Steel Limited

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No. JSW/S/CO/2025/564

Date: 28/11/2025

To,

The Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (Eastern Zone), A/3, Chandersekharpur, Bhubaneswar – 751023	The Member Secretary, State Level Environment Impact Assessment Authority, 5RF-2/1, Acharya Vihar,Unit – IX, OPTCL Colony, Anand Bazar, Bhoi Nagar, Bhubaneswar, Odisha 751022

Sub: - Submission of Six-monthly EC compliance report for the **Gonua Iron Ore Mine of M/s JSW Steel Ltd for the period April 2025 to September 2025**.

Ref: - 1. Vesting Order dated 30th May 2020 issued by GoO, Steel and Mines Department.
2. Environment Clearance Letter dated 21.12.2019 issued by SEIAA, Odisha.

Dear Sir,

We are submitting herewith a six-monthly EC compliance report of Gonua Iron Ore Mine, M/s JSW Steel Ltd. for the period April 2025 to September 2025 as per EIA notification 2006. The same is also attached in soft copy to your good office on e-mail to seiaaorissa@gmail.com; and roez.bsr-mef@nic.in; for your ready reference.

We trust that the measures taken towards environmental safeguards comply with the stipulated conditions. We look forward to your guidance which shall certainly help us in our endeavor for improving upon our environmental management practices.

Seeking your co-operation as always.

Thanking you,

Yours Faithfully
For JSW Steel Ltd

Vijay Kumar 28/11/25

Vijay Kumar
(Authorized Signatory)
Encl: As above

ENVIRONMENT CLEARANCE COMPLIANCE STATUS – GONUA MINE

Six Monthly Compliance report of Environmental Clearance for Gonua Iron Ore Mine, JSW Steel Ltd. for the period from- April 2025 to September 2025.

Reference letter from SEIAA, Odisha - SEIAA File No. 38069/03-MIN-V/09/2019/7685/ SEIAA, Dated 21.12.2019.

Capacity- 1.20 MTPA of Iron ore.

Sl. No.	Environment Clearance Conditions	Self-Declaration	Compliance Remarks
A.	**Specific Conditions**		
1	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Odisha, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.	Being complied	Noted and abided with the conditions given by the court of Law.
2	This Environmental Clearance will not be operational till such time the Project proponent complies with all the statutory requirements and the Judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Others applicable to this project.	Agreed to comply	We shall abide by the condition given as per the statutory requirements and Judgment of the Hon'ble Supreme Court dated 2nd August 2017.
3	The Department of Mines and Geology, Government of Odisha shall ensure that mining operation shall not commence 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 the 2nd August 2017 in write Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Others.	Agreed to comply	We shall ensure as per the statutory requirements and Judgment of the Hon'ble Supreme Court dated the 2nd August 2017 in writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Others.
4	The proponent shall comply all the specific conditions as recommended by CSIR-NEERI on carrying capacity study (as applicable) in time bound manner as proposed.	Being complied	NEERI recommendations such as quantification of air emission load, mobile water sprinklers on haul roads, and dry fog- type dust suppression system at material handling plants (crushing and screening) have been adopted. Monitoring of ambient air and fugitive emission data has been implemented. Ambient air quality is being monitored at the buffer zone. PUC check is being conducted for the vehicles. Noise level monitoring is being carried out. Flow rate measurement of perennial nala is being done. Oil and grease trap has been provided at the vehicle washing bay. The

