03/2024

Sample No. :

MSKNB/ED/2023-24/02/9A47F2

Date of receipt of sample:

29/02/2024

Date(s) of performance:

29/02/2024 - 06/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000158017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	26/02/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 19-35 deg C 2) Barometric Pressure: 712 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Kshitish Kumar Mohanty
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/M13C14

Sample No. : MSKNB/ED/2023-24/02/9A47F2

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.13
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical in Charge

Authorized Signatory:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical in Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 748, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005005

Date :

02/03/2024

Sample No. :

MSKGL/ED/2023-24/02/01155

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	26/02/2024
5. Place of sampling	Near Gunada Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005005

Sample No. : MSKGL/ED/2023-24/02/01155

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	16.4
2	Carbon Monoxide (CO)	mg/m3	IS: 5182 (Part 10) (O)	2 8HR.	0.34
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS: 5182 (Part 6) (O)	80 24 HR.	19.0
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m3	IS: 5182 (Part 23) (O)	100 24 HR.	207
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24),2019 (O)	60 24 HR.	100
7	Sulphur Dioxide (SO2)	micro gm/m3	IS: 5182 (Part 2) (O)	80 24 HR.	7.4

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P-48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003540F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/S13C12

Date :

06/03/2024

Sample No. :

MSKNB/ED/2023-24/02/7W481Q

Date of receipt of sample:

29/02/2024

Date(s) of performance:

29/02/2024 - 06/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	26/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :19-35 deg C 2) Barometric Pressure: 712 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Kshitish Kumar Mohanty
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/S13C12

Sample No. : MSKNB/ED/2023-24/02/7W481Q

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.04
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.30
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	7.4

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity : NA

— END —

Reviewed By:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

Head Office: Bhadracharya Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005015

Date :

05/03/2024

Sample No. :

MSKGL/ED/2023-24/02/01154

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TIMM
4. Date of sampling	26/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005015

Sample No. : MSKGL/ED/2023-24/02/01154

RESULT

Analysis Result of Ambient Air

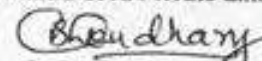
Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	14.1
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.49
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	20.5
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 Hr.	BDL(DL:20.0)
5	Particulate Matter (<10µm)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	183
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	90
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	8.6

— END —

Report Verified By



For Mitra S. K. Private Limited


Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044038120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-69502400003542F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/513C1P

Date :

06/03/2024

Sample No. :

MSKNB/ED/2023-24/02/MH483M

Date of receipt of sample:

29/02/2024

Date(s) of performance:

29/02/2024 - 06/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	26/02/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :19-35 deg C 2) Barometric Pressure: 712 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Kshilish Kumar Mohanty
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/513C1P**Sample No. :** MSKNB/ED/2023-24/02/MH483M

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity : NA

— END —

Reviewed By:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), T4B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005016

Date :

05/03/2024

Sample No. :

MSKGL/ED/2023-24/02/01156

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TIMM
4. Date of sampling	26/02/2024
5. Place of sampling	Near Gunada PIT Office TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

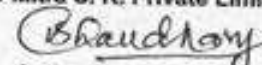
Report No. : MSKGL/ED/2023-24/005016**Sample No. :** MSKGL/ED/2023-24/02/01156

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	14.3
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.50
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	19.2
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10 _{um})	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	166
6	Particulate Matter (<2.5 _{um})	micro gm/m ³	IS 5182 (PT-24).2019 (O)	60 24 HR.	92
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.7

— END —

Report Verified By**For Mitra S. K. Private Limited**
Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-69502400003549F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM), Joda West

AI/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/P13C1M

Date :

06/03/2024

Sample No. :

MSKNB/ED/2023-24/02/WQ48DW

Date of receipt of sample:

29/02/2024

Date(s) of performance:

29/02/2024 - 06/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	27/02/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 18-30 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kumar Mantri
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/P13C1M

Sample No. : MSKNB/ED/2023-24/02/WQ48DW

RESULT

Chemical					
Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature

Name

Designation : Technical In Charge

Dr. Devottam Banerjee

Authorized Signatory:

Signature

Name

Designation : Technical In Charge

Dr. Devottam Banerjee

The results relate only to the item(s) listed.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreechi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email: info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) ,Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005014

Date :

05/03/2024

Sample No. :

MSKGL/ED/2023-24/02/01163

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TIMM
4. Date of sampling	27/02/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005014

Sample No. : MSKGL/ED/2023-24/02/01163

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	16.3
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.45
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	22.5
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10µm)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	179
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	90
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	8.0

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-69502400003548F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/P13C1D

Date :

06/03/2024

Sample No. :

MSKNB/ED/2023-24/02/R448FT

Date of receipt of sample:

29/02/2024

Date(s) of performance:

29/02/2024 - 06/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	27/02/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :17-30 deg C 2) Barometric Pressure: 704 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kumar Mantri
9. Field Equipments Used	MSK/BBL/FIELD/ROS-9

Report No. : MSKPL/ED/2023-24/P13C1D

Sample No. : MSKNB/ED/2023-24/02/R448FT

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.13
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 748, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005009

Date :

02/03/2024

Sample No. :

MSKGL/ED/2023-24/02/01162

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TIMM
4. Date of sampling	27/02/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005009**Sample No. :** MSKGL/ED/2023-24/02/01162**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	16.3
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.42
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	22.3
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	208
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24).2019 (O)	60 24 HR.	86
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	8.5

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-69502400003579F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

A/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/G13C1S

Date :

06/03/2024

Sample No. :

MSKNB/ED/2023-24/03/MNL11T

Date of receipt of sample:

02/03/2024

Date(s) of performance:

02/03/2024 - 06/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	28/02/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :17-31 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Sathy, Pratik Mantri, Akash Sathy
9. Field Equipments Used	MSK/BBU/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/G13C1S

Sample No. : MSKNB/ED/2023-24/03/MNL11T

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.13
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Strachey Centre (9th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22550007 Fax : 91 33 22550008

Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

Date :

Sample No. :

Reference No. & Date :

MSKGL/ED/2023-24/005062

05/03/2024

MSKGL/ED/2023-24/03/00005

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn Mines TIMM
4. Date of sampling	28/02/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005062

Sample No. : MSKGL/ED/2023-24/03/00005

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UCM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	14.9
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.47
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	22.2
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL 20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	195
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24) 2019 (O)	60 24 HR.	96
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.1

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003580F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/A13C1E

Date :

06/03/2024

Sample No. :

MSKNB/ED/2023-24/03/NSH14C

Date of receipt of sample:

02/03/2024

Date(s) of performance:

02/03/2024 - 06/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	28/02/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 17-31 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Sethy, Pratik Mantri, Akash Sethy
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/A13C1E

Sample No. : MSKNB/ED/2023-24/03/NSH14C

RESULT

Chemical					
Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.06
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	7.1

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity : NA

— END —

Reviewed By:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22950001 Fax : 91 33 22950008
Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM), Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005063

Date :

05/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00006

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tinagpahar Iron & Mn Mines TIMM
4. Date of sampling	29/02/2024
5. Place of sampling	Near Gunada PIT Office TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005063

Sample No. : MSKGL/ED/2023-24/03/00006

RESULT

Analysis Result of Ambient Air

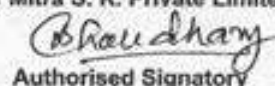
Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	18.8
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.48
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	21.0
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL/20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	185
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	88
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.8

—END—

Report Verified By



For Mitra S. K. Private Limited



Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003587F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/413C5M

Date :

06/03/2024

Sample No. :

MSKNB/ED/2023-24/03/THR102

Date of receipt of sample:

02/03/2024

Date(s) of performance:

02/03/2024 - 06/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	29/02/2024
5. Place of sampling	Near Guruda Pit Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :17-31 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Sethi, Akash Sethy, Damabaru Dhar Dash
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/413C5M

Sample No. : MSKNB/ED/2023-24/03/THR102

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.04
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature

Name : Dr. Devottam Banerjee

Designation : Technical in Charge

Authorized Signatory:

Signature

Name : Dr. Devottam Banerjee

Designation : Technical in Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office:

Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005069

Date :

06/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00013

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn Mines TIMM
4. Date of sampling	29/02/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005069**Sample No. :** MSKGL/ED/2023-24/03/00013**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	19.3
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.45
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	22.9
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	170
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	87
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	8.3

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003586F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/013C55

Date :

06/03/2024

Sample No. :

MSKNB/ED/2023-24/03/S32149

Date of receipt of sample:

02/03/2024

Date(s) of performance:

02/03/2024 - 06/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	29/02/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :17-31 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Sethi, Akash Sethy, Damabaru Dhar Dash
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/013C55

Sample No. : MSKNB/ED/2023-24/03/S32149

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.13
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Wastes) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analyses (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700015, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005068

Date :

06/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00012

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn Mines TIMM
4. Date of sampling	29/02/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005068**Sample No. :** MSKGL/ED/2023-24/03/00012**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	13.4
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.43
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	21.2
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10 _{um})	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	213
6	Particulate Matter (<2.5 _{um})	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	102
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.9

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P-48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003585F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/513C4A

Date :

06/03/2024

Sample No. :

MSKNB/ED/2023-24/03/JPS159

Date of receipt of sample:

02/03/2024

Date(s) of performance:

02/03/2024 - 06/03/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000158017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	29/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 17-31 deg C 2) Barometric Pressure: 706 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Sethi, Akash Sethy, Damabaru Dhar Dash
9. Field Equipments Used	MSK/BBU/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/513C4A**Sample No. :** MSKNB/ED/2023-24/03/JPS159

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.38
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per GPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

Authorized Signatory:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In Charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per GPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreechi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005059

Date :

05/03/2024

Sample No. :

MSKGL/ED/2023-24/03/00011

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn Mines TIMM
4. Date of sampling	29/02/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005059

Sample No. : MSKGL/ED/2023-24/03/00011

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	15.1
2	Carbon Monoxide (CO)	mg/m3	IS: 5182 (Part 10) (O)	2 8HR.	0.37
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS: 5182 (Part 6) (O)	80 24 HR.	22.6
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m3	IS: 5182 (Part 23) (O)	100 24 HR.	204
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24) 2019 (O)	60 24 HR.	96
7	Sulphur Dioxide (SO2)	micro gm/m3	IS: 5182 (Part 2) (O)	80 24 HR.	8.2

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000003073F

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/P1314Z

Date :

27/02/2024

Sample No. :

MSKNB/ED/2023-24/02/4N2BAU

Date of receipt of sample:

17/02/2024

Date(s) of performance:

17/02/2024 - 27/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/02/2024
5. Place of sampling	Palsa Kha Village
6. Environmental conditions during sampling & Transport	1) Temperature : 16-29 deg C 2) Barometric Pressure: 712 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS 5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Kshitish Kumar Mohanty
9. Field Equipments Used	MSK/BBU/FIELD/RDS-16

Report No. : MSKPL/ED/2023-24/P1314Z**Sample No. :** MSKNB/ED/2023-24/02/4N2BAU**RESULT****Chemical**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.07
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature : *P. Ganguly*
Name : Ms. Prial Ganguly
Designation : Executive Chemist

Authorized Signatory

Signature : *[Signature]*
Name : Dr. Souryashree Mukhopadhyay
Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreechi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005002

Date :

23/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00710

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Bamebar Iron & Mn. Mines (BIMM)
4. Date of sampling	14/02/2024
5. Place of sampling	Palsa Kha Village
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005002

Sample No. : MSKGL/ED/2023-24/02/00710

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	15.2
2	Carbon Monoxide (CO)	mg/m3	IS: 5182 (Part 10) (O)	2 8HR.	0.41
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS: 5182 (Part 6) (O)	80 24 HR.	21.2
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10um)	micro gm/m3	IS: 5182 (Part 23) (O)	100 24 HR.	168
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24).2019 (O)	60 24 HR.	82
7	Sulphur Dioxide (SO2)	micro gm/m3	IS: 5182 (Part 2) (O)	80 24 HR.	7.9

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-8950



Scan for Portal

ULR: TC-695024000003074F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

A/Po. - Joda, Dist - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/Q1314A

Date :

27/02/2024

Sample No. :

MSKNB/ED/2023-24/02/5R2B90

Date of receipt of sample:

17/02/2024

Date(s) of performance:

17/02/2024 - 27/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	14/02/2024
5. Place of sampling	Guruda Village
6. Environmental conditions during sampling & Transport	1) Temperature : 16-29 deg C 2) Barometric Pressure: 712 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Kshitish Kumar Mohanty
9. Field Equipments Used	MSK/BBL/FIELD/RDS-18

Report No. : MSKPL/ED/2023-24/Q1314A

Sample No. : MSKNB/ED/2023-24/02/5R2B90

RESULT

Chemical					
Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.12
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity : NA

— END —

Reviewed By:

Signature :

Name : Ms. Priya Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Soumyadeep Mukhopadhyay

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shradhi Centre (5th Floor), 748, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/005003

Date :

23/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00711

Reference No. & Date :

3000158017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahal Iron Mn. Mines (TIMM)
4. Date of sampling	14/02/2024
5. Place of sampling	Gunuda Village
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/005003

Sample No. : MSKGL/ED/2023-24/02/00711

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	14.6
2	Carbon Monoxide (CO)	mg/m ³	IS: 5182 (Part 10) (O)	2 8HR.	0.43
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS: 5182 (Part 6) (O)	80 24 HR.	20.5
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	<20.0
5	Particulate Matter (<10um)	micro gm/m ³	IS: 5182 (Part 23) (O)	100 24 HR.	173
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	83
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS: 5182 (Part 2) (O)	80 24 HR.	7.4

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

DUST FALL MONITORING REPORT

Report No. MSKGL/ED/2023-24/005092


Date: 07.03.2024

ANALYSIS REPORT OF DUSTFALL

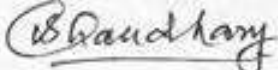
Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	TIRINGPAHAR IRON & MANGANESE MINES (TIMM)
Date of sampling	01.02.2024 to 29.02.2024
Location	Guruda Pit Office (TIMM)

