



Ref. No.: MGM/P&E/12/23

Date: 03/Nov/2023

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 Bamebari Iron and Manganese Mine of M/s TATA Steel Ltd., for the period from **April'2023 to Sep'2023**.

Reference:

- 1) MoEF Letter Ref No: J-11015/85/2003-IA. II(M) DATED 17th Nov 2005.
- 2) MoEF&CC's Office Memorandum vide File No. IA3-22/1/2022-IA-III [E- 172624] dt. 14th June 2022.

Respected Sir,

This has referenced to the ministry's above referenced Office Memorandum; we have been directed to submit the six-monthly compliance on the environmental conditions prescribed in the prior environmental clearance letter(s) through newly developed compliance module in the PARIVESH Portal from the respective login.

Accordingly, we are herewith uploading/submitting the six-monthly compliance report on the status of the implementation of the conditions stipulated in environmental clearance awarded to us vide ministry's letter Ref No: - **J-11015/85/2003-IA. II(M) DATED 17.11.2005** in respect of Bamebari Iron and Manganese Mine of M/s Tata Steel for the period from **April'2023 to September'2023** for your kind perusal.

We believe the above submission is in order.

Thanking You

Yours Faithfully

F: Tata Steel



Heati

Mine & Production Planning
Bamebari Iron & Manganese Mines
Ferro Alloys Mineral Division

TATA STEEL LTD.

Ferro Alloys & Minerals Division, Manganese Group of Mines, At/P.O.: Bichhakundi, Via: Joda,
Dist: Keonjhar Odisha – 758 034 Tel.: 9238101370, e-mail : mnminesadmin@tatasteel.com
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Corporate Identity Number L27100MH1907PLC000260 website : www.tatasteel.com



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Ministry of Environment, Forest and Climate Change



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View Compliance Report at Project Proponent

Proposal Details

Proposal No

IA/OR/MIN/11660/2005

Category

Non-Coal Mining

Name of Project

Bamebari Manganese Ore Mine of M/s Tata Steel, ML Area: 464 ha {Production Capacity: 0.832 LTPA}

Plot / Survey/ Khasra No.

Village(s)

Sub-District(s)

State

ODISHA

District

KENDUJHAR

MoEF File No

No.J-11015/85/2004-IA.II(M)No.J-11015/85/2004-IA.II(M)

**Name of the Entity/
Corporate Office**

Tata Steel

Entity's PAN

NA

Entity Name as per PAN

NA

Entity details mentioned above is correct ?

Agree

Project KML

[View on DSS](#)

Covering Letter

Covering Letter

[Click to View](#)

Compliance Reporting Details

Reporting Year

2023

Reporting Period

01 Dec(01 Apr - 30 Sep)

Remark(if any)

Six Monthly EC Compliance Report in respect of Bamebari Iron & Mn Mine Project Type: Mining (Open Cast) Mineral: Manganese Ore (83200 Tonnes per annum)

Details of Production and Project Area

Date of Commencement of Project/Activity

01-04-1932

	Project Area as per EC Granted(ha.)	Actual Project Area in Possession(ha.)
Private	0	15.503
Revenue Land	67.165	0.102
Forest	382.269	448.395
Others	14.566	0
Total	464	463.99999999999994

PRODUCTION CAPACITY

Sr.No.	Name of the Product	Units	As per EC Granted	As per CTO Granted	CTO ID	Valid Up To	Production during last financial year
1	Manganese	Tons per Annum (TPA)	83200	83200	117	31-03-2025	83073