			NEERI Compliance report has been attached as **ANNEXURE I.**
5	The project proponent shall mandatorily implement the remediation plan as well as the Natural and Community Resource Augmentation Plan as submitted in the Final EIA/EMP Report in Chapter-10. The status of implementation shall be submitted to the Regional Office, MoEF&CC, SPCB and SEIAA, Odisha along with six monthly compliance reports.	Being Complied	The remediation plan as per the EIA/EMP report is implemented at site.
6	The Project Proponent shall obtain Consent to Operate from the State Pollution Control Board, Odisha and effectively implement all the conditions stipulated therein.	Being Complied	CTO has been vested to JSW Steel Ltd for 2 years with vide letter no 4854/IND-I-CON-1539 dated 31.03.2024 have been obtained from SPCB. CTO Copy is attached as **ANNEXURE II.**
7	The Project Proponent shall carryout sustainable and scientific mining in conformity with the approved mining plan and accordingly, strict monitoring shall be carried out by the Regional Office, MoEF&CC, Govt. of India, Bhubaneswar, Odisha State Pollution Control Board and Department of Mines and Steel, Government of Odisha.	Being Complied	Sustainable and scientific mining in conformity with the approved mining plan is being carried out.
8	The Project Proponent shall carryout monitoring of air quality parameters covered under NAAQS notification, 2009 and Fugitive dust emission monitoring as per the action plan submitted to the Ministry. The frequency of monitoring shall be governed by MoEF&CC, Govt. of India circular dated 27.05.2009 and Consent to Operate issued by Odisha State Pollution Control Board for ambient air and fugitive dust emission respectively.	Being Complied	Regular Ambient air quality monitoring and fugitive dust emission monitoring are carried out and data is well within the limit prescribed. The monitoring report is submitted to the board within the timeline. AAQ Monitoring reports are attached as **ANNEXURE III**.

9	No mining activities will be allowed in forest area for which the Forest Clearance is not available.	Being Complied	The present mining operation is restricted within vested Forest area only as per FC F. No. 8-47/93-FC, Dtd. 07/09.08.1996 over 54.40 ha. Fresh forest clearance under FC Act, 1980 for the diversion of 32.875 ha of forest land has also been applied vide Proposal No. FP/OR/MIN/QRY/418017/2023 dated 27.09.2023 and the same is under evaluation. Advance NPV has already been paid. Further, as per MMDR Amendment Act 2021, the Forest clearances and other permissions continue to be valid even after the expiry or permission of lease till the minerals are exhausted. Hence, the Forest Clearance for 54.40 ha will be valid till life of the mine. The letter for the same is attached as **ANNEXURE IV.**
10	The Environmental Clearance is subject to obtaining requisite NBWL Clearance, if any, from the Standing Committee of National Board for Wildlife for Mining project.	Complied	No Wild Life Sanctuary/Tiger Reserve/National Park/ Elephant corridor within the core as well as within the buffer zone of the project.
11	Project Proponent should plant only native species for green belt development. Plantation of local species should be carried out during the Monsoon Season.	Complied	A total of 9745 saplings were planted by the end of 2024-25, which included safety zone plantation, dump plantation. Photos for the same is attached as **ANNEXURE V.**
12	The Proponent shall install online Ambient Air Quality Monitoring System and there should be system for display of digital AAQ data within 03 months at least at three locations as per wind direction. Online provisions of pH and turbidity meters at discharge points of STP and ETP and also at water storage ponds in the mining area may be made. Project Proponent should display the result digitally in front of the main Gate of the mine site.	Being Complied	Regular Ambient air quality monitoring and fugitive dust emission monitoring are being carried out and data is well within the prescribed limit. An Electronic Digital Display Board has already been installed near the Gate No. 2 area for displaying ambient air quality monitoring data noise monitoring data, water/wastewater quality monitoring data. AAQ Monitoring reports are attached as **ANNEXURE III.**
13	Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) in case of intersecting the groundwater table. The intersecting ground water table can only be commencing after conducting a detailed hydrogeological study and necessary permission from the CGWA/MoEF&CC. The Report on six monthly bases on change in groundwater level and quality shall be submitted to the Regional Office of the Ministry, CGWA, and State Pollution Control Board.	Being Complied	NOC from CGWA for 75 m3/day vide No. CGWA/NOC/MIN/REN/1/2024/9851, valid up to 09/05/2026. CGWA NOC is attached as **ANNEXURE VI.** Hydrogeological study has been conducted and Hydrogeological Report attached as **ANNEXURE VI A**