CHEMICAL ANALYSIS OF WATER AS PER IS: 2490

Sl. No.	Test Parameters	Unite	Method	Results
1	Arsenic as (As)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m ² -mo)
2	Cadmium as (Cd)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m ² -mo)
3	Copper as (Cu)	None	EPA 3050 B (Digestion) EPA 6010 D (ICP-OES): 2018	0.0460 g/m ² -mo
4	Hexavalent Chromium as (Cr+6)	None	EPA 3060A_(O)	BDL(DL:0.0003 g/m ² -mo)
5	Iron as (Fe)	None	APHA 24th Edition, 2023 4500- O-C/G	1.835 g/m ² -mo
6	Lead as (Pb)	None	EPA 3050 B (Digestion) , EPA 6010 D (ICP-OES), July	BDL(DL:0.0003 g/m ² -mo)
7	Manganese as (Mn)	None	EPA 6010D_(O)	0.546 g/m ² -mo
8	Mercury as (Hg)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m ² -mo)
9	Selenium as (Se)	None	USEPA-29 - 25/06/1996_(O)	BDL(DL:0.0003 g/m ² -mo)
10	Zinc as (Zn)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D(ICP-OES): 2018	0.0045 g/m ² -mo

Checked by: 

For Mitra S. K. Private Limited



Authorized Signatory

At/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037

T : +91 94370 09815, 94370 09820, 94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com

Report No. MSKGL/ED/2023-24/005093


Date: 07.03.2024

ANALYSIS REPORT OF DUSTFALL

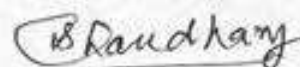
Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	TIRINGPAHAR IRON & MANGANESE MINES (TIMM)
Date of sampling	01.02.2024 to 29.02.2024
Location	Guruda Dumping Yard (TIMM)

CHEMICAL ANALYSIS OF WATER AS PER IS: 2490

Sl. No.	Test Parameters	Unite	Method	Results
1	Arsenic as (As)	None	EPA 3050 B (Digestion), 1996 EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m2-mo)
2	Cadmium (as Cd)	None	EPA 3050 B (Digestion), 1996 EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m2-mo)
3	Copper (as Cu)	None	EPA 3050 B (Digestion) EPA 6010 D (ICP-OES): 2018	0.0283 g/m2-mo
4	Hexavalent Chromium (as Cr+6)	None	EPA 3060A_(O)	BDL(DL:0.0003 g/m2-mo)
5	Iron (as Fe)	None	APHA 24th Edition, 2023 4500- O-C/G	2.860 g/m2-mo
6	Lead (as Pb)	None	EPA 3050 B (Digestion) , EPA 6010 D (ICP-OES), July	BDL(DL:0.0003 g/m2-mo)
7	Manganese (as Mn)	None	EPA 6010D_(O)	0.567 g/m2-mo
8	Mercury (as Hg)	None	EPA 3050 B (Digestion), 1996 EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m2-mo)
9	Selenium (as Se)	None	USEPA-29 - 25/06/1996_(O)	BDL(DL:0.0003 g/m2-mo)
10	Zinc (as Zn)	None	EPA 3050 B (Digestion), 1996 EPA 6010 D(ICP-OES): 2018	0.0077 g/m2-mo

Checked by: 

For Mitra S. K. Private Limited



Authorized Signatory

Report No. MSKGL/ED/2023-24/005094


Date: 07.03.2024

ANALYSIS REPORT OF DUSTFALL

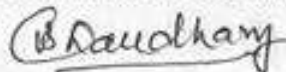
Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	TIRINGPAHAR IRON & MANGANESE MINES (TIMM)
Date of sampling	01.02.2024 to 29.02.2024
Location	Guruda Houli Road (TIMM)

CHEMICAL ANALYSIS OF WATER AS PER IS: 2490

Sl. No.	Test Parameters	Unite	Method	Results
1	Arsenic as (As)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m2-mo)
2	Cadmium as (Cd)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m2-mo)
3	Copper as (Cu)	None	EPA 3050 B (Digestion) EPA 6010 D (ICP-OES): 2018	0.0582 g/m2-mo
4	Hexavalent Chromium as (Cr+6)	None	EPA 3060A_(O)	BDL(DL:0.0003 g/m2-mo)
5	Iron as (Fe)	None	APHA 24th Edition, 2023 4500- O-C/G	15.409 g/m2-mo
6	Lead as (Pb)	None	EPA 3050 B (Digestion) , EPA 6010 D (ICP-OES), July	BDL(DL:0.0003 g/m2-mo)
7	Manganese as (Mn)	None	EPA 6010D_(O)	4.034 g/m2-mo
8	Mercury as (Hg)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m2-mo)
9	Selenium as (Se)	None	USEPA-29 - 25/06/1996_(O)	BDL(DL:0.0003 g/m2-mo)
10	Zinc as (Zn)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D(ICP-OES): 2018	0.0473g/m2-mo

Checked by:- 

For Mitra S. K. Private Limited



Authorized Signatory

At/P.O.: BARBIL Ward No-6
 Dist.: Keonjhar, Odisha - 758035
 CIN: U51909WB1956PTC023037

T : +91 94370 09615, 94370 09820, 94370 75269
 E : barbil@mitrask.co.in
 W : www.mitrask.com

Report No. MSKGL/ED/2023-24/005095


Date: 07.03.2024

ANALYSIS REPORT OF DUSTFALL

Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	TIRINGPAHAR IRON & MANGANESE MINES (TIMM)
Date of sampling	01.02.2024 to 29.02.2024
Location	Guruda Shorting Yard (TIMM)

CHEMICAL ANALYSIS OF WATER AS PER IS: 2490

Sl. No.	Test Parameters	Unit	Method	Results
1	Arsenic as (As)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m ² -mo)
2	Cadmium (as Cd)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m ² -mo)
3	Copper (as Cu)	None	EPA 3050 B (Digestion) EPA 6010 D (ICP-OES): 2018	0.0576 g/m ² -mo
4	Hexavalent Chromium (as Cr+6)	None	EPA 3060A_(O)	BDL(DL:0.0003 g/m ² -mo)
5	Iron (as Fe)	None	APHA 24th Edition, 2023 4500- O-C/G	14.009 g/m ² -mo
6	Lead (as Pb)	None	EPA 3050 B (Digestion) , EPA 6010 D (ICP-OES), July	BDL(DL:0.0003 g/m ² -mo)
7	Manganese (as Mn)	None	EPA 6010D_(O)	6.637 g/m ² -mo
8	Mercury (as Hg)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m ² -mo)
9	Selenium (as Se)	None	USEPA-29 - 25/06/1996_(O)	BDL(DL:0.0003 g/m ² -mo)
10	Zinc (as Zn)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D(ICP-OES): 2018	0.0968 g/m ² -mo

Checked by: 

For Mitra S. K. Private Limited


 Authorized Signatory

Report No. MSKGL/ED/2023-24/005097


Date: 07.03.2024

ANALYSIS REPORT OF DUSTFALL

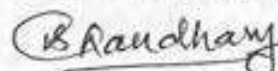
Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	TIRINGPAHAR IRON & MANGANESE MINES (TIMM)
Date of sampling	01.02.2024 to 29.02.2024
Location	Guruda Screen Plant (TIMM)

CHEMICAL ANALYSIS OF WATER AS PER IS: 2490

Sl. No.	Test Parameters	Unite	Method	Results
1	Arsenic as (As)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m ² -mo)
2	Cadmium (as Cd)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m ² -mo)
3	Copper (as Cu)	None	EPA 3050 B (Digestion) EPA 6010 D (ICP-OES): 2018	0.0765 g/m ² -mo
4	Hexavalent Chromium (as Cr+6)	None	EPA 3060A_(O)	BDL(DL:0.0003 g/m ² -mo)
5	Iron (as Fe)	None	APHA 24th Edition, 2023 4500- O-C/G	5.993 g/m ² -mo
6	Lead (as Pb)	None	EPA 3050 B (Digestion) , EPA 6010 D (ICP-OES), July	BDL(DL:0.0003 g/m ² -mo)
7	Manganese (as Mn)	None	EPA 6010D_(O)	1.718 g/m ² -mo
8	Mercury (as Hg)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m ² -mo)
9	Selenium (as Se)	None	USEPA-29 - 25/06/1996_(O)	BDL(DL:0.0003 g/m ² -mo)
10	Zinc (as Zn)	None	EPA 3050 B (Digestion), 1996 , EPA 6010 D(ICP-OES): 2018	0.0262 g/m ² -mo

Checked by:- 

For Mitra S. K. Private Limited



Authorized Signatory

Report No. MSKGL/ED/2023-24/005096


Date: 07.03.2024

ANALYSIS REPORT OF DUSTFALL

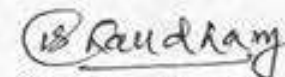
Name of the Client	M/s. TATA STEEL LIMITED
Name of the Mines	TIRINGPAHAR IRON & MANGANESE MINES (TIMM)
Date of sampling	01.02.2024 to 29.02.2024
Location	Near Stock Yard (TIMM)

CHEMICAL ANALYSIS OF WATER AS PER IS: 2490

Sl. No.	Test Parameters	Unite	Method	Results
1	Arsenic as (As)	None	EPA 3050 B (Digestion), 1996 EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m2-mo)
2	Cadmium (as Cd)	None	EPA 3050 B (Digestion), 1996 EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m2-mo)
3	Copper (as Cu)	None	EPA 3050 B (Digestion) EPA 6010 D (ICP-OES): 2018	0.0237 g/m2-mo
4	Hexavalent Chromium (as Cr+6)	None	EPA 3060A_(O)	BDL(DL:0.0003 g/m2-mo)
5	Iron (as Fe)	None	APHA 24th Edition, 2023 4500- O-C/G	31.603 g/m2-mo
6	Lead (as Pb)	None	EPA 3050 B (Digestion), EPA 6010 D (ICP-OES), July	BDL(DL:0.0003 g/m2-mo)
7	Manganese (as Mn)	None	EPA 6010D_(O)	6.993 g/m2-mo
8	Mercury (as Hg)	None	EPA 3050 B (Digestion), 1996 EPA 6010 D (ICP-OES): 2018	BDL(DL:0.0003 g/m2-mo)
9	Selenium (as Se)	None	USEPA-29 - 25/06/1996_(O)	BDL(DL:0.0003 g/m2-mo)
10	Zinc (as Zn)	None	EPA 3050 B (Digestion), 1996 EPA 6010 D(ICP-OES): 2018	0.0501 g/m2-mo

Checked by: 

For Mitra S. K. Private Limited


Authorized Signatory

ENVIRONMENTAL MONITORING REPORT

JANUARY
2024

TIRINGPAHAR IRON & MANGANESE MINES

At the request of :

M/s. TATA STEEL LIMITED
Bichakundi, Joda, Dist: Keonjhar
ODISHA

Conducted By:



M/s. MITRA S.K. PRIVATE LIMITED

At/Po – Barbil
Dist : Keonjhar, Odisha
Pin - 758 035

AMBIENT AIR QUALITY MONITORING REPORT

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001709F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/Y11FA7

Date :

05/02/2024

Sample No. :

MSKNB/ED/2023-24/01/UN205R

Date of receipt of sample:

16/01/2024

Date(s) of performance:

16/01/2024 - 05/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/058, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	11/01/2024
5. Place of sampling	NEAR GARUDA PIT OFFICE
6. Environmental conditions during sampling & Transport	1) Temperature :10-27 deg C 2) Barometric Pressure: 732 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS 5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN KUMAR NAIK, PRATIK KUMAR MANTRI
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/Y11FA7**Sample No. :** MSKNB/ED/2023-24/01/UN205R

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.02
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

----- END -----

Reviewed By:

Signature:

Name:

Designation: Executive Chemist

Mr. Pail Ganguly

Authorized Signatory:

Signature:

Name:

Designation: Lab in charge

Dr. Saikat Kumar Mukhopadhyay

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shraachi Centre (9th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM), Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004477

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00558

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tringpahar Iron & Mn. Mines
4. Date of sampling	11/01/2024
5. Place of sampling	Guruda Pit Office TMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004477

Sample No. : MSKGL/ED/2023-24/01/00558

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	16.3
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 : 1999 (Reaff 2014) (NDIR) (O)	2 8HR.	0.54
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 : 2006 (Reaff 2012) (O)	80 24 HR.	20.2
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	185
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	90
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 : 2001 (Reaff.2012) (O)	80 24 HR.	7.6

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001708F

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/G11FA2

Date :

05/02/2024

Sample No. :

MSKNB/ED/2023-24/01/NL204B

Date of receipt of sample:

16/01/2024

Date(s) of performance:

16/01/2024 - 05/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	11/01/2024
5. Place of sampling	NEAR GARUDA SORTING YARD TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :10-27 deg C 2) Barometric Pressure: 732 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5162(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN KUMAR NAIK, PRATIK KUMAR MANTRI
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/G11FA2**Sample No. :** MSKNB/ED/2023-24/01/NL204B**RESULT****Chemical**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.03
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.30
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	7.0

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:**Signature :****Name :** Mr. Pali Ganguly**Designation :** Executive Chemist**Authorized Signatory:****Signature :****Name :** Dr. Soumyadeep Mukhopadhyay**Designation :** Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Street Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33-40140000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004479

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00557

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Triungpohar Iron & Mn. Mines
4. Date of sampling	11/01/2024
5. Place of sampling	Near Guruda Sorting Yard TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA


Report No. : MSKGL/ED/2023-24/004479**Sample No. :** MSKGL/ED/2023-24/01/00557**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR) (O)	2 8HR.	0.48
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2008 (Reaff.2012) (O)	80 24 HR.	19.6
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2008 (Reaff. 2012) (O)	100 24 HR.	217
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	96
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	7.5

— END —

Report Verified By

For Mitra S. K. Private Limited


Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001707F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/F11F9G

Date :

05/02/2024

Sample No. :

MSKNB/ED/2023-24/01/E2206E

Date of receipt of sample:

