



सत्यमेव जयते

File No.: J-11015/62/2020-IA.II(M)
Government of India
Ministry of Environment, Forest and Climate
Change
IA Division



Dated 28/02/2026



To,

Mr. BASWARAJ MAHADEVPPA DALGADE
M/s. JSW STEEL LTD
JSW CENTRE, BANDRA KURLA COMPLEX, BANDRE (EAST) , Mumbai, MUMBAI,
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Subject: **Narayanposhi Iron & Manganese Ore mining with enhancement in production capacity of Iron Ore (ROM) from 6 to 10 MTPA & OB 4.216 MTPA with total excavation 14.216 MTPA & existing capacity of Manganese Ore (ROM) 0.036 MTPA & OB 0.223 MTPA with total Excavation 0.259 MTPA along with Mobile Crushing & Screening Plant (400TPHx10 Nos & 250TPHx07 Nos), CPU 2000 TPH, Grinding & Beneficiation Plant 6.0MTPA for Mineral Processing & Slurry Pumping Station to transport Iron Ore Concentrate in the ML area 349.254Ha [(ML Area: 347.008ha (As per DGPS)/ 349.254ha (As per ROR)] by M/s Jsw Steel Ltd located at Sundargarh, Odisha - For Environmental Clearance reg**

Sir/Madam,

This has reference to your online application No. IA/OR/MIN/482860/2024, dated 24.09.2024, submitted to the Ministry for obtaining prior Environmental Clearance (EC) under the provisions of the Environmental Impact Assessment (EIA) Notification, 2006, and subsequent amendments thereto. The application pertains to the Narayanposhi Iron & Manganese Ore Mine, located in Sundargarh District, Odisha, proposed by M/s JSW Steel Ltd. The proposal involves enhancement in the production capacity of Iron Ore (ROM) from 6.0 MTPA to 10.0 MTPA, with an associated overburden (OB) of 4.216 MTPA, making the total excavation 14.216 MTPA. Additionally, the proposal includes the continuation of the existing Manganese Ore (ROM) production capacity of 0.036 MTPA and OB of 0.223 MTPA, with a total excavation of 0.259 MTPA.

The project also includes installation and operation of Mobile Crushing and Screening Plants (10 units of 400 TPH and 7 units of 250 TPH), a Crushing and Processing Unit (CPU) of 2000 TPH, and a Grinding and Beneficiation Plant with a capacity of 6.0 MTPA for mineral processing. A Slurry Pumping Station is also proposed for transporting Iron Ore concentrate. The mining lease area comprises 349.254 hectares [347.008 ha as per DGPS survey / 349.254 ha as RoR].

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC24A0000OR5884644N
(ii) File No.	J-11015/62/2020-IA.II(M)
(iii) Clearance Type	Fresh EC
(iv) Category	A
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals,2(b) Mineral beneficiation
(vi) Sector	Non-Coal Mining Expansion in Narayanposhi Iron & Manganese Ore Mine [ML Area 347.008 Ha (As per DGPS)/349.254 Ha (As per ROR)] with Iron Ore (ROM 10 MTPA & OB 4.216 MTPA) Total Excavation 14.216 MTPA & with Manganese Ore (ROM 0.036 MTPA & OB 0.223 MTPA) Total Excavation 0.259 MTPA along with Mobile Crushing & Screening Plant (400TPHx10 Nos & 250TPHx07 Nos), CPU 2000TPH, Grinding & Beneficiation Plant 6.0MTPA for Mineral Processing & Slurry Pumping Station to transport Iron Ore Concentrate at Sundargarh, Odisha
(vii) Name of Project	
(viii) Location of Project (District, State)	SUNDARGARH, ODISHA
(ix) Issuing Authority	MoEF&CC
(x) Applicability of General Conditions	No

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-2 (Part A, B and C)/ EIA & EMP Reports were submitted to the MoEF&CC for an appraisal by the EAC under the provision of EIA notification 2006 and its subsequent amendments.

4. The above-mentioned proposal has been considered by EAC in the meeting held on 25-26/06/2025. The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed from the PARIVESH portal by scanning the QR Code above.

5. Observation and Recommendation of the Committee:-

The EAC deliberated the ADS points related to environmental clearance for Narayanposhi Iron & Manganese Ore mining with enhancement in production capacity of Iron Ore (ROM) from 6 to 10 MTPA & OB 4.216 MTPA with total excavation 14.216MTPA & existing capacity of Manganese Ore (ROM) 0.036MTPA & OB 0.223MTPA with total Excavation 0.259MTPA along with Mobile Crushing & Screening Plant (400TPHx10 Nos & 250TPHx07 Nos), CPU 2000 TPH, Grinding & Beneficiation Plant 6.0MTPA for Mineral Processing & Slurry Pumping Station to transport Iron Ore Concentrate in the ML area 349.254Ha by M/s Jsw Steel Ltd located at Sundargarh, Odisha.

The instant proposal was earlier recommended by the EAC vide minutes of the 38th EAC-NCM meeting held on 27.12.2024. However, a complaint was received in the Ministry regarding construction of Beneficiation plant in the project more than capacity stipulated in old EC condition on 26.12.2024.

Accordingly, an Additional Details Sought (ADS) dated 27.02.2025 was raised to the Project Proponent (PP) seeking a pointwise reply to the issues raised in the complaint. In its reply dated 02.03.2025 to the ADS, PP stated that *“The construction of crushing and screening plant is started for sizing of iron ore without any upgradation of quality for which CTE is obtained from SPCB-Odisha dated 04.12.2021 as per*

the provision of Air and Water Act. This shall cater the present production capacity of 6 million Tones. It may be noted that the same is not covered by the provisions of EIA Notification, 2006 as clarified in the OM dated 22.09.2008 of MoEFCC. We would like to confirm that no construction activity related to the 6.0 MTPA Beneficiation Plant has begun. MoEFCC may depute any official to check the fact. Additionally, we want to add that no procurement orders for beneficiation equipment have been placed to date”.

However, during 38th EAC meeting on 27.12.2024, PP had submitted that *“they are constructing a beneficiation plant with capacity of 2 MTPA along with crusher and screening plant within the Mine Lease area as per earlier EC dated 18.06.2019”* and it was minutised in the 38th EAC NCM meeting.

Since, PP’s submissions were different in its ADS reply dated 02.03.2025 and its submission during 38th EAC meeting dated 27.12.2024 it was decided after taking inputs from EAC members that Regional Office Bhubaneswar may conduct a site inspection and verify the status of construction of crushing screening plant and beneficiation plant.

Subsequently an ADS dated 19.03.2025 was raised asking that *“PP needs to obtain and submit a report on current status of installation of beneficiation plant in the project after site inspection by MoEFCC RO, Bhubaneswar”*.

Accordingly, RO Bhubaneswar undertook the site inspection on 26.03.2025 and in its report dated 04.04.2025 stated that *“During visit incomplete construction was observed on the premises. PP reported that 80 Percent of construction of 2000 TPH crushing and screening plant construction and erection work is completed. It was also reported that it is likely to be completed by July2025. During visit installation of beneficiation plant part has not been observed. The construction activity observed on 26.03.2025 at the proposed central processing unit for conveyor, primary crusher, screens, cone crusher, stackers, ECR buildings and the stacker along with proposed electrical control room -II for stacker. The construction activity of the beneficiation plant is yet to be started.”*

Since the PPs ADS reply dated 02.03.2025 and report of RO Bhubaneswar after site inspection on 04.04.2025 were not in consonance with 38th EAC minutes therefore the proposal was referred to EAC in its 43rd EAC meeting on 22- 23.04.2025.

During the 43rd EAC meeting PP stated that the construction of crushing and screening plant has been started for sizing of iron ore without any upgradation of quality for which Consent to Establish (CTE) was obtained from SPCB-Odisha vide letter no. 19304/IND-II-CTE-6577 dated 04.12.2021 as per the provision of Air and Water Act. PP further stated that they envisage to replace multiple smaller capacity mobile screening and crushing plant with single point fixed crusher & screen plant for achieving enhanced efficiency, better environmental management by providing suitable enclosures to all the equipment, provide network of dry fog dust suppression system, dust extraction system and development of surrounding green belt area on the proposed location.

EAC noted that the following capacity of crusher and screen was mentioned in the earlier EIA/EMP report on the basis of which EC dated 18.06.2019 was granted: -

<i>S.No.</i>	<i>Crusher/Screening</i>	<i>Capacity</i>	<i>Numbers</i>	<i>Total</i>
<i>1</i>	<i>Mobile Screening</i>	<i>200 TPH</i>	<i>3</i>	<i>600 TPH</i>
<i>2</i>	<i>Mobile Screening</i>	<i>150 TPH</i>	<i>4</i>	<i>600 TPH</i>
<i>3</i>	<i>Mobile Screening</i>	<i>100 TPH</i>	<i>2</i>	<i>200 TPH</i>

4	Fixed Crusher	350 TPH	1	300 TPH
5	Mobile Crusher	150 TPH	1	150 TPH
6	Mobile Crusher	100 TPH	1	100 TPH
7	Stand by Mobile Crusher	150 TPH	1	150 TPH
8	Stand by Mobile Crusher	100 TPH	1	100 TPH
8	Stand by Mobile Screen	150 TPH	2	300 TPH
9	Stand by Mobile Screen	100 TPH	1	100 TPH
10	Stand by Mobile Screen	200 TPH	1	200 TPH
11	Revolving Screen	10 TPH	1	10 TPH

After detailed, deliberation vide minutes of the 43rd EAC, EAC noted that two CTEs were issued to the project by Odisha State Pollution Control Board dated 04.06.2021 and 04.12.2021 with some variations in configuration of crushing and screening facility. Accordingly, EAC asked PP to provide a comparative analysis of the ongoing construction of crushing and screening facilities in comparison with earlier EIA EMP report (on the basis of which EC dated 18.06.2019 was issued) and Consent to Establish dated 04.06.2021 and 04.12.2021 issued by OSPCB. PP was also asked to explain whether there is any change in pollution load due to project activities in the context of variations in configuration of crushing and screening facilities in the project.

The PP replied to the aforesaid queries of the EAC vide letter dated 13.06.2025 and accordingly the matter was referred in the 46th EAC meeting held during 25-26 June 2025. During the meeting, EAC deliberated the ADS points raised vide minutes of the 43rd EAC meeting.

PP presented the following comparative analysis of the ongoing construction of crushing and screening facilities in comparison with earlier EIA/EMP in comparison with earlier EIA/EMP Report (on the basis of which EC dated 18.06.2019 was issued) and Consent to establish dated 04.12.2021:-

S. No.	Description	Ex-lessee EIA	CTE dated 04.12.2021 obtained by JSW	Remarks
1.	Total Production Capacity	Total of 2000 TPH capacity crushing & screening units	Central Crushing & Screening Plant of Capacity 2000 TPH (Central Processing Unit - fixed crushing capacity of 350 TPH) within the ML Area	Total same. mobile and handling. Lesser crushing.
2.	Process	Dry process involving segregation of size fractions through screening and sizing of bigger size rock by crushing, no change in grade.	Dry process involving segregation of size fractions through screening and sizing of bigger size rock by crushing, no change in grade.	Same
3.	Location	Staggered Locations Screens: At Pit Top	Single Location Crushing and	In Both Configurations

Mobile Crusher: At Pit Top Screening plant **processing area is on the Pit Top**
 Fixed crusher: At Pit Top – located at Pit Top in **Fixed crusher at Same location**
 Ear marked the same location as earlier Fixed crusher **Same location**
 (Areas are designated as processing and stack yard) was earmarked.

4.	Product Mix	CLO and Fines For Operating plants: 09- Screens 03 Crushers	CLO and Fines	Same
5.	Nos. of open Feed points	For standby plants: 03 Screens 02 Crushers Total= 17 For Operating plants: screens 3 X 9 =27 crushers 3 X 2 = 6	01 – Single Feed Hopper	Reduction by 16 nos.
6.	Nos. of Discharge chutes	For standby plants: Screens 03 Crushers 02 Total = 38 Feeding excavator, Loader and tippers for Evacuation of processed products – Dedicated set for each mobile screening & crushing plant	02 – Intermediate discharge 02 – Final product discharge Total = 4	Reduction by 34 nos.
7.	Auxiliary equipment	No auxiliary equipment	No auxiliary equipment	Elimination of all the auxiliary equipment's e.g., Feeding excavator, Loader and Tippers
8.	Environmental protection measures	Water Sprinklers at all discharge, loading and unloading points, Hoods at discharge chute	1. Provision of network of DFDS system (compressed Air and water arrangement for creating fine mist/fog) 2. Dust extraction system with bag filter and stack arrangement in both screen house. 3. Equipment and conveyors are situated in closed house and gallery	Enhancement in the EMP including DFDS, dust extraction with bag filter & stacking, conveyor etc.
9.	Green Cover	Located at Staggered places, hence maintaining green	Green Cover planned all around the	Green Cover around the Crushing &

cover is not possible

Crushing and Screening
Screening plant area

EAC noted the submission of the PP and enquired about change in pollution load due to project activities in the context of variations in configuration of crushing and screening facilities in the project. PP submitted that a pollution load assessment study has been conducted by M/s MECON Limited. Based on the findings of the air quality modelling, it has been observed that the proposed integrated fixed crushing and screening unit results in a significant reduction in peak concentrations of air pollutants when compared to the existing multiple mobile crushing and screening units. The proposed fixed plant, with a capacity of 2000 TPH, offers operational advantages owing to its compact and continuous design, which allows for better operational efficiency and environmental control. The design incorporates effective pollution control measures such as enclosures for all systems, a Dry Fog Dust Suppression (DFDS) system, and additional dust extraction through bag filters, leading to improved dust management. The study indicates that a reduced pollution load would be achieved through this arrangement, with estimated decreases of 0.15 kg/hr for PM₁₀, 0.03 kg/hr for PM_{2.5}, 0.01 kg/hr for SO₂, and 0.86 kg/hr for NO.

EAC noted the submission of the PP and study by M/s Mecon Ltd and opined that Central Crushing & Screening Plant of Capacity 2000 TPH (Central Processing Unit) being constructed by PP eliminates requirement of multiple equipments thereby reducing power requirements and also decreases emissions.

6. Based on aforesaid discussions and presentation made by the Project Proponent and the Consultant, the Expert Appraisal Committee (EAC), in 46th EAC meeting held on 25-26th June, 2025 under the provisions of the EIA Notification, 2006 and its subsequent amendments, reiterated its recommendation made vide minutes of 38th EAC meeting held during 27.12.2024 for the grant of Environmental Clearance for enhancement of Narayanposhi Iron & Manganese Ore mining with enhancement in production capacity of Iron Ore (ROM) from 6 to 10 MTPA & OB 4.216 MTPA with total excavation 14.216MTPA & existing capacity of Manganese Ore (ROM) 0.036MTPA & OB 0.223MTPA with total Excavation 0.259MTPA along with Mobile Crushing & Screening Plant (400TPHx10 Nos & 250TPHx07 Nos), CPU 2000 TPH, Grinding & Beneficiation Plant 6.0MTPA for Mineral Processing & Slurry Pumping Station to transport Iron Ore Concentrate in the ML area 349.254Ha by M/s JSW Steel Ltd located at Sundargarh, Odisha and is subject to the specific conditions mentioned in the Minutes of 38th EAC Meeting held on 27th December 2024 along with certain specific conditions and also standard conditions applicable to Non-Coal mining projects (Annexure - I).

7. The details of the project as per the information submitted by the Project Proponent are enclosed as Annexure (II)

8. The Ministry has examined the proposal in accordance with the provisions of the EIA Notification, 2006 and its subsequent amendments. Based on the recommendations of the Expert Appraisal Committee, the Ministry hereby accords Environmental Clearance for the Narayanposhi Iron & Manganese Ore Mining Project, involving enhancement in production capacity of Iron Ore (ROM) from 6.0 MTPA to 10.0 MTPA, along with Overburden (OB) of 4.216 MTPA, resulting in total excavation of 14.216 MTPA. The project also includes the existing capacity of Manganese Ore (ROM) at 0.036 MTPA and OB of 0.223 MTPA, with total excavation of 0.259 MTPA by M/s JSW Steel Ltd, located in Sundargarh district, Odisha. This Environmental Clearance is subject to compliance with the specific conditions prescribed for this project in addition to the standard conditions applicable to non-coal mining and mineral beneficiation projects(Annexure I).

9. The Environmental Clearance to the aforementioned project is under provisions of EIA Notification, 2006, as amended. It does not tantamount to approvals/consent/permissions etc. required to be obtained

under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

10. The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time bound manner. The Ministry may revoke or suspend the environmental clearance, if implementation of any of the above conditions is not found satisfactory.

11. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 read with subsequent amendments therein.

12. The PP is under obligation to implement commitments made in the Environment Management Plan, which forms part of this EC.

13. General Instructions:

a. The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC/ SEIAA website where it is displayed.

b. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

c. The project proponent shall have a well laid down environmental policy duly approved by the Board of Directors (in case of Company) or competent authority, duly prescribing standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/ forest / wildlife norms / conditions.

d. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the project proponent (during construction phase) and authorized entity mandated with compliance of conditions (during operational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.

e. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

f. The Regional Office of this Ministry 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.

g. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

h. PP needs to comply the OM dated 24.07.2024 of MoEFCC, where it is stated that the plantation of

saplings shall be carried out in the earmarked 33% greenbelt area as part of the tree plantation campaign "EK Ped Ma ke Naam" (एक पेड़ माँ के नाम (and the details of the same shall be uploaded in the MeriLife portal (<https://merilife.nic.in>).