Conditions

Specific Conditions

Sr.No.	Condition Type	Condition Details	Status of Compliance,Remarks/Reason and Supporting Documents
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1	Statutory compliance	Mining shall not be undertaken in areas of forestland within the lease without the necessary approvals / forestry clearance.	<p>PPs Submission</p> <p>Bamebari Iron & Manganese Mine is presently operated for the production of Manganese Ore and consists of Mine Lease area (total) of 464.0 ha. Out of which, forest land and non-forest land prevails over 448.395 ha and 15.605 ha. respectively. The mine has been granted with Stage-II clearance/Final approval from the erstwhile Ministry of Environment & Forest, New Delhi vide Ministry's letter no. No 8-72/2004-FC dt 25.01.2007 for the diversion of 145.329 ha of forest land falling within the mine lease area. It is pertinent to mention here that prior to 2015, legal status of entire 448.395 ha was not forest land. In the year 2015, MoEF notified the legal status of Sabik Kisam of Forest land as on 25.10.1980, as forest land, vide Circular No. F.No.8-78/1996-FC, dated.10.03.2015, due to which applicability of forest clearance over an area of 66.126 ha. (previously non-forest land) becomes a legal requirement. Accordingly, forest diversion proposal over an area of 303.066 ha (Sabik forest & Balance forest) has been applied on 19.06.2016, the same is under active consideration. Presently, Mining is carried out in restricted manner within the extent of stage-II diverted area of 145.329 ha, non-forestland of 15.605 ha and some portions of the broken up forestland (broken up prior to 1980). Complied Attachment: NA</p>
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2	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.	PPs Submission	<p>No top soil generated during the period April'23 to September'23 since mining has not advanced into any virgin land. Top Soil recovered during mining operation is concurrently being used for the development of plantation activities. However due to space constraints, practice of utilizing the top soil in concurrent reclamation and rehabilitation is followed to prevent loss of nutrient potential in the course of storing. However during intermittent storage of top soil at site it is ensured that top layer is provided with either coir mats and/or grassing and peripheral drainage system for arresting the erosion. Following measures are ensured at site for the top soil management: 1. Collection and storage of top soil at earmarked site(s) 2. Assessment of top soil for nutrient potential parameters such as pH, EC, CEC, OC, and N, P, K, etc. 3. Grassing as per feasibility if required 4. Accounting of utilization of top soil in the plantation.</p> <p>Complied Attachment: NA</p>
3	WASTE MANAGEMENT	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	PPs Submission	<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. The dump is terraced at every 5-6 mtrs and</p>

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.

overall slope is maintained well within 28°. The dumps are stabilized by means of biological reclamation with the plantation of Vertiber grass on the slopes and native varieties of forestry saplings. 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 vertiber grass plantation 4. Final rehabilitation measures by means of native varieties of forestry saplings both on the slope and benches of the dump. Photographs of dump management measures undertaken at site is enclosed.
Complied
Attachment: [Click to View](#)

4	WASTE MANAGEMENT	Minerals rejects shall be stacked separately at earmarked site/dump only.	PPs Submission	The mineral rejects generated during manual processing of manganese ore (i.e. sorting, dressing and sizing) has been stacked separately at earmarked site. The designated site for mineral storage is indicated in the surface plan which is updated on quarterly basis. Complied Attachment: NA
5	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	PPs Submission	Existing catch drains and garland drains have been constructed all along the periphery of dump at the toe. Size, gradient and length of the drains are adequate to take care of the peak flow. A series of check dams and settling pits have been provided for

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.

proper settlement of suspended solid in surface runoff. The garland drain, catch drains and sedimentation pits are periodically de-silted and maintained properly every year before the onset of monsoon. The mine management regularly inspect the compliance w.r.t various provisions of progressive mine closure plan (PMCP) especially for the dump stabilization and surface runoff associated aspects. The status thereof is also filed in the form of PMCP returns annually to Indian Bureau of Mines for subsequent verification. The following measures at the mine level are ensured for adequate management of the silt and sediment flow associated environmental scenario for the OB, mineral dumps and other strategic locations such as: 1. Network of Garland Drains of size 2.5 mtr (Width) X 1.5 mtr (Depth) is constructed all along the periphery of dumps. 2. Series of check dams at strategic locations along the contour 3. Retention Wall (masonry walls) and/or Gabion walls of size 2m X 1m X 1m along the bottom of dump periphery 4. Coir matting using geotextile coir are being used for slope protection measures against erosion. 5. Periodic de-siltation of the siltation tanks and check dams before the onset of monsoon every year. 6. Separate line for storm water is maintained with proper drainage facility and is ultimately channelized to RWH ponds. Photographs of dump management measures are enclosed in the previous section. Status

as submitted before IBM in regard to the PMCP compliance w.r.t Garland drains and other aspects is enclosed herewith.
 Complied
 Attachment: [Click to View](#)