14	The project should also implement a community Development and Welfare program in the areas of Health, Education Environmental Protection.	Complied	Gonua Mining operation was started on 1st July 2020 and various community development initiatives are under implementation for community upliftment. A need-based assessment survey has been completed and an action plan is under implementation for compliance. Peripheral Activities like SHG training and health camps are being conducted as shown in **ANNEXURE VII.**
15	Proponent shall appoint an occupational Health Specialist of regular and periodical medical examination of the workers engaged in the project and maintain records accordingly, also occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/ preventive measures taken accordingly. The recommendations of national Institute for ensuring good occupational environment for mine workers shall be implemented. The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.	Complied	Workers engaged in Operations are provided with PPE's. Besides this, acoustic enclosures are provided for all machines operating within the mines. The noise level is being monitored by a Noise Level Meter the results reveal that the parameter is well within the prescribed norms. Initial Medical Examination and periodical Medical Examinations of the workers engaged in the project are being carried out periodically and records are maintained. A medical dispensary with full time. The doctor has been appointed at the mine area for the health check-ups of employees and also the locals. Photos for the same has been attached as **ANNEXURE VIII.**
16	Project Proponent shall run an awareness campaign on sanitation for women and utilization of Sanitary Napkin and also to distribute the Sanitary Napkin/pads to the women and provide the training for proper disposal.	Complied	An awareness campaign on sanitation for women and utilization of Sanitary napkins and hygiene awareness is being conducted. Photos for the same has been attached as **ANNEXURE VIII**.
17	The Regular monitoring of ground water table to be carried out by establishing a network of existing wells and constructing new piezometers. The reports shall be submitted at interval of six months to the Regional Office of the MoEF&CC, Govt. of India, Bhubaneswar and Odisha State Pollution Control Board.	Being Complied	Regular monitoring of groundwater level and quality is being carried out in both core zone and buffer and monitoring reports are attached as **ANNEXURE III.**
18	The water balance/ water auditing shall be carried out and measures for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF & CC, Govt. of India, Bhubaneswar and Odisha State Pollution Control Board.	Complied	The total water requirement for Gonua Iron Ore mines is 75 KLD. Rainwater collected in pits is being utilized for dust suppression in the mining operations. Fixed water sprinklers and pressurized mobile water tankers are utilized for dust suppression arrangements to reduce water requirements. Complete water balances the diagram is attached as **ANNEXURE IX.**

19	The Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the at interval of six months to the Regional Office of the MoEF & CC, Govt. of India, Bhubaneswar and Odisha State Pollution Control Board.	Being Complied	Regular monitoring of water quality of upstream and downstream is being carried out and the consolidated report is attached as **ANNEXURE III**
20	The Plantation/Green belt at the periphery of the water body, particularly on eastern and western boundaries, shall be maintained in the mined-out area in order to reduce the loss of surface water.	Complied	A total of 9745 saplings were planted by the end of 2024-25, which included safety zone plantation, dump plantation. Photos for the same is attached as **ANNEXURE V.**
B.	**General Conditions**		
1	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest and Climate Change (MoEF & CC), Govt. of India as well as SEIAA, Odisha 3 years in advance of final mine closure for approval.	Being Complied	A progressive mine closure plan approved by IBM is in place. The final mine closure plan along with details of the Corpus fund will be submitted to the Ministry of Environment & Forests and SEIAA.
2	No change in mining technology and scope of work should be made without prior approval of the SEIAA, Odisha.	Agreed to comply	There will not be any change in the mining technology and scope of work, without prior approval of the SEIAA, Odisha.
3	No change in the calendar plan including excavation, quantum of minerals and waste should be made.	Complied	All the excavation, production and waste generation are as per the approved mine plan.
4	The project proponent shall obtain the necessary prior permission of the competent authority for the drawl of the requisite quantity of water (surface water and groundwater) for the project.	Complied	There is no draw down of surface water. NOC from CGWA for 75 m3/day vide No. CGWA/NOC/MIN/REN/1/2024/9851, valid up to 09/05/2026. CGWA NOC is attached as **ANNEXURE VI.**
5	Mining shall be carried out as per the provisions outlined in the mining plan approved by the Indian Bureau of Mines (IBM) as well as by abiding by the guidelines of the Directorate General Mines Safety (DGMS).	Complied	Mining shall be carried out as per the approved mine plan.