14. This issues with the approval of the Competent Authority.

Copy To

- i. **The Secretary**, Ministry of Mines, Government of India ShastriBhawan, New Delhi.
- ii. **The Chief Secretary**, Government of Odisha, Secretariat, Bhubaneswar.
- iii. **The Secretary**, Department of Environment, Government of Odisha, Secretariat, Bhubaneswar.
- iv. **The Secretary**, Department of Mines and Geology, Government of Odisha, Secretariat, Bhubaneswar.
- v. **The Secretary**, Department of Forests, Government of Odisha, Secretariat, Bhubaneswar.
- vi. **The Secretary**, Department of Steel and Mines, Government of Odisha, Secretariat, Bhubaneswar.
- vii. **The Member Secretary**, Odisha Pollution Control Board, PariveshBhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- viii. **The Deputy Director General of Forests (C)**, Ministry of Environment, Forest and Climate Change, Regional Office, A/3, Chandersekharpur, Bhubaneswar – 751023.
- ix. **The Chief Wildlife Warden**, PrakurtiBhawan, 5th floor, BDA Apartment, Nilakanthanagar, Nayapalli, Bhubaneswar-751012, Odisha.
- x. **The Chairman**, Central Pollution Control Board, PariveshBhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
- xi. **The Controller General**, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440001.
- xii. **The Director General**, Directorate General of Mines Safety, Hirapur, Dhanbad.826001
- xiii. **The Member Secretary**, Central Ground Water Board, Ministry of Agriculture and Irrigation, 12/1 Jam Nagar House, Shahjahan road, New Delhi 110011.
- xiv. **The District Collector**, Sundargarh District, Govt. of Odisha.
- xv. **Guard File.**
- xvi. **PARIVESH Portal.**

Annexure 1

Specific EC Conditions for (Mining Of Minerals)

1. Specific Conditions

S. No	EC Conditions
1.1	The PP shall submit an updated status report detailing the implementation of NEERI's

S. No	EC Conditions
	recommendations, along with the progress made on the installation of the slurry pipeline, within six months to RO, MOEFCC.
1.2	The PP shall enhance dependence on surface water sources and maximize the utilization of harvested rainwater to reduce dependency on groundwater resources.
1.3	Mining operation is not allowed in the undiverted forest land of 19.256 Ha. PP needs to erect closely spaced pillars to clearly demarcate the undiverted forest land in the lease area. PP should also construct fireline along undiverted forest land boundary in consultation with State Forest Department. All officers, supervisors, overman, mate, workers, operators, persons employed in the mine should be made aware about the undiverted forest land and its boundaries so that there is no mining operations in it.
1.4	On all the surface plans, production plans used in the project the diverted and undiverted forest areas should be clearly marked in different colours.
1.5	PP should follow the provisions of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and the guidelines of FC Divison of MoEFCC with regards to forest land involved in the project.
1.6	The natural water bodies and or streams which are flowing in and around the mine lease area should not be disturbed. PP shall consult state Water Resource department and SPCB regarding Nallah/Stream and follow their instructions. Implementation status of this condition should be communicated to Regional office, Bhubaneswar.
1.7	No blasting activities shall take place within 500 meters of schools and residential areas and within 500 meters of streams and rivers without permission from DGMS. However, one school is currently located just 80 meters away from UPL. The project proponent (PP) should explore for relocating the school within the lease area within one year to mitigate potential environmental and health impacts.No blasting activity shall be undertaken during school hours. Blasting can only be done on School Holidays. A copy of the EC shall also be provided to Principal of the School and District Education officer. Metal windscreen should be installed adjacent to the school for prevention against flyrocks and dust. Special permission from DGMS should be taken for carrying blasting activity near to the school.
1.8	PP needs to strictly adhere to MMR (Metalliferous Mines Regulation) / DGMS guidelines and recommendations of the study for undertaking blasting activity. PP shall take all steps so that ground vibration and air over pressure does not exceed the stipulations in MMR/ DGMS guidelines. PP shall ensure that there is no damage to the school, students and staff of the school.
1.9	PP shall submit the revised Wildlife Conservation Plan within two months to Ministry's Regional Office. The Project Proponent should follow-up the status of implementation on Wildlife Conservation Plan from the Forest Officials and the same shall be submitted to the Ministry's Regional Office in the six monthly compliance report.
1.10	The Project Proponent shall continue to monitor the air quality, noise level, water quality, water level and ground vibration during drilling and blasting at the edge of the mine, near the village, at crusher and at other sensitive receptors and such collected data shall be submitted quarterly to the Ministry's Regional Office.
1.11	The Project Proponent should install Continuous Ambient Air Quality Monitoring Stations

S. No	EC Conditions
	(CAAQMS) as per the scientific study and in consultation with CPCB/SPCB. The real time data so generated should be displayed digitally at entry and exit gate of mine lease area for public display and shall be linked to server of CPCB/SPCB.
1.12	The Project Proponent needs to use modern equipment's such as Camera Traps for ensuring presence and movement of wild animals in the study area in consultation with Wildlife Wing of Forest Department. Appropriate interventions shall be taken to minimise stress conditions for wild animals and to avoid Man-Animal conflict.
1.13	The Project Proponent shall take adequate measures to prevent the pilferage of mineral. The Project Proponent needs to implement all possible mitigation measures while transporting the mineral by Road. Tarpaulins covered trucks should be used to prevent spillage and emission of dust. Operators, Supervisors, contractor personal should be properly trained on environmental aspects of Ore/waste spillage and resultant air and water pollution. Record of above training of the personal, supervisor/officials should be submitted to Regional office of MoEF&CC.
1.14	The Project Proponent needs to install the permanent water sprinklers in addition to mobile water tankers along the haul road and the approach road. Further, 10 nos. of fog canon/mist sprayer of atleast 40 m throw shall be installed at various locations in the mine area. Effective dust suppression system shall also be adopted at other parts of the mining lease to arrest the fugitive dust emission. One fog cannon at each nearby school shall be installed along with metal wind screen.
1.15	PP shall carryout the blasting in a controlled manner such that the direction of the blasting should be perpendicular to the village/school and it must follow Metalliferous Mines Regulations, 1961 & DGMS guidelines in this respect so that safety is ensured and chances of ground vibration are minimized. PP should regulate blasting timings in consultation with DGMS ensuring that blasting is conducted outside of school hours.
1.16	Regional office of MoEF&CC shall do the site inspection of the project within one year of issuance of this EC to check whether the conditions of EC are being complied by PP and there is no adverse impact on the schools and nearby habitations. PP shall submit the site inspection report of the Regional office of Ministry to IA Divison and Compliance and Monitoring Divison of Ministry within one year from issuance of this EC.
1.17	The Project Proponent shall explore the possibility of using atleast 20% of Electric vehicles/CNG/Solar instead of diesel operation within three years.
1.18	The air pollution control equipment's like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at areas prone to air pollution. PP shall take necessary measures to avoid generation of fugitive dust emissions.
1.19	The Project Proponent should adopt the proper mitigation measures as proposed under EMP. The adoption of mitigation measures and monitoring of the same as proposed in the EMP shall be done under the supervision of the qualified environmental personnel. The implementation status of the same shall be submitted to the Ministry's Regional Office.
1.20	The Project Proponent should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground). A dedicated team to oversee environment management shall be setup at site which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality

S. No	EC Conditions
	parameters on routine basis instead of engaging environment monitoring laboratories/consultants. Any non-compliance or infringement should be reported to the concerned authority.
1.21	The Project Proponent shall conduct third party audit of compliance of EC condition at an interval one year and its report shall be submitted to RO, MoEF&CC.
1.22	The Project Proponent shall ensure the survival rate of 95% for planting the gap plantation and new plantation. The Project Proponent shall make the actual count on the saplings planted and its survival rate and in case of failure of achievement of 95% survival rate, action plan for achieving the target survival rate shall be submitted to the Ministry's Integrated Regional Office. Project proponent shall use saplings of 10 ft height for plantation (2500 plants/ha). PP shall make provision for drip irrigation to conserve the water. PP should plant fruit bearing trees along with Sal and allied species within the ML area.
1.23	To address the concerns raised by the public in the public hearing, PP should complete its public hearing commitments within 3 years. PP shall comply with all action plans made for public hearing concerns and make regular maintenance and record the progressive activity outcomes. The Project proponent shall ensure that the activities proposed under the public hearing is different from the CSR activities.
1.24	The Project Proponent needs to provide the good quality drinking water supply and also by laying network of pipelines to the local people at free of cost.
1.25	The Project Proponent shall provide the rainwater harvesting structure at mine offices and quarters/colonies to recharge the ground water.
1.26	PP needs to construct sedimentation ponds, check dam, gabion structures, retaining wall, garland drain etc to safeguard the Karo River and other natural Streams/Nallahs flowing in and around the Lease area.
1.27	The Project Proponent shall also organize employment-based apprenticeship/ internship training program every year with appropriate stipend for the youth and other programs to enhance the skill of the local people. The data should be maintained for the training imparted to the persons and the outcome of the training, for the assessment of the training program should be analyzed periodically and improved accordingly.
1.28	The Project Proponent should periodically monitor and maintain the health records of the mine workers digitally prior to mining operations, at the time of operation of mine and post mining operations. Regular surveillance shall be carried through regular occupational health check-up every year for mine workers. PP shall also organize medical camp for the benefit of the local people and also the monitor the health impacts due to mining activity.
1.29	The mobile water tankers should be used in the ML area for dust suppression and control. A logbook of water tankers should be maintained mentioning running hours, kilometre reading, maintenance hours of water tankers for each shift. PP shall use non-toxic chemicals for dust suppression in order to reduce the total water requirement.
1.30	The Project Proponent should take adequate measures to prevent the fly rock falling onto the nearby habitations and also the Project Proponent needs to set up a permanent monitoring in the nearby village to monitor the blast induced ground vibration and air over pressure.

S. No	EC Conditions
1.31	26. The Project Proponent needs to reduce the dependency upon the ground water, surface water (water from rivers, etc.) and it shall construct a water reservoir within the lease area for meeting its day-to-day water needs. An implementation report in this regard needs to be submitted to Ministry's Regional Office.
1.32	The Project Proponent shall ensure that the transportation shall not occur through village road.
1.33	Project Proponent needs to collect samples from upstream and downstream of Karo River and check its water quality including measurement of free silica concentration as per the DGMS standards and circulars/guidelines.
1.34	The mining lease holders shall, after ceasing mining operations, undertake regrassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. The implementation report of the above said condition shall be submitted to the Ministry's Integrated Regional Office.
1.35	Approval/permission of the CGWA/SGWA shall be obtained before drawing ground water for the project activities, if applicable. State Pollution Control Board (SPCB) concerned shall not issue Consent to Operate (CTO) till the project proponent obtains such permission.
1.36	Project proponent shall take necessary other clearances/permissions under various Acts and Rules if any, from the respective authorities / department.
1.37	PP shall consult State Forest Department and Chief Wildlife Warden about the additional steps to be taken for conservation and free movement of Elephants near the Mine Lease area.
1.38	PP shall organize community awareness programs in local villages to educate residents about co-existing with elephants and preventing human-wildlife conflicts. Emergency response teams comprising local community members and experts shall be established to handle Human-Elephant Conflict situations effectively.
1.39	PP should strictly follow the NEERI guidelines as given in Part-B.
1.40	<p>B. NEERI CONDITIONS</p> <p>Recommendation of CSIR-NEERI Report on "Carrying Capacity Study for Environmentally Sustainable Iron and Manganese Ore Mining Activity in Keonjhar, Sundargarh and Mayurbhanj districts of Odisha State"</p> <p>1) Department of Steel & Mines, Govt. of Odisha should prepare 5 years regional plan for annual ironore requirement from the state, which in turn shall be met from different mines/zones (e.g. Joda, Koira.) in the state. Accordingly, sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.</p>
1.41	2) The expansion or opening of new manganese ore mines may be considered only when the actual production of about 80% is achieved. Further, the mines that have not produced Mn ore for last two years and have no commitment in the current year as well; EC capacity in such cases may be reviewed. The Department of Steel & Mines, Govt. of Odisha shall submit the Annual Report on this issue to the MoEF&CC for further necessary action.

S. No	EC Conditions												
1.42	<p>3) Analysis of baseline environmental quality data for the year 2014 and 2016 indicates that existing mining activities appear to have little / no potential impact on environmental quality, except on air environment, which was mainly due to re-suspension of road dust. Therefore, all the working mines can continue to operate with strict compliance to monitoring of environmental quality parameters as per EC and CTE/CTO conditions of the respective mine, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEF&CC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable acts.</p>												
1.43	<p>4) Considering the existing environmental quality, EC capacity, production rate, iron ore resource availability and transport infrastructure availability, the share of Joda and Koira sector works out to be 70% and 30% respectively for the existing scenario for the year 2015-16. However, for additional EC capacity, it can be 50:50 subject to commensurate infrastructure improvement (viz. SOTM, pollution free road transport, enhancement of rail network etc.) in the respective regions.</p>												
1.44	<p>5) Continuous monitoring of different environmental quality parameters as per EC and CTE/CTO conditions with respect to air, noise, water (surface & ground water) and soil quality in each region shall be done. The environmental quality parameters should not indicate any adverse impact on the environment. Monitoring within the mines should be done by individual mine lease holders, whereas outside the mine lease area, monitoring should be done by the Govt. of Odisha through various concerned departments/ authorized agencies. Various monitoring/ studies should be conducted through national reputed institutes, NABET/ MoEF&CC accredited laboratories/organizations. The reports submitted by individual mine lease holders and study reports prepared by other concerned departments/agency for each of the regions should be evaluated and examined by SPCB/ MoEF&CC.</p>												
1.45	<p>6) Construction of cement concrete road from mine entrance and exit to the main road with proper drainage system and green belt development along the roads and also construction of road minimum 300 m inside the mine should be done. This should be done within one year for existing mines and new mine should have since beginning. The concerned departments should extend full support; wherever the land does not belong to the respective mine lease holders. The Department of Steel & Mines, Govt. of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has not constructed proper cement concrete road as suggested above.</p>												
1.46	<p>7) In view of high dust pollution and noise generation due to road transport, it is proposed to regulate/guide the movement of iron and manganese ore material based on the EC capacity of the mines. Accordingly, ore transport mode has been suggested, as given below in Table.</p> <p>Table: EC Capacity based Suggested Ore Transport Mode (SOTM)</p> <table border="1" data-bbox="335 1702 1468 2049"> <thead> <tr> <th>Code</th> <th>EC Capacity</th> <th>Suggested Ore Transport Mode</th> </tr> </thead> <tbody> <tr> <td>SOTM 1</td> <td>≥ 5 MTPA</td> <td>100% by private railway siding or conveyor belt up to public railway siding or pipeline for captive mines and 70% for non-captive mines</td> </tr> <tr> <td>SOTM 2</td> <td>Between 3 and <5 MTPA</td> <td>Minimum 70% by public railway siding, through conveyor belt and maximum 30% by road - direct to destination or other public railway siding or above option</td> </tr> <tr> <td>SOTM 3</td> <td>Between 1 and <3 MTPA</td> <td>Minimum 70% by public railway siding and maximum 30% by road - direct to destination or by other public railway siding or above options</td> </tr> </tbody> </table>	Code	EC Capacity	Suggested Ore Transport Mode	SOTM 1	≥ 5 MTPA	100% by private railway siding or conveyor belt up to public railway siding or pipeline for captive mines and 70% for non-captive mines	SOTM 2	Between 3 and <5 MTPA	Minimum 70% by public railway siding, through conveyor belt and maximum 30% by road - direct to destination or other public railway siding or above option	SOTM 3	Between 1 and <3 MTPA	Minimum 70% by public railway siding and maximum 30% by road - direct to destination or by other public railway siding or above options
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	<p>SOTM₄ <1 MTPA 100 % by 10/17 Ton Trucks or above options</p> <p>It is mentioned by State Govt. of Odisha that currently about 45% of the iron ore is despatched using rail network and progressively it will be increased to about 60% by rail/slurry over a period of 5 years, taking into account time required to set up more railway sidings.</p> <p>In view of present ore transport practices and practical limitations, all the existing mines should ensure adoption of SOTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning itself, and should have system in place within next 5 years.</p> <p>However, the State Govt. of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha.</p> <p>Transportation of iron & manganese ore through river (jetty) to nearest Sea port (Sea cargo option) may be explored or connecting Sea ports with Railway network from the mines to be improved further so that burden on existing road and rail network and also pollution thereof can be minimized.</p> <p>Progress on development of dust free roads, implementation of SOTM, increased use of existing rail network, development of additional railway network/conveyor belt/ pipelines etc. shall be submitted periodically to MoEF&CC.</p> <p>Responsibility: Department of Steel & Mines, Govt. of Odisha; Time Period: 5 Years for developing railway/ conveyor belt facilities</p>
1.47	<p>8) Development of parking plazas for trucks with proper basic amenities/ facilities should be done inside mine. This should be done within one year for existing mines and new mines should have since beginning. Small capacity mines (in terms of lease area or production) not having enough space within the mine lease areas should develop parking plaza at a common place within the region with requisite facilities. Responsibility: Individual Mine Lease Holders; Time Period: 1 Year</p>
1.48	<p>9) Construction of NH 215 as minimum 4 lane road with proper drainage system and plantation and subsequent regular maintenance of the road as per IRC guidelines. Construction of other mineral carrying roads with proper width and drainage system along with road side plantation to be carried out. Responsibility: Department of Steel & Mines with PWD / NHAI Time Period: 2 Years.</p>
1.49	<p>10) Regular vacuum cleaning of all mineral carrying roads aiming at “Zero Dust Re-suspension” may be considered. Responsibility: PWD / NHAI/ Mine Lease Holders; Time Period: 3 months for existing roads.</p>
1.50	<p>11) Expansion of existing mines and new mines should be considered after conducting recent EIA Study (as per the provisions of EIA Notification 2006, as amended time to time) with proper justification on demand scenario for iron ore requirement and availability of pollution free transport network in the region. Responsibility: IBM, Department of Steel & Mines and MoEF&CC, New Delhi.</p>
1.51	<p>12) Mine-wise Allocation of Annual Production: In case the total requirement of iron ore exceeds</p>