16/01/2024

Date(s) of performance:

16/01/2024 - 05/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	11/01/2024
5. Place of sampling	NEAR GARUDA VIEW POINT TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 10-27 deg C; 2) Barometric Pressure: 732 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN KUMAR NAIK, PRATIK KUMAR MANTRI
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/F11F9G**Sample No. :** MSKNB/ED/2023-24/01/E2206E

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.03
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.54
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	24.0

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Ms. Prii Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Soumyadeep Mukherjee

Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Solid, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 748, A.J.C. Bose Road, Kolkata - 700015, West Bengal, India.
Tel. : 91 33 40143000 / 22550007 Fax : 91 33 22550008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004472

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00556

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tringabhar Iron & Mn. Mines
4. Date of sampling	11/01/2024
5. Place of sampling	Near Guruda View Point TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004472

Sample No. : MSKGL/ED/2023-24/01/00556

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.5
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 : 1999 (Reaff. 2014) (NDIR) (O)	2 8HR.	0.47
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 : 2006 (Reaff. 2012) (O)	80 24 HR.	18.5
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL 20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	184
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24), 2019 (O)	60 24 HR.	90
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 : 2001 (Reaff. 2012) (O)	80 24 HR.	7.5

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044038120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001715F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/L1202R

Date :

05/02/2024

Sample No. :

MSKNB/ED/2023-24/01/QT227L

Date of receipt of sample:

16/01/2024

Date(s) of performance:

16/01/2024 - 05/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	12/01/2024
5. Place of sampling	NEAR GURUDA PIT OFFICE TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 10-26 deg C 2) Barometric Pressure: 733 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN KUMAR NAIK, PRATIK KUMAR MANTRI
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/L1202R**Sample No. :** MSKNB/ED/2023-24/01/QT227L

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.02
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

----- END -----

Reviewed By:

Signature

Name

Mr. Piali Ganguly

Designation

Executive Chemist

Authorized Signatory:

Signature

Name

Dr. Soumyajit Mahapatra

Designation

Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 748, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22680009
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda Dist. - Keonjhar, Odisha - 758034 India Pin

TEST REPORT

Report No. :

MSKGL/ED/2023-24/004475

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00564

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tringpahar Iron & Mn. Mines
4. Date of sampling	12/01/2024
5. Place of sampling	Guruda Pit Office TMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004475

Sample No. : MSKGL/ED/2023-24/01/00564

RESULT**Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	16.6
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 : 1999 (Reaff. 2014) (NDIR) (O)	2 8HR.	0.40
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 : 2006 (Reaff. 2012) (O)	80 24 HR.	16.8
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	130
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24):2019 (O)	80 24 HR.	35
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 : 2001 (Reaff. 2012) (O)	80 24 HR.	9.6

----- END -----

Report Verified By



For Mitra S. K. Private Limited



Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001714F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/Z1201V

Date :

05/02/2024

Sample No. :

MSKNB/ED/2023-24/01/PE2254

Date of receipt of sample:

16/01/2024

Date(s) of performance:

16/01/2024 - 05/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	12/01/2024
5. Place of sampling	NEAR GURUDA SORTING YARD TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 10-26 deg C 2) Barometric Pressure: 733 mm of Hg 3) Rain fall : No. & Cold Chain Maintained
7. Sampling Plan & Method used	IS 5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN KUMAR NAIK, PRATIK KUMAR MANTRI
9. Field Equipments Used	MSK/BBU/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/Z1201V**Sample No. :** MSKNB/ED/2023-24/01/PE2254

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.16
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	18.4

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Mr. Pral Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Soumyadeep Mukherjee

Designation : LMO in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guidelines & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22050007 Fax : 91 33 22960008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

AsPo. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004481

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00563

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines
4. Date of sampling	12/01/2024
5. Place of sampling	Near Guruda Sorting Yard TMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004481

Sample No. : MSKGL/ED/2023-24/01/00563

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.5
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 : 1999 (Reaff. 2014) (NDIR) (O)	2 8HR.	0.35
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 : 2008 (Reaff. 2012) (O)	80 24 HR.	17.3
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2008 (Reaff. 2012) (O)	100 24 HR.	176
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24).2019 (O)	80 24 HR.	89
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 : 2001 (Reaff. 2012) (O)	80 24 HR.	BDL(DL:6.0)

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001713F

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM)_Joda West

Al/Pd. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/61201S

Date :

05/02/2024

Sample No. :

MSKNB/ED/2023-24/01/FJ2243

Date of receipt of sample:

16/01/2024

Date(s) of performance:

16/01/2024 - 05/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/066, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	12/01/2024
5. Place of sampling	NEAR GURUDA VIEW POINT TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 10-26 deg C 2) Barometric Pressure: 733 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN KUMAR NAIK, PRATIK KUMAR MANTRI
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/61201S**Sample No. :** MSKNB/ED/2023-24/01/FJ2243**RESULT****Chemical**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.37
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	7.8

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

----- END -----

Reviewed By:

Signature :

Name : Mr. Palli Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Souradeep Mukhopadhyay

Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004473

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00562

Reference No. & Date :

3000156017, Date - 28/03/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tringphar Iron & Mn. Mines
4. Date of sampling	12/01/2024
5. Place of sampling	Guruda View Point TMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004473

Sample No. : MSKGL/ED/2023-24/01/00562

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	18.2
2	Carbon Monoxide (CO)	mg/m3	IS 5182 : Part 10 : 1999 (Reaff.2014) (NDIR) (O)	2 8HR.	0.19
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS 5182 : Part 6 : 2006 (Reaff. 2012) (O)	80 24 HR.	27.5
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m3	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	138
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24),2019 (O)	60 24 HR.	72
7	Sulphur Dioxide (SO2)	micro gm/m3	IS 5182 : Part 2 : 2001 (Reaff.2012) (O)	80 24 HR.	6.6

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001814F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM), Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/012117

Date :

06/02/2024

Sample No. :

MSKNB/ED/2023-24/01/JQ3CAU

Date of receipt of sample:

24/01/2024

Date(s) of performance:

24/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	18/01/2024
5. Place of sampling	Near Guruda PFT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 18-28 deg C 2) Barometric Pressure: 733 mm of Hg 3) Rain fall No & Cold Chain Maintained
7. Sampling Plan & Method used	IS: 5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kr Mantri, Dhambudhar Das
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/012117

Sample No. : MSKNB/ED/2023-24/01/JQ3CAU

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

----- END -----

Reviewed By:

Signature : 
Name : Dr. Devottam Banerjee
Designation : Technical in charge

Authorized Signatory:

Signature : 
Name : Dr. Soumyadeep Bhattacharya
Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22500007 Fax : 91 33 22600008
Email : info@mitrask.com Website : www.mitrask.com

Mitra S. K. Private Limited

Address of Branch :

P.O. Barbil Dt Keonjhar Orissa 758 035



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004503

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00975

Reference No. & Date :

3000158017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn Mines
4. Date of sampling	18/01/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	Clear & sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004503

Sample No. : MSKGL/ED/2023-24/01/00975

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	16.3
2	Carbon Monoxide (CO)	mg/m3	IS 5182 : Part 10 : 1999 (Reaff.2014) (NDIR) (O)	2 8HR.	0.41
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS 5182 : Part 6 : 2006 (Reaff.2012) (O)	80 24 HR.	21.2
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m3	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	175
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24),2019 (O)	60 24 HR.	84
7	Sulphur Dioxide (SO2)	micro gm/m3	IS 5182 : Part 2 : 2001 (Reaff.2012) (O)	80 24 HR.	7.3

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Head Office: Shuchi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700018, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitras.com Website : www.mitrask.com

Page 1 of 1

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001813F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/X1211U

Date :

06/02/2024

Sample No. :

MSKNB/ED/2023-24/01/AY3C8Z

Date of receipt of sample:

24/01/2024

Date(s) of performance:

24/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000158017/056, Date - 18/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	18/01/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 18-28 deg C 2) Barometric Pressure: 733 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS: 5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kr Mantri, Dhambudhar Das
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/X1211U**Sample No. :** MSKNB/ED/2023-24/01/AY3C8Z

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.1
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.4
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	6.9

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

----- END -----

Reviewed By:

Signature:

Name: Dr. Devottam Banerjee

Designation: Technical In charge

Authorized Signatory

Signature:

Name: Dr. Sashyadeep Mukhopadhyay

Designation: Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India
Tel : 91 33 40143000 / 22850007 Fax : 91 33 22850008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004538

Date :

18/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00974

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tisingpohar Iron & Mn Mines
4. Date of sampling	18/01/2024
5. Place of sampling	Near Guruda Shorting Yard
6. Environmental conditions during sampling & Transport	Cloudy
7. Sampling Plan & Method used	NA

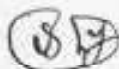
Report No. : MSKGL/ED/2023-24/004538**Sample No. :** MSKGL/ED/2023-24/01/00974

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	15.3
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 : 1999 (Reaff. 2014) (NDIR) (O)	2 8HR.	0.39
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 : 2006 (Reaff. 2012) (O)	80 24 HR.	18.6
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10µm)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	196
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	97
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 : 2001 (Reaff. 2012) (O)	80 24 HR.	6.8

— END —

Report Verified By**For Mitra S. K. Private Limited****Authorised Signatory**

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044038120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001812F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

A/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/V1210V

Date :

06/02/2024

Sample No. :

MSKNB/ED/2023-24/01/9C3CCM

Date of receipt of sample:

24/01/2024

Date(s) of performance:

24/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	18/01/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 18-28 deg C 2) Barometric Pressure: 733 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kr Mantri,Dhambrudhar Das
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/V1210V

Sample No. : MSKNB/ED/2023-24/01/9C3CCM

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.3
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	5.3

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In charge

Authorized Signatory:

Signature :

Name : Dr. Gouryaditya Mukhopadhyay

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004497

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00973

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringahar Iron & Mn. Mines
4. Date of sampling	18/01/2024
5. Place of sampling	Near Gunda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004497**Sample No. :** MSKGL/ED/2023-24/01/00973**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR) (O)	2 8HR.	0.46
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2006 (Reaff.2012) (O)	80 24 HR.	26.6
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10µm)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	177
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24):2019 (O)	60 24 HR.	64
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	6.8

— END —

Report Verified By

For Mitra S. K. Private Limited

 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001819F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/U12125

Date :

06/02/2024

Sample No. :

MSKNB/ED/2023-24/01/J03CDN

Date of receipt of sample:

24/01/2024

Date(s) of performance:

24/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	19/01/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 13-29 deg C 2) Barometric Pressure: 734 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS: 5152(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Dhambrudhar Das, Akash Kr. Sethy
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/U12125

Sample No. : MSKNB/ED/2023-24/01/J03CDN

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.45
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Dr. Devottam Banerjee

Designation : Technical In charge

Authorized Signatory:

Signature :

Name : Dr. Shubhadeep Mukherjee

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shraachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/ Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004498

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00980

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tringpahar Iron & Mn. Mines
4. Date of sampling	19/01/2024
5. Place of sampling	Near Gunada View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004498

Sample No. : MSKGL/ED/2023-24/01/00980

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 : 1999 (Reaff. 2014) (NDIR) (O)	2 8HR.	0.50
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 : 2006 (Reaff. 2012) (O)	80 24 HR.	15.5
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	192
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24):2019 (O)	60 24 HR.	97
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 : 2001 (Reaff. 2012) (O)	80 24 HR.	BDL(DL:6.0)

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P-48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001820F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM), Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/X1212C

Date :

06/02/2024

Sample No. :

MSKNB/ED/2023-24/01/L53C8C

Date of receipt of sample:

24/01/2024

Date(s) of performance:

24/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	19/01/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 13-29 deg C 2) Barometric Pressure: 734 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Dhambudhar Das, Akash Kr. Sethy, Pratik Mishra,
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/X1212C

Sample No. : MSKNB/ED/2023-24/01/L53C8C

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.27
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

----- END -----

Reviewed By:

Signature:

Name : Dr. Devottam Banerjee

Designation : Technical In charge

Authorized Signatory:

Signature:

Name : Dr. Soumyadeep Mukherjee

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 43143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004532

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00981

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tidingpahar Iron & Mn Mines
4. Date of sampling	19/01/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004532

Sample No. : MSKGL/ED/2023-24/01/00981

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	16.3
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR) (O)	2 8HR.	0.76
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2006 (Reaff.2012) (O)	80 24 HR.	18.5
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	144
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	60 24 HR.	75
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	BDL(DL-6.0)

----- END -----

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-69502400001950F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/Y1219H

Date :

07/02/2024

Sample No. :

MSKNB/ED/2023-24/01/JW455E

Date of receipt of sample:

29/01/2024

Date(s) of performance:

29/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	25/01/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 17-32 deg C 2) Barometric Pressure: 735 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5102(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kr.Mantri, Lalin Naik
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/Y1219H**Sample No. :** MSKNB/ED/2023-24/01/JW455E

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.26
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature:

Name: Ms. Priya Ganguly

Designation: Executive Chemist

Authorized Signatory:

Signature:

Name: Dr. Soumyajit Ghosh

Designation: Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 23650007 Fax : 91 33 22000028
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Orisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004596

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/01113

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tringpohar Iron & Mn. Mines TIMM
4. Date of sampling	25/01/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004596

Sample No. : MSKGL/ED/2023-24/01/01113

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	14.5
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 : 1999 (Reaff. 2014) (NDIR) (O)	2 8HR.	0.42
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 : 2006 (Reaff. 2012) (O)	80 24 HR.	15.6
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	142
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24) 2019 (O)	60 24 HR.	76
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 : 2001 (Reaff. 2012) (O)	80 24 HR.	7.3

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 46, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001951F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. : Joda, Dist. : Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/012191

Date :

07/02/2024

Sample No. :

MSKNB/ED/2023-24/01/VS4562

Date of receipt of sample:

29/01/2024

Date(s) of performance:

29/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date : 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	25/01/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :17-32 deg C 2) Barometric Pressure: 735 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPAv
8. Identification of the personnel performing sampling by MSK	Pratik Kr.Mandri, Lalit Naik
9. Field Equipments Used	MSK/BBL/FIELD/FDS-9

Report No. : MSKPL/ED/2023-24/012191

Sample No. : MSKNB/ED/2023-24/01/VS4562

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.25
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity : NA

— END —

Reviewed By:

Signature : P. Ganguly

Name : Ms. Priti Ganguly

Designation : Executive Chemist

Authorized Signatory

Signature :

Name : Dr. Soumyadeep Mukherjee

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700015, West Bengal, India.