6	The project proponent shall carry out scientific investigation with respect of Blast induced ground vibration, fly rock & and air blast. Based on this study, Project Proponent should design an effective blast design to curb blast induced menace and public annoyance. The Report shall be submitted to the SEIAA, Odisha as well as the Regional Office of the Ministry.	Being Complied	A vibration study is carried out on a regular basis to study the blast-induced ground vibration, fly rock & and air blast.
7	The lands which are not owned by Proponent, mining will be carried out only after obtaining the consents from all the concerned (and owners as per the provisions of the Mineral Concession Rules, 1960 and MMDR Act,1957.	Complied	Mining is being carried out in the already broken-up area as per the approved mine plan.
8	Digital processing of the entire lease area using remote sensing techniques shall be carried out regularly once in three years for monitoring land use pattern and report submitted to the SEIAA, Odisha as well as to the Ministry of Environment, Forest and Climate Change and its Regional Office.	Complied	DGPS Surveyed Mining lease boundary superimposed on High-Resolution Satellite image of Gonua Iron Ore Mine duly vetted by M/s ORSAC has been attached as **ANNEXURE X.**
9	The critical parameters of ambient air quality as per the Notification 2009 such as PM10, PM2.5, NO2 and SO2 etc. in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, the quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)] The monitored data shall be uploaded on the website of company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.	Being Complied	Regular Ambient air quality monitoring and Water quality monitoring are being carried out by recognized NABET, MoEF&CC accredited laboratory. Monitoring reports are attached as **ANNEXURE III.**

10	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM10 and PM2.5 such as haul road, loading and unloading points and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.	Being Complied	Regular water sprinkling through mobile water sprinkler tankers is being carried out on haul roads and nearby mineral dispatch roads to avoid the generation of dust during the movement of vehicles**.** Fixed auto sprinklers on both sides of the major haul road and approach roads of the mine is in the commissioning phase. However, as an interim arrangement frequency of the Mobile water tanker sprinkling has been increased to suppress the dust emission generated due to transportation of vehicles. Regular maintenance of Haul roads is being carried out to avoid the generation of dust during the movement of vehicles. Regular monitoring of ambient air quality parameters is being carried out and data is well within the limit prescribed. Photos for the same is attached as **ANNEXURE XI.**
11	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. The monitoring shall be carried out four times in a year pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to the SEIAA, Odisha as well as Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board.	Complied	Regular monitoring of groundwater level and quality is being carried out in both core zone and buffer and monitoring reports are attached as **ANNEXURE III.**
12	Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained. The natural water bodies and or streams which are flowing in and around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table.	Being Complied	Regular monitoring of the flow rate of the springs and perennial nallahs being carried out around the mine lease and monitoring reports are attached as **ANNEXURE III.**