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	<p>thesuggested limit for that year, permission for annual production by an individual mine may bedecided depending on approved EC capacity (for total actual dispatch) and actual production rate ofindividual mine during last year or any other criteria set by the State Govt., i.e. Dept. of Steel & Mines.Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare inadavance mine-wise annual production scenario as suggested in Table, so that demand for ironore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.</p> <p>Table: Allocation of Production to Different Mines for 5 Years (as per approved Mining Plan)</p> <table border="1" data-bbox="331 495 1422 808"> <thead> <tr> <th rowspan="2">Mine/Lease</th> <th rowspan="2">EC Capacity (MTPA)</th> <th colspan="5">Suggested Annual Production (MT)</th> </tr> <tr> <th>2016-17 Yr 1</th> <th>2017-18 Yr 2</th> <th>2018-19 Yr 3</th> <th>2019-20 Yr 4</th> <th>2020-21 Yr 5</th> </tr> </thead> <tbody> <tr> <td>Mine 1</td> <td>X1</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mine 2</td> <td>X2</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mine 3</td> <td>X3</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mine n</td> <td>Xn</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td>160 + dX</td> <td>105</td> <td>129</td> <td>153</td> <td>177</td> <td>201</td> </tr> </tbody> </table> <p>Next year allocation = Average of EC Capacity and Last year production</p>	Mine/Lease	EC Capacity (MTPA)	Suggested Annual Production (MT)					2016-17 Yr 1	2017-18 Yr 2	2018-19 Yr 3	2019-20 Yr 4	2020-21 Yr 5	Mine 1	X1						Mine 2	X2						Mine 3	X3						Mine n	Xn						Total	160 + dX	105	129	153	177	201
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1.52	<p>13) Expansion of Existing Mines having Validity up to 2020: In view of implementation of MMDR Act2015, wherein many non-captive mines are expected to be closed by March 2020, total iron oreproduction scenario has been. It is expected that the non-captive mines having validity till 2020 shalltry to maximize their production (limited to EC capacity) in the remaining period. Further, dependingupon availability of iron ore resources, these mines may also seek expansion of EC capacity. It maybe noted here that total EC capacity of existing 25 working mines having validity upto 2020 is about85 MTPA, whereas actual production from these mines has been only 44.677 MT (52.6%) during2015-16 and 57.07 MT (67.1%) during 2016-17. Also, it is expected that these mines would not evenbe able to achieve ore production as per existing EC capacity till March 2020. Therefore, theseexisting mines should go for production to the fullest extent to meet the requisite demand from theState. However, where EC limit is exhausted, application for expansion may be considered. Further,the EC process (i.e. Grant of TOR, Baseline data collection, Mining plan/scheme approval, Public hearing, preparation of EIA/EMP Report. Appraisal by the EAC and grant of EC) takes aboutone year time. Under such circumstances, it is suggested that further applications for grant of TOR orgrant of EC for expansion of production capacity of the mine should be considered for those existingmines, which have exhausted their capacity subject to consideration of all environmental aspects. Responsibility: Department of Steel & Mines and MoEF&CC, New Delhi.</p>																																															
1.53	<p>14) Sustained Iron Ore Production beyond 2020: Considering the implementation of MMDR Act 2015,total production of iron ore in Odisha State is anticipated to be about 111 MT during 2016-17(actual production was – 102.663 MT), 136 MT during 2017-18, 146 MT during 2018-19 and 146 MTduring 2019-20. Then there will be substantial drop in total production (to the tune of 73 MT during2020-21 onwards) due to closure of mines, which are valid up to 2020. Therefore, in order tomaintain operation/sustained growth of downstream industries, iron ore mining in the region needsto be continued at a sustainable rate. The State Govt. through Department of Steel and Minesshould initiate appropriate action to ensure continued availability of iron ore from the region, as persuggested sustainable annual production.</p>																																															
1.54	<p>15) Reserves Estimation–Mining Plan and Exploration: Appropriate actions (geo-technical investigationfor qualitative and quantitative resource estimation & other preparations for auction of</p>																																															

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	<p>mines), maybe initiated taken into account the existing working mines, and the mines which were operational at some point of time (but closed presently due to various reasons). The total iron ore reserves/resources available within the total lease area of each mine should be estimated by State Govt./NMET/ GSI (or any other approved agency) with respect to: (i) Total lease area of mine (surface), (ii) Maximum depth to which resources could be available, (iii) Resources below the groundwater table (if intersected), (iv) Reserves are to be estimated as per UNFC code with respect to quantity and quality (% Fe content), (v) Maximum mining rate and area for auction (after 2020) will be calculated based on total resources available and proposed life of mine leading to closure of mine in a stipulated time period.</p> <p>Responsibility: Department of Steel & Mines, IBM and GSI; Time frame: 1 year for the mines to be auctioned for next 2 years. The above mentioned organizations shall ensure the compliance with respect to timelines for implementations.</p>
1.55	<p>16) Depending upon availability of extractable iron ore resources within a mine, mining below the ground water table may be permitted after conducting necessary geological and hydro-geological study by GSI and requisite approval from the CGWB/CGWA (Central Ground Water Board/Authority). This can be explored at least in few mines on trial/pilot basis. Further, within a mine, it will be desirable to operate one pit at a time, and next pit should be opened after extracting maximum possible resources from the first pit, so that the exhausted pit can be used for back filling/storing of low grade iron ore. However, depending upon the quantity and/or quality of iron/manganese ore, other mine pits in the same mine lease may also be opened for sustainable scientific mining, as per approved mining plan/scheme of mining by IBM. The Department of Steel & Mines, Govt. of Odisha should initiate the pilot project so that minerals are fully utilized.</p>
1.56	<p>17) Commercial Utilization of Low Grade Ore: R&D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. R&D studies on utilization of mine wastewater having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept. of Steel & Mines, Individual Mine Lease Holders.</p>
1.57	<p>20) Large and medium mine leases contribute to better implementation of reclamation and rehabilitation plans to sustain the ecology for scientific and sustainable mining. The small leases do not possess scientific capability of environmentally sustainable mining. Therefore, new mine leases having more than 50 ha area should be encouraged, as far as possible. This will ensure inter-generational resource availability to some extent. Responsibility: Dept. of Steel & Mines, Govt. of Odisha.</p>
1.58	<p>19) State Govt. of Odisha shall make all efforts to ensure exhausting all the iron & manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept. of Steel & Mines, Govt. of Odisha.</p>
1.59	<p>18) The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it will be desirable to develop proper rail network in the region. Rail transport shall not</p>

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	<p>only be pollutionfree mode but also will be much economical option for iron ore transport. The rail network and/orconveyor belt system upto public railway siding needs to be created. The total length of theconveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length ofrail network/ conveyor system for 8 mines (under SOTM 1 & 2) is estimated to be around 95 km.Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxyrailway sidings in Koira region. Responsibility: Dept. of Steel & Mines, Govt. of Odisha andConcerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). TheDepartment of Steel & Mines, Govt. of Odisha should follow-up with the concerned Departmentsand railways so that proposed proper rail network is in place by 2025.</p>
1.60	<p>21) Mining Operations/Process Related: (i) Appropriate mining process and machinery (viz. rightcapacity, fuel efficient) should be selected to carry out various mining operations that generateminimal dust/air pollution, noise, wastewater and solid waste. e.g. drills should either be operatedwith dust extractors or equipped with water injection system. (ii) After commencement of miningoperation, a study should be conducted to assess and quantify emission load generation (in termsof air pollution, noise, waste water and solid waste) from each of the mining activity (includingtransportation) on annual basis. Efforts should be made to further eliminate/ minimize generation ofair pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology. This shall be ensured by the respective mine lease holders. (iii) Variousmachineries/equipment selected (viz. dumpers, excavators, crushers, screen plants etc.) andtransport means should have optimum fuel/power consumption, and their fuel/power consumptionshould be recorded on monthly basis. Further, inspection and maintenance of all the machineries/equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommendedtime schedule and record should be maintained by the respective mine lease holders. (iv) Digitalprocessing of the entire lease area using remote sensing technique should be carried out regularlyonce in 3 years for monitoring land use pattern and mining activity taken place. Further, the extentof pit area excavated should also be demarcated based on remote sensing analysis. This should bedone by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of nationalrepute or if done by a private agency, the report shall be vetted/ authenticated by ORSAC,Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders.Responsibility: Individual Mine Lease Holders.</p>
1.61	<p>22) Air Environment Related: (i) Fugitive dust emissions from all the sources should be controlledregularly on daily basis. Water spraying arrangement on haul roads, loading and unloading andat other transfer points should be provided and properly maintained. Further, it will be desirable touse water fogging system to minimize water consumption. It should be ensured that the ambient airquality parameters conform to the norms prescribed by the CPCB in this regard. (ii) The core zone ofmining activity should be monitored on daily basis. Minimum four ambient air quality monitoringstations should be established in the core zone for SPM, PM10, PM2.5, SO2, NOx and COmonitoring. Location of air quality monitoring stations should be decided based on themeteorological data, topographical features and environmentally and ecologically sensitive targetsand frequency of monitoring should be undertaken in consultation with the State Pollution ControlBoard (based on Emission Load Assessment Study). The number of monitoring locations may bemore for larger capacity mines and working in larger area. Out of four stations, one should beonline monitoring station in the mines having more than 3 MTPA EC Capacity. (iii) Monitoring in bufferzone should be carried out by SPCB or through NABET accredited agency. In addition, air qualityparameters (SPM, PM10, PM2.5, SO2, NOx and CO) shall be regularly monitored at locations ofnearest human habitation including schools and other public amenities located nearest to sourceof the dust generation as applicable. Further, 11 continuous air quality monitoring systems</p>

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	<p>may be installed in Joida and Koira regions and one in Baripada/ Rairangpur region. (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral. (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of using closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine (periodically, near truck entry and exit gate). Responsibility: Individual Mine Lease Holders and SPCB.</p>
1.62	<p>23) Noise and Vibration Related: (i) Blasting operation should be carried out only during daytime. Controlled blasting such as Nonel, should be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. (ii) Appropriate measures (detailed in Section 5.4) should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with earplugs/muffs. (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the noise levels in the report. The data should be used to map the noise generation from different activities and efforts should be made to maintain the noise levels within the acceptable limits of CPCB (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored at least once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.</p>
1.63	<p>24) Water/Wastewater Related: (i) In general, the mining operations should be restricted to aboveground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro- geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ outcome of such study may be reflected/incorporated in the EIA/EMP report of the mine appropriately. (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flow rate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas and river passing through the mine lease area (upstream and downstream locations) should be carried out on monthly basis. (iii) Regular monitoring of ground water level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis. (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region. (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoff etc.) should be taken to prevent pollution of nearby river/other water bodies. Water quality monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted through NABL/ NABET approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable. (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage treatment plant should be installed for the employees/colony, wherever applicable. (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be</p>

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	<p>undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization. (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls. (xi) Trenches / garland drain should be constructed at the foot of dumps to arrest silt from being carried to water bodies. Adequate number of checkdams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease areas and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis. (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water withdrawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.</p>
1.64	<p>25) Land/ Soil/ Overburden Related: (i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years or as per provisions mentioned in the mine plan/ scheme). The top soil should be used for land reclamation and plantation appropriately. (ii) Fodder plots should be developed in the non-mineralised area in lieu of use of grazing land, if any. (iii) Over burden/ low grade ore should be stacked at earmarked dump site(s) only and should not be kept active for long period. The dump height should be decided on case to case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc. (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil, OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data. Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals. (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled area should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating. (vi) Hazardous waste such as, waste oil, lubricants, resin, and coal tar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease Holders.</p>
1.65	<p>26) Ecology/Biodiversity (Flora-Fauna) Related: (i) As per the Red List of IUCN (International Union for Conservation of Nature), six floral species and 21 faunal species have been reported to be under threatened, vulnerable & endangered category. Protection of these floral and faunal species should be taken by the State Forest & Wildlife Department on priority, particularly in the mining zones, if any. (ii) The mines falling within 5-10 km of the Karo-Karampada Elephant corridor buffer need to take precautionary measures during mining activities. The forest and existing elephant corridor routes are to be protected and conserved. Improvement of habitat by providing</p>

S. No	EC Conditions
	<p>food, water and space for the elephants is required to be ensured to avoid Man-Elephant conflicts. Though as per the records of State Forest Department, movement of elephants in the Karo-Karampada elephant corridor within 10 km distance from the mines in Joda and Koira is not observed, the Forest Department shall further record and ensure that elephant's movement is not affected due to mining activities. (iii) All precautionary measures should be taken during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna should be prepared and implemented in consultation with the State Forest and Wildlife Department within the mine lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department. (iv) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner. (v) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species / grass species/scrub etc., distance between the plants and survival rate should be recorded. (vi) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation. (vii) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value. (viii) Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status, along with expenditure details. (ix) Similarly, Wildlife Department is also required to record and document annual status of wildlife in the region and should identify the need for wildlife management on regional level. (x) Maintenance of the ecology of the region is prime responsibility of the State Forest and Wildlife Department. They need to periodically review the status and identify the need for further improvement in the region. The required expenditure may be met from the funds already collected in the form of compensatory afforestation and wildlife management. Further, additional fund, if required can be sought from DMF. Responsibility: Individual Mine Lease Holders and State Forest & Wildlife Department.</p>
1.66	<p>27) Socio-Economic Related: (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities. Further, basic amenities and infrastructure facilities like education, medical, roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region. (ii) Land outtees and land losers/affected people, if any, should be compensated and rehabilitated as per the national/state policy on Resettlement and Rehabilitation. (iii) The socio-economic development in the region should be focused and aligned with the guidelines/initiatives of Govt. of India/ NITI Aayog / Hon'ble Prime Minister's Vision centring around prosperity, equality, justice, cleanliness, transparency, employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education, medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for "Samagra Vikas" of these blocks well as other blocks of the district. While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by Ministry of Mines, Govt. of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District</p>

S. No	EC Conditions								
	Administration and Individual Mine Lease Holders.								
1.67	<p>28) Road Transport Related: (i) All the mine lease holders should follow the suggested ore transport mode (SOTM), based on its EC capacity within next 5 years. (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the mine, as suggested in Chapter 10. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport. (iii) Transportation of ore should be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PM10 should be monitored near the roads towards entry & exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders and Dept. of Steel & Mines.</p>								
1.68	<p>29) Occupational Health Related: (i) 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 periodically. (ii) Occupational health surveillance program for all the employees/workers (including casual workers) should be undertaken periodically (on annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately, if needed. (iii) Occupational health and safety measures related awareness programs including identification of work related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis. A full time qualified doctor should be engaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and records should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less) should be conducted followed by follow-up of actions, wherever required. Occupational health centre should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer).</p>								
1.69	<p>30) Reporting of Environmental Sustainability Achievement: All the mines should prepare annual environmental sustainability report (ESR), highlighting the efforts made towards environmental protection with respect to different environmental components vis-à-vis production performance of the mine on monthly basis. The data collected as per EC and CTE/CTO conditions should be utilized to prepare the annual sustainability report. The mines performing high with effective environmental safeguards may be suitably recognized/ rewarded. "Star Rating Format" formulated by the Ministry of Mines along with environmental sustainability report may be used.</p>								
1.70	<p>31) Environmental Monitoring Requirements at Regional Level: Apart from strict compliance and monitoring by individual mine lease holder, there is a need for simultaneous monitoring in each of the regions by competent expert agencies under the guidance/ supervision of concerned regulatory agency. Details of the studies required to be done on regular basis (continuously for 5 years) through responsible agency (organization of national/state repute) and time frame are suggested in Table.</p> <p>Table: Suggested Environmental Monitoring Requirements and Action Plans at Regional Level.</p> <table border="1" data-bbox="331 1816 1473 2040"> <thead> <tr> <th data-bbox="338 1861 379 1921">Sr. No.</th> <th data-bbox="384 1861 799 1921">Study Component/ Action Plan</th> <th data-bbox="847 1861 1011 1921">Responsibility</th> <th data-bbox="1230 1816 1390 1962">Monitoring and Reporting Time Frame (Approx.)</th> </tr> </thead> <tbody> <tr> <td data-bbox="338 1973 363 2011">1.</td> <td data-bbox="384 1973 799 2040">Environmental Quality Monitoring with respect to Air, Water, Noise and</td> <td data-bbox="847 1973 922 2011">SPCB</td> <td data-bbox="1230 1973 1473 2011">Continuous Annually</td> </tr> </tbody> </table>	Sr. No.	Study Component/ Action Plan	Responsibility	Monitoring and Reporting Time Frame (Approx.)	1.	Environmental Quality Monitoring with respect to Air, Water, Noise and	SPCB	Continuous Annually
Sr. No.	Study Component/ Action Plan	Responsibility	Monitoring and Reporting Time Frame (Approx.)						
1.	Environmental Quality Monitoring with respect to Air, Water, Noise and	SPCB	Continuous Annually						

S. No	EC Conditions		
	<p>Soil Quality in each region (Joda, Koira and Baripada/Rairangpur) as per specified frequency shall be done by a third party (preferably Govt.) and/or laboratory approved/ recognized by NABET/ CPCB/ SPCB/ MoEF&CC. All the water bodies (rivers, nallas, ponds etc.) shall be monitored. National/State level research/ academic institutes may be involved initially for couple of years to streamline the activity. The report shall be brought out annually by June each year. The study shall be conducted in consultation with MoEF&CC-RO.</p>		
	<p>Installation of online ambient air quality monitor for PM10, PM2.5, SOx and NOx within the mine having more than 3 MTPA EC Capacity</p>	Respective Mine Lease Holders	Continuous Annually
	<p>Installation of online ambient air quality monitor for PM10, PM2.5, SOx and NOx in the Joda and Koira Region (total 11 locations).</p>	SPCB	Continuous Annually
2.	<p>Status of flora and fauna in each of the regions shall be assessed on annual basis. Changes, if any, taking place in the region shall be brought out clearly. The study shall be conducted in consultation with State Forest and Wildlife Department.</p>	State Forest & Wildlife Dept.	Annually in mining zone and once in 3 years in the region
3.	<p>Socio-economic study incorporating developments taking place in each of the region, CSR initiatives made by the mining companies shall be conducted on annual basis. Further, micro level developmental needs shall be clearly brought out in the report for each region. The study shall be conducted in consultation with district administration.</p>	Respective District Administration	Annually
4.	<p>A detailed hydro-geological study in each of the regions shall be conducted in an integrated manner in consultation with Regional Director, Central Ground Water Board. Accordingly, all project proponents shall implement suitable conservation measures to augment ground water resources in the area.</p>	SPCB	Once in 2 years
5.	<p>The State Govt. shall ensure</p>	Dept. of Steel	12 months for road