6	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.	PPs Submission	<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 and accordingly, following measures at the mine level are ensured for adequate management of the silt and sediment flow associated environmental scenario for the OB, mineral dumps and other strategic locations such as:</p> <ol style="list-style-type: none"> 1. Network of Garland Drains of size 2.5 mtr (Width) X 1.5 mtr (Depth) is constructed all along the periphery of dumps. 2. Series of check dams at strategic locations along the contour 3. Retention Wall (masonry walls) and/or Gabion walls of size 2m X 1m X 1m along the bottom of dump periphery <p>These dimensions are based on the assessment of net volume of runoff to be generated from and varies w.r.t sites. Photographs of such measures have been enclosed in the previous section.</p> <p>Complied Attachment: NA</p>
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7	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.	PPs Submission	Trace metals like Ni, Co, As and Hg are monitored both in dust fall and soil samples on quarterly basis covering all the seasons. Environmental Monitoring activities are ensured by engaging an NABL accredited laboratory and also having requisite approval from the Ministry in this regard. Dust fall is analyzed for locations like sorting yard, project office premises and Near Haul roads and some village areas whereas soil samples from different land use locations such as OB dump, forestland, Parks & gardens and other areas like agricultural land (from peripheral villages) are analyzed for at least 15-20 parameters including the nutrient profile attributes together with the heavy metals. So far no adverse results have been observed in both the types of monitoring results. An abstract of dust fall analysis carried out during year 2023 is enclosed. Complied Attachment: Click to View
8	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.	PPs Submission	Mineral Transportation is ensured by by tippers and all the trucks are covered with tarpaulins before issuance of transit permits for their onward transportation. OB is handled within the mine lease area using shovel dumper combination. Following dust control measures are ensured for checking fugitive dust emissions: 1. Fixed Sprinkling System for the Haul Roads (existing 1250 mtrs) 2. Mist Canons at dumps/sorting yards 3.

				<p>Automatic Wheel wash facility at the exit point of the mines 4. Dust suppression by means of mobile water tanker (capacity 10KI) deployed for dumping yard and other locations. 5. Closed Wagons for Dispatch through Railway siding is followed 6. Fixed sprinkling arrangement at siding Photographs of fugitive dust emission measures are enclosed herewith. Complied Attachment: Click to View</p>
9	GREENBELT	<p>A green belt of adequate width should be raised by planting the native species around ML area. Plantation should also be carried out along roads, OB dump sites etc. 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	<p>Plantation activities are ensured in accordance with the provisions of Progressive Mine Closure Plan (PMCP); Besides, 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 57.971 hectares of area (including waste dump, safety zone, back filled area and avenue plantation zones) have been covered under plantation with 287220 nos of saplings (approx.) . In the process of afforestation, the mine has ensured rehabilitation of around 35.129 ha of Waste dump & 1.500 ha of backfilled area where the saplings have attained self sustaining stage. Besides, the mine management has</p>

also established a centralized nursery over an area of 2000 sq-mtr with a generation potential of around 1 lakh saplings/year within the lease area Joda west mine which also caters to the needs of Bamebari mine as well in promoting greenbelt/ afforestation related measures. Brief glimpses of Greenbelt and associated afforestation measures undertaken at mine level is enclosed as annexure to this section.
Complied
Attachment: [Click to View](#)

