



**The Member Secretary
State Pollution Control Board, Odisha
Paribesh Bhawan
A/118, Nilakantha Nagar, Unit - VIII
Bhubaneswar - 751012**

MD/ ENV/ 828 / 120 / 2023
Date: 28th September 2023

**Sub: Environmental Statement of Katamati Iron Mine, M/s Tata Steel Limited
for 2022-23.**

Dear Sir

Kindly find attach herewith the Environmental Statement in the prescribed format (Form V) as per "Environmental (Protection) Amendment Rules 1992" of our Katamati Iron Mine for your kind perusal.

Thanking you,

Yours faithfully
f: Tata Steel Limited

Chief (Mine Planning & Projects), OMQ

Encl: As above

**Copy to: The Regional Officer, State Pollution Control Board, At: Baniapata,
College Road, Keonjhar - 758001, Odisha**

TATA STEEL LIMITED

Mines Division Noamundi 833 217 India
Tel 91 9234301340 Fax 91 6596 290737

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India
Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

ENVIRONMENT STATEMENT 2022-23



KATAMATI IRON MINE TATA STEEL LIMITED

September 2023

FORM - V
(See Rule -14)

ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31st MARCH,
2022

KATAMATI IRON MINE, M/S TATA STEEL LIMITED

PART-A

| | | |
|---|---|---|
| 1 | Name and address of the owner/ occupier of the industry, operation or process | : Mr. Shirish Shekhar, Chief (Katamati) Katamati Iron Mine, Tata Steel Limited Po.: Noamundi, Dist.-West Singhbhum Jharkhand – 833217 Mr Ajay Kumar Goyal, Mines Manager (Katamati) Katamati Iron Mine, Tata Steel Limited Po.: Noamundi, Dist.-West Singhbhum Jharkhand – 833217 |
| | Nominated Owner | : Mr. Atul Bhatnagar, General Manager, OMQ division, Administrative Building, Noamundi Iron Mine, Tata Steel Limited PO.: Noamundi, Dist.-West Singhbhum Jharkhand – 833217 Mr T V Narendran, CEO & Managing Director, Tata Steel Ltd, Bombay House, 24 Homi Mody Street, Fort, Mumbai 400 001 |
| 2 | Industry Category | : Opencast Iron Mining Industry (Major) |
| 3 | Production Capacity | : Mine: 13.5 MTPA Iron Ore ROM Processing: 4 MTPA Production details in FY23: ROM (Ore + Subgrade): 7581611 T OB waste: 1498582 T |
| 4 | Year of Establishment | : 1933 |
| 5 | Date of last Environmental Statement submitted. | : 27 th September 2022, vide letter no. MD/ENV/305/120/2022 for the year 2021-22. |

PART-B

Water and Raw Material Consumption

(i) Water Consumption:

| <u>Consumption Head:</u> | 2021-22 (In cu.m/day) (Annual Average) | 2022-23 (In cu.m/day) (Annual Average) |
|------------------------------------|--|---|
| Process | Nil | Nil |
| Spraying in mine pit , services | 183.48 | 407.53 |
| Domestic | Nil | Nil |
| Name of the product | Process water consumption per product output (m³/MT) | |
| Iron Ore* | Nil | Nil |

*Note: The Katamati Iron mine has common colony with Noamundi Iron Mine. Thus, domestic water consumption is considered at Noamundi mine only. The mine has only mobile crushing & screening plant at pit head.

ii) Raw Material Consumption

The following items have been consumed/ utilized:

| Name of Raw Materials | Name of Product | Consumption of Raw Material | | |
|--|-------------------------|--|--|---|
| | | During previous financial year (2021-22) | During current financial year (2022-23) | |
| High Speed Diesel | Iron Ore of steel grade | 1982892 Litre | 6057017 Litre | |
| Lubricants | | 54224 Litre | 100544 Litre | |
| Grease | | 11650 Kg | 5264 Kg | |
| Explosive of all types (Explosive, codex, detonator) | | Slurry explosives | Small dia (up to 32mm)- 17984 Kg Large dia. (above 32 mm)- 18050 Kg | Small dia (up to 32mm)- Nil. Large dia. (above 32 mm)- 7531 Kg |
| | | Detonators | Ordinary - 0 Electrical-386 nos. | Ordinary - 0 Electrical-386 nos. |
| | | Detonating Fuse | 9175 Mts | 2154 Mts. |
| Gas | | | 0 | 0 |
| Tyres | | | 11 nos. | 32 nos. |
| Drill rods | | | 116 nos. | 343 nos. |
| Electric Power in KWH | | | | |
| Consumed | Iron Ore of steel grade | 2963160 | 23206519 | |
| Generated | | - | 162000 | |