S. No	EC Conditions
	<p>construction and maintenance of dust free common roads/ appropriate rail network for transport of ore from mines to the consumer end.</p> <p>Construction and maintenance of dust free roads from respective mine to the main road</p> <p>Traffic/road inspection study addressing the condition of traffic/roads leading to different mines and connecting to different railway sidings shall be undertaken on annual basis.</p> <p>Further, detailed traffic study shall be undertaken on every 5 yearly basis to ensure adequacy of road/rail infrastructure in each of the regions. The study can be undertaken through national/ state level research/ academic institute (such as CSIR-CRRI, New Delhi).</p> <p>Assessment of land use/ land cover changes in each of the regions, with particular focus on mining areas, afforestation activities, variation in flowpath of various water bodies etc. using remote sensing data</p> <p>R&D Studies for utilization of low-grade iron ore</p> <p>The data so generated for the region should be made available on the website of Department of Steel & Mines and also at MoEF&CC website, so that it can be effectively utilized by Individual Mine Lease Holders for preparing EIA/ EMP reports. This will meet the requirement for separate one season baseline environmental quality data collection by the individual proponents, if the mine proposed is in the same study region. Further, MoEF&CC (through EAC) can also utilize the database available in evaluating the proposals for expansion of existing mines or new mines while granting ToR or EC to the mine, taking an holistic view of the region. State Govt. of Odisha should bring out an integrated environmental sustainability report for each of the regions (mainly for Joda and Koia region) incorporating ESR of individual mines and data collected in the region through various agencies, once in 5 years, to plan level of scientific and sustainable mining for the next 5 years.</p>
1.71	<p>32) Institutional Mechanism for Implementation of Environmentally Sustainable Mining: The present study is not a one-time study, but a process to ensure environmentally sustainable mining activities in the region on long term basis. Looking into the large-scale mining activities and long term perspective for mining vis-à-vis environmentally sustainable mining and upliftment of people of the region, there is a need to create an agency, who will integrate all the aspects relating to sustainable mining in the region on long term basis. It could be a SPV of Govt. of Odisha or a cell within the overall control and supervision of Dept. of Steel & Mines, with members from IBM, GSI, OSPCB, MoEF&CC-RO and other concerned Departments and Mine Owners (EZMA), District</p>

S. No	EC Conditions
	<p>Administration. It is found that the strong database available for the region needs to be taken into account to map and establish environmental quality of the region on daily, monthly, seasonal and annual basis. Further, the efforts and initiatives of the mines towards environmental protection as well as upliftment of the people of the region are required to be integrated, and a systematic plan at the block/regional level needs to be framed for the overall benefit of the local society, region, district, state and the country as a whole. It will be desirable to have proper environmental quality data management and analysis by NEERI or any other agency for next 5 years (six monthly compliance reports followed by field verification) ensuring sustainable mining practices in the region leading to an overall development of the region. District Mineral Fund should be utilized appropriately for various developmental activities/needs of the region. Further, an environmental sustainability report incorporating environmental status of region coupled with social upliftment may be brought out by SPCB or any other authorized agency on annual basis. This report can be used for supporting the regional EIA study, and also need for environmental quality monitoring by individual mine seeking environmental clearance for new mine/ expansion of mine, including public hearing. Since, outcome of the above study reports shall be in the overall interest of all the stakeholders (including local population) of the region, further planning for the region shall warrant cooperation and assistance of all the stakeholders (mine operators, industries, transporters, State & Central Government Offices, MoEF&CC, CPCB, SPCB, Dept. of Steel & Mines, IBM, IMD, NGOs and local people) in sharing the relevant data/information/reports/documents etc. to continuously improve upon the environmentally sustainable development plan for economic growth in mining sector as well as for improvement in quality of life of the people of the region.</p>

Standard EC Conditions for (Mining of minerals)

1. Statutory Compliance

S. No	EC Conditions
1.1	<p>The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.</p>
1.2	<p>The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.</p>
1.3	<p>This Environmental Clearance (EC) is subject to orders/ judgment of Honble Supreme Court of India, Honble High Court, Honble NGT and any other Court of Law, Common Cause Conditions as may be applicable.</p>
1.4	<p>The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred. PP needs to apply for transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to</p>

S. No	EC Conditions
	time.
1.5	The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
1.6	State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
1.7	A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
1.8	The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area."
1.9	The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of Schedule-I species in the study area).
1.10	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
1.11	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
1.12	The project proponent shall obtain the necessary permission from the Central Ground Water Authority, in case of drawl of ground water / from the competent authority concerned in case of drawl of surface water required for the project.
1.13	The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.
1.14	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.

2.

S. No	EC Conditions
2.1	The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/

S. No	EC Conditions
	protected against felling and plantation of such trees should be promoted.
2.2	The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.

3. Air Quality Monitoring And Preservation

S. No	EC Conditions
3.1	Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.
3.2	The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
3.3	Design the ventilation system for adequate air changes as per ACGIH document for all tunnels, motor houses, Oil Cellars.
3.4	Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.
3.5	The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognised under Environment (Protection) Act, 1986. 9) The project proponent shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g., PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to S02 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120 each). covering upwind and downwind directions.
3.6	The project proponent shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g., PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to S02 and NOx emissions) within and

S. No	EC Conditions
	outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120 each).covering upwind and downwind directions.
3.7	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories. Monitor fugitive emissions in the plant premises.
3.8	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.
3.9	The project proponent use leak proof trucks/dumpers carrying ore and other raw materials and cover them with tarpaulin.
3.10	The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugitive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

4. Water Quality Monitoring And Preservation

S. No	EC Conditions
4.1	The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease including upstream and downstream. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.
4.2	In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
4.3	Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total

S. No	EC Conditions
	Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
4.4	Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
4.5	Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
4.6	Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.
4.7	The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.
4.8	The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.
4.9	The project proponent shall make efforts to minimise water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water.
4.10	The project proponent shall practice rainwater harvesting to maximum possible extent.
4.11	Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.
4.12	Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.
4.13	The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.
4.14	Adhere to Zero Liquid Discharge
4.15	The project proponent shall install 24x7 continuous effluent monitoring system with respect to

S. No	EC Conditions
	standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.
4.16	The project proponent shall provide the slime disposal facility with impervious lining and collection wells for seepage. The water collected from the slime pond shall be treated and recycled.

5. Noise And Vibration Monitoring And Prevention

S. No	EC Conditions
5.1	The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
5.2	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
5.3	The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

6. Noise Monitoring And Prevention

S. No	EC Conditions
6.1	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
6.2	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

7. Mining Plan

S. No	EC Conditions
7.1	The Project Proponent shall adhere to approved mining plan, inter alia, including, total excavation (quantum of mineral, waste, over burden, inter burden and top soil etc.); mining technology; lease area; scope of working (method of mining, overburden & dump management, O.B& dump mining, mineral transportation mode, ultimate depth of mining, concurrent reclamation and reclamation at mine closure; land-use of the mine lease area at various stages of mining scheme as well as at the

S. No	EC Conditions
	end-of-life; etc.).
7.2	The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.

8. Energy Conservation Measures

S. No	EC Conditions
8.1	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;
8.2	Provide LED lights in their offices and residential areas.

9. Land Reclamation

S. No	EC Conditions
9.1	The Overburden (O.B.), waste and topsoil generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB / waste dumps / topsoil dump like height, width and angle of slope shall be governed as per the approved Mining Plan and the guidelines/circulars issued by D.G.M.S. The topsoil shall be used for land reclamation and plantation.
9.2	Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
9.3	The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
9.4	Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.

10. Waste Management

S. No	EC Conditions
10.1	The waste oil, grease and other hazardous waste shall be disposed of as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016.
10.2	Kitchen waste shall be composted or converted to biogas for further use.(to be decided on case to case basis depending on type and size of plant)

11. Transportation

S. No	EC Conditions
11.1	No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers. [If applicable in case of road transport].
11.2	The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

12. Green Belt And Emp

S. No	EC Conditions
12.1	Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant
12.2	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.

13. Green Belt

S. No	EC Conditions
13.1	The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

14. Public Hearing And Human Health Issues

S. No	EC Conditions
14.1	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
14.2	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
14.3	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
14.4	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.
14.5	Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.

15. Corporate Environment Responsibility

S. No	EC Conditions
15.1	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.
15.2	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.
15.3	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Mineral Beneficiation plants shall be implemented.

S. No	EC Conditions
15.4	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
15.5	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
15.6	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest I wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.

16. Miscellaneous

S. No	EC Conditions
16.1	The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/High Court and any other Court of Law relating to the subject matter.
16.2	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
16.3	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
16.4	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
16.5	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
16.6	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
16.7	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

S. No	EC Conditions
16.8	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
16.9	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
16.10	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
16.11	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
16.12	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponents website permanently.
16.13	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
16.14	A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
16.15	Concealing factual data failure to comply with any or submission of false/ fabricated data and of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
16.16	The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
16.17	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.
16.18	The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
16.19	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

S. No	EC Conditions
16.20	The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
16.21	In pursuant to Ministry's O.M No 22-34/2018-IA.III dated 16.01.2020 to comply with the direction made by Honble Supreme Court on 8.01.2020 in W.P. (Civil) No 114/2014 in the matter Common Cause vs Union of India, the mining lease holder shall after ceasing mining operations, undertake regrassing the mining area and any other area which may have been disturbed due to other mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
16.22	The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/High Court and any other Court of Law relating to the subject matter.

17. Corporate Environment Responsibility (Cer)

S. No	EC Conditions
17.1	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.

Standard EC Conditions for (Mineral beneficiation)

1. Statutory Compliance

S. No	EC Conditions
1.1	The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/Subordinate legislations, etc., as may be applicable to the project.
1.2	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
1.3	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.
1.4	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
1.5	The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan

S. No	EC Conditions
	and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of Schedule-I species in the study area).
1.6	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
1.7	The project proponent shall obtain the necessary permission from the Central Ground Water Authority, in case of drawl of ground water / from the competent authority concerned in case of drawl of surface water required for the project.
1.8	The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.

2. Air Quality Monitoring And Preservation

S. No	EC Conditions
2.1	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as well as 04/06 Nos. Continuous Ambient Air Quality Station (CAAQMS) for monitoring AAQ parameters with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time. The CEMS and CAAQMS shall be connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories. (case to case basis small plants: Manual; Large plants: Continuous and their no's.)
2.2	The project proponent shall carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area (at least at four locations one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions.
2.3	The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.
2.4	Sampling facility at process stacks and at quenching towers shall be provided as per CPCB guidelines for manual monitoring of emissions.
2.5	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.
2.6	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these

S. No	EC Conditions
	system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories. Monitor fugitive emissions in the plant premises.
2.7	The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.
2.8	The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognised under Environment (Protection) Act, 1986. 9) The project proponent shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g., PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to S02 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120°each). covering upwind and downwind directions.
2.9	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.
2.10	The project proponent shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g., PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to S02 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120°each). covering upwind and downwind directions.
2.11	Ensure covered transportation and conveying of raw material to prevent spillage and dust generation; Use closed bulkers for carrying fly ash.
2.12	Recycle and reuse iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after briquetting/agglomeration.
2.13	The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugitive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.
2.14	The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.
2.15	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.
2.16	The project proponent shall provide primary and secondary fume extraction system at all heat treatment furnaces.
2.17	The project proponent use leak proof trucks/dumpers carrying ore and other raw materials and cover them with tarpaulin.
2.18	Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.

S. No	EC Conditions
2.19	Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.
2.20	Design the ventilation system for adequate air changes as per ACGIH document for all tunnels, motor houses, Oil Cellars.
2.21	Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.
2.22	Pollution control system in the plant shall be provided as per the CREP Guidelines of CPCB.
2.23	The project proponent shall adopt the Clean Air practices like mechanical collectors, wet scrubbers, fabric filters (bag houses), electrostatic precipitators, combustion systems (thermal oxidizers), condensers, absorbers, adsorbers, and biological degradation. Controlling emissions related to transportation shall include emission controls on vehicles as well as use of cleaner fuels. Sufficient numbers of additional truck mounted Fog/Mist water cannons shall be procured and operated regularly inside the project premises and also in the surrounding villages to arrest suspended dust in the atmosphere.
2.24	Bag filters shall be cleaned regularly and efficiency of bag filter system shall be monitored at regular intervals.
2.25	Water Sprinklers/Water mist system shall be installed near raw material yards, operational units and other strategic locations to control fugitive emissions from the plant.
2.26	The particulate matter emissions from the process stacks shall be less than 30 mg/Nm ³ and measures shall be undertaken as per the submitted action plan. Efficient Air monitoring equipment shall be installed.
2.27	Following additional arrangements to control fugitive dust shall be provided: a. Fog / Mist Sprinklers at all on bulk raw material storage area (at the transfer points) like Iron Ore, Coal and for Fly Ash and similar solid waste storage areas. b. Proper covered vehicle shall be used while transport of materials. c. Wheel washing mechanism shall be provided in entry and exit gates with complete recirculation system.

3. Water Quality Monitoring And Preservation

S. No	EC Conditions
3.1	The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.
3.2	The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.

S. No	EC Conditions
3.3	The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.
3.4	The project proponent shall provide the slime disposal facility with impervious lining and collection wells for seepage. The water collected from the slime pond shall be treated and recycled.
3.5	Adhere to 'Zero Liquid Discharge'
3.6	Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.
3.7	The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.
3.8	Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.
3.9	The project proponent shall monitor regularly ground water quality at least twice a year (pre- and post-monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited laboratories.
3.10	The project proponent shall practice rainwater harvesting to maximum possible extent.
3.11	The project proponent shall make efforts to minimise water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water.
3.12	Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.
3.13	Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.
3.14	Tyre washing facilities shall be provided at the entrance of the plant gates.
3.15	Water meters shall be provided at the inlet to all unit processes in the steel plants.
3.16	The project proponent shall make efforts to minimise water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water.
3.17	The proposed project shall be designed as Zero Liquid Discharge Plant. ETP shall be installed and there shall be no discharge of effluent from the plant. Domestic effluent shall be treated in Sewage Treatment Plant. Suitable measures shall be adopted for sewage water handling to ensure no contamination of any kind of water body.

S. No	EC Conditions
3.18	All stockyards shall have impervious flooring and shall be equipped with water spray system for dust suppression. Stock yards shall also have garland drains and catch pits to trap the run off material and shall be implemented as per the action plan submitted in EIA/EMP report.
3.19	Rain water harvesting shall be implemented to recharge/harvest water as per the action plan submitted in the EIA/EMP report.

4. Noise Monitoring And Prevention

S. No	EC Conditions
4.1	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
4.2	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.
4.3	Noise pollution shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and amendments thereof, and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
4.4	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

5. Energy Conservation Measures

S. No	EC Conditions
5.1	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;
5.2	Provide LED lights in their offices and residential areas.
5.3	Use torpedo ladle for hot metal transfer as far as possible. If ladles not used, provide covers for open top ladles.
5.4	Restrict Gas flaring to < 1%.
5.5	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;
5.6	Provide LED lights in their offices and residential areas.

6. Waste Management

S. No	EC Conditions
6.1	The waste oil, grease and other hazardous waste shall be disposed of as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016.
6.2	Kitchen waste shall be composted or converted to biogas for further use.(to be decided on case to case basis depending on type and size of plant)
6.3	Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil. Oil collection trays shall be provided under coils on saddles in cold rolled coil storage area.
6.4	Kitchen waste shall be composted or converted to biogas for further use.
6.5	Used refractories shall be recycled as far as possible.
6.6	100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.
6.7	The Plastic Waste Management Rules 2016, inter-alia, mandated banning of identified Single Use Plastic (SUP) items with effect from 01/07/2022. In this regard, CPCB has issued a direction to all the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) on 30/06/2022 to ensure the compliance of Notification published by Ministry on 12/08/2021. The technical guidelines issued by the CPCB in this regard is available at https://cpcb.nic.in/technical-guidelines-3/ . All the project proponents are hereby requested to sensitize and create awareness among people working within the Project area as well as its surrounding area on the ban of SUP in order to ensure the compliance of Notification published by this Ministry on 12/08/2021. A report, along with photographs, on the measures taken shall also be included in the six monthly compliance report being submitted by the project proponents.
6.8	A proper action plan must be implemented to dispose of the electronic waste generated in the industry.
6.9	Solid waste utilization: a. PP shall install a slag crusher to convert steel slag into aggregate for use in construction industry, fine sand for use as flux in steel plant, sand in brick making and as lime in cement making. b. PP shall recycle/reuse solid waste generated in the plant as far as possible. c. Used refractories shall be recycled as far as possible.

7. Green Belt And Emp

S. No	EC Conditions
7.1	Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant
7.2	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.

8. Water Quality Monitoring And Preservation In Case Of Beneficiation Plant

S. No	EC Conditions
8.1	Tailing management plan shall be implemented as included in EIA report.
8.2	Tailings from Iron Ore beneficiation plant shall be dewatered in filter press and no slime /tailing pond shall be permitted.

9. Public Hearing And Human Health Issues

S. No	EC Conditions
9.1	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
9.2	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.
9.3	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
9.4	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
9.5	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
9.6	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms.
9.7	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP. Safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
9.8	Occupational health surveillance of the workers shall be done on a regular basis and records maintained.
9.9	All the commitments made towards socio-economic development of the nearby villages shall be satisfactorily implemented. The action plan based on the social impact assessment study of the project as per the EMP in accordance to the Ministry's OM dated 30.09.2020 shall be strictly implemented and progress shall be submitted to the Regional Office of MoEF&CC. PP shall adopt nearby villages and prepare and implement a robust plan to develop them into model villages in next 10 years.