10	Statutory compliance	Groundwater shall not be used for mine operations. Prior approval of CGWA shall be obtained for using groundwater.	<p>PPs Submission</p> <p>Ground water is not being used for any mining associated processes. There is no wet beneficiation plants within the lease. Majorly water is used for meeting domestic requirements of office areas, rest shelters areas for workers and supply to villagers nearby and Haul road dust suppression purposes. Presently, mine draws around 130 KLD of ground water from 3 bore wells which is exclusively used for drinking and domestic consumption and supply to local villagers for drinking purposes. However during FY23, Joribar pit was encountered with mine seepage and accordingly, a detailed hydrogeological investigation was carried out by engaging a CGWA empaneled agency and with the help of ground water modelling studies, it was estimated that peak seepage for Joribar would be around 482KLD. Therefore the revised application seeking NOC from CGWA was made and processed by the authority after due appraisal by the CGWA's Internal EAC meeting and NOC was granted to Bamebari mine for the Abstraction of 130 KLD (from bore wells) and 482 KLD from Mine pits (as seepage). The NOC thus permits the mine for ground water usage of 612KLD. Mine seepage water is utilised for irrigation and haul road</p>
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				<p>dust suppression purpose. Ref. NOC No. CGWA/NOC/MIN/REN/2/2023/8486 valid till 22-07-2024. Copy of the said NOC is enclosed.</p> <p>Complied</p> <p>Attachment: Click to View</p>
11	MINING PLAN	<p>Mining will not intersect groundwater. Prior permission of the MOEF and CGWA shall be taken to mine below water table.</p>	PPs Submission	<p>As per the approved mining plan and status thereof, it is conclusive that ultimate pit depth of the mine has not punctured regional water table; however at Joribar bar pit, seepage was evidenced during FY23 mainly attributed to some localised aquifer which was identified during a detailed hydrogeological investigation carried out by engaging a CGWA empaneled agency and with the help of ground water modelling studies, it was estimated that peak seepage for Joribar would be around 482KLD. Therefore the revised application seeking NOC from CGWA was made to include dewatering volume of 482KLD (Peak) alongwith already permitted abstraction of 130 KLD from bore wells and the same was processed by the authority after due appraisal by the CGWA's Internal EAC meeting and NOC was granted to Bamebari mine for the Abstraction of 130 KLD (from bore wells) and 482 KLD from Mine pits (as seepage). The NOC, thus permits the mine for ground water usage of 612KLD. Mine seepage water is utilized for irrigation and haul road dust suppression purpose whereas ground water from bore well is used for drinking and other domestic purposes including supply to local villagers. Ref. NOC No. CGWA/NOC/MIN/REN/2/2023/8486 valid till 22-07-2024. Copy of the said NOC is enclosed.</p> <p>Complied</p> <p>Attachment: Click to View</p>
12	WATER QUALITY MONITORING	<p>Regular monitoring of ground water level and quality should be carried</p>	PPs Submission	<p>A network of open dug wells and bore wells have been identified for</p>

	<p>AND PRESERVATION</p>	<p>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 & Forest & Central Ground Water Authority quarterly.</p>		<p>monitoring of GW level in and around the mines. Apart from this periodically an extensive survey for monitoring ground water level for peripheral wells for approx. 100 nos wells have been studied during 2022. Finding thereof has been presented before Central Ground Water Authority and no such adverse observations have been raised w.r.t GW level. A copy of the abstract of GW level and the detailed GW level records is enclosed herewith. Besides, a telemetric based piezometer has been installed within the mine lease and data on real-time basis is monitored and credentials of the telemetry system has been shared with CGWA for remote surveillance purpose. Water Quality reports have been annexed in the previous section. Ground water level monitoring report (during Apr'23 to Sep'23) and comprehensive GW level survey findings is enclosed herewith. Complied Attachment: Click to View</p>
13	<p>WATER QUALITY MONITORING AND PRESERVATION</p>	<p>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</p>	<p>PPs Submission</p>	<p>Environmental Quality Parameters are monitored by engaging an NABL accredited agency having it's laboratory recognized by MoEF&CC. Water Quality parameters are regularly tested for both surface water and ground water sources. 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</p>

		in case levels are found to be higher than permissible limits.		with applicable permissible limits/standards prescribed. An abstract of water quality assessment for April'23 to Sep'23 is enclosed herewith. Complied Attachment: Click to View
14	Statutory compliance	"Consent to Operate" should be obtained from SPCB before expanding mining activities.	PPs Submission	Consent To Operate (CTO) is obtained for the mine as applicable. Presently, the mine is operated with a valid CTO granted by Odisha State Pollution Control Board which is valid till 31-March 2025. Scope of CTO: Production of Mn Ore for 83200 TPA and Operation of Mobile Screening Plant of 1X75 TPH. Ref. CTO No. 117 issued vide OSPCB's letter bearing reference no. 544/IND/I/CON/189, dtd. 07-01-2022 Complied Attachment: Click to View
15	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	PPs Submission	Site Specific wildlife management plan has been approved by PCCF, Bhubaneswar, Odisha and Chief Wildlife Warden Odisha vide memo no. 7743 / 1 WL-SSP -01/2015 Bhubaneswar, the dated 01.09.2015. TSL has also deposited an amount of Rs. 4,69,81,000/- on 15.02.2018 for the implementation of various provisions of site-Specific wildlife conservation plan (SSWLCP), approved by state forest department. There are two types of provisions. Part of the SSWLCP activities needs to be implemented by State Forest Department with the user taking accountability towards implementation cost and part of the

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.