Tel. : 91 33 40140000 / 22650007 Fax : 91 33 22650006

Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004606

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00009

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TMM
4. Date of sampling	25/01/2024
5. Place of sampling	Near Guruda PIT Office TMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004606

Sample No. : MSKGL/ED/2023-24/02/00009

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m3	IS 5182 : Part 10 : 1999 (Reaff. 2014) (NDR) (O)	2 8HR.	0.54
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS 5182 : Part 6 : 2006 (Reaff.2012) (O)	80 24 HR.	21.3
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m3	IS 5182: Part 23:2008 (Reaff. 2012) (O)	100 24 HR.	212
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24):2019 (O)	60 24 HR.	86
7	Sulphur Dioxide (SO2)	micro gm/m3	IS 5182 : Part 2 : 2001 (Reaff.2012) (O)	80 24 HR.	8.2

— END —

Report Verified By



For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001952F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/212193

Date :

07/02/2024

Sample No. :

MSKNB/ED/2023-24/01/XZ451Q

Date of receipt of sample:

29/01/2024

Date(s) of performance:

29/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	25/01/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :17-32 deg C 2) Barometric Pressure: 735 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS 5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kr.Mantri, Lalit Naik
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/212193**Sample No. :** MSKNB/ED/2023-24/01/XZ451Q

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

----- END -----

Reviewed By:

Signature :

Name : Ms. Piali Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Saumyadeep Mukhopadhyay

Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreechi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22050007 Fax : 91 33 22050009
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004594

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/01115

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TIMM
4. Date of sampling	25/01/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004594**Sample No. :** MSKGL/ED/2023-24/01/01115**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff.2014) (NDR) (O)	2 8HR.	0.44
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2006 (Reaff.2012) (O)	80 24 HR.	28.3
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10 _{um})	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	222
6	Particulate Matter (<2.5 _{um})	micro gm/m ³	IS 5182 (PT-24):2019 (O)	60 24 HR.	109
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	8.6

— END —

Report Verified By



For Mitra S. K. Private Limited


Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001957F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd. (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/0121BB

Date :

07/02/2024

Sample No. :

MSKNB/ED/2023-24/01/LB450P

Date of receipt of sample:

29/01/2024

Date(s) of performance:

29/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	26/01/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 17-32 deg C 2) Barometric Pressure: 734 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kr. Mantri, Lalit Naik
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/0121BB

Sample No. : MSKNB/ED/2023-24/01/LB450P

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.35
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	5.9

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature : *P. Ganguly*
Name : Mr. Pratik Ganguly
Designation : Executive Chemist

Authorized Signatory:

Signature : *Dr. Soumyadeep Mukhopadhyay*
Name : Dr. Soumyadeep Mukhopadhyay
Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per GPCB guideline & (Air) 1 month from the date of issue of the Test Report. The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004587

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/01120

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

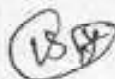
1. Group	Air
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TMM
4. Date of sampling	26/01/2024
5. Place of sampling	Near Guruda View Point-TMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004587**Sample No. :** MSKGL/ED/2023-24/01/01120**RESULT****Analysis Result of Ambient Air**

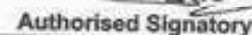
Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR) (O)	2 8HR.	0.46
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2006 (Reaff.2012) (O)	60 24 HR.	20.2
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(20.0)
5	Particulate Matter (<10µm)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	165
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24).2019 (O)	60 24 HR.	74
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	BDL(DL-6.0)

— END —

Report Verified By



For Mitra S. K. Private Limited


 Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-8950



Scan for Portal

ULR: TC-695024000001958F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

AVPo. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/F121BX

Date :

07/02/2024

Sample No. :

MSKNB/ED/2023-24/01/S5451R

Date of receipt of sample:

29/01/2024

Date(s) of performance:

29/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000158017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	26/01/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :17-32 deg C 2) Barometric Pressure: 734 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kr.Mantri, Lalit Naik
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/F121BX

Sample No. : MSKNB/ED/2023-24/01/S5451R

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 16th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature: P. Ganguly

Name: Ms. Pooi Ganguly

Designation: Executive Chemist

Authorized Signatory

Signature: Dr. Soumyadeep Mondopadhyay

Name: Dr. Soumyadeep Mondopadhyay

Designation: Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004595

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/01121

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TIMM
4. Date of sampling	26/01/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004595**Sample No. :** MSKGL/ED/2023-24/01/01121**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff.2014) (NDR) (O)	2 8HR.	0.62
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2006 (Reaff.2012) (O)	80 24 HR.	17.3
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10µm)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	178
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24):2019 (O)	60 24 HR.	88
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	7.7

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044038120
Email: udayanlab@mitrask.com



TC-8950



Scan for Portal

ULR: TC-695024000001959F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

A/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/Q121BY

Date :

07/02/2024

Sample No. :

MSKNB/ED/2023-24/01/SD452W

Date of receipt of sample:

29/01/2024

Date(s) of performance:

29/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	26/01/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :17-32 deg C 2) Barometric Pressure: 734 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kr.Mantri, Lalin Naik
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/Q121BY

Sample No. : MSKNB/ED/2023-24/01/SD452W

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.03
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.22
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	6.0

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity : NA

— END —

Reviewed By:

Signature :

Name : Ms. Priya Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Soumyadeep Mukherjee

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per GPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shashi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700015, West Bengal, India.
Tel. : 91 33 40143000 / 22000037 Fax : 91 33 22950008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004590

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/01122

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TMM
4. Date of sampling	26/01/2024
5. Place of sampling	Near Guruda PIT Office TMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004590**Sample No. :** MSKGL/ED/2023-24/01/01122**RESULT****Analysis Result of Ambient Air**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 : 1999 (Reaff. 2014) (NOIR) (O)	2 8HR.	0.53
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 : 2006 (Reaff. 2012) (O)	80 24 HR.	20.2
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10 _{um})	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	215
6	Particulate Matter (<2.5 _{um})	micro gm/m ³	IS 5182 (PT-24):2019 (O)	60 24 HR.	121
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 : 2001 (Reaff. 2012) (O)	80 24 HR.	7.8

— END —

Report Verified By**For Mitra S. K. Private Limited****Authorised Signatory**

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002254F

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/T121B7

Date :

12/02/2024

Sample No. :

MSKNB/ED/2023-24/02/57UD18

Date of receipt of sample:

01/02/2024

Date(s) of performance:

01/02/2024 - 12/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	29/01/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 18-33 deg C 2) Barometric Pressure: 735 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Kr Setty
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/T121B7**Sample No. :** MSKNB/ED/2023-24/02/57UD18**RESULT****Chemical**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.41
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	7.5

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature : P. Ganguly

Name : Ms. Priet Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature : S. Sanyal

Name : Dr. Sanyal Mukhesh Chandra

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shivaji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22050007 Fax : 91 33 22690006
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004612

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00007

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TIMM
4. Date of sampling	29/01/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004612

Sample No. : MSKGL/ED/2023-24/02/00007

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff.2014) (NDIR) (O)	2 8HR.	0.35
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2006 (Reaff.2012) (O)	80 24 HR.	19.7
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	162
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24) 2019 (O)	60 24 HR.	71
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	BDL(DL:8.0)

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002256F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/W121BL

Date :

12/02/2024

Sample No. :

MSKNB/ED/2023-24/02/VY807P

Date of receipt of sample:

01/02/2024

Date(s) of performance:

01/02/2024 - 12/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	29/01/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 18-33 deg C 2) Barometric Pressure: 735 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS: 5102(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Kr Setty
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/W121BL

Sample No. : MSKNB/ED/2023-24/02/VY807P

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.09
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature : P. Ganguly

Name : Mr. Pali Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Dr. Soumyadeep Mukherjee

Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Strachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700019, West Bengal, India.

Tel. : 91 33 40143000 / 22660007 Fax : 91 33 22660008

Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004585

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/01114

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TIMM
4. Date of sampling	10/02/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004585

Sample No. : MSKGL/ED/2023-24/01/01114

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff.2014) (NOIR) (O)	2 8HR.	0.46
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2006 (Reaff.2012) (O)	80 24 HR.	16.6
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10µm)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	165
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24):2019 (O)	60 24 HR.	76
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	BDL(DL:6.0)

— END —

Report Verified By



For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002255F

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM)_Joda West

A/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/L121BQ

Date :

12/02/2024

Sample No. :

MSKNB/ED/2023-24/02/K8RS2A

Date of receipt of sample:

01/02/2024

Date(s) of performance:

01/02/2024 - 12/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000158017/055, Date - 15/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	29/01/2024
5. Place of sampling	Near Guryda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 18-33 deg C 2) Barometric Pressure: 735 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pranab Kr Setty
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/L121BQ**Sample No. :** MSKNB/ED/2023-24/02/K8RS2A**RESULT****Chemical**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.02
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.31
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	10.4

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

----- END -----

Reviewed By:

Signature :

Name : Mr. Pril Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : Sumedha Mukhopadhyay

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Solid, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40143000 / 22550007 Fax : 91 33 22550005
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004607

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00008

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpohar Iron & Mn. Mines TIMM
4. Date of sampling	29/01/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004607

Sample No. : MSKGL/ED/2023-24/02/00008

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff.2014) (NDR) (O)	2 8HR.	0.51
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2006 (Reaff.2012) (O)	80 24 HR.	18.1
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	181
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24) 2019 (O)	60 24 HR.	86
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	7.2

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-8950



Scan for Portal

ULR: TC-695024000002168F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/D121BS

Date :

10/02/2024

Sample No. :

MSKNB/ED/2023-24/02/ZLUC5L

Date of receipt of sample:

02/02/2024

Date(s) of performance:

02/02/2024 - 10/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	30/01/2024
5. Place of sampling	Near Guruda PIT Office TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :18-33 deg C 2) Barometric Pressure: 735 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS:5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN NAIK
9. Field Equipments Used	MSK/BBL/FIELD/FDS-10

Report No. : MSKPL/ED/2023-24/D121BS**Sample No. :** MSKNB/ED/2023-24/02/ZLUC5L

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	BDL(DL:0.01)
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion :

Limit as per CPCB notification, New Delhi, 16th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature : P. Ganguly

Name : Ms. Prii Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature : Dr. Soumyadip Mukhopadhyay

Name : Dr. Soumyadip Mukhopadhyay

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Solid, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed Food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Strach Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.

Tel. : 91 33 40143000 / 22650007 Fax. : 91 33 22650006

Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004620

Date :

12/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00016

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tingpohar Iron & Mn. Mines TMM
4. Date of sampling	30/01/2024
5. Place of sampling	Near Guruda PIT Office TMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004620

Sample No. : MSKGL/ED/2023-24/02/00016

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff.2014) (NOIR) (O)	2 8HR.	0.46
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2006 (Reaff.2012) (O)	80 24 HR.	20.7
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10µm)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	201
6	Particulate Matter (<2.5µm)	micro gm/m ³	IS 5182 (PT-24):2019 (O)	60 24 HR.	106
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	7.8

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002167F

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/E121B1

Date :

10/02/2024

Sample No. :

MSKNB/ED/2023-24/02/TH228J

Date of receipt of sample:

02/02/2024

Date(s) of performance:

02/02/2024 - 10/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000158017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	30/01/2024
5. Place of sampling	Near Guruda Shorting Yard- TIMM
6. Environmental conditions during sampling & Transport	1) Temperature :18-33 deg C 2) Barometric Pressure: 735 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN NAIK
9. Field Equipments Used	MSK/BBL/FIELD/RDS-9

Report No. : MSKPL/ED/2023-24/E121B1**Sample No. :** MSKNB/ED/2023-24/02/TH228J**RESULT****Chemical**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4: June	Not Specified	0.14
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	13.8

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

----- END -----

Reviewed By:

Signature : P. Ganguly

Name : Ms. Palli Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name :

Designation :

Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel : 91 33 40143000 / 22650007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004609

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/000015

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpehar Iron & Mn. Mines TIMM
4. Date of sampling	30/01/2024
5. Place of sampling	Near Guruda Shoring Yard- TIMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004609

Sample No. : MSKGL/ED/2023-24/000015

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	10.2
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 : 1999 (Reaff. 2014) (NDIR) (O)	2 8HR.	0.48
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 : 2006 (Reaff. 2012) (O)	80 24 HR.	20.1
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2008 (Reaff. 2012) (O)	100 24 HR.	175
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24),2019 (O)	80 24 HR.	93
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 : 2001 (Reaff. 2012) (O)	80 24 HR.	7.1

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorized Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000002166F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/L121B6

Date :

10/02/2024

Sample No. :

MSKNB/ED/2023-24/02/SP0B6X

Date of receipt of sample:

02/02/2024

Date(s) of performance:

02/02/2024 - 10/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	30/01/2024
5. Place of sampling	Near Guruda View Point-TIMM
6. Environmental conditions during sampling & Transport	1) Temperature : 18-33 deg C 2) Barometric Pressure: 735 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11,12) & USEPA
8. Identification of the personnel performing sampling by MSK	LALIN NAIK
9. Field Equipments Used	MSK/BBL/FIELD/RDS-7

Report No. : MSKPL/ED/2023-24/L121B6**Sample No. :** MSKNB/ED/2023-24/02/SP0B6X

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	0.03
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.31
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	7.2

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature :

Name : Ms. Palli Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature :

Name : S. Sanyal

Designation : Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shree Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.