10. Corporate Environment Responsibility

S. No	EC Conditions
10.1	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.
10.2	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest I wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
10.3	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
10.4	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
10.5	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.
10.6	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Mineral Beneficiation plants shall be implemented.

11. Miscellaneous

S. No	EC Conditions
11.1	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
11.2	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
11.3	44) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

S. No	EC Conditions
11.4	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
11.5	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
11.6	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
11.7	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
11.8	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
11.9	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
11.10	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
11.11	The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/High Court and any other Court of Law relating to the subject matter.
11.12	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
11.13	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
11.14	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
11.15	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

S. No	EC Conditions
11.16	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
11.17	Action plan for developing connecting and internal road in terms of MSA as per IRC guidelines shall be implemented
11.18	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
11.19	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
11.20	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
11.21	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
11.22	The recommendations of the approved Site-Specific Wildlife Management Plan (in case of involvement of Schedule-I species) shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report to the concerned Regional Office of the MoEF&CC.
11.23	The PP shall put all the environment related expenditure, expenditure related to Action Plan on the PH issues, and other commitments made in the EIA/EMP Report etc. in the company web site for the information to public/public domain. The PP shall also put the information on the left over funds allocated to EMP and PH as committed in the earlier ECs and shall be carried out and spent in next three years, in the company web site for the information to public/public domain.
11.24	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
11.25	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
11.26	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
11.27	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
11.28	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by

S. No	EC Conditions
	furnishing the requisite data / information/monitoring reports.
11.29	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

12. Green Belt

S. No	EC Conditions
12.1	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration by trees.
12.2	Project proponent shall submit a study report on Decarbonisation program, which would essentially consist of company's carbon emissions, carbon budgeting/ balancing, carbon sequestration activities and carbon capture, use and storage and offsetting strategies. Further, the report shall also contain time bound action plan to reduce its carbon intensity of its operations and supply chains, energy transition pathway from fossil fuels to Renewable energy etc. All these activities/ assessments should be measurable and monitor able with defined time frames.
12.3	Greening and Paving shall be implemented in the plant area to arrest soil erosion and dust pollution from exposed soil surface.

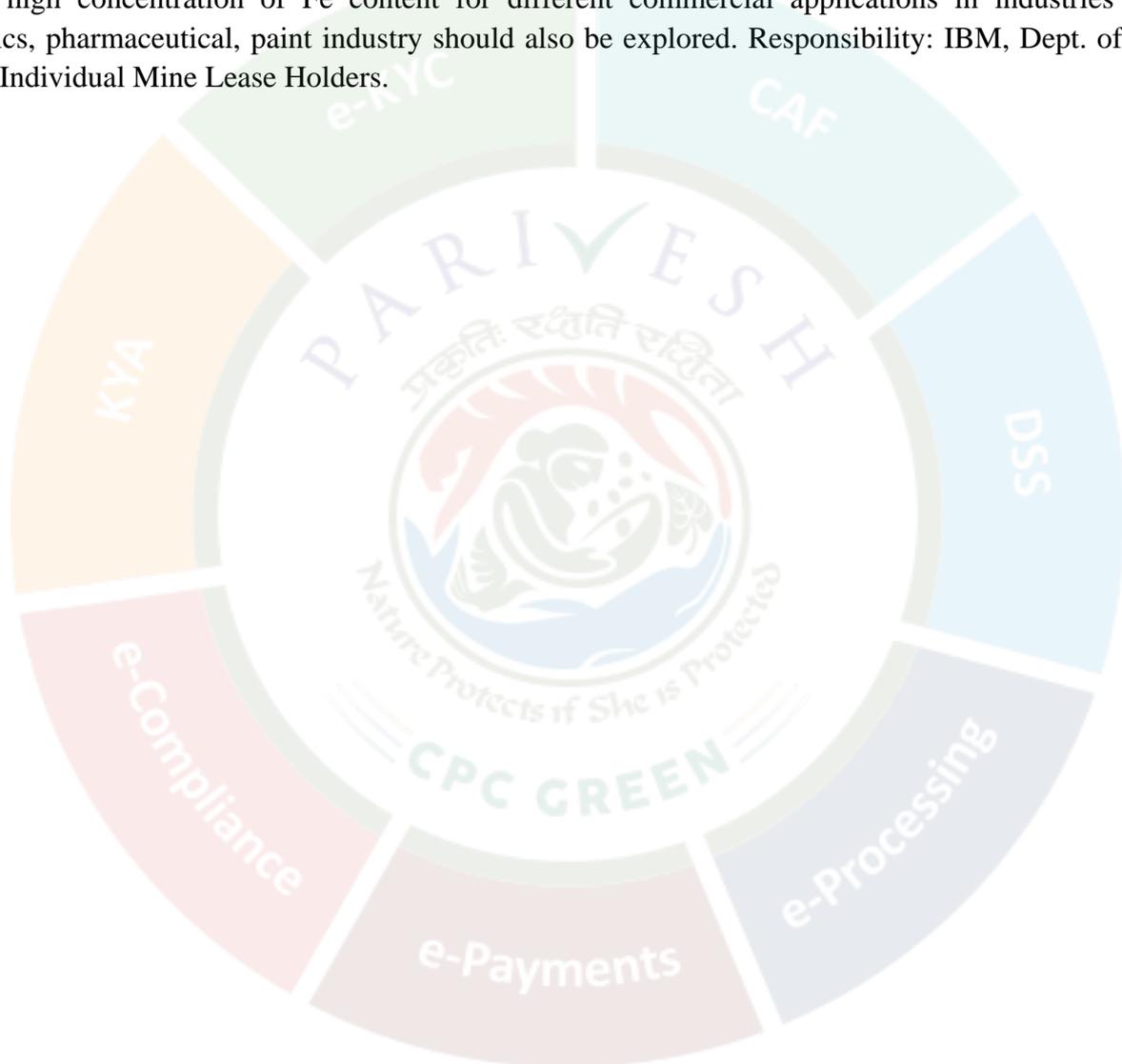
13. Environment Management

S. No	EC Conditions
13.1	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 30/09/2020. As part of Corporate Environment Responsibility (CER) activity, company shall adopt nearby villages based on the socio-economic survey and undertake community developmental activities in consultation with the village Panchayat and the District Administration as committed.
13.2	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
13.3	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
13.4	Performance test shall be conducted on all pollution control systems every year and report shall be submitted to Integrated Regional Office of the MoEF&CC.

Additional EC Conditions

1. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/High Court and any other Court of Law relating to the subject matter.

2. R&D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. R&D studies on utilization of mine wastewater having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept. of Steel & Mines, Individual Mine Lease Holders.



Narayanposhi Iron & Manganese Ore mining with enhancement in production capacity of Iron Ore (ROM) from 6 to 10 MTPA & OB 4.216 MTPA with total excavation 14.216 MTPA & existing capacity of Manganese Ore (ROM) 0.036 MTPA & OB 0.223 MTPA with total Excavation 0.259 MTPA along with Mobile Crushing & Screening Plant (400TPHx10 Nos & 250TPHx07 Nos), CPU 2000 TPH, Grinding & Beneficiation Plant 6.0MTPA for Mineral Processing & Slurry Pumping Station to transport Iron Ore Concentrate in the ML area 349.254Ha [(ML Area: 347.008ha (As per DGPS)/ 349.254ha (As per ROR)] by M/s Jsw Steel Ltd located at Sundargarh, Odisha.

Details of the Project:

- i. The mine lease area is located between Latitude 21°54'46.07" N to 21°56'23.13" N Longitude 85°13'41.16" E to 85°14'56.56" E. The mine lease area falls under the Survey of India Toposheet No. Core Zone F45N1 (73G/1), F45N5 (73G/5) and Buffer zone: F45N1 (73G/1), F45N5 (73G/5), F45H8 (73F/8), F45H4 (73F/4) and falls in Seismic Zone-II.
- ii. JM EnviroNet Pvt. Ltd. has been engaged by PP as an accredited EIA Consultant organization recognized by NABET (QCI). The EIA-Consultant holds Certificate No. NABET/EIA/2326/RA 0308, dated 29.11.2023, which remains valid until 07.08.2026.
- iii. Accredited Consultant and certificate no. and Validity - JM EnviroNet Pvt. Ltd. Accredited EIA Consultant by NABET (QCI) Certificate No. NABET/EIA/2326/RA 0308, dated 29.11.2023 and same is valid up to 07.08.2026.
- iv. Category details:

Category of the Project	The existing mine falls under Category 'A' (>250 ha) project as per the Schedule of EIA Notification, 2006 & its subsequent amendments thereof; Project or Activity 1(a) 3 "Mining of Minerals" and 2(b) 3 Mineral beneficiation of Schedule having an area of [ML Area: 347.008 ha (As per DGPS)/ 349.254 ha (As per ROR)].
Schedule No.	Project or Activity 1 (a) - 3 for "Mining of Mineral" & 2 (b) (3) for Mineral Beneficiation
Mining lease Area (MLA) (In ha)	ML Area: 347.008 ha (As per DGPS)/ 349.254 ha (As per ROR)

General Conditions (if any)	Not Applicable
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v. ToR/EC Details:

a) ToR Details: The Project Proponent has obtained the ToR vide letter no. J-11015/62/2020-IA.II (M) dated 31.12.2020 and subsequent amendment vide letter no. J-11015/62/2020-IA.II (M) dated 18.02.2022.

b) EC Details:

Date of application	Proposal No/ File No	Consideration by EAC	Remarks
22.06.2024	IA/OR/MIN/482860/2024	35 th EAC Meeting (Non-Coal Mining) held during 3-4 th October, 2024	The Committee deferred the proposal and asked to submit the requisite information.
	IA/OR/MIN/482860/2024	38 th EAC Meeting (Non-Coal Mining) held on 27 th December, 2024	The EAC recommended the proposal for Environmental Clearance in the 38 th EAC (Non-Coal Mining) meeting held on 27 th December, 2024.
			ADS was raised to this proposal dated 19.03.2025 as "PP needs to obtain and submit a report on current status of installation of beneficiation plant in the project after site inspection by MoEFCC Regional Office, Bhubaneswar"
	IA/OR/MIN/482860/2024	43 rd EAC Meeting (Non-Coal Mining) held during 22 nd - 23 rd April, 2025	EAC deferred the proposal and raised ADS on 03.05.2025 for following requisite information:- i. PP needs to provide a

			<p>comparative analysis of the ongoing construction of crushing and screening facilities in comparison with earlier EIA EMP report (on the basis of which EC dated 18.06.2019 was issued) and Consent to establish dated 04.06.2021 and 04.12.2021 issued by OSPCB.</p> <p>ii. PP needs to explain whether there is any change in pollution load due to project activities in the context of variations in configuration of crushing and screening facilities in the project</p>
			PP has submitted the point-wise reply on 13.06.2025 against ADS raised on 03.05.2025.
	IA/OR/MIN/482860/2024	46 th EAC Meeting (Non-Coal Mining) held during 25-26 th April, 2025	Committee re-considered the proposal and deliberated in 46 th EAC Meeting.

vi. Details of Mine Lease in chronological manner:

S. No.	Prospecting License/ Letter of Intent (LoI)/ Grant of Mine lease and Lr No	Date of the grant	Name of the Mineral & (Major/ Minor)	Period of Grant	Granted by	Mine lease area in Ha

1.	Issuance of Letter of Intent in favor of JSW Steel Ltd. vide letter no. 2288/S&M/IV(Misc) SM-66/2016(Pt-I)	02.03.2020	Iron & Manganese Ore	03 years	Govt. of Odisha	ML Area 347.008 Ha (As per DGPS)/ 349.254 Ha (As per ROR)
2.	Issuance of Vesting Order in favor of JSW Steel Ltd. vide letter no. 4212/SM IV (B) SM-21/2020	30.05.2020	Iron & Manganese Ore	2 years	Govt. of Odisha	
3.	Permanent Vesting Order was issued in favor of JSW Steel Ltd.	15.02.2022	Iron & Manganese Ore	-	-	

S. No.	Details of grant of Mine Lease deed execution	Period of Grant		Name of the Mineral	Mine lease area in Ha
		From	To		
1	Mine Lease was granted & executed in favor of M/s. JSW Steel Ltd.	26.06.2020	25.06.2070	Iron & Manganese Ore	ML Area 347.008 Ha (As per DGPS)/349.254 Ha (As per ROR)
2.	Mine Lease was registered in favor of M/s. JSW Steel Ltd.	27.06.2020	26.06.2070	Iron & Manganese Ore	

vii. Land Use/Land Cover of the Mine Lease Area:

Private land	4.687 ha
Government land	55.648 ha
Forest land	257.451 Ha
Total Mining lease area (MLA), ha	ML Area 347.008 Ha (As per DGPS)/349.254 Ha (As per ROR)
Private land for crusher, workshop & other infrastructure outside the MLA	All the activities proposed within mine lease
Additional information (if any)	29.222 ha is ST Land

viii. Mining Plan details:

Mining Plan including Progressive Mine Closure Plan (approved by Indian Bureau of Mines/DMG)	Letter No.	RMP-2309/2024-25-IBM_RO_BBS
	Date	06.12.2024
	Mineral & (Major/Minor)	Major
	Mine Lease Area, Ha	ML Area 347.008 Ha (As per DGPS)/349.254 Ha (As per ROR)
	Validity	The approval has been given for mining proposal for the year 2025-26 to 2029-30 and are subject to the validity of the lease period
Additional information (if any)	The Approved Mining Plan was valid up to 31.03.2030. The review of the mining plan is submitted under rule 17(2) of MCR, 2016, for the financial year 2025-26 to 2029-30. The enhanced production proposal quantity of 10 million tonnes, will be done after obtaining the EC from the MoEF&CC. total forest area in the lease is 257.451 ha, out of which diverted forest area is 238.195 ha. Balance area i.e., is 19.256 ha have been applied for diversion, and it is proposed that no operations will be undertaken in the un-diverted Forest Land during this plan period.	
Mining Parameters	Quantitative Description	
Method of Mining	Opencast Fully Mechanized Method with Crushing, Screening, CPU and Beneficiation Plant (Proposed)	
Drilling/Blasting	Parameter	Description
	Bench Height	9m
	Bench Width	10 m for Iron Ore Zone 7 m for Manganese Ore Zone
	Depth of Blasthole	9.9m
	Burden	3m
	Spacing	4m

	Hole diameter	115m
	Powder Factor	5.4 Tonne/Kg
Geological Reserves	192.133 Million Tonnes Iron ore and 0.685 Million Tonnes Manganese Ore	
Mineable Reserves	157.62 Million Tonnes Iron ore and 0.65 Million Tonnes Manganese Ore	
Breakup of Total Excavation (Topsoil/OB/SB/IB/Mineral Rejects/Waste, MTPA)	Iron Ore (ROM: 10 Million TPA & OB: 4.216 Million TPA), Total Excavation: 14.216 Million TPA and Manganese Ore (ROM: 0.036 MTPA & OB: 0.223 MTPA), Total Excavation: 0.259 Million TPA	
Life of Mine	16 years for Iron Ore and 19 Years for Manganese Ore	
Mine Bench Height & Bench Width	Bench Height: 9m (Iron Ore Zone); 6m (Manganese Ore Zone) Bench Width: 10 (Iron Ore Zone); 7 m (Manganese Ore Zone)	
No. of Mine Benches	13 Nos. in Iron Quarry 4 Nos. in Mn Quarry	
Existing Depth, m bgl	The existing bottom RL in: 535 m	
Ultimate Depth of Mining, m bgl	420 m	
Ground Water Table, m bgl	Likely depth of water table is of 5 m (at RL545 m) general surface level (at RL550 m) in rainy season and 8m (at RL542 m) in dry season. Mn Quarry-5 has touched the ground water at 540m RL.	
Details of ground water intersection	Yes (Mn Quarry-5 has touched the ground water at 540m RL)	
Individual bench slope	75 ⁰	
Overall pit slope	37.5 ⁰ for Iron Ore zone and 31 ⁰ for Manganese Ore zone	
Details of existing/ proposed Crusher	Existing: Stationary crushing & screening plant: 1 x 350 TPH, Mobile crushing & screening plant: 1 x 150 TPH & 1 x 100 TPH, Mobile screening plant: 3 x 200 TPH, 4 x 150 TPH, 2 x 100 TPH, Mobile revolving screening plants- 1 x 10 TPH Proposed: Mobile Crushing & Screening Plant: (400 TPH x 10 & 250 TPH x 07), initially & same will be phased out after Central	

	Processing Unit (CPU): 2000 TPH is commissioned
Mineral Beneficiation	Proposed: 6.0 Million TPA Grinding & Beneficiation Plant
RoM output size	Fines 0-10mm; CLO 5-18mm,10-30mm, 10-40mm, 10-180mm or any other size as per market/business requirements
Transportation details including capacity of dumper/tipper, mode of transport and distance	Dumpers are being/will be used for ore transportation from mine to ore processing area, waste transportation to dump area and processed ore transportation from ore processing area to stacking yard. Initially the iron ore will be sent to JSW plants and other end users through Road/Railway/Sea-ways. After commissioning of Grinding & Beneficiation Plant it will be processed and transported through slurry Pipeline/Road/Railway/Pipe Conveyor.
Generation of Topsoil/OB & its Management during plan period & conceptual period	There is no top soil cover in the Iron Ore mineable area. The top soil cover from the Mn working quarry will be scrapped and stacked at the earmarked site. Total waste generation during plan period from the iron ore zone will be 8802600 cum and 250100 cum from manganese ore zone. OB is being & will be used for the backfilling of excavated area.
Generation of Mineral Rejects/Waste & its Management during plan period & conceptual period	Iron ore with <45% Fe (laterite, shale, BHJ/BHQ) and manganese ore processing generate significant waste, including 30% from beneficiation, 78% intercalated waste, and 10% Mineral Rejects, temporarily stored for future use. During Plan period mineral reject/ tailing will be generated 2.7 million cum.