provisions needs to be implemented within the lease area by the project proponent like avifauna monitoring, solar fencing and other activities which are carried out on ongoing basis by the company. Apart from this, a regional wildlife conservation plan has been prepared by the state forest department for Bonai & Keonjhar divisions. Towards the implementation cost, the company has deposited the fund as assessed by the Divisional Forest Officer. Details of payment as deposited as per the aforesaid demand is as follows: 1. A sum of Rs. 45,05,554/- on 14.12.2005 2. A sum of Rs. 47,74,446/- on 27.03.2013 3. A sum of Rs. 10672000/- on 24.02.2015
Complied
Attachment: NA

16	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	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 provisions of MMDR Act, the FMCP (final mine closure plan) shall be verified for its effective implementation of before abandonment of a mine and requisite certificate from the authorized officer, as the case may be, to the effect that protective, reclamation and rehabilitation work in accordance with the FMCP or with such modifications as approved by the competent authority have been carried out before
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				<p>abandonment of mine will be obtained from IBM. The final mine closure plan along with details of Corpus fund/financial assurance amount as assessed by IBM shall be intimated to the Ministry of Environment & Forests in advance of final mine closure for approval. As per rule, FMCP is prepared 2 years in advance from the date of closure/life of the mine. So far Bamebari mine has deposited a sum of Rs. 11.59165 Cr. in respect of 231.833 ha of mined out areas with the IBM in the form of Bank Guarantees towards financial assurance for the implementation of measures of PMCP and FMCP provisions.</p> <p>Complied Attachment: NA</p>
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General Conditions

Sr.No.	Condition Heading	Condition Details	Status of Compliance,Remarks/Reason and Supporting Documents	
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	So far, Mining is carried out as proposed by using shovel-dumper combination. No wet beneficiation process being carried out in the project. Dry mobile screening with the help of a 1X75 TPH screen plant is operated. However, mine has envisaged production of Iron Ore into his production scope and approval from the ministry is being sought for the same with the expansion

plan. Application has been made to Ministry under EIA Notification, 2006 provisions and amendment thereof. Terms of Reference has been granted for the conduct of public hearing and preparation of draft EIA/EMP report. Public hearing for the said expansion plan has also been carried out. However, till final approval (EC) is not granted, no change to the existing mining (technology/method) shall be followed. Complied Attachment: NA

2	MINING PLAN	No change in the calendar plan including excavation, quantum of manganese ore and waste should be made.	PPs Submission	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 83200 tonnes per annum. This is in compliance with Ministry's OM dtd. 14th May 2020 regarding flexibility in production irrespective of calendar plan. Annual production of the mine has been duly
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				certified by Dy. Director of Mines and it is confirmed that production is well within the EC limit. DDM certified production Report for the past years is enclosed herewith. Complied Attachment: Click to View
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 Bhubaneshwar and the State Pollution Control Board/Central Pollution Control Board once in six. Months.	PPs Submission	Ambient Air Quality is monitored by establishing a network of 04 nos of dedicated AAQ stations within the core zone. The monitoring locations were established in consultation with Regional Office, State Pollution Control Board (Keonjhar Region). 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. Ambient Air Quality parameters are monitored on weekly basis (twice in a week) for both core

				and buffer zone. Abstract of Ambient Air Quality monitoring result for the period during April'23 to Sep'23 is enclosed herewith. Complied Attachment: Click to View
4	AIR QUALITY MONITORING AND PRESERVATION	Drills should be wet operated or with dust extractors and controlled blasting should be practiced.	PPs Submission	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. Blasting parameters are assessed periodically by engaging agency like CIMFR, Dhanbad. Latest report on the control blasting is enclosed herewith. Complied Attachment: Click to View
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	All the dust prone areas are adequately sprinkled by mobile sprinklers. Additionally, the mine management has also installed fixed-type water sprinklers along

haul road at Joribar Quarry over 1250 mtrs. Following measures are ensured for containment of fugitive dust emission: 1. Mobile water tanker (cap-10KI) for Haul Roads and Dump yards and other locations) 2. Mist Canons (30 LPH) for sorting yards and screening plants 3. Automatic Wheel wash facility at Railway Siding and exit point of the mines 4. Misting arrangement at the screen plants. Photographs reflecting the status of pollution control measures (fugitive dust) deployed at the mine is enclosed herewith. Complied Attachment: [Click to View](#)

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 should be provided with ear plugs/ muffs.	PPs Submission	Ear plugs & Earmuffs are provided to the workers working in mining operation & DG operations and other high noise generating equipment's. Beside, Provision of acoustic enclosures are invariably ensured before
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the installation of such noise generating instruments. Besides, following monitoring measures are also 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 over eight-hour durations. Photographs of Noise Monitoring (Ambient and Occupational Noise Exposure Assessment) is enclosed herewith. Complied Attachment: [Click to View](#)

7	WATER QUALITY MONITORING AND PRESERVATION	Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under	PPs Submission	For effective management of effluent following mitigative measures are ensured at the mine level: 1.
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GSR 422 (E) dated 19th May, 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.