13	Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and a record of monitoring data should be maintained and submitted to the SEIAA, Odisha as well as the Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.	Being Complied	Regular monitoring of water quality of upstream and downstream is being carried out by recognized NABET, MoEF&CC accredited laboratory. and monitoring reports are attached as **ANNEXURE III.**
14	Transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sound, dust, and accidents could be mitigated. The project proponent shall bear the cost towards the widening and strengthening of the existing public road network in case the same is proposed to be used for the Project. No road movement should be allowed on the existing village road network without appropriately increasing the carrying capacity of such roads.	Complied	Transportation of the minerals is carried out through the by-pass road which is away from the habitation. Regular maintenance including widening of the road is being carried out for maintaining/increasing the carrying capacity of the road. A paved road has been provided for the transportation of ore through the NH. Natural Plantation along the road has been carried out. Dedicated water tanker has been deployed to control the dust on the transportation road.
15	The illumination and sound at night at project sites disturb the villages with 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 light/night hours.	Complied	Mining is being carried out in the already broken-up area as per the approved mine plan. Illumination and sound are restricted to the core zone only. No project sites disturb the villages in respect of both human and animal population. Ambient Noise level monitoring is being carried out at 4 different locations in the core zone as well as 4 locations in the buffer zone. Along with this Source noise monitoring is carried out at 4 different locations and the Noise monitoring report is attached as **ANNEXURE III.**
16	Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. The material transfer points should invariably be provided with Bag filters and or dry logging system. In case of Belt-conveyor facilities the system should be fully covered to avoid airborne dust; the Use of the effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured.	Being Complied	Regular water sprinkling through mobile water sprinkler tankers is being carried out on haul roads and nearby mineral dispatch roads to avoid the generation of dust during the movement of vehicles. Fixed auto sprinklers on both sides of major haul roads and approach roads of the mine are operational. However, as an interim arrangement frequency of the Mobile water tanker sprinkling has been increased to suppress the dust emission generated due to the transportation of vehicles. Regular maintenance of Haul roads is being carried out to avoid the generation of dust during the movement of vehicles. Photos of the same has been attached as **ANNEXURE XI.**

17	A sufficient number of Gullies to be provided for better management of water. Regular Monitoring of pH shall be included in the monitoring plan and a report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on a monthly basis.	Being Complied	Regular monitoring of water quality is being carried out. Existing series of settling ponds being maintained for surface water management.
18	There shall be planning, developing and implementing facility of rainwater harvesting measures on a long-term basis and implementation of conservation measures to augment groundwater resources in the area in consultation with the Central Ground Water Board.	Complied	Maximum rain water has already been channelized to Mine Pits and the same is being utilized in dust suppression and other mining activities. Existing surface run-off, Retention wall, Garland drains, and setting pits are being maintained. Detailed Hydrology study is prepared, recommendations of the study and consultation with CGWB, additional rainwater harvesting measures/structures will be implemented for rainwater harvesting.
19	The Project Proponent has to take care of gullies formed on slopes. Dump mass should be consolidated with proper filling/leveling with the help of dozers/compactors.	Being Complied	Overburden is being stacked at the earmarked site and is stabilized with the coir matting and plantation.
20	The reclamation at waste dump sites shall be ecologically sustainable. Scientific reclamation shall be followed. The local species may be encouraged and species are so chosen that the slope, bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic parameters and allows only species adopted to that micro climate.	Being Complied	Backfilling and reclamation will be carried out as per the approved mine plan. Plantation will be carried out after the maturity of the same.

21	The top soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The maximum height of the dumps shall not exceed 8m and width 20m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface runoff. In critical area, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated area should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the ministry of environment forest and climate change and its regional office on six-month basis.	Being complied	There is no topsoil dump within the mine lease area, once it is generated it will be stored at earmarked location. The overburden (OB) generated during the mining operations is stacked at earmarked dump site(s) only. Plantation of the native species is being carried out on the dump for stabilization. Regular monitoring and management of the rehabilitated area is carried out.
22	Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be developed etc. The drains shall be regularly desilted particularly after monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and overburden dumps to prevent runoff of water and flow of sediments directly into the river and other water bodies, and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years' data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide an adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilated at regular intervals.	Being complied	Garland drain of around 500m and retaining wall of 250m has been constructed and the existing siltation pond is being maintained to prevent runoff of water and flow of sediments directly into the river and other water bodies. The collected water is being used for dust suppression and for greenbelt development. Desiltation of the existing garland drain and the settling pond has been carried out before monsoon. Photos of the same has been attached as **ANNEXURE XII.**