ix. Water requirement:

Total water requirement	13,296 m3/day	Fresh water	2082 m3/Day- Ground Water & Dewatering water 11, 214 m3/Day – Surface water
		Treated water (Domestic)	70 KLD (treated through STP capacity 80 KLD)

Source	Surface water, ground water sources, rain water harvesting pond, borewell and from manganese pit
Permission for withdrawal/ intersection along with details of grant and its validity	Renewal of NOC from CGWA for Ground water withdrawal (980KLD) & for dewatering (1102KLD) was obtained vide NOC No. CGWA/NOC/MIN/REN/2/2024/10057 was obtained dated 17.10.2024 and same is valid up to 18.01.2026. Permission regarding surface water withdrawal for 4,000 m ³ /hr (96,000 m ³ /day) has been obtained by the Department of Water Resources, Odisha dated 28.11.2023.
Additional information (if any)	Total water requirement will be 539 cum/hr for beneficiation/Grinding & Slurry Pumping. Further, for domestic consumption it has been planned to utilise ~15 cum/hr of water. Therefore, total water requirement will be 554 m ³ /hr (13, 296 m ³ /day) and will be met from surface water, ground water sources, rain water harvesting pond, borewell and from manganese pit.

x. Nearest village/town/ highway/interstate boundary/railway station/water bodies/monument/ forest

Particular	Particular's Name	Distance & Directions
Village	Village Kashira	~0.3 km in East Direction
Town/City	Barbil	~26 km in NE direction
Highway	NH-215 (Earlier known as NH-520)	Passing through ML Area
Interstate Boundary	Odisha – Jharkhand	~ 8.9 km in North direction
Railway Station/Railway line	Barsuan	~15.2 km in SW direction
Water Bodies	Karo Nadi	Adjacent in NW direction and at some places overlapped to mine lease
	Suna Nadi	~6.7 km in East direction
	Orahari Nallah	Adjacent to ML boundary in SW direction
	Kashira Nallah	Flowing through ML Area
	Narayanposhi Nallah	Flowing through ML Area
	Samij Nallah	~3.8 km in NW direction
	Kalta Nallah	~4.0 km in NNW direction
	Teherei Nallah	~5.7 km in ESE direction
	Kalmang Nallah	~6.3 km in ENE direction
	Erua Nallah	~6.7 km in WNW direction
	Gera Nallah	~7.8 km in West direction
	Topadihi Nallah	~8.0 km in NE direction

	Khajurdihi Nallah	~8.0 km in SE direction
	Geria Nallah	~8.8 km in WSW direction
Forest	No Protected Forest within 10km radius.	
	Kathamala RF	within ML area
	Mendhamaruni RF	~1.0 km in East direction
	Karo RF	~1.3 km in North direction
	Tortha RF	~1.5 km in NW direction
	Reserved Forest	~2.8 km in South direction
	Sarakanda RF	~5.0 km in South direction
	Uliburu RF	~6.4 km in North direction
	Khajurdihi RF	~7.2 km in SSE direction
	Tholkabad RF	~7.8 km in North direction
	Karampada RF	~8.7 km in North direction
	Lakrhaghat RF	~8.7 km in NE direction
	Siddhamath RF	~9.3 km in ENE direction

xi. Presence of Environmentally Sensitive areas in the study area

Forest Land/ Protected Area/ Environmental Sensitivity Zone	Yes/ No	Details of Certificate/ Letter issued by the concerned Department mentioning the Lr no, date of grant and remarks
Forest Land within the mine lease area and (if yes) status of Forest Clearance	Yes	<ul style="list-style-type: none"> Forest Clearance (Stage-II) for diversion of 244.327 ha including 184.591 ha of virgin land vide letter no. F. No.8-34/2000-FC (Vol-I) dated 15.11.2007 and vested to JSW FC (Stage II) transferred to JSW for 238.201 ha forest land vide No. FE-DIV-FLD-0067-2022-17050/FE&CC, dated 22.09.2022 Application for diversion of balance forest land i.e. 19.256 ha (including 1.014 ha safety zone) has been submitted vide Letter No. JSW/S/CO/2023/615, dated 27.09.2023. Presently, file is under process for Stage-I Clearance at MoEF&CC, New Delhi. NPV Amount of Rs. 19,30,88,250/- was submitted to the DFO by JSW Steel Ltd. Ex lessee paid Rs. 18,39,40,850/- as NPV. Total NPV paid = 37,70,29,100 /- (NPV has been paid for entire forest land by JSW) on 10.06.2020. 19.256 Ha of forest area is needed for Forest Clearance, which is currently in progress with the State Government. No mining activity is planned in the aforementioned forest area of

		19.256 Ha, as shown in the mining plan and mentioned on page no. - 4, 31, and 71 of the approved Mining Plan along with the Progressive Mine Closure Plan (2025-2030) by the Indian Bureau of Mines, Bhubaneshwar, vide letter no. RMP-2309/2024-25-IBM_RO_BBS, dated 06.12.2024. This information has also been conveyed to the EAC (NCM) through an email dated 06.12.2024.
National Park	No	Karo – Karampada Elephant Corridor (~7.7 Km from the Mine lease area in North direction)
Wildlife Sanctuary	No	
Elephant/Tiger Reserve	No	
Eco-Sensitive Zone(ESZ)/Eco-Sensitive Area(ESA)	No	-
Coastal Regulation Zone (CRZ)	No	-
Schedule-I species (Nos. and name of schedule-I species with authenticated letter)	Yes	Total 3 species i.e. <i>Elephas maximas</i> (Indian Elephant), <i>Melursus ursinus</i> (Sloth Bear) and <i>Python molurus</i> (Indian Python) of Schedule I according to (IWPA) Indian Wildlife Protection Act' 1972 was recorded in the study area during field survey. As per IWPA, Amendment Act, 2022 total 23 Schedule I Species were found viz. <i>Chameleon zeylanicus</i> (Indian Chameleon), <i>Elephas maximas</i> (Indian Elephant), <i>Melursus ursinus</i> (Sloth Bear), <i>Canis aureus</i> (Golden Jackal), <i>Vulpes bengalensis</i> (Bengal Fox), <i>Viverricula indica</i> (Small Indian Civet), <i>Felis chaus</i> (Jungle cat), <i>Hyena hyena</i> (Stripped Hyena), <i>Hystrix indica</i> (Porcupine), <i>Herpestes edwardsii</i> (Common Mongoose), <i>Python molurus</i> (Indian Python), <i>Ptyas mucosus</i> (Rat Snake), <i>Naja naja</i> (Indian Cobra), <i>Varanus bengalensis</i> (Monitor Lizard), <i>Natrix piscator</i> (Rat Snake), <i>Tyto alba</i> (Barn Owl), <i>Paradoxus hermaphorditus</i> (Common Palm Civet), <i>Pteropus melanotus</i> (Black flying fox), <i>Daboia russelii</i> (Russel's Viper), <i>Eryx johnii</i> (Sand boa), <i>Bubo bengalensis</i> (Indian Eagle Owl), <i>Dendrocopos mahrattelsis</i> (Yellow crowned woodpecker), <i>Gallus gallus</i> (Red Jungle Fowl).

Wildlife Conservation Plan	Yes	<p>The Wildlife Conservation Plan was prepared by the DFO and approved by the PCCF & Chief Wildlife Warden, Odisha, vide letter no. 988/CWLW-FDWC-FD-0126/2021, dated 31.01.2022. Budget proposed for conservation of the same is Rs. 746.173 Lakh.</p> <p>Following the implementation of the amended Wildlife Conservation Act 2022, the company have requested the Forest Department to revisit the SSWLCP, vide letter no. JSW/S/CO/2024/585, dated 10.09.2024. The Forest Department has issued a revised authenticated list of flora and fauna in line with amended WLA vide letter no. 10044/6F-(Mg.), dated 19.11.2024 and based on the same the process of revising the existing SSWLCP is in process.</p> <p>Divisional Forest Officer of Bonai Division, Sundergarh (District) has revised the Site-Specific Wildlife Conservation Plan with regard to Narayanposhi Iron Ore and manganese Mine of M/s. JSW Steel Ltd. The same is forwarded to PCCF (WL) and Chief Wildlife Warden through RCCF Rourkela for further approval.</p>
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xii. Greenbelt/Plantation details:

Proposed area for greenbelt/plantation and no. of saplings proposed	At conceptual stage, greenbelt/plantation will be carried out on 317.215 ha area. Nos of saplings at conceptual stage 793038 @ 2500/ha
Budget for greenbelt & plantation till the end of life of mine.	Rs. 15.86 Crore
Budget for nursery	Rs. 30.82 Lakh
Details of existing plantation and its survival rate	At present, 32.17 ha area had been covered under the greenbelt/plantation with 80425 nos of saplings Survival Rate 90%.
No. of tree cuts in the mine lease area and compensatory afforestation	NA
Particulars for greenbelt/plantation	Area covered (In Ha)
7.5 m barrier & non-mineralized zone	40.611

50 m safety zone of nallah, roads, electric lines	
500 m safety zones of nearest habitation villages	-

xiii. Baseline detail:

Baseline Data (Air / Water / Noise / Soil / Hydro geological study/ Traffic Study/ others)	
Period of baseline data collection	Dec., 2023 to Feb., 2024
Season(Summer/Pre-monsoon/Post-monsoon/Winter)	Winter Season
Predominant Wind direction (From)	North West
Ambient Air Quality (no. of locations) and results	10
Noise level (no. of locations) and results	10
Water Quality (no. of locations) and results	Ground water: 08
	Surface water: 07
Soil Quality (no. of locations) and results	08
Hydro geological study and results	Detailed hydrogeology study has been carried out by Geo Climate Risk Solutions Pvt. Ltd. in June, 2023.

xiv. Public Hearing (PH) Details:

Advertisement for PH with date (name of major national daily and one regional vernacular daily newspaper)	National Level/Local Level: "The Times of India" & "The Dharitri" on 21.04.2022
Date of PH	23.05.2022 at 10:00 AM
Venue	Open field Infront of proposed Indoor Stadium, Dhublameda Village under Koira Block in the District of Sundargarh
Chaired by	Dr. Binod Bihari Dash, Regional Officer, SPCB Rourkela Shri Shiv Shankar Toppo, Additional District Magistrate, Sundargarh
Main issues raised during PH	Employment, Drinking Water Facility, Infrastructure, Education, Pollution, Plantation, Nearby Development, Medical Facilities etc.
Budget proposed for addressing issues raised during PH over 3 years	610 lakhs

xv. Details of CTE/CTO, Certified Compliance Report, Certified Production Details from the inception of the mine:

Particulars	Details of Letter along with date of grant and validity
Consent to Establish	Vide letter no. 536/IND-II-CTE 6207, dated 14.01.2019

Consent to Operate	Vide letter no. 4651/IND-I-CON-2258, Consent Order No. 2944, dated 30.03.2024 & same is valid up to 31.03.2026		
Certified Compliance Report and Inspection date	<p>Certified Compliance Report vide file no. 101-1040/18/EPE, dated 19.09.2024. Action Taken Report for partially complied conditions has been submitted to Regional Office, MoEF&CC, Bhubaneswar on 24.09.2024.</p> <p>Date of Inspection: 30.08.2024</p> <p>Again, site visit of the RO, MoEFCC, Bhubaneswar was done on 26.03.2025 with reference to the ADS raised on dated 19.03.2025. After inspection, the report was prepared and submitted to the MoEFCC, vide File No. 101-1040/18/EPA, dated 04.04.2025.</p>		
Certified Production Details from the inception of the mine (in tabular form against the EC capacity)	Period	Production in Tonnes	
		Iron Ore	Mn Ore
	2020-2021	4476524	496.518
	2021-2022	5443454	4752.28
	2022-2023	5296717	5191.404
	2023-2024	5627775	554.00
2024-2025	5846458	1610.0	

xvi. Rehabilitation & Resettlement (R&R):

R & R details	This is an existing mine and expansion will be carried out within existing mine premises.
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xvii. Court case details:

Court Case, No and its present status	<p>A court case is pending against the Project at Odisha High Court with order no. WP (C) 24918/2020 regarding the refund of excess stamp duty paid during the time of registration of lease deed. Till now no order has been passed.</p> <p>As per the judgement of Hon'ble High court of Odisha dated 09.11.2020, it mention that: "The impunged levy of differential stamp duty paid by the petitioner-company on its mining lease deeds pursuant to demands dated 26.06.2020 shall be subject to final outcome of the writ petition".</p>
Undertaking by Project Proponent w.r.t court case	Project Proponent has submitted an undertaking with regards to the court cases.

xviii. Affidavit/Undertaking details:

Affidavit as per Ministry's OM dated 30.05.2018	PP has submitted the undertaking by way of notarized affidavit bearing no P072261 dated 15.04.2024 stating that the proposal does not involve violation of Ministry's OM dated 30.05.2018.
Undertaking by Project Proponent in EIA/EMP Report	An Undertaking by Project Proponent has been submitted along with EIA-EMP report.
Undertaking by Consultant in EIA/EMP Report	Consultant has submitted the undertaking vide letter dated 21.06.2024 for the EIA/EMP report.
Plagiarism Certificate	PP has submitted plagiarism certificate dated 21.06.2024

xix. Details of the Environmental Management Plan (EMP):

Activities	Capital cost (Crores)	Recurring cost (Lakhs/annum)
Air, Noise, Water, Greenbelt/ Plantation etc.	Rs. 33.91/- crore including Rs. 7.46 Crore for Wildlife Conservation Plan	4.52 Crore

xx. Details of project cost and employment:

Particular	(Rs. In Crore)
Total cost of EMP (Capital Cost of EMP + capital cost of Public Hearing)	Capital cost for EMP is Rs. 33.91 Crore including Rs. 7.46 Crore for Wildlife Conservation Plan and Budget proposed for addressing the issues raised during the Public Hearing: Capital Cost: Rs. 610 Lakh
Project Cost	Total cost of the project is Rs. 960 Crores
Employment (Nos)	Existing: 500, Additional: 452 & Total: 952

xxi. PP has submitted reply on 09.08.2024 against the Essential details were sought on 25.06.2024 as given below:

S. No.	EDS	Reply by Project Proponent
1.	The Project Proponent needs to submit the latest Certified Compliance Report (not a year older from the date of inspection) by the Ministry's Regional Office.	The project was monitored by the Regional Office of MoEF&CC at Bhubaneswar on 06.02.2023 and 07.02.2023 in line with the Certified Compliance Report for the expansion project. Based on the site inspection, a monitoring report was issued and ATR was sought by the IRO Bhubaneswar with some observations. The ATR submitted by JSW has undergone the due process of review, perusal and in turn certain clarifications were asked by the MoEFCC, New Delhi. In view of the above, it is evident that IRO Bhubaneswar, post its inspection has constantly reviewed and perused the compliance status

	<p>through evidential documents and site photographs. The last review of the compliance by IRO Bhubaneswar office was on 13.02.2024. Further, Jt. Secretary- MoEF&CC perused the compliance through personal hearing on dated 25.04.2024 and based on the deliberations and conclusions, JSW submitted required documents as concluding act.</p> <p>It is also submitted that on receipt of the cited observation through EDS as referred, clarifications explaining the case and request for perusal was made vide our letter dated 10.07.2024.</p> <p>The duration of this entire process should be exempted from the one-year time period from the date of site inspection, as stipulated in paragraph (iii) of part B of the OM dated 08.06.2024.</p>
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B. PP has submitted point wise reply on 24.09.2024 against the Essential details sought on 23.09.2024.

1.	Submission of Certified Compliance Report	Certified Compliance Report vide file no. 101-1040/18/EPE, dated 19.09.2024. Action Taken Report for partially complied conditions has been submitted to Regional Office, MoEF&CC, Bhubaneswar on 24.09.2024.
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C. Project was considered in 35th EAC meeting held during 28 to 29th October, 2024 wherein Committee deferred the proposal. PP has submitted the point-wise reply on 27.11.2024 against the Additional details sought on 20.11.2024 as given below:

Point 1	The Project Proponent (PP) needs to submit a protection plan for villages and schools located within or adjacent to the ML area, ensuring their safety from any mining related activities.			
Reply	The nearby habitation of the Villages within 500 m from the ML boundary are the following: Village Orhauri, Harishchandrapur, Kusumidihi, Renglabeda and Segasahi. Habitation details nearby the ML Area			
	S. No.	Villages	Distance & Direction from ML Boundary	Distance & Direction from UPL
	1	Harischandrapur	~90 m in SW direction	~100 m form Manganese quarry and ~700 m from Iron Quarry in WSW direction

2	Rengalbeda	~110 m in NNE direction	~2.6 km from Mn quarry in NNE direction and ~270 m from Fe quarry in NW direction
3	Segasahi	~160m in ENE direction	~1.8 km from Mn quarry in ENE direction and ~181 m from Fe quarry in East direction
4	Kusumdihi	~200 m in NNW direction	~1.5 km from Mn quarry in North direction and ~500 m from the Fe quarry in NNW direction
5	Orhuri	~220 m in SSW direction	~400 m from Mn quarry in SSW direction and ~680m from Fe Quarry SW direction

There is 1 school within mine lease and 2 schools are located within 500 m from the ML boundary.

S. No.	Particular	Details		
1.	Name of Village	Kashira	Harishchandrapur	Kusumdihi
2.	Name of School	Govt PS Narayanposhi	Govt. UPS Orhuri	Odisha Adarsha Vidyalaya
3.	Distance from Mine boundary	Within ML	200 m	350 m
4.	Distance from UPL	80 m	360 m	540 m

Protection Plan and safety measures for Villages and School:

- As per the micro-meteorological data, pre-dominant wind direction was observed from NW. Habitation of Village Harishchandrapur is located at ~90m distance in SW direction from ML boundary.
- Schools and Habitation of any Village will not be disturbed at any stage of mining.
- Mining is being/will be carried out as per the provisions outlined in Mining Plan Approved by Indian Bureau of Mines as well as by abiding to the guidelines of Director General Mines Safety (DGMS) and Conditions mentioned in DGMS guidelines will be followed strictly.
- Controlled blasting is being/will be adopted and optimum use of explosive energy is being/will be made by optimizing explosive charge per hole and per delay.
- NONEL and bottom hole initiation system is being/will be used to control ground vibrations, noise & fly rocks.