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. Waste water/runoff collected from the mine pits: Since there is no wet process thus no wastewater is generated at any stage from any process however surface runoff accumulated in the mine pit is dewatered and collected Rainwater Reservoir/harvesting ponds. After adequate retention period, the same is fed to water treatment plant for final treatment. A new water treatment plant of 600 KLD capacity has been constructed within the lease area for water treatment process. Periodically water samples from WTP and mine pits and oil-water separation system are collected and analysed by an NABL accredited agency for checking compliance w.r.t applicable standards. Abstract of analysis result of

wastewater samples collected from STP and oil-water separation system at workshop is enclosed. Complied Attachment: [Click to View](#)

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	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 with the following provisions. A centralized contract to third party is placed for three manganese mines of the company. Mode of Contract is as follows: Period of Contract: 03 years (renewed every three years) Scope of Contract: Establishment of an onsite laboratory with facilities for parameters like BOD, COD, all titrimetric parameters, Uv-VIS spectrophotometer, Weather Stations on real-time basis, In-situ water testing Kit, pH meter, Turbidity meter, EC meter,
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Noise meter, CO analysers, portable dust samplers, noise meters, etc.
 Scope for Services: Sampling, analysis and reporting
 Manpower: Around 10 personnel's dedicated for field sampling and 05 personnel for onsite laboratory analysis purpose.
 The laboratory extends services to three mines namely Joda West Iron & Mn Mine, Bamebari Iron & Mn Mine and Tiringpahar Iron & Mn Mine being operated under the same management control.
 Complied
 Attachment: NA

9	Human Health Environment	<p>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.</p>	PPs Submission	<p>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</p>
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of Mines Rule, 1955. The initial and periodical examination includes blood haematology, blood pressure, detailed cardiovascular assessment, neurological examination etc. All chest radiographs are being classified for detection of pneumoconiosis, diagnosis and documentation made in accordance to ILO classifications. 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 Toxicity exposure assessment test (periodic) by a medical laboratory. A copy of latest Mn Toxicity exposure assessment report is enclosed here with. No adverse findings have been observed in

				the assessment. Complied Attachment: Click to View
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	The company has made a robust arrangement for reviewing and monitoring the implementation of Environment management plan by Centralized Environmental Management Department, headed by the Chief, Environment and supporting staff. The operation and legal sections include Head, Mine & Production Planning, Head, Environment, Senior Manager - Mine Planning, Senior Manager - Environment, Environment Engineer, Chemists, etc. Complied Attachment: Click to View
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 Bhubaneshwar.	PPs Submission	A dedicated cost Centre for maintaining all environmental expenditure is maintained in a separate GL account having a unique cost center mapped in the SAP system. All sorts of

				environmental protection related expenditures are booked in the said cost center for accounting purpose. Complied Attachment: NA
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	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. Complied Attachment: NA
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	Copy of the clearance letter marked to Sarpanch, Gram Panchayat, Palasa on 12.01.2006. Complied Attachment: NA
14	Corporate Environmental Responsibility	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	The action was required to be ensured by the State Pollution Control Board. Complied Attachment: NA

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	A copy of Environmental Clearance has been advertised in two local newspapers such as Anupam Bharat & Aam Khabar, dt.10.01.2006. Complied Attachment: NA
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Document uploaded by the PP

Last Site Visit Report (if available)

NA

Last Site Visit Report Date (if available)

Additional Attachment (if any)

NA

Additional Remarks (if any)

- I 'Tata Steel' hereby give undertaking that the data and information given in the filed compliance and enclosures are true to be best of my knowledge and belief and I am aware that if any part of the data and information found to be false or misleading at any stage, the clearance given to the project will be revoked at our risk and cost. In addition to above, I hereby give undertaking that no activity such as change in project layout, construction, expansion, etc. has been taken up without due approval.

Cover Letter From RO/SRO

Cover Letter From RO/SRO

NA

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