PART-C

POLLUTION DISCHARGED TO ENVIROMENT/ UNIT OF OUTPUT
(Parameters as specified in the consent issued)

| Pollutants | Quantity of Pollutants discharged (mass / day) | Concentration of of Pollutants discharges (mass / day) | Percentage of variation from prescribed standards with reasons |
|------------|---|--|--|
| a) Water | Katamati Iron Mine is an opencast iron mine with mobile crushing & screening plant for processing of the ore. At present, total water requirement is met from adjoining Noamundi Iron Mine of Tata Steel Limited (Mine is having valid permission from WRD). There is no wet processing of the mineral, hence no generation of tailings. Water is only used for dust suppression purpose. | | |

| | |
|--------|---|
| | <p>There is no separate workshop at Katamati. The effluent generated in the central workshop at Noamundi is handled and treated in the ETP. Treated water is reused for washing.</p> <p>Garland drains along with toe walls have been constructed all around the OB dump as well as Mineral Reject dump for management of surface runoff. Rainwater is allowed to accumulate in the lower-most benches of the mine quarry pit for recharge of ground water. A network of settling ponds and check dams exists in the downstream areas which are now being increased in number as well as size for proper management of surface runoff. Further all garland drains and settling ponds are de-silted as part of pre-monsoon preparations. The network of all these structures ensures that only clear water leaves the mine lease boundary.</p> <p>Wheel washing facility has been installed and is in operation near exit gate to arrest the dust due to transport activity. The water from this system is recycled back and sludge is being removed and stored in mine dump.</p> <p>There are no colonies within Katamati mine lease area. All the colonies are in the adjoining Noamundi mine lease area where there is adequate no. of STPs to treat the domestic wastewater.</p> <p>Further the domestic sewage generated in the mine pit office are treated in soak pit-septic tank arrangement.</p> <p>The water quality data for the common STP/ETP located at Noamundi and surface water quality data is provided as Annexure-1</p> |
| b) Air | <p>Wet drilling is practiced in Katamati Iron Mine with drills equipped with water injection system. Blasting is done using the controlled blasting technique. Dry fog system, fixed water sprinklers, mobile tankers and mist cannons are provided to prevent any fugitive emissions.</p> <p>Further, dust-cum-noise barrier is proposed to be installed around the crushing and screening plants to act as windbreaker as well as attenuate the noise level and keep it below the prescribed noise levels at the boundary of plant.</p> <p>A wheel washing facility has been installed at exit gate of mine to arrest and control the fugitive emission from mineral transportation. In addition to this all the trucks carrying ore through public roads are covered with tarpaulin.</p> <p>Three Continuous Ambient Air Quality Monitoring station (CAAQMS) are installed in core and buffer zone of Katamati area. Various air quality parameters such as PM10, PM2.5, SOx, NOX, CO etc. are monitored and the data of same is transmitted to State Pollution Control Board server online. The data of same is also being displayed publicly.</p> <p>A thick & dense vegetation is also placed in all surrounding the area which significantly reduced the pollution load.</p> <p>The average results of air quality monitoring is attached as Annexure-2.</p> |

PART-D

HAZARDOUS WASTES

As specified under the Hazardous & Other Waste (Management & Trans boundary Movement) Rules, 2016 and amendment thereof

| Hazardous Wastes | Total Quantity | |
|------------------|--|---|
| | During previous financial year (2021-22) | During current financial year (2022-23) |
| i) From Process | | |

| | | |
|--|---|---|
| <ul style="list-style-type: none"> • Used Oil • Waste containing Oil (Jute etc.) • Waste Used Batteries • Discarded containers | <p>Nil</p> <p>Nil</p> <p>Nil</p> <p>Nil</p> | <p>Nil</p> <p>Nil</p> <p>Nil</p> <p>Nil</p> |
| <p>ii) From Pollution Control Facility</p> <ul style="list-style-type: none"> • Waste oil from oil & grease separation pit • Sludge from oil and grease separation pit | <p>Nil.</p> <p>Hazardous waste generated in the common facility at Noamundi is disposed as per the Rules to the authorised recyclers.</p> | |