	<ul style="list-style-type: none"> • Provision of monitoring of each blast is being/ will be made so that the impact of blasting on nearby habitation & dwelling units and schools is ascertained. • The blasting is being done in such a way that no damage is cause to residential houses. • Controlled blasting is being/will be carried out to reduce air blast and peak particle velocity in order to control effect of vibration in the nearby habitation and school. • The drilling, charging, stemming and blasting operations are being/will be carried out under direct personal supervision of Manager/Asst. Manager. He maintains the records of blasting parameters for every blast. • Main haulage road in the mine is being/shall be provided with permanent water sprinklers and other roads is being/ shall be regularly wetted with water tankers fitted with sprinklers. Crusher and material transfer points are being/ shall invariably be provided with bag filters or dry fogging system. • All measures are being/will be adopted to control fugitive dust emission during mining operation and to ensure no impact on nearby habitats and schools. • For conducting blasting for mining operations, proper vibration studies are being/shall be carried out well before approaching such habitats or other buildings to evaluate the zone of influence and impact of blasting on the neighbourhood. Blasting is being/will be done within the permissible distance from habitation as permitted by DGMS. • No mining operations are being /will be carried out within 50 meters of public works such as public roads and buildings or inhabited sites. • A bund will be made around the habitation area. • People will be notified in advance when noisy work is to be done to limit their exposure, further sign-post also will be for noisy areas. • The ambient Air Quality Monitoring is being/will be done in the core as well as buffer zone of the ML area. There are 03 nos. of online CAAQMS and 4 nos. of manual monitoring stations located in the buffer zone. Records of the monitoring are being maintained properly. • Beneficiation Plant for Mineral Processing will be based on latest technology comprising Drum scrubbers, double deck wet screens, jigs, dewatering screens, thickening cyclones, Thickener, Filter press, Hence, no major impact on air quality will arise due to processing plant. • A thick plantation is being proposed in over the bund and Village safety zone to control dust emissions and noise.
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	<ul style="list-style-type: none"> • Green belt along the 7.5m mine lease periphery and plantation on dump and along the nallah is being/ will be carried out. • Plantation around schools and residential areas will be carried out. • Regular monitoring of air and noise levels at the project boundary and nearby sensitive locations. • Appropriate protective measures are/will be implemented based on the monitoring results. • Ensuring compliance with permissible standards set by regulatory authorities. <p>This detailed plan will be ensuring the safety and well-being of Villages and schools near the mining area.</p>
Point 2	PP is required to submit a comprehensive protection plan for the rivers and nallahs flowing within or adjacent to the ML area to prevent contamination and environmental degradation.
Reply	<p>Two seasonal nallahs viz. Narayanposhi and Kasira Nallah are flowing within the lease area which divide the whole lease into three parts from NE to SW. River Karo is flowing due North close to the Western boundary outside the lease area which constitutes the principal drainage system of the locality and collects surface run-off water through the seasonal nallahs. No waste water is being discharged due to mining activities. Also, the beneficiation process will not use any chemicals and hence there is no likelihood of any chemical contamination of water bodies due to the mining activities; Following protective measures are/will be adopted to control the surface run-off:</p> <ul style="list-style-type: none"> • River & nallah will not be disturbed due to mining. Mining will be carried out at 50m away from the river and nallah. • During monsoon, mine wash-off from pits are being/will be arrested by series of check dams proposed on the downstream side and silt settling ponds constructed at the lowest bench of the mine. • The check dams & check bunds are being/ will be de-silted well before monsoon season every year to ensure clear water to overflow. The de-silted material is stacked separately. • Guard walls and coco fibre fence have been made along the nala. Besides this, plantation has been carried out along the sides of nala. • Retaining wall & garland drains are constructed around the dumps & at strategic points of quarries. • The surface run-off from the external OB dumps is guided through sedimentation ponds and garland drains to the surface water course. It will prevent eroded material from reaching the main drainage/water course of the region. • Regular monitoring of surface water quality is being/will be carried out.

	<p>Therefore, it can be concluded that major part of the surface runoff from working areas is being channelized to in pit settling cum percolation ponds located at various strategic locations. The rest part is channelized through garland drain to percolation cum settling pits and check dams.</p> <p>Various protective measures viz. retaining walls, garland drains and settling cum percolation pond around the toe of dumps, blue dust stock yard, mineral reject stock, Top Soil stack, around RF area and NH-215; Check dams around Nallahs and dumps have been constructed to prevent pollution of nalas present within the lease and water bodies nearby to the mine site.</p>																					
Point 3	<p>PP must engage a reputed national institute to conduct blasting/vibration studies, including fly rock distances and air overpressure. Furthermore, PP should submit a mitigative plan to ensure the smooth passage of vehicles during blasting activities.</p>																					
Reply	<p>The Department of Mining Engineering at the National Institute of Technology, Rourkela conducted a scientific study on blast-induced ground vibration and submitted the report in June 2024. Copy of the same is submitted along with ADS Reply.</p> <p><u>Study on Air Over Pressure:</u></p> <p>Based on the study as mentioned in para 5.2 therein, AOP observed ranges between 94.04 dB and 136.54 dB. The measured air overpressure was plotted against cube root scaled distance [SD]. Relation between the cube root of scaled distance and sound pressure was studied and a governing relation is determined as:</p> $AOP = -0.0703 (D / Q^{1/3}) + 114.61$ <p>Where, AOP = Air Over Pressure (dB); D = Radial distance (m), and Q = Maximum charge per delay /kg</p> <p>There exists a report that suggests the different noise levels and their possible consequences.</p> <p><u>Noise level and its possible effect (Heck, 2014)</u></p> <table border="1"> <thead> <tr> <th>S.No.</th> <th>AOP (dB)</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>115</td> <td>Threshold of complaints</td> </tr> <tr> <td>2</td> <td>134</td> <td>US Bureau of mines recommended safe level of blasting</td> </tr> <tr> <td>3</td> <td>140</td> <td>Historical Proven safe level</td> </tr> <tr> <td>4</td> <td>151</td> <td>Occasional windows break</td> </tr> <tr> <td>5</td> <td>171</td> <td>General windows break</td> </tr> <tr> <td>6</td> <td>180</td> <td>Possible structure damage</td> </tr> </tbody> </table> <p>The above table shows that the sound level produced by blasting operations is within safe limits and would not affect human being adversely.</p> <p><u>Study on Fly Rocks</u></p> <p>In the trial blast carried out by the mines (mentioned at Para 5.5 and 5.6 of study report), it was observed that, the maximum distance travelled by those flying rocks of about 5.00 cm sizes were about 20 to 60 m from the blast</p>	S.No.	AOP (dB)	Description	1	115	Threshold of complaints	2	134	US Bureau of mines recommended safe level of blasting	3	140	Historical Proven safe level	4	151	Occasional windows break	5	171	General windows break	6	180	Possible structure damage
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	<p>patches. Those would not cause any harm as the area was secured during blasting operations.</p> <p>The mines have also implemented the technique of muffle blasting to reduce the scattering of fly rock further, as below.</p> <p>In the Narayanposhi mine, the mines used metal wire mesh with dimensions 1.8m x 1.2m and a mesh aperture of 10mm as well as tin sheets of dimensions 6m x 4m to cover the blast holes. The positions of these sheets were secured with one or two bags filled with locally available fines weighing over 35 to 50 kgs each.</p> <p><u>Mitigative Plan for Highway Commuters</u></p> <ul style="list-style-type: none"> • The blasting activity at present is concentrated in the area which is 300m away from the National highway. • Keeping in view the advancement of mining faces towards National highway, PP has applied for obtaining controlled blasting permission from DGMS vide application No- JSW/NP/ DGMS/ BBSR-II/0353/ 24-25, 10.09.2024. • All the blasting operations upon advancing closer than 300m from National Highway shall be carried out in accordance with the recommendation of scientific study and provisions of permission as would be granted by DGMS. • Additionally, a SOP is formulated and same is submitted along with ADS Reply, wherein at S. No. 6.11 it is envisaged to halt traffic before the firing, in consultation with NHAI by erecting suitable barriers and posting of security to ensure safety of commuters.
Point 4	PP is required to submit an action plan for the transportation of ore, in line with the NEERI recommendations, until the slurry pipeline is commissioned.
Reply	<p>At present, Narayanposhi Iron and Manganese Ore Mine has dispatched 5.54 Million TPA ore and the same was dispatched through rail/road/ ship mode.</p> <p>Compliance to NEERI conditions and improvement in infrastructure since 2018:</p> <p><u>1. Development of Road Network:</u></p> <p>NH-215 is passing through the lease area which is widened and made four lanes, is the main connecting road to all the railway sidings. In addition to this, other branch roads of Barbil & Joda sector connected to NH from railway siding is widened and concreted. These roads are also provided with paved shoulders, proper drainage system and green belt.</p> <p>Regular vacuum cleaning of all mineral carrying roads is done by road sweeping machine deployed by mines and also by Govt. agencies.</p> <p>Besides this, cement concrete road has been constructed from mine entrance/exit to the NH and wheel washing system is installed in the exit gate.</p> <p><u>2. Other measures to control dust:</u></p>

	<p>Iron Ore from mine are transported through tarpaulin covered trucks up to the nearest railway siding and port from where it is transported to user destination by railway wagons and ships respectively. The trucks are regularly monitored for the emission of the vehicle (PUC) to ascertain emission limits as per the pollution norms.</p> <p>Besides the existing iron ore transportation, additional 4 MTPA iron ore is proposed to be dispatched with available logistic infrastructures and following tentative incremental quantity by railway sidings is envisaged.</p> <table border="1" data-bbox="320 533 1385 1133"> <tr> <td data-bbox="320 533 735 636">Narayanposhi</td> <td data-bbox="735 533 906 636">Rail</td> <td data-bbox="906 533 1027 636">MTPA</td> <td data-bbox="1027 533 1257 636">No of trucks/ day</td> <td data-bbox="1257 533 1385 636">To & Fro</td> </tr> <tr> <td data-bbox="320 636 735 701" rowspan="7">Towards Railway Siding 4 MTPA</td> <td data-bbox="735 636 906 701">Jaroli</td> <td data-bbox="906 636 1027 701">0.64</td> <td data-bbox="1027 636 1257 701">97</td> <td data-bbox="1257 636 1385 701">194</td> </tr> <tr> <td data-bbox="735 701 906 766">Banspani</td> <td data-bbox="906 701 1027 766">0.68</td> <td data-bbox="1027 701 1257 766">103</td> <td data-bbox="1257 701 1385 766">206</td> </tr> <tr> <td data-bbox="735 766 906 875">BIL/ RMJC</td> <td data-bbox="906 766 1027 875">1.00</td> <td data-bbox="1027 766 1257 875">151</td> <td data-bbox="1257 766 1385 875">302</td> </tr> <tr> <td data-bbox="735 875 906 940">Rakshi</td> <td data-bbox="906 875 1027 940">0.56</td> <td data-bbox="1027 875 1257 940">85</td> <td data-bbox="1257 875 1385 940">170</td> </tr> <tr> <td data-bbox="735 940 906 1005">Bimalgarh</td> <td data-bbox="906 940 1027 1005">0.48</td> <td data-bbox="1027 940 1257 1005">73</td> <td data-bbox="1257 940 1385 1005">145</td> </tr> <tr> <td data-bbox="735 1005 906 1070">Rengra</td> <td data-bbox="906 1005 1027 1070">0.36</td> <td data-bbox="1027 1005 1257 1070">55</td> <td data-bbox="1257 1005 1385 1070">109</td> </tr> <tr> <td data-bbox="735 1070 906 1133">Barsuan</td> <td data-bbox="906 1070 1027 1133">0.28</td> <td data-bbox="1027 1070 1257 1133">42</td> <td data-bbox="1257 1070 1385 1133">85</td> </tr> </table> <p data-bbox="320 1133 1385 1238">No of working days considered: 330 days, Weight of Truck considered: 20 Tonne</p> <p data-bbox="320 1238 1385 1361">For the incremental handling requirement and to supplement the existing capability of railways we have contributed 25 rakes to the existing rolling stocks under GPWIS and will add further as per need.</p>	Narayanposhi	Rail	MTPA	No of trucks/ day	To & Fro	Towards Railway Siding 4 MTPA	Jaroli	0.64	97	194	Banspani	0.68	103	206	BIL/ RMJC	1.00	151	302	Rakshi	0.56	85	170	Bimalgarh	0.48	73	145	Rengra	0.36	55	109	Barsuan	0.28	42	85
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Point 5	<p>PP needs to revise its proposed water requirements, taking into account current local consumption and future water needs. PP needs to improve upon technology to reduce water consumption during processing of iron ore. PP needs to develop methodology to recycle maximum water.</p>																																		
Reply	<p>The requirement of makeup water for beneficiation and slurry pumping earlier was planned for @553 m³/hr. Further technological development will be introduced and reduction in requirement of make-up water is aimed as @539 m³/hr (a saving of 14 m³/hr). The details are as narrated below: -</p> <table border="1" data-bbox="320 1709 1385 2004"> <thead> <tr> <th data-bbox="320 1709 533 1856">Activity</th> <th data-bbox="533 1709 746 1856">Water Requirement (m³/hr)</th> <th data-bbox="746 1709 960 1856">Water Requirement (m³/Day)</th> <th data-bbox="960 1709 1385 1856">Source</th> </tr> </thead> <tbody> <tr> <td data-bbox="320 1856 533 2004">Beneficiation & slurry pumping</td> <td data-bbox="533 1856 746 2004">539</td> <td data-bbox="746 1856 960 2004">12, 936</td> <td data-bbox="960 1856 1385 2004">2082 m³/Day- Ground Water & Dewatering water -</td> </tr> </tbody> </table>	Activity	Water Requirement (m ³ /hr)	Water Requirement (m ³ /Day)	Source	Beneficiation & slurry pumping	539	12, 936	2082 m ³ /Day- Ground Water & Dewatering water -																										
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Mining and Allied Activities	15	360	11, 214 m ³ /Day – Surface water
Total	554	13, 296	

Description	m ³ /Hr	m ³ /Day
Water Addition in Plant	3673	88, 152
Water recovery & recycle to plant	3134	75, 216
Water lost in tailing, production and evaporation losses	539	12, 936
Make-up water to plant	539	12, 936

Improvement:

- a. It is discussed with our consultant M/s. MECON that for reducing evaporation loss, the depth of water reservoir would be reduced by 1 m So that Surface area can be minimized. The evaporation loss would be reduced from 39m³/hr to around 30 m³/hr.
- b. All drainage would be made with coverings and would be channelized to main reservoir for re-use of water.
- c. Big size of filters with polypropylene filter cloths would be used for minimizing the moisture carrying by tailings. With this technological change moisture in tailing could be reduced to 20% as against the planned 23%. This will help reduce the water loss to 28m³/hr from 33m³/hr.
- d. The mine site has three recharge ponds with 5779.5 m3 capacity for pond 1, 2478.7 m3 capacity for pond 2 and 6789.7 m3 for pond 3, making it total 15,047.99 m3. Average annual rainfall is taken as 1300mm. Presuming that number of fillings will be 3 times in a year thus taking no. of days water available in water conservation structures is 120 days So, total estimated recharge from three ponds 81,258.5 m3 /year.
- e. Waste water generated from workshop is being treated using oil–water separator and treated water is being used in dust suppression & vehicle washing.
- f. Sewage waste generated from canteen, mine office & toilets is being disposed in soak pit via septic tank.
- g. Use of wetting agents is recommended to reduce water consumption.
- h. Re-use of water recovered from processing plant.
- i. Rain water harvesting from roof tops of buildings and other super structures for storage. The roof top rain water is collected and channelized to the recharge well in the camp area.

	<p>j. Suitable storm water drainage system along the roads is provided to dispose storm water effectively. The surface run-off collected in the storm water drains is channelized through a series of settling-cum-percolation ponds before discharged.</p> <p>k. Staggered trenches of 2m x 1m dimension are proposed to be constructed along the contours so that during sudden storm, good amount of run-off can be harvested which will maintain a good amount of soil moisture content.</p> <p>l. For effective harvesting of rain water from the valley in the northern part of the lease area, a recharge tank with overflow system is already provided.</p>								
Point 6	PP is required to submit an action plan to reduce diesel consumption, increase renewable energy use, and adopt electric vehicles within the ML area to align with sustainable practices.								
Reply	<p><u>1. Action Plan to Reduce Diesel Consumption</u></p> <p>➤ Total Diesel Consumption per tonne of Iron ore for FY 2023-24:</p> <table border="1"> <thead> <tr> <th>Activity</th> <th>Specific Diesel Consumption (Litres per tonne of iron ore)</th> </tr> </thead> <tbody> <tr> <td>Mining Excavation</td> <td>0.68</td> </tr> <tr> <td>Mineral Processing and Dispatch</td> <td>0.67</td> </tr> <tr> <td>Total Diesel consumption</td> <td>1.35</td> </tr> </tbody> </table> <p>➤ It is proposed to construct a Crushing and Screening Plant of 2000 tph, which would be electrically operated. This will reduce the specific diesel consumption from 1.35 litres per tonne to 0.68 litre per tonne only, amounting to reduction of 6700 kilo litres per annum corresponding to 10 million tonne of iron ore production.</p> <p><u>2. Increasing Use of Renewable Energy</u></p> <p>➤ At present 50 KW of solar power system is installed an additional 50 KW installation is planned for completion by the end of this financial year.</p> <p>➤ 3 km of solar fencing has been installed to protect wildlife and reduce human-wildlife interactions.</p> <p>➤ In the Buffer Zone, 22 solar-powered borewells (equipped with overhead tanks, standposts, solar panels, and pipelines) have been installed, along with 50 solar streetlights in nearby communities, encouraging the use of clean energy.</p> <p><u>3. Adoption of Electric Vehicles within the Mining Lease</u></p> <p>➤ JSW Steel is a founding member of the EV100+ initiative, an international movement aimed at phasing out heavy, polluting vehicles.</p> <p>➤ Feasibility studies are underway to evaluate the suitability of electric trucks and loaders in JSW mines at Odisha in collaboration with M/s Propell Motor and M/s Sany India limited.</p> <p>➤ Possibility will be explored for deployment of electric operated heavy mining vehicles.</p>	Activity	Specific Diesel Consumption (Litres per tonne of iron ore)	Mining Excavation	0.68	Mineral Processing and Dispatch	0.67	Total Diesel consumption	1.35
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Point 7	PP needs to obtain a certificate from the Department of Mines and Geology (DMG) confirming that no mining activity has been undertaken at the ML boundary (Safety Zone) on the northern side.								