Tel. : 91 33 40143000 / 22650007 Fax : 91 33 22550008

Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

Name & Address of Customer :

Tata Steel Ltd.(MGM) Joda West

As/Pos. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

TEST REPORT

Report No. :

MSKGL/ED/2023-24/004615

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/02/00014

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TMM
4. Date of sampling	30/01/2024
5. Place of sampling	Near Gurude View Point-TMM
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004615

Sample No. : MSKGL/ED/2023-24/02/00014

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	10.5
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 :1999 (Reaff. 2014) (NDIR) (O)	2 8HR.	0.28
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 :2006 (Reaff. 2012) (O)	80 24 HR.	20.1
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	157
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24):2019 (O)	60 24 HR.	75
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff. 2012) (O)	80 24 HR.	BDL(DL-6.0)

----- END -----

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel : +91 7044038120
Email: udayanlab@mitrask.com



TC-8950



Scan for Portal

ULR: TC-69502400001845F

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd (MGM)_Joda West

Al/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India

Report No. :

MSKPL/ED/2023-24/F12169

Date :

08/02/2024

Sample No. :

MSKNB/ED/2023-24/01/2D451A

Date of receipt of sample:

27/01/2024

Date(s) of performance:

27/01/2024 - 06/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000158017/056, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	24/01/2024
5. Place of sampling	Guruda Village
6. Environmental conditions during sampling & Transport	1) Temperature : 16-31 deg C 2) Barometric Pressure: 734 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS 5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	Pratik Kr. Mantri, Lalit Naik,
9. Field Equipments Used	MSK/BBL/FIELD/RDS-18

Report No. : MSKPL/ED/2023-24/F12169

Sample No. : MSKNB/ED/2023-24/01/2D451A

RESULT

Chemical

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL:1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL:4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL:0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL:0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.19
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL:5.0)

Opinion : Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

— END —

Reviewed By:

Signature : P. Ganguly

Name : Ms. Preet Ganguly

Designation : Executive Chemist

Authorized Signatory:

Signature : Dr. Soumyadeep Mukhopadhyay

Name : Dr. Soumyadeep Mukhopadhyay

Designation : Lab in charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shreeji Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700018, West Bengal, India.
Tel : 91 33 40143000 / 22660007 Fax : 91 33 22660008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004588

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/01108

Reference No. & Date :

3000156017/056, Date - 15/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	Tiringpahar Iron & Mn. Mines TIMM
4. Date of sampling	24/01/2024
5. Place of sampling	Guruda Village (Buffer Zone)
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004588

Sample No. : MSKGL/ED/2023-24/01/01108

RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH3)	micro gm/m3	IS 5182 (Part 25)	400 24 HR.	15.2
2	Carbon Monoxide (CO)	mg/m3	IS 5182 : Part 10 : 1999 (Reaff.2014) (NDIR) (O)	2 8HR.	0.41
3	Nitrogen Dioxide (NO2)	micro gm/m3	IS 5182 : Part 6 : 2006 (Reaff.2012) (O)	80 24 HR.	22.2
4	Ozone (O3)	micro gm/m3	IS 5182 (Part 9)	180 1 HR.	BDL(DL-20.0)
5	Particulate Matter (<10um)	micro gm/m3	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	161
6	Particulate Matter (<2.5um)	micro gm/m3	IS 5182 (PT-24).2019 (O)	60 24 HR.	78
7	Sulphur Dioxide (SO2)	micro gm/m3	IS 5182 : Part 2 : 2001 (Reaff.2012) (O)	80 24 HR.	7.6

— END —

Report Verified By

For Mitra S. K. Private Limited

Authorised Signatory

Address of Laboratory :

Building No, P- 48, Udayan Industrial Estate,
3, Pagladanga Road, Kolkata 700015
West Bengal
Tel. : +91 7044036120
Email: udayanlab@mitrask.com



TC-6950



Scan for Portal

ULR: TC-695024000001732F

TEST REPORT**Name & Address of Customer :**

Tata Steel Ltd.(MGM)_Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 759034 India

Report No. :

MSKPL/ED/2023-24/0120CR

Date :

05/02/2024

Sample No. :

MSKNB/ED/2023-24/01/YT2729

Date of receipt of sample:

20/01/2024

Date(s) of performance:

20/01/2024 - 05/02/2024

Location of performance of

Permanent Facility

Reference No. & Date :

3000156017/058, Date - 16/09/2023

Discipline:

Chemical

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	Atmospheric Pollution
2. Description of sample	Ambient Air
3. Unique Identification of sample(if any)	NA
4. Date of sampling	17/01/2024
5. Place of sampling	JAJANG HIGH SCHOOL
6. Environmental conditions during sampling & Transport	1) Temperature : 11-27 deg C 2) Barometric Pressure: 732 mm of Hg 3) Rain fall : No & Cold Chain Maintained
7. Sampling Plan & Method used	IS-5182(P-11, 12) & USEPA
8. Identification of the personnel performing sampling by MSK	PRATIK KUMAR MANTRI, DAMBARUDHAR DAS
9. Field Equipments Used	MSK/BBL/FIELD/RDS-14

Report No. : MSKPL/ED/2023-24/0120CR**Sample No. :** MSKNB/ED/2023-24/01/YT2729**RESULT****Chemical**

Sl No.	Parameter	UOM	Method	Limit	Result
1	Arsenic as (As)	ng/m3	USEPA-IO 3.4, June	6 (Annual)	BDL(DL-1.0)
2	Benzene	micro gm/m3	IS 5182 (Part 11)	5 (Annual)	BDL(DL-4.2)
3	Benzo(a)Pyrene	ng/m3	IS 5182 (Part 12)	1 (Annual)	BDL(DL-0.5)
4	Lead (as Pb)	micro gm/m3	USEPA-IO 3.4, June	1 (24 Hours)	BDL(DL-0.01)
5	Manganese as Mn	micro gm/m3	USEPA-IO 3.4, June	Not Specified	0.02
6	Nickel as Ni	ng/m3	USEPA-IO 3.4, June	20 (Annual)	BDL(DL-5.0)

Opinion :

Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Statement of Conformity NA

----- END -----

Reviewed By:

Signature:

Name: Dr. Divotam Banerjee

Designation: Technical in charge

Authorized Signatory:

Signature:

Name: Dr. Soumyadeep Mukhopadhyay

Designation: Lab In charge

The results relate only to the item(s) tested.

This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.

The reserved part of sample(s) for chemical analysis (Non - perishable sample(s) Food, Water) shall be retained for 15 days from the date of issue of the Test Report. Perishable sample(s) shall be retained 2 days from the date of issue of the Test Report.

The reserved part of sample(s) for chemical analysis (Soil, Solid & Liquid Waste) shall be retained for 15 days as per CPCB guideline & (Air) 1 month from the date of issue of the Test Report.

The reserved part of sample(s) for Microbiological analysis (Non - perishable sample(s) Food, Sealed Water, Sealed food) shall be retained for 15 days from the date of issue of the Test Report.

Head Office: Shrachi Centre (5th Floor), 74B, A.J.C. Bose Road, Kolkata - 700016, West Bengal, India.
Tel. : 91 33 40142000 / 22050007 Fax : 91 33 22650008
Email : info@mitrask.com Website : www.mitrask.com



Scan for Portal

TEST REPORT

Name & Address of Customer :

Tata Steel Ltd (MGM) Joda West

At/Po. - Joda, Dist. - Keonjhar, Odisha - 758034 India Pin

Report No. :

MSKGL/ED/2023-24/004470

Date :

10/02/2024

Sample No. :

MSKGL/ED/2023-24/01/00626

Reference No. & Date :

3000156017, Date - 28/09/2023

We hereby certify that the following sample Drawn by us has been analyzed with the following results:

1. Group	AIR
2. Description of sample	Ambient Air (Buffer zone)
3. Unique Identification of sample(if any)	Tingpishar Iron & Mn. Mines
4. Date of sampling	17/01/2024
5. Place of sampling	Jajang High School
6. Environmental conditions during sampling & Transport	Clear & Sunny
7. Sampling Plan & Method used	NA

Report No. : MSKGL/ED/2023-24/004470**Sample No. :** MSKGL/ED/2023-24/01/00626

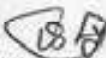
RESULT

Analysis Result of Ambient Air

Sl No.	Parameter	UOM	Method	Limit	Result
1	Ammonia (NH ₃)	micro gm/m ³	IS 5182 (Part 25)	400 24 HR.	BDL(DL:10.0)
2	Carbon Monoxide (CO)	mg/m ³	IS 5182 : Part 10 : 1999 (Reaff.2014) (NDIR) (O)	2 8HR.	0.34
3	Nitrogen Dioxide (NO ₂)	micro gm/m ³	IS 5182 : Part 6 : 2006 (Reaff.2012) (O)	80 24 HR.	18.6
4	Ozone (O ₃)	micro gm/m ³	IS 5182 (Part 9)	180 1 HR.	BDL(DL:20.0)
5	Particulate Matter (<10um)	micro gm/m ³	IS 5182: Part 23:2006 (Reaff. 2012) (O)	100 24 HR.	144
6	Particulate Matter (<2.5um)	micro gm/m ³	IS 5182 (PT-24):2019 (O)	60 24 HR.	71
7	Sulphur Dioxide (SO ₂)	micro gm/m ³	IS 5182 : Part 2 :2001 (Reaff.2012) (O)	80 24 HR.	BDL(DL:6.0)

— END —

Report Verified By



For Mitra S. K. Private Limited

Authorised Signatory



Test Report

Page 1 of 1

Ambient Air Quality Monitoring Report-November-2023

Report No.: AN/AAQ/TS-JEIM/2023/1-6			Date: 04/12/2023	
Name and Address of Industry:-	M/s Tiringpahad Iron & Manganese Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962
			W. O. date:	22/03/2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/22112023/ENV-283-11/JEIM-CZ/AAQMS-11 and ALPL/22112023/ENV-283-12/JEIM-CZ/AAQMS-12	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	6,13,20,27 November-2023 & 2-December-2023	
Test Started On:-	6,13,20,27 Nov-2023 & 2-Dec-2023	Test Completed On:-	7,16,21,28 November-2023& 4-Dec-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³ IS 5182 (Part 23)	PM _{2.5} µg/m ³ USEPA-40 (Part 50)	SO ₂ µg/m ³ IS 5182 (Part-2)	NO ₂ µg/m ³ IS 5182 (Part-6)	CO mg/m ³ IS 5182 (Part-10)
Method Reference							
AAQMS-11	Near Guruda Sorting Yard- TIMM	04/11/2023	62.9	20.3	12.0	26.8	BDL (DL – 0.5)
		08/11/2023	60.2	19.4	10.8	26.0	BDL (DL – 0.5)
		11/11/2023	53.6	18.2	10.3	25.6	BDL (DL – 0.5)
		17/11/2023	58.1	19.7	11.2	26.1	BDL (DL – 0.5)
		22/11/2023	61.5	23.8	12.9	27.9	BDL (DL – 0.5)
		25/11/2023	60.2	19.3	12.0	26.4	BDL (DL-0.5)
		27/11/2023	54.5	18.2	11.2	27.8	BDL (DL-0.5)
		30/11/2023	56.9	20.0	12.9	26.6	BDL (DL – 0.5)
Monthly Average Value			58.5	19.9	11.7	26.7	BDL (DL – 0.5)
AAQMS-12	Near Guruda Project Office- TIMM	04/11/2023	58.2	27.0	15.3	19.7	BDL (DL-0.5)
		08/11/2023	62.8	21.3	14.7	23.9	BDL (DL-0.5)
		11/11/2023	62.8	21.5	12.0	21.8	BDL (DL-0.5)
		17/11/2023	57.3	18.5	11.2	25.1	BDL (DL-0.5)
		22/11/2023	63.9	25.9	12.6	27.4	BDL (DL-0.5)
		25/11/2023	57.1	20.4	13.3	28.0	BDL (DL-0.5)
		27/11/2023	54.2	18.8	11.8	17.2	BDL (DL-0.5)
		30/11/2023	58.3	21.3	12.7	27.9	BDL (DL-0.5)
Monthly Average Value			59.3	21.8	13.0	23.9	BDL (DL-0.5)

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and, applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • BDL- Below detection limit.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Snehal Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway

Dr. (Mrs.) S. D. Garway

Quality Manager

-----End of Report-----





Test Report

Page 1 of 1

Ambient Air Quality Monitoring Report-November-2023

Report No.: AN/AAQ/TS-JEIM/2023/1-7			Date: 04/12/2023	
Name and Address of Industry:-	M/s Tiringpahad Iron & Manganese Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962
			W. O. date:	22/03/2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/22112023/ENV-283-13/JEIM-CZ/AAQMS-13	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	6,13,20,27 November-2023 & 2-December-2023	
Test Started On:-	6,13,20,27 Nov-2023 & 2-Dec-2023	Test Completed On:-	7,16,21,28 November-2023& 4-Dec-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³ IS 5182 (Part 23)	PM _{2.5} µg/m ³ USEPA-40 (Part 50)	SO ₂ µg/m ³ IS 5182 (Part-2)	NO ₂ µg/m ³ IS 5182 (Part-6)	CO mg/m ³ IS 5182 (Part-10)
Method Reference							
AAQMS-13	Near Guruda View Point-TIMM	04/11/2023	63.6	23.7	15.0	28.9	BDL (DL-0.5)
		08/11/2023	70.2	28.8	16.4	36.1	BDL (DL-0.5)
		11/11/2023	68.1	26.8	17.2	31.6	BDL (DL-0.5)
		17/11/2023	64.6	23.7	15.3	28.9	BDL (DL-0.5)
		22/11/2023	70.2	28.2	17.4	37.8	BDL (DL-0.5)
		25/11/2023	64.0	28.2	12.8	34.3	BDL (DL-0.5)
		27/11/2023	63.4	21.8	11.8	29.1	BDL (DL-0.5)
		30/11/2023	68.1	25.9	15.2	34.8	BDL (DL-0.5)
Monthly Average Value			66.5	25.9	15.1	32.7	BDL (DL-0.5)

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • BDL- Below detection limit.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Sneha Raut