PART-E

SOLID WASTES

Overburden waste is generated in the mine. All the overburden is stored in the designated place inside the mine as per the approved mining plan.

| Sources | During previous financial year (2021-22) | During current financial year (2022-23) |
|---|---|--|
| a) From Process <ul style="list-style-type: none"> • From mining as Overburden | 1616896 Tonne | 1498582 Tonne |
| b) From Pollution Control Facility | Nil | Nil |
| c) i. Quantity recycled or reutilized within the unit | Nil | Nil |
| ii. Quantity sold | Nil | Nil |
| iii. Quantity disposed | Nil | Nil |

PART-F

PLEASE SPECIFY THE CHARACTERISTICS (IN TERMS OF COMPOSITION AND QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTES AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES

In the Katamati Iron Mine, hazardous waste is generated mainly in the form of used oil during the maintenance of HEMMs at the common workshop located at Noamundi. The used oil is disposed to authorized agency as per the Hazardous Waste Management Rules. During handling and maintenance of HEMM, the oil-soaked materials (jute etc.) is being kept and disposed in impervious pit. The hazardous waste such as used batteries are sold to authorized agency.

All the hazardous waste generated is handled through a centralized system at Noamundi and disposed to authorized recyclers only.

PART-G

IMPACT OF POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION

- Katamati Iron Mine is a mechanized opencast iron mine with crushing & screening plant at pit head. For mineral conservation, various techniques followed, such as blending of subgrade materials, use of low grade ore etc. is being explored.
- Old slime stock is stored within the mine for its future use.
- For dust suppression, fixed & mobile dust suppression units are installed at Katamati Mine in haul roads.
- A wheel washing facility is also installed and commissioned at Katamati near exit gate to clean any dust attached to the tyres of vehicles.
- Check dams, siltation ponds, toe wall and garland drains are constructed as per approved mining plan.

PART-H

ADDITIONAL MEASURES/ INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION, PREVENTION OF POLLUTION

- The frequency of water spraying by mobile tanker along the approach roads to the entry-exit gate was reviewed and ensured to operate in all 3 shifts. The tanker sprays water on an average 9 trips/day. Water spraying by mobile tanker along public road from entry-exit gate to Deojhar (around 5 km) is being done in 3 shifts on an average of 8 trips/day.
- Covering of the entire width of approach road during water spraying was ensured and will be maintained always.
- Dust-cum-noise barrier is proposed to be installed around the crushing and screening plants to attenuate the noise level and keep it below the prescribed noise levels at the boundary of plant.
- All the high-mast lights are focused towards the mine area only by way of protective barrier.
- The OB dumps are developed as per the applicable guidelines – proper benching, dump angle, toe walls and garland drains, etc. Stability of waste dumps is ensured to prevent soil erosion. The dump stability is maintained as per the recommendation of CSIR-CIMFR. Geo-textile/ coir matting is opted for the dumps which have adverse conditions like steep slopes; further rows of vetiver grasses are planted.
- Various toe wall, garland drains are made as per progressive mining plan. The capacity of these settling ponds are being increased to enable the accumulation of more water.

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF THE ENVIRONMENT

Katamati Iron Mine of Tata Steel Limited is a captive mine and is certified for the Integrated Management System (ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018) from last two decades.

The unit is having a full-fledged Environmental Management department with well qualified personnel from environmental background to take care of all aspects relating to mines and processing plant of unit.

Various awareness programs throughout the year are conducted in the area which includes celebration of World Environment Day, World Water Day, Mine Environment & Mineral Conservation Week, Annual Flower & Vegetable Show etc.

In the year 2022-23, approx. Rs. 4.70 Crores were spent on various environmental activities at Katamati Iron Mine.