Reply	A Certificate from the Department of Mines and Geology (DMG) stating that no mining activity has been undertaken at the ML boundary (Safety Zone) on the northern side. Copy of the same is submitted along with ADS Reply.																																	
Point 8	PP must submit a copy of the Stage-I Forest Clearance (FC) for 19.256 ha of forest land, along with the transfer of Stage-II Forest Clearance for 238.201 ha of forest land in its name.																																	
Reply	<ul style="list-style-type: none"> M/s AMTC the erstwhile lessee has obtained forest clearance over the entire forest area falling within the mining lease, barring 14.864 Ha as safety zone & Greenbelt, as per extant rule vide F.No. 8-34/2000-FC (Vol.-I) dated 15th Nov 2007. In 2020, upon getting the mining lease through auction process JSW got vested with the Forest Clearance which was granted to erstwhile lessee. Pursuant to amendment in MMDR and guideline issued by MOEF &CC transfer of Forest clearance vide No. FE-DIV-FLD-0067-2022-17050/FE&CC, dated 22.09.22 is made in the name of JSW over area of 238.201Ha NPV has been paid for the entire forest area and CA land also has been provided for the total forest area within the lease. Details of NPV and CA land is given below. <table border="1" data-bbox="327 992 1382 1330"> <tr> <td>NPV Paid by</td> <td>In Rs.</td> </tr> <tr> <td>By Ex-Lessee</td> <td>18, 39, 40, 850/-</td> </tr> <tr> <td>By JSW</td> <td>19,30,88,250/- (over entire forest land @ 7.5 lakhs/Ha)</td> </tr> <tr> <td>Total NPV</td> <td>37, 70, 29, 100/-</td> </tr> </table> <table border="1" data-bbox="319 1368 1386 1975"> <thead> <tr> <th colspan="5">CA LAND STATUS OF NARAYANPOSHI</th> </tr> <tr> <th>S.N.</th> <th>Pattern</th> <th>Area (Ha)</th> <th>Date</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CA land provided by Ex-Lessee (virgin forest area)</td> <td>184.591</td> <td>20.08.2009</td> <td>Village Kusumtola of Banki range under Bonai Forest Division</td> </tr> <tr> <td>2</td> <td>CA land provided by JSW (Pre-80 broken)</td> <td>53.61</td> <td>29.05.2023</td> <td>Village Phulabadi of BJP range under Keonjhar Division</td> </tr> <tr> <td>3</td> <td>CA land provided by</td> <td>20.00</td> <td>14.03.2023</td> <td>Village Lephripada of Lephripada range</td> </tr> </tbody> </table>	NPV Paid by	In Rs.	By Ex-Lessee	18, 39, 40, 850/-	By JSW	19,30,88,250/- (over entire forest land @ 7.5 lakhs/Ha)	Total NPV	37, 70, 29, 100/-	CA LAND STATUS OF NARAYANPOSHI					S.N.	Pattern	Area (Ha)	Date	Location	1	CA land provided by Ex-Lessee (virgin forest area)	184.591	20.08.2009	Village Kusumtola of Banki range under Bonai Forest Division	2	CA land provided by JSW (Pre-80 broken)	53.61	29.05.2023	Village Phulabadi of BJP range under Keonjhar Division	3	CA land provided by	20.00	14.03.2023	Village Lephripada of Lephripada range
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	JSW (fresh diversion)			under Sundergarh Division
	<p>➤ On account of DGPS survey and georeferencing of village sheet some differences are noticed and accordingly 19.256 Ha of forest area needed Forest Clearance. For which our FC application is with state govt for further processing.</p> <p>➤ Further, it is to submit that no mining activity is planned in the un-diverted area of 19.256 Ha, which is also shown in then Mining plan for 2025-30. The same is verified and scrutinized by the RCOM, Bhubaneswar.</p>			
Point 9	PP is required to submit the status of Scheduled Tribe (ST) land within the ML area, detailing any specific considerations or approvals needed.			
Reply	Lease of Narayanposhi Iron & Mn Mines is executed over an area of 349.254 Ha (as per RoR). Surface right over an area of 324.800 Ha was granted to the ex-lessee and has been vested to JSW Steel vide vesting order 15.02.2024. We are yet to obtain the surface right over the balance area of 24.643Ha as shown in the enclosed map. Out of such 24.643Ha, an area of 13.357 Ha is designated as ST land. The said ST land is in the possession of their owners. The conceptual mining plan highlighted in green and yellow (earmarked as M1, M2, M3) is situated on the southern side of highway. The ST land in the rectangle ABCD shown in the map is highlighted in blue colour. It is evident that we have no working plan in this area and hence there in no plan to acquire the ST land.			

D. PP has submitted point wise reply to the second ADS on 13.12.2024 were sought on 11.12.2024 as given below;

S. No.	ADS	Reply by PP
1.	PP needs to submit a copy of the Stage-I Forest Clearance for 19.256 ha of forest land.	19.256 Ha of forest area is needed for Forest Clearance, which is currently in progress with the State Government. No mining activity is planned in the aforementioned forest area of 19.256 Ha, as shown in the mining plan and mentioned on page no. - 4, 31, and 71 of the approved Mining Plan along with the Progressive Mine Closure Plan (2025-2030) by the Indian Bureau of Mines, Bhubaneshwar, vide letter no. RMP-2309/2024-25-IBM_RO_BBS, dated 06.12.2024. This information has also been conveyed to the EAC (NCM) through an email dated 06.12.2024.
2.	PP needs to submit software generated Plagiarism certificate.	PP has submitted software generated Plagiarism certificate.

3.	PP needs to clarify whether Wildlife Conservation Plan has been prepared as per Wildlife Amendment Act 2022 or not.	The Wildlife Conservation Plan was prepared by the DFO and approved by the PCCF & Chief Wildlife Warden, Odisha, vide letter no. 988/CWLW-FDWC-FD-0126/2021, dated 31.01.2022. Following the implementation of the amended Wildlife Conservation Act 2022, PP have requested the Forest Department to revisit the SSWLCP, vide letter no. JSW/S/CO/2024/585, dated 10.09.2024. The Forest Department has issued a revised authenticated list of flora and fauna and same is in the process of revising the existing SSWLCP to incorporate the amendments in the WLA. The company shall submit the approved Wildlife Conservation Plan within two months.
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E. PP has submitted point-wise reply to the third ADS on 02.03.2025 were sought on 27.02.2025 as mentioned below:

S. No.	ADS	Reply by PP
1.	Unauthorized construction: JSW Steel Ltd completed construction of a 2000 TPH Central Processing Unit and a 6.0 MTPA Beneficiation Plant within the mining lease area before obtaining EAC recommendations or the mandatory EC. This constitutes gross violations of the EIA Notification, 2006, and the Environment Protection Act, 1986. Satellite images from 2023 and November 2024 clearly show these facilities constructed without prior environmental clearance or Consent to Establish.	The construction of crushing and screening plant is started for sizing of iron ore without any upgradation of quality for which Consent to Establish (CTE) is obtained from SPCB-Odisha vide letter no. 19304/IND-II-CTE-6577 dated 04.12.2021 as per the provision of Air and Water Act. This shall cater the present production capacity of 6 million Tones. It may be noted that the same is not covered by the provisions of EIA Notification, 2006 as clarified in the OM dated 22.09.2008 of MoEFCC. PP confirmed that no construction activity related to the 6.0 MTPA Beneficiation Plant has begun. MoEFCC may depute any official to check the fact. Additionally, we want to add that no procurement orders for beneficiation equipment have been placed to date.
2.	Serious environmental hazard: As the mine area is undulating hills with altitudes varying from 545 m to 640 m above MSL, general slope of the area	A suitable location has been identified for establishing the 6.0 MTPA Beneficiation Plant, taking into account all necessary environmental,

	<p>is towards north and National Highway NH215 and Rajamudna-Rimuli road pass through the ML area through the mining lease area. The operation of the said illegal high-capacity beneficiation plant will generate huge quantity tailings whose improper management may lead to slippage to NH- 215.</p>	<p>technical, and regulatory considerations. The tailings as proposed to be generated from beneficiation plant will be in the form of dry filter cake and are proposed to be discarded along with the mine waste.</p> <p>Proposed Tailing Management</p> <ul style="list-style-type: none"> • Tailing cake from the beneficiation plant will be hauled to the backfilled area • Overburden will be progressively dumped over the tailing • Waste management scheme (OB + Tailing) is prepared with a bottom-up approach for dumps creation with filter press material encircled within the host rocks material. This approach can prevent any potential flow of filter press dump material. • The top cover will be reclaimed by plantation. <p>With the above tailing management plan there would not remain any scope of slippage of tailing towards any other public property as the same would be contained within the worked-out mine and would be overlaid by other over burden.</p>
3.	<p>Karo river flows adjacent to the ML area in the northwest direction, and in certain sections, overlaps with the ML area. Additionally, the Orahari Nallah runs adjacent to the ML area in the northwest, while the Kashira Nallah and Narayanposhi Nallah traverse through the ML area.</p>	<p>Mine working is planned to ensure protection of nallah leaving 50 m stretch all along. Adequate run-off management by check-dam, garland drain, siltation pond etc. to ensure non-entry of silt to water body.</p>
4.	<p>Public Hearing Non-compliance: Public consultations in affected villages were reportedly not conducted as per mandatory requirements. Public hearing in villages of Harishchandrapur, Koira,</p>	<p>The public hearing for the project has been conducted in accordance with APPENDIX IV of EIA Notification, 2006 fulfilling all the mandatory requirements. All necessary records and documentation related to the</p>

	<p>Kashira, Kusmdihi, and Kathamala RF for construction 2000TPH Central Processing unit and grinding & 6.0MTPA Beneficiation plant has not been conducted. It is again violation E.P Act. and EIA 2006</p>	<p>public hearing are available for reference. Public hearing proceeding is attached herewith as Annexure-I for the reference. The Company also would like to inform that public hearing was conducted on 23.05.2022 under the chairmanship of Additional District Magistrate, Sundargarh at Open field in-front of proposed Indoor Stadium, Dhublameda Village under Koira Block in the District of Sundargarh as selected by SPCB, Odisha.</p>
5.	<p>Misrepresentation of Facts: As can be inferred from the last EAC meeting the proximity of protected reserves, rivers, and critical water bodies to the mining lease area was not transparently disclosed by the project proponent.</p>	<p>Details of forests, water bodies/ rivers are mentioned in the final EIA report at Table - 3.1 Environmental Settings of the 10 km Study Area at page no. 125-126 and also presented before the hon'ble committee. This information is already been disclosed during different stages of EC process and is available in the public portal for reference.</p>
6.	<p>Excessive water withdrawal: The huge water drawl of 11,550cum/day from Baitarani River will severely affect may adversely impact local water availability and when the said river is already stressed due to large-scale mining and only major river in the said mining zone for local inhabitants.</p>	<p>The requirement of drawl of 11, 550 cum/Day from Baitarani River was envisaged, which further was reduced to 11, 214 cum/day. Out of the said requirement 9462 cum/day would be utilized as conveying media for slurry transportation of iron ore in compliance with NEERI recommendations for avoiding the reliance on road transport. It is pertinent to note that out of 9462 cum/day again 9384 cum/day would be recovered at user end (Paradeep) for alternate utilization by the industry. Dept. of Water Resources, Govt. of Odisha has allocated 39 cusec of surface water from Kanupur dam of Baitarani River to Narayanposhi and Nuagaon mines of JSW. To meet the requirement of NEERI recommendations, beneficiation and</p>

		slurry pumping project is proposed to fulfill the SOTM model. There is no significant impact on local habitats and for the water availability.
7.	As per vested order issued post auction of the said mine, EC for 6.0 MTPA iron ore production and 2.0 MTPA Beneficiation plant issued to erstwhile lessee AMTC was vested to JSW Steel Ltd. The new lessee JSW Ltd, soon after execution of ML, applied to MOEF&CC, GoI for expansion of iron ore production to 10 MTPA (ROM) of iron ore, 0.036 million TPA of manganese ore (ROM) along with screening, crushing and 6.0 MTPA beneficiation plant in the lease area, and the Expert appraisal committee has approved the ToR in its 31.12. 2020. The project proponent had again applied for amendment of ToR and proposal was considered in the 45th EAC (Non-Coal Mining) meeting held during 24th, 25th and 27th January, 2022. The EAC meeting had noted that project proponent JSW Ltd had not carried out the public hearing.	PP clarified that alleged claim stating that The EAC meeting had noted that project proponent JSW Ltd has not carried out the public hearing is a misinterpretation of the facts. The public hearing was conducted as per the mandatory requirements, ensuring transparency and compliance with APPENDIX IV of EIA Notification, 2006 fulfilling all the mandatory requirements after grant of amendment in ToR by the 45th EAC (NCM) committee held on 22-27 Jan 2022. All relevant stakeholders were given the opportunity to participate, and their concerns were duly recorded and addressed. All necessary records and documentation related to the public hearing are available for reference. Public hearing was conducted on 23.05.2022 under the chairmanship of Additional District Magistrate, Sundargarh at open field in front of proposed Indoor Stadium, Dhublameda Village under Koira Block in the District of Sundargarh.
8.	Instead of complying the approved TOR, preparation of EIA and EMP and public hearing as directed in aforesaid EAC meeting, JSW Steel Ltd started construction of 6MTPA iron ore beneficiation plant in 2023 and more than 90% of the project has been completed in 2024. These activities are gross violation of E.P. Act.	As stated earlier, no construction activity related to the 6.0 MTPA Beneficiation Plant has begun. Even the detailed engineering and procurement of equipment is not yet started. MOEF May depute any official to check the fact. The above allegation is unfounded.

F. Fourth Additional details were sought on 19.03.2025 & following reply was submitted by PP on 04.04.2025:

S. No.	ADS	Reply by PP
1	PP should obtain and submit a report on current status of installation of beneficiation plant in the project after site inspection by MoEFCC Regional Office, Bhubaneswar on 19.03.2025.	Site visit of the IRO was done on 26.03.2025 and based on the observations made during inspection and documents submitted, the status report was prepared and submitted to the MoEF&CC, Vide File No. 101-1040/18/EPA, dated 04.04.2025.

G. 5th Additional details were sought on 08.04.2025 & Reply was submitted by PP on 17.04.2025.

S. No.	ADS	Reply by PP
1	PP should submit the present status of implementation of revised Wildlife Conservation Plan.	Divisional Forest Officer of Bonai Division, Sundergarh (District) has revised the site-specific Wildlife Conservation Plan with regard to Narayanposhi Iron Ore and manganese Mine of M/s. JSW Steel Ltd. The same is forwarded to PCCF (WL) and Chief Wildlife Warden through RCCF Rourkela for approval.

H. Proposal was considered in the 43rd EAC meeting held during 22-23rd April, 2025. The deferred the proposal and Additional details sought on 23.04.2025. The PP has submitted point-wise reply on 13.06.2025 as mentioned below:

S. No.	ADS	Reply by PP
1	PP needs to provide a comparative analysis of the ongoing construction of crushing and screening facilities in comparison with earlier EIA/EMP Report (on the basis of which EC dated 18.06.2019 was issued) and Consent to Establish dated 04.06.2021 and 04.12.2021 issued by OSPCB.	Comparative analysis of the ongoing construction of crushing and screening facilities in comparison with earlier EIA/EMP Report (on the basis of which EC dated 18.06.2019 was issued) and Consent to Establish dated 04.12.2021 issued by OSPCB has been submitted. Consent to Establish for EC Proposal has been obtained from the OSPCB, dated 04.06.2021 under Water (Prevention & Control of Pollution) Act, 1974 and under Air (Prevention & Control of Pollution) Act, 1981. This Consent to Establish is subject to EC. The production activity for the proposal shall be commenced after obtaining Environment Clearance.

	<p>PP needs to explain whether there is any change in pollution load due to project activities in the context of variations in configuration of crushing and screening facilities in the project.</p>	<p>A detailed study regarding pollution load assessment has been carried out by the MECON Limited and same is enclosed with ADS Reply.</p> <p>It is observed from air quality modelling studies that there is considerable decrease in maximum peak concentrations in case of integrated screening & crushing unit as compared to multiple mobile crushing and screening units.</p> <p>Fixed screening & crushing unit of 2000 TPH envisaged will have distinct advantage of better efficiency due to compact and continuous design.</p> <p>Pollution control measures could be effectively managed as all the systems are having enclosures, arrangement of DFDS system and additional arrangement of dust extraction through bag filters are incorporated. A lesser pollution load could be achieved through this system.</p> <p>The decrease in pollution load achieved is 0.15 kg/hr in PM10, 0.03 kg/hr in PM2.5, 0.01 kg/hr in SO2 and 0.86 kg/hr in NOx.</p> <p>Hence, from the pollution load assessment study, it can be concluded that there shall be considerable decrease in pollution load after phasing out of existing multiple crushing and screening units with fixed integrated crushing and screening plant.</p>
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