Sneha Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway

Dr. (Mrs.) S. D. Garway
Quality Manager

---End of Report---





Test Report

Page 1 of 1

Ambient Air Quality Monitoring Report-November-2023

Report No.: AN/AAQ/TS-JEIM/2023/1-12			Date: 04/12/2023
Name and Address of Industry:-	M/s Tiringpahad Iron & Manganese Mine (M/s TATA Steel Limited)		W. O. No.
			4700098928/962 22.03.2022
Sample Description/Type	Ambient Air Quality (Buffer Zone)	Sample Ref. No.:-	ALPL/22112023/ENV-283-24/JEIM-BZ/AAQMS-11 & ALPL/22112023/ENV-283-25/JEIM-BZ/AAQMS-12
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	13-November-2023
Test Started On:-	17-November-2023	Test Completed On:-	18-November-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-11	Jajang High School	11/11/2023	52.9	23.4	9.1	21.6	BDL (DL-0.5)
Monthly Average Value			52.9	23.4	9.1	21.6	BDL (DL-0.5)
AAQMS-12	Jurudi Village	11/11/2023	51.6	17.3	7.6	18.4	BDL (DL-0.5)
Monthly Average Value			51.6	17.3	7.6	18.4	BDL (DL-0.5)
NAAQM Standard			100 (24 hrs)	60 (24 hrs)	80 (24 hrs)	80 (24 hrs)	2 (8hrs)

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • BDL- Below detection limit.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Snehal Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----





**Anacon
Laboratories**

Anacon Laboratories Pvt. Ltd. Nagpur Lab
 Q FP-34, 35, Food Park, Five Star Industrial Estate,
 MIDC Butibori, Nagpur, Maharashtra, India - 441 122
 ☎ + 91 8045685558 ✉ Email : info@anacon.in
 🌐 https://www.anaconlaboratories.com

Test Report

Fugitive Emission Monitoring Report-November-2023

Report No.: AN/FE/TS-JEIM/2023/1-15			Date: 30/11/2023
Name and Address of Industry:-	M/s Tiringpahad Iron & Manganese Mine (M/s TATA Steel Limited)		W. O. No.
			4700098928/962 22.03.2022
Sample Description/Type	Fugitive Emission	Sample Ref. No.:-	ALPL/22112023/ENV-283- /JEIM/FE-1 to 12
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	27/11/2023
Test Started On:-	28/11/2023	Test Completed On:-	28/11/2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sl. No.	Location Name	Date of sampling	TSPM µg/m ³
Method Reference			IS 5182 (Part 23)
FE-1	Haul Road Near Guruda	20/11/2023	673
FE-2	Sorting Yard Guruda	20/11/2023	491
FE-3	Near View Point Mine Guruda	20/11/2023	564
FE-4	Near Screen Plant	20/11/2023	492
MoEF & CC Norms:		1200 µg/m ³	

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Snehal Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway

Dr. (Mrs.) S. D. Garway
Quality Manager

-----End of Report-----

Thank you for instilling your trust and faith in our services. We cherish our relationship with you, and we put in a lot of hard work in making sure that you get a seamless experience at every stage of your interaction with us. In our constant endeavor towards ensuring that your next experience will be significantly better than the current one, we welcome your feedback on feedback@anacon.in.





Test Report

Page 1 of 1

Ambient Air Quality Monitoring Report-October-2023

Report No.: AN/AAQ/TS-JEIM/2023/1-6			Date: 03/11/2023	
Name and Address of Industry:-	M/s Tiringpahad Iron & Manganese Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962
			, W. O. date:	22/03/2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/23102023/ENV-261-11/JEIM-CZ/AAQMS-11 and ALPL/23102023/ENV-261-12/JEIM-CZ/AAQMS-12	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	9,16,23,30 October -2023	
Test Started On:-	9,16,23,30 October-2023	Test Completed On:-	10,17,25,31 October-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³ IS 5182 (Part 23)	PM _{2.5} µg/m ³ IS 5182 (Part 50)	SO ₂ µg/m ³ IS 5182 (Part-2)	NO ₂ µg/m ³ IS 5182 (Part-6)	CO mg/m ³ IS 5182 (Part-10)
Method Reference:							
AAQMS-11	Near Guruda Sorting Yard- TIMM	04/10/2023	59.7	19.6	10.3	24.7	BDL (DL - 0.5)
		07/10/2023	61.1	22.1	9.4	26.2	BDL (DL - 0.5)
		11/10/2023	65.5	23.8	10.5	23.8	BDL (DL - 0.5)
		14/10/2023	62.2	20.9	11.1	25.6	BDL (DL - 0.5)
		18/10/2023	70.5	26.7	11.8	24.4	BDL (DL - 0.5)
		21/10/2023	68.6	22.6	10.5	24.1	BDL (DL-0.5)
		25/10/2023	72.4	24.3	11.6	27.0	BDL (DL-0.5)
		28/10/2023	57.5	22.9	13.3	27.2	BDL (DL - 0.5)
Monthly Average Value			64.7	22.9	11.1	25.4	BDL (DL - 0.5)
AAQMS-12	Near Guruda Project Office- TIMM	04/10/2023	65.3	24.2	8.7	17.1	BDL (DL-0.5)
		07/10/2023	62.8	22.5	7.9	15.3	BDL (DL-0.5)
		11/10/2023	68.3	25.4	6.5	16.5	BDL (DL-0.5)
		14/10/2023	70.6	26.7	8.7	18.0	BDL (DL-0.5)
		18/10/2023	56.7	23.4	8.3	15.3	BDL (DL-0.5)
		21/10/2023	49.5	20.9	7.5	16.2	BDL (DL-0.5)
		25/10/2023	72.8	27.2	6.7	18.3	BDL (DL-0.5)
		28/10/2023	64.5	25.1	7.3	19.9	BDL (DL-0.5)
Monthly Average Value			63.8	24.4	7.7	17.1	BDL (DL-0.5)

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • BDL- Below detection limit.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----





Anacon Laboratories

Anacon Laboratories Pvt. Ltd. Nagpur Lab

FP-34, 35, Food Park, Five Star Industrial Estate,

MIDC Butibori, Nagpur, Maharashtra, India - 441 122

+ 91 8045685558 Email : info@anacon.in

https://www.anaconlaboratories.com

Test Report

Page 1 of 1

Ambient Air Quality Monitoring Report-October-2023

Report No.: AN/AAQ/TS-JEIM/2023/1-7		Date: 03/11/2023	
Name and Address of Industry:-	M/s Tiringpahad Iron & Manganese Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22/03/2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/23102023/ENV-261-13/JEIM-CZ/AAQMS-13
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	9,16,23,30 October -2023
Test Started On:-	9,16,23,30 October-2023	Test Completed On:-	10,17,25,31 October-2023
Sampling Procedure		ANtd/7.2/Mon-01	

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³ IS 5182 (Part 23)	PM _{2.5} µg/m ³ USEPA 40 (Part 50)	SO ₂ µg/m ³ IS 5182 (Part-2)	NO ₂ µg/m ³ IS 5182 (Part-6)	CO mg/m ³ IS 5182 (Part-10)
Method Reference							
AAQMS-13	Near Guruda View Point-TIMM	04/10/2023	61.8	22.6	11.6	26.2	BDL (DL-0.5)
		07/10/2023	77.7	30.5	12.2	23.8	BDL (DL-0.5)
		11/10/2023	73.6	28.4	10.8	29.4	BDL (DL-0.5)
		14/10/2023	62.5	24.6	12.3	27.2	BDL (DL-0.5)
		18/10/2023	70.4	22.6	14.0	25.5	BDL (DL-0.5)
		21/10/2023	60.6	25.5	13.3	25.9	BDL (DL-0.5)
		25/10/2023	74.5	26.7	11.2	27.9	BDL (DL-0.5)
		28/10/2023	63.1	23.8	12.3	30.5	BDL (DL-0.5)
Monthly Average Value			68.0	25.6	12.2	27.1	BDL (DL-0.5)

NOTES: •

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • BDL - Below detection limit.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut
Snehal Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway

Dr. (Mrs.) S. D. Garway
Quality Manager

-----End of Report-----





Test Report

Page 1 of 1

Ambient Air Quality Monitoring Report-October-2023

Report No.: AN/AAQ/TS-JEIM/2023/1-12			Date: 03/11/2023
Name and Address of Industry:-	M/s Tiringpahad Iron & Manganese Mine (M/s TATA Steel Limited)		W. O. No.
			4700098928/962 22.03.2022
Sample Description/Type	Ambient Air Quality (Buffer Zone)	Sample Ref. No.:-	ALPL/23102023/ENV-261-24/JEIM-BZ/AAQMS-11 & ALPL/23102023/ENV-261-25/JEIM-BZ/AAQMS-12
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	16-October-2023
Test Started On:-	17-October-2023	Test Completed On:-	18-October-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS-5182 (Part-10)
AAQMS-11	Jajang High School	14/10/2023	51.3	17.2	8.4	16.9	BDL (DL-0.5)
	Monthly Average Value		51.3	17.2	8.4	16.9	BDL (DL-0.5)
AAQMS-12	Jurudi Village	14/10/2023	47.1	15.6	7.3	16.2	BDL (DL-0.5)
	Monthly Average Value		47.1	15.6	7.3	16.2	BDL (DL-0.5)
NAAQM Standard			100 (24 hrs)	60 (24 hrs)	80 (24 hrs)	80 (24 hrs)	2 (8hrs)

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • BDL - Below detection limit.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Snehal Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----





**Anacon
Laboratories**

Anacon Laboratories Pvt. Ltd. Nagpur Lab

FP-34, 35, Food Park, Five Star Industrial Estate,

MIDC Butibori, Nagpur, Maharashtra, India - 441 122

+ 91 8045685558 Email : info@anacon.in

https://www.anaconlaboratories.com

Test Report

Fugitive Emission Report-October-2023

Report No.: AN/FE/TS-JEIM/2023/1-15			Date: 31/10/2023
Name and Address of Industry:-	M/s Tiringpahad Iron & Manganese Mine (M/s TATA Steel Limited)		W. O. No.
			4700098928/962 22.03.2022
Sample Description/Type	Fugitive Emission	Sample Ref. No.:-	ALPL/23102023/ENV-261- /JEIM/FE-1 to 12
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	23/10/2023
Test Started On:-	23/10/2023	Test Completed On:-	25/10/2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sl. No.	Location Name	Date of sampling	TSPM $\mu\text{g}/\text{m}^3$
Method Reference			IS 5182 (Part 23)
FE-1	Haul Road Near Guruda	16/10/2023	794
FE-2	Sorting Yard Guruda	16/10/2023	381
FE-3	Near View Point Mine Guruda	16/10/2023	469
FE-4	Near Screen Plant	16/10/2023	421
MoEF & CC Norms:		1200 $\mu\text{g}/\text{m}^3$	

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Snehal Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway

Dr. (Mrs.) S. D. Garway

Quality Manager

---End of Report---



Fugitive Dust control Measures deployed at Tiringpahar Mine



**Mist Cannon in
Sorting Yard**



**Tyre Washing
Facility**



**Fixed
Sprinklers**

NOISE MONITORING REPORT

Report No. MSKGL/ED/2023-24/005059

Date: 29.02.2024


MONITORING REPORT OF AMBIENT NOISE

Name of the Client		M/s. TATA STEEL LIMITED			
Name of the Mines		TIRINGPAHAR IRON & MANGANESE MINES (TIMM)			
SL. NO.	Monitoring Location	Date Monitoring	Noise Level in dB (A)		
			Ld	Ln	Ldn
1.	BS Mining Work Shop	19/20.02.2024	60.5	59.1	59.9
2.	In Front of Admin Office	19/20.02.2024	50.5	40.8	48.9
3.	Near Weigh Bridge	19/20.02.2024	61.9	57.7	60.5
4.	Mines View Plant	19/20.02.2024	66.7	63.1	65.5
5.	Shorting Yard Rest Shelter	20/21.02.2024	60.8	57.7	59.8
6.	250 meter from Screen Plant	20/21.02.2024	60.2	57.9	59.4

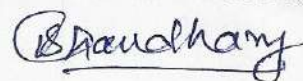
Note : Day Time : 6.00 AM -10.00 PM, Night Time: 10.00PM- 6.00AM

AMBIENT AIR QUALITY STANDARDS IN RESPECT OF NOISE AS PER CPCB GUIDELINES

AREA CODE	CATEGORY OF AREA / ZONE	LIMITS IN dB (A)	
		DAY TIME	NIGHT TIME
A	INDUSTRIAL AREA	75	70
B	COMMERCIAL AREA	65	55
C	RESIDENTIAL AREA	55	45
D	SILENE ZONE	50	40

Checked by: 

For Mitra S. K. Private Limited



Authorised Signatory



Test Report

Page 4 of 4

Noise Monitoring Report-November-2023

Report No.: AN/NE/TS-JEIM/2023/1-19			Date:30/11/2023
Name and Address of Industry:-	M/s Tiringpahad Iron & Manganese (M/s TATA Steel Limited)		W. O. No.
			4700098928/962 date: 22.03.2022
Sample Description/Type	Noise Monitoring	Sample Ref. No.:-	ALPL/22112023/ENV-283-N/JEIM/NE-19 to 25
Sample Drawn By:-	Anacon Representative	Data Inward date:-	30/11/2023
Sampling Procedure	ANtd/7.2/Mon-01	Sampling Method	IS 9989:1981(R2001)

Sampling Date: 27/11/2023 to 29/11/2023.