Shubham

Manager (Environment)

Manager (Environment), OMQ

WATER QUALITY DATA 2022-23
Katamati Iron Mine
(Annual Average)

| Parameters | SEWAGE TREATMENT PLANT | | | | EFFLUENT TREATMENT PLANT | | | | Standard |
|---------------------|-----------------------------|--------|----------------------------|--------|--------------------------|--------|---------------------|--------|----------|
| | New Town Ship STP 50 KLD | | Central Camp STP 50 KLD | | Bottom Bin ETP 10 KLD | | Hospital ETP 10 KLD | | |
| | Inlet | Outlet | Inlet | Outlet | Inlet | Outlet | Inlet | Outlet | |
| pH* | 6.86 | 7.23 | 6.60 | 7.14 | 6.44 | 7.03 | 6.55 | 7.18 | 5.5–9.0 |
| TSS (mg/l) | 88.08 | 33.50 | 80.83 | 27.00 | 89.42 | 31.08 | 103.67 | 26.75 | 100 |
| BOD 5 days (mg/l) | 26.00 | 13.53 | 27.25 | 10.98 | 20.75 | 9.96 | 26.53 | 11.10 | 30 |
| COD (mg/l) | 77.17 | 35.91 | 84.40 | 31.20 | 61.65 | 29.17 | 78.24 | 30.29 | 250 |
| Oil & Grease (mg/l) | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | 10 |
| Iron (mg/l) | 0.86 | .46 | 0.90 | 0.50 | 0.83 | 0.52 | 0.96 | 0.54 | 3.0 |
| Faecal Coliform | 139.67 | 53.58 | 16.92 | 44.75 | 141.67 | 50.17 | 122.50 | 52.00 | - |

Note: BDL – Below detection limit.

WATER QUALITY DATA 2022-23
Katamati Iron Mine
(Annual Average)

| Parameters | SURFACE WATER | | | | Standard |
|-------------------|------------------------|--------------------------|---|--|----------|
| | Jojo Nalla Upstream | Jojo Nalla Downstream | Mahadev Nallah (Murga Nallah) Upstream | Mahadev Nallah (Murga Nallah) Downstream | |
| pH* | 6.84 | 7.13 | 6.84 | 7.11 | 5.5–9.0 |
| DO (mg/l) | 6.39 | 6.37 | 6.38 | 6.41 | |
| TSS (mg/l) | BDL | BDL | BDL | BDL | 100 |
| BOD 5 days (mg/l) | 2.547 | 7.90 | 2.55 | 2.50 | 30 |
| COD (mg/l) | 8.89 | 9.16 | 8.89 | 8.10 | 250 |
| Iron (mg/l) | 0.256 | 0.24 | 0.26 | 9.27 | 0.5 |
| Total Coliform | BDL | BDL | | | 5000 |

Note: BDL – Below detection limit.

Annexure-2**AIR QUALITY DATA 2022-23**
Annual Average Air quality of Katamati Iron Mine of FY'23

| Pollutants | Concentration of pollutants ($\mu\text{g}/\text{m}^3$) | Standards ($\mu\text{g}/\text{m}^3$) |
|-------------------------|--|--|
| Near Pit Office | | |
| 1. PM ₁₀ | 54.36 | 100 |
| 2. PM _{2.5} | 19.54 | 60 |
| 3. SO ₂ | 8.62 | 80 |
| 4. NO _x | 17.44 | 80 |
| 5. CO | 0.208 | 4* |
| Near Metso Plant | | |
| 1. PM ₁₀ | 56.23 | 100 |
| 2. PM _{2.5} | 19.90 | 60 |
| 3. SO ₂ | 9.48 | 80 |
| 4. NO _x | 18.93 | 80 |
| 5. CO | 0.207 | 4* |
| Near Viewpoint | | |
| 1. PM ₁₀ | 55.91 | 100 |
| 2. PM _{2.5} | 20.06 | 60 |
| 3. SO ₂ | 9.67 | 80 |
| 4. NO _x | 18.73 | 80 |
| 5. CO | 0.205 | 4* |
| Near Pit Office | | |
| 1. PM ₁₀ | 57.03 | 100 |
| 2. PM _{2.5} | 21.05 | 60 |
| 3. SO ₂ | 9.53 | 80 |
| 4. NO _x | 18.89 | 80 |
| 5. CO | 0.207 | 4* |

*Unit of CO is mg/m³