Sl. No.	Location Name	Results dB(A)	
		Day Time (6:00 am to 10:00pm)	Night Time (10:00 pm to 06:00am)
NE-1	B. S Mininig work shop -TIMM	67.1	56.3
NE-2	Infront of Admin Office -TIMM	51.9	48.1
NE-3	Near Weigh Birdge TIMM	64.3	57.6
NE-4	Sorting Yard Rest Sheltor -TIMM	53.1	42.7
NE-5	250 Mtrs from Screen Plant -TIMM	47.9	38.2
NE-6	Mines View Point - TIMM	67.6	54.7
Nor ms:	Industrial Area	75.0	70.0
	Commercial Area	65.0	55.0
	Residential Area	55.0	45.0


NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by


 Snehal Raut
 Deputy Technical Manager

Authorized Signatory


 Dr. (Mrs.) S. D. Garway
 Quality Manager

-----End of Reports-----





Test Report

Page 4 of 4

Noise Monitoring Report-October-2023

Report No.: AN/NE/TS-JEIM/2023/1-19			Date: 31/10/2023
Name and Address of Industry:-	M/s Tiringpahad Iron & Manganese (M/s TATA Steel Limited)		W. O. No.
			4700098928/962 date: 22.03.2022
Sample Description/Type	Noise Monitoring	Sample Ref. No.:-	ALPL/23102023/ENV-261-N/JEIM/NE-19 to 25
Sample Drawn By:-	Anacon Representative	Data Inward date:-	30/10/2023
Sampling Procedure	ANtd/7.2/Mon-01	Sampling Method	IS 9989:1981(R2001)

Sampling Date: 23/10/2023 to 27/10/2023.

Sl. No.	Location Name	Results dB(A)	
		Day Time (6:00 am to 10:00pm)	Night Time (10:00 pm to 06:00am)
NE-1	B. S Mininig work shop -TIMM	52.9	43.6
NE-2	Infront of Admin Office -TIMM	47.1	38.3
NE-23	Near Weigh Birdge TIMM	64.7	54.9
NE-4	Sorting Yard Rest Sheltor -TIMM	68.3	56.1
NE-5	250 Mtrs from Screen Plant -TIMM	61.9	58.2
NE-6	Mines View Point - TIMM	59.4	39.1
Nor ms:	Industrial Area	75.0	70.0
	Commercial Area	65.0	55.0
	Residential Area	55.0	45.0

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

-----End of Reports-----



MANGANESE TESTING (Blood & Urine) for Mining Employees

work order by



Tata Steel Limited

MANGANESE GROUP OF MINES | FAMD

COMPREHENSIVE REPORT

Dated: 25th July 2023

Dr. Madhusudhan Reddy, PhD
Director, DRPL

Dr. Ramesh, MBBS
Consultant & Occupational Health Specialist

Dr. Raman Singh, PhD
Vice President-Grad Women in Science (USA)
TA-Research & Corporate Services, DRPL

Dr. Kuldeep Singh, MRSCMS (IITRoorkee),
PhD (IITBombay), PostDoc (France)
TA-Research & Corporate Services, DRPL



Dr Reddys Path Labs Private Limited
Hyderabad

Background

Manganese (Mn) is a naturally occurring metal and ranks as the fourth most widely used metal globally. In humans, it plays a crucial role as an essential trace element, acting as a co-factor for important metalloenzyme activities within our cells. These metalloenzymes contribute to various vital functions, including the formation of connective tissues and bones, clotting factors, lipid and carbohydrate metabolism, and they also play a significant role in maintaining normal brain and nerve activity within the central nervous system (CNS).

A deficiency in manganese can lead to health issues related to bone, joint, and collagen functions. Conversely, excess manganese can be toxic, resulting in disorders of the nervous system, as reported in various toxicological and pathological studies.

For adults, the recommended dietary intake is 2.3 mg/day for men and 1.8 mg/day for women. To ensure safety, a Tolerable Upper Intake Level (UL) of 11 mg/day has been established for adults, based on a no-observed-adverse-effect level for Western diets. This information serves as a guideline to maintain a balanced manganese intake and avoid potential adverse effects associated with either deficiency or excessive consumption.

Manganese exposure can arise from various sources, such as diet, where it naturally occurs in water, grains, and green leafy vegetables. Additionally, air can also be a source of manganese, with contributions from both natural and man-made sources. Notably, mining and milling activities involving manganese are significant man-made sources of exposure. Another potential route of manganese exposure is through long-term parenteral nutrition, which can lead to manganese toxicity.

The body can take in manganese through enteral (oral ingestion), parenteral (injection), or inhalation routes, but for occupational relevance, ingestion and inhalation are the primary routes of concern. According to the National Institute for Occupational Safety and Health (NIOSH), the respiratory system, central nervous system, liver, and kidneys are potentially affected organs when it comes to manganese exposure.

Overall, understanding the diverse sources and routes of manganese exposure is crucial for effectively managing potential health risks associated with this essential trace element. A safety

margin exists between the daily requirement levels of manganese and the amounts that can cause damage. Excessive ingestion or inhalation of manganese beyond the daily requirements can lead to cell damage. Current evidence suggests that in large quantities, manganese increases oxidative stress within cells. Oxidative stress occurs when there is an imbalance between free radicals and antioxidants, resulting in potential harm to cells. Free radicals are unstable molecules that can react with other substances in the body, causing cell damage. This process can lead to various effects, including mitochondrial dysfunction, glutamate-mediated excitotoxicity, and protein aggregation within the cells. Understanding these mechanisms is essential for recognizing the potential risks associated with excessive manganese exposure and safeguarding against adverse health effects.

Excessive exposure to manganese is known to cause a major neurodegenerative effect called manganism. The clinical manifestations of manganism are well-documented, and its differentiation from other movement disorders, particularly idiopathic Parkinson's disease, which shares similarities, has been extensively studied. However, formal application of clinical criteria in epidemiological research is limited.

Confidence in diagnosing manganism is bolstered by the use of MRI and PET scans, as well as tests of response to dopaminomimetic drugs and EDTA chelation. Both manganism and Parkinson's disease exhibit abnormal features and pathophysiology in the basal ganglia, a brain region associated with voluntary motor control, where manganese tends to accumulate. However, in Parkinson's disease, the abnormalities are related to dopaminergic dysfunction of the nigrostriatal system, as evidenced by FDOPA uptake in PET imaging and positive response to levodopa treatment. These features are either lacking or less apparent in manganism.

Recent reports of frank manganese poisoning have become scarce, likely due to declining occupational exposures. Instead, researchers now study more subtle adverse nervous system effects using highly sensitive but non-specific psychometric tests and functional brain imaging. These effects are termed "subclinical" as they are believed to be present before overt disease symptoms appear. Researchers compare findings from these sensitive methods against a control group.

In addition to neuronal damage, extensive exposure to high levels of manganese can harm the liver and kidneys, as these organs are involved in the metabolism and excretion of manganese.

Impaired clearance of manganese from the body can also occur in cases of liver disease, leading to elevated levels of the metal in the body. Understanding these complex mechanisms is crucial for early detection and effective management of manganese-related health issues.

After removal of exposure to manganese, cognitive function is reported to improve, but motor, sensory, and mood disturbances may persist or worsen, though the specific timeframe for these events remains unclear. Therefore, the key to prevention and treatment lies in minimizing or completely ceasing exposure.

To address occupational exposure, the US National Institute for Occupational Safety and Health (NIOSH) recommends an occupational exposure limit of 1 mg/m³ as an 8-hour time-weighted average, and 3 mg/m³ for short-term exposures lasting 15 minutes or less. For the general public, the US Agency for Toxic Substances and Disease Registry (ATSDR) recommends an Inhalation Minimal Risk Level (MRL) of 0.04 µg/m³ for chronic exposure, which is considered safe for inhalation over an extended period.

Adhering to these exposure limits is essential to safeguarding the health of workers and the general population from potential adverse effects of manganese exposure. Both the US Department of Labor and a recent meta-analysis, considering individual participant data, identified the lowest observed adverse effect limit for manganese exposure to be 0.05 mg/m³. However, assessing exposure to manganese can be challenging due to variations in particle size and shape. This complexity means that adverse effects may be more likely to occur in mining environments where dust contains larger particle sizes. Careful monitoring and control of manganese exposure are crucial in such settings to protect workers from potential neurological deficits associated with this metal.

Studies dating back to the 1970s have demonstrated severe adverse health effects resulting from very high manganese exposure. Even before overt clinical manifestations of manganese toxicity resembling Parkinson's-like features, early signs of nervous system impairment may manifest as poor neurological function, as measured by neuropsychological tests like finger tapping. These effects are often referred to as 'sub-clinical,' indicating that they are at a stage where patients or workers may not yet notice them.

It is assumed that if exposure continues, these sub-clinical symptoms could progress to the stage

of diagnosable clinical manganese toxicity. However, the transition from sub-clinical to clinical disease has not been definitively established.

Motor function test performance may begin to show deterioration at mean concentrations of inhalable manganese ranging from 0.05 mg/m³ to 0.30 mg/m³. However, the relationship between airborne exposure levels, corresponding blood manganese levels, and their association with adverse health outcomes remains unclear. Further research is necessary to better understand these relationships and to establish reliable exposure guidelines to protect the health of workers and individuals at risk of manganese exposure.

Dose-dependent effects are commonly associated with exposure, implying that certain low levels may not pose significant harm. Consequently, having accurate knowledge of exposure levels that do not result in health effects is crucial for the safety and protection of workers in their workplaces. Employers and workplaces must prioritize this information to adequately safeguard their workers' well-being.

To ensure the health and safety of employees, many countries have implemented policies that enforce low occupational and environmental exposure limits for manganese. These regulations state that employers are responsible for ensuring that work-related exposure does not lead to illness among their workers. By adhering to these guidelines, we can effectively protect workers from potential adverse health effects associated with manganese exposure in the workplace.

Despite the considerable research conducted on manganese (Mn) exposure, several critical questions remain unanswered. It is still uncertain what range of health effects may arise, at which specific exposure levels, and over what duration. Additionally, the strength of these relationships is yet to be fully understood.

Furthermore, the outcome and prognosis of toxic effects from manganese exposure are influenced by various individual factors, including genetic profiles, which add complexity to the overall picture.

Finally, exposure to manganese often occurs in combination with other exposures within the same industries or due to non-occupational factors, such as liver disease or iron deficiency. These confounding factors can make it challenging to isolate the specific effects of manganese

exposure, making the assessment and interpretation of results more intricate.

To gain a comprehensive understanding of the health effects of manganese exposure, future research needs to address these uncertainties and consider the various contributing factors. Only by doing so can we develop well-informed strategies to protect individuals from the potential adverse effects of manganese exposure in various settings.

To prevent manganese exposure and safeguard workers from potential occupational diseases and disabilities, it is crucial to identify risk levels and competing factors. Additionally, clear criteria are essential to determine the occupational origin of symptoms, serving as a basis for fair financial compensation in case of exposure.

Conducting a systematic appraisal of the literature can yield valuable insights into several key aspects, including the types and nature of exposure, the health effects resulting from exposure, the influence of competing factors, and the prognosis after exposure has ceased.

By thoroughly examining these factors, we can obtain clear and well-founded findings that will aid in developing effective preventive measures and providing proper support to workers who may have been affected by manganese exposure. Such insights are essential for promoting worker safety and well-being in industries where manganese exposure is a concern.

The objectives of the study to conduct occupational surveillance of mine workers in the Manganese Group of Mines of FAMD, Tata Steel, Joda, to assess their exposure to Manganese and identify the possibility of Manganese Poisoning. We will summarize the symptoms, analyze test results, and evaluate existing evidence on the potential adverse health effects of manganese for these workers. The ultimate objective is to provide a comprehensive report detailing the available evidence related to exposure, its consequences, and potential contributing factors. Additionally, if any cases of manganese poisoning are identified, the report will include appropriate recommendations and remedial measures to address the issue effectively.

The scope of the study encompasses a wide range of aspects related to Manganese Poisoning among mine workers in the Manganese Group of Mines of FAMD. The key components include:

1. Occupational surveillance of Manganese Poisoning among mine workers in the specified

mines.

2. Analysis of symptoms and/or medical history of Manganese Poisoning in the mine workers.
3. Collection of blood and urine samples on-site for further examination.
4. Sampling criteria comprising 90% uncontrolled samples and 10% controlled samples for comparison.
5. Thorough testing and individual reports generated, along with a comprehensive overall report.
6. Recommendations for preventive and remedial measures, adhering to WHO guidelines and other Indian Standards.

By covering these diverse elements, the study aims to provide valuable insights and practical recommendations to address Manganese Poisoning effectively in the mining workforce.

To achieve our study objectives, we conducted sample collections at four specific mine locations: Joda West Iron & Manganese Mine, Bamebari Iron & Manganese Mine, Tiringpahar Iron & Manganese Mine, and Khondbond Iron & Manganese Mine. A total of 300 samples were gathered from these mine locations and categorized as uncontrolled samples. Additionally, we collected about fifteen controlled samples from employees who had minimal or no exposure to manganese mines.

To enhance the reliability of our study, we conducted an extensive review of existing literature, including meta-analyses, pertaining to manganese exposure in occupational settings. We carefully compared the data from these studies with our test results to evaluate the causal association between manganese exposure and its potential health effects. By combining evidence from various sources, we aimed to gain deeper insights into the impact of manganese exposure on health.

Methods

a) Specified a question consisting of previous illness, present disease condition, use of regular medication, symptoms, location of exposure (yard, mines and open sites) and outcome (e.g. neurological function deficits).

b) Random Sample Collection (Blood and Urine), **Uncontrolled Samples: 170 (Blood-85, Urine-85), Controlled Samples: 30 (Blood-15, Urine-15)**

Uncontrolled samples were collected from four different mine locations-

1. Joda West Iron & Manganese Mine:

- a. HQUARRY: No. of Samples: 20
 - b. GGQ: No. of Samples: 22
 - c. DQUARRY: No. of Samples: 16
2. Bamebari Iron & Manganese Mine: Joribari Block: No. of Samples: 26
 3. Tiringpahar Iron & Manganese Mine: 26
 4. Khondbond Iron & Manganese Mine: No. of Samples: 25

Participants and Comparison

Our study encompassed both male and female mine workers, as well as administrative staff of all age groups. We carefully compared the test results of blood and urine samples from mine workers who were occupationally exposed to manganese with those of the unexposed administrative staff. This allowed us to assess the potential differences in manganese exposure levels between the two groups and draw relevant conclusions from our findings.

Searching and including studies:

In our quest to gather comprehensive information, we conducted an extensive search using multiple databases and non-electronic sources, without imposing any date or language restrictions. Our thorough approach involved utilizing PubMed to develop a sensitive search, which was later translated and applied to other databases.

We focused on identifying all relevant systematic reviews and empirical studies available to date. Two independent reviewers meticulously assessed the fulfillment of inclusion criteria first by examining titles and abstracts, and later by evaluating the full text. Any disagreements that arose during the review process were resolved through constructive discussions between the reviewers. This meticulous approach ensured that we collected a comprehensive and reliable body of evidence for our research.

Gender, Age, Mine Locations, controlled and uncontrolled Subgroup analysis

Our evaluation was structured to consider the following aspects:

1. Age, gender, and the outcomes of blood and urine samples.
2. Comparison of results between controlled and uncontrolled samples of blood and urine.
3. Analysis based on mine location site, gender, age, and the outcomes of blood and urine samples.

By organizing our assessment in this manner, we aimed to gain a comprehensive understanding of the various factors that could potentially impact the results of the study and draw meaningful conclusions from the data.

Results

Our findings are organized in a clear manner, categorized by sample collection method and the location of Manganese exposure in the mines. Subsequently, we provide a comprehensive synthesis summarizing the overall study, encompassing all mine locations, ages, and genders for both sample groups. For our analysis, we employed the ICPMS test method and used the reference values for Blood (4-15 ug/L) and Urine (0.50-9.80 ug/L) in males and females.

The conclusive summary of the laboratory analysis comprised a total of 300 samples, equally split into 150 blood samples and 150 urine samples. In order to assess the significance of positive results related to manganese exposure, we employed a sampling approach that involved both controlled and uncontrolled random sampling methodologies. Out of the total samples, 270 were uncontrolled and derived from mine workers, comprising 135 blood samples and 135 urine samples. Additionally, we collected 30 controlled samples, consisting of 15 blood samples and 15 urine samples, from staff members who had no exposure to manganese.

We conducted a thorough questionnaire and discussions with both the controlled and uncontrolled groups to gather information on their previous illnesses, medication usage, and the nature of their manganese exposure (whether in mines, yards, or open sites). Additionally, we inquired about the duration and frequency of their duties in manganese mines, as well as their drinking water sources and overall water consumption patterns.

To ensure the validity of our findings, we excluded mine workers and controlled groups who had a history of consuming Gadolinium or Iodine-containing contrast media, vitamins, minerals, or herbal supplements within the 7 days leading up to the sampling, or within 96 hours (4 days) prior to the administration. This was done to eliminate any potential interference with the study results.

An encouraging discovery from our investigation was that all mining site locations maintained a high standard of cleanliness and hygiene, offering proper filtered water for drinking. Moreover, the washroom facilities for both genders in the mining sites were well-maintained and clean. For

detailed results, please refer to Annexure-A.

In our comprehensive study, we conducted age and gender-specific comparisons across all six mine locations. Our findings revealed that the Bamebari Iron & Manganese Mine, Joribari Block (n=6), had the youngest female mine workers, while the Joda West Iron & Manganese Mine, HQUARRY (n=12), had the oldest female workers. Among male mine workers, the youngest were observed in Joda West Iron & Manganese Mine, GGQ (n=6), while the oldest were in Joda West Iron & Manganese Mine, HQUARRY (n=8).

The data indicates a notable trend, with the oldest mine workers found in Joda West Iron & Manganese Mine, HQUARRY, for both genders. As a result, this specific mine location demands closer attention and regular periodic medical examinations (PME), including X-rays (Chest PA), to ensure the health and well-being of its workers. As for the controlled group, the average age was 32.70 (n=15) for males and 44.20 (n=15) for females.

The comparison of average results for the male population in blood samples revealed that the Khondbond Iron & Manganese Mine workers' values were nearly identical to those of the controlled group. Similarly, among the female mine workers from the Khondbond Iron & Manganese Mine, the blood values were also very similar to those of the controlled group. This indicates that the Khondbond Iron & Manganese Mine workers are exposed to lower levels of manganese compared to others.

It's noteworthy that no single mine worker, male or female, tested positive for manganese exposure in their blood across all six mine locations.

In the study comparing urine samples between mine workers and the controlled group for both genders, it was observed that the Joda West Iron & Manganese Mine, HQUARRY group, exhibited values close to those of the controlled group among males. On the other hand, among females in the uncontrolled group from all six mine locations, the values were also in close proximity to the controlled group.

The overall summary of results indicates that the mean blood value among male and female mine workers was 5.36 (n=135), while for urine, it was 4.25 (n=135). Comparatively, the controlled group's blood value was 2.51 (n=15), and urine value was 2.95 (n=15).

Final Conclusion & Recommendations

The overall level of evidence in our study, encompassing the data from all 300 samples from both controlled and uncontrolled groups, along with systematic reviews and meta-analyses, indicates a low likelihood of manganese exposure. Our findings provide sufficient evidence to conclude that there is no manganese contamination detected in any of the six mine locations, whether through oral intake in the yards, air circulation near open sites, or the source of drinking water.

However, despite the lack of current health effects on mine workers from manganese exposure within the established limits, we highly recommend conducting regular periodic medical examinations (PME) to continuously evaluate any potential risks over time. Such assessments could include other health function tests to ensure the well-being of the mine workers. In summary, our study suggests that the current manganese exposure limits have not impacted the health of mine workers, as evidenced by cross-sectional and data studies. Nevertheless, it is prudent to conduct ongoing evaluations to monitor and safeguard the health of these workers.

References

1. Food and Nutrition Board. Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc Washington, DC:Institute of Medicine, 2002.
2. Fell JM, Reynolds AP, Meadows N, et al. Manganese toxicity in children receiving long-term parenteral nutrition. *Lancet* 1996;**347**(9010):1218-21
3. Department of Health and Human Services. NIOSH POCKET GUIDE TO CHEMICAL HAZARDS: DHHS(NIOSH) CDC 2007.
4. HaMai D, Bondy SC. Oxidative basis of manganese neurotoxicity. *Ann N Y Acad Sci* 2004;**1012**:129-41
5. Zhang S, Zhou Z, Fu J. Effect of manganese chloride exposure on liver and brain mitochondria function in rats. *Environ Res* 2003;**93**(2):149-57
6. Gavin CE, Gunter KK, Gunter TE. Manganese and calcium efflux kinetics in brain mitochondria. Relevance to manganese toxicity. *Biochem J* 1990;**266**(2):329-34
7. Bowman AB, Kwakye GF, Herrero Hernandez E, et al. Role of manganese in neurodegenerative diseases. *J Trace Elem Med Biol* 2011;**25**(4):191-203 doi: 10.1016/j.jtemb.2011.08.144[published Online First: Epub Date].

8. Racette BA, Aschner M, Guilarte TR, et al. Pathophysiology of manganese-associated neurotoxicity. *Neurotoxicology* 2012;**33**(4):881-6 doi: 10.1016/j.neuro.2011.12.010[published Online First: Epub Date].
9. Huang WH, Lin JL. Acute renal failure following ingestion of manganese-containing fertilizer. *Journal of toxicology Clinical toxicology* 2004;**42**(3):305-7
10. Sanchez B, Casals-Casado J, Quintana S, et al. Fatal manganese intoxication due to an error in the elaboration of Epsom salts for a liver cleansing diet. *Forensic science international* 2012;**223**(1-3):e1-4 doi: 10.1016/j.forsciint.2012.07.010[published Online First: Epub Date].
11. Deng Q, Liu J, Li Q, et al. Interaction of occupational manganese exposure and alcohol drinking aggravates the increase of liver enzyme concentrations from a cross-sectional study in China. *Environmental Health* 2013;**12**(1):30
12. Lebda MA, El-Newehy MS, El-Sayed YS. Neurohepatic toxicity of subacute manganese chloride exposure and potential chemoprotective effects of lycopene. *Neurotoxicology* 2012;**33**(1):98-104 doi: <http://dx.doi.org/10.1016/j.neuro.2011.12.008>.
13. Bowler RM, Gocheva V, Harris M, et al. Prospective study on neurotoxic effects in manganese-exposed bridge construction welders. *Neurotoxicology* 2011;**32**(5):596-605 doi: 10.1016/j.neuro.2011.06.004[published Online First: Epub Date].
14. Wastensson G, Sallsten G, Bast-Pettersen R, et al. Neuromotor function in ship welders after cessation of manganese exposure. *International archives of occupational and environmental health* 2012;**85**(6):703-13 doi:10.1007/s00420-011-0716-6[published Online First: Epub Date].
15. Bouchard M, Mergler D, Baldwin M, et al. Neurobehavioral functioning after cessation of manganese exposure: a follow-up after 14 years. *American journal of industrial medicine* 2007;**50**(11):831-40 doi: 10.1002/ajim.20407[published Online First: Epub Date].
16. Beuter A, Lambert G, MacGibbon B. Quantifying postural tremor in workers exposed to low levels of manganese. *Journal of neuroscience methods* 2004;**139**(2):247-55 doi: 10.1016/j.jneumeth.2004.05.002[published Online First: Epub Date].
17. Meyer-Baron M, Knapp G, Schaper M, et al. Performance alterations associated with occupational exposure to manganese--a meta-analysis. *Neurotoxicology* 2009;**30**(4):487-96 doi: 10.1016/j.neuro.2009.05.001[published Online First: Epub Date].
18. Hine CH, Pasi A. Manganese intoxication. *The Western journal of medicine* 1975;**123**(2):101-7
19. Saric M, Markicevic A, Hrustic O. Occupational exposure to manganese. *British journal of industrial medicine* 1977;**34**(2):114-8
20. Smyth LT, Ruhf RC, Whitman NE, et al. Clinical manganese and exposure to manganese in the production and processing of ferromanganese alloy. *Journal of occupational medicine : official publication of the Industrial Medical Association* 1973;**15**(2):101-9

Annexure-A

Results for the Joda West Iron & Manganese Mine:

HQUARRY:

Average Age Males (n=8): 44.5

Average Age Females (n=12): 42.75

Males Blood Samples Report Analysis Mean Value (n=8): 5.34

Females Blood Samples Report Analysis Mean Value (n=12): 7.45

Males Urine Samples Report Analysis Mean Value (n=8): 3.70

Females Urine Samples Report Analysis Mean Value (n=12): 3.44

Both Male & Female Blood Samples Report Analysis Mean Value (n=20): 6.18

Both Male & Female Urine Samples Report Analysis Mean Value (n=20): 3.60

GGQ:

Average Age Males (n=6): 32.50

Average Age Females (n=16): 38.50

Males Blood Samples Report Analysis Mean Value (n=6): 5.84

Females Blood Samples Report Analysis Mean Value (n=16): 6.64

Males Urine Samples Report Analysis Mean Value (n=6): 4.60

Females Urine Samples Report Analysis Mean Value (n=16): 4.42

Both Male & Female Blood Samples Report Analysis Mean Value (n=22): 6.42

Both Male & Female Urine Samples Report Analysis Mean Value (n=22): 4.47

DQUARRY:

Average Age Males (n=12): 37.10

Average Age Females (n=4): 39.25

Males Blood Samples Report Analysis Mean Value (n=12): 5.36

Females Blood Samples Report Analysis Mean Value (n=4): 6.61

Males Urine Samples Report Analysis Mean Value (n=12): 3.81

Females Urine Samples Report Analysis Mean Value (n=4): 2.57

Both Male & Female Blood Samples Report Analysis Mean Value (n=16): 5.56

Both Male & Female Urine Samples Report Analysis Mean Value (n=16): 3.50

Lab report analysis results for the Bamebari Iron & Manganese Mine: Joribari Block:

Average Age Males (n=20): 39.5

Average Age Females (n=6): 35.10

Males Blood Samples Report Analysis Mean Value (n=20): 5.29

Females Blood Samples Report Analysis Mean Value (n=6): 5.82

Males Urine Samples Report Analysis Mean Value (n=20): 4.81

Females Urine Samples Report Analysis Mean Value (n=6): 3.96

Both Male & Female Blood Samples Report Analysis Mean Value (n=26): 5.41

Both Male & Female Urine Samples Report Analysis Mean Value (n=26): 4.61

Lab report analysis results for the Tiringpahar Iron & Manganese Mine:

Average Age Males (n=16): 36.06

Average Age Females (n=10): 42.4

Males Blood Samples Report Analysis Mean Value (n=16): 6.31

Females Blood Samples Report Analysis Mean Value (n=10): 6.77

Males Urine Samples Report Analysis Mean Value (n=16): 4.86

Females Urine Samples Report Analysis Mean Value (n=10): 4.22

Both Male & Female Blood Samples Report Analysis Mean Value (n=26): 6.48

Both Male & Female Urine Samples Report Analysis Mean Value (n=26): 4.61

Lab report analysis results for the Khondbond Iron & Manganese Mine:

Average Age Males (n=20): 39.35

Average Age Females (n=5): 44.20

Males Blood Samples Report Analysis Mean Value (n=20): 2.51

Females Blood Samples Report Analysis Mean Value (n=5): 1.93

Males Urine Samples Report Analysis Mean Value (n=20): 4.27

Females Urine Samples Report Analysis Mean Value (n=5): 4.38

Both Male & Female Blood Samples Report Analysis Mean Value (n=25): 2.49

Both Male & Female Urine Samples Report Analysis Mean Value (n=25): 4.49

Lab report analysis results for Controlled Samples:

Average Age Males (n=15): 32.70

Average Age Females (n=15): 44.2

Males Blood Samples Report Analysis Mean Value (n=15): 2.47

Females Blood Samples Report Analysis Mean Value (n=15): 1.93

Males Urine Samples Report Analysis Mean Value (n=15): 2.90

Females Urine Samples Report Analysis Mean Value (n=15): 4.38

Both Male & Female Blood Samples Report Analysis Mean Value (n=15): 2.51

Both Male & Female Urine Samples Report Analysis Mean Value (n=15): 2.95