23	Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water bodies, along the roads, etc. by planting the native species in consultation with the local DFO/Agriculture Department and as per CPCB Guidelines. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within the first five years.	Complied	1000 saplings were planted in FY 2023-24, and 2540 saplings were planted in FY 24-25. A total of 9745 saplings were planted till the end of 2024-25. Gap plantations are being carried out in the safety zone. Photos of the same has been attached as **ANNEXURE V.**
24	Project Proponent shall follow the mitigation measures provided in 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", if any, applicable to the project.	Complied.	As per the Office Memorandum No. Z- 11013/57/2014-IA. II (M), dated 29th October 2014, titled "Impact of mining activities on Habitations-Issues of MoEF&CC, mitigative measures are being taken care of. This includes the construction of garland drains, check dams, retaining walls, and settling ponds. OM also states about the regular monitoring of natural streams, illumination surveys, and others which are being carried out.
25	The Project Proponent shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing, if any. In this context, Project Proponent should implement the directions of the Hon'ble Supreme Court with regard to acquiring grazing land The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded against felling and plantation of such trees should be promoted.	Complied	No grazing land is available inside the mine lease area.
26	The project proponent shall take all precautionary measures during mining operations for the conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for the conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.	Being complied	No Wild Life Sanctuary/Tiger Reserve/National Park/ Elephant corridor within the core as well as within the buffer zone of the project. The Site-Specific Wildlife Conservation Plan has been duly approved by PCCF, vide Letter No. 990/CWLW-FDWC-FD 0125-2021, Bhubaneshwar dated 31/01/2022.
27	The project proponent has to comply with the Corporate Environment Responsibility (CER) as per the	Complied	Expenditure made for Environmental Management Measures for the FY 2024-25 is attached herewith as

	provisions mentioned in the OM of Ministry no 22-65/2017. IA-III dated 1 May 2018 based on local needs and action plan with financial and physical breakup/details shall be prepared and submitted to the Ministry's Regional Office located at Bhubaneswar. Implementation of such a program shall be ensured accordingly in a time-bound manner.		**ANNEXURE XIII.**
28	Provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche, etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Being Complied	Facilities such as safe drinking water, a dispensary, mobile toilets, soak pits etc are provided.
29	Measures 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 ear plugs / mulls.	Being Complied	As per the observation from noise monitoring regularly carried out, the noise level is observed to be below 85 dB in the work zone area. Noise-producing equipment is covered as far as practicable. Workers engaged in Operations are provided with earplugs/muffs. Besides this, acoustic enclosures are provided for all machines operating within the mines. Controlled blasting is in place. Regular Noise Monitoring is being carried out and Monitoring reports are attached as **ANNEXURE III.**
30	Industrial waste water (workshop and wastewater from the mine) should be properly collected, and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	Complied	No industrial wastewater is generated from the mine. Workshop equipped with wastewater treatment facilities followed by an Oil and grease trap system and then recycled for captive utilization for HEMM washing. Regular Monitoring of water quality parameters being carried out by NABET Accredited laboratory. Report for the same is attached as **ANNEXURE III.**
31	Personnel working in dusty areas should wear protective respiratory device sand they should also be provided with adequate training and information on safety and health aspects.	Complied	PPEs like safety shoes, reflective jackets, safety glasses, ear plugs, helmets, etc. have been distributed. Personnel working in dusty areas wear protective respiratory devices and Vocational trainings have been carried out. Dust Suppression System (Dry fog system) being provided at all appropriate places of mineral handling plants (crusher & screening plant) and other areas. The same are being maintained for proper dust control. Pre-placement medical examination and periodical examination of the workers engaged are being conducted & and records are maintained.
32	A separate environmental management cell with suitably qualified personnel should be set- up under the control of a Senior Executive, who will report directly to the Head of the Organization	Complied	A dedicated Environment Management Cell under the leadership of AVP Environment has been formed and reports to Mine Senior Management i.e., Head of Operations (VP). Reports for the same are attached as **ANNEXURE XIV.**

33	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office.	Being Complied	We are in the process for implementation of various measures undertaken for the environment management plan since the operation started in July 2020. Details of environmental protection measures expenditure (head-wise breakup) were submitted to the ministry and its regional office. Environment protection expenditure as attached as **ANNEXURE XIII.**
34	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.	Agreed to comply	The project authority will inform to the regional officer regarding the date of final closure of the project.
35	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.	Being complied.	The last six-monthly compliance report along with monitoring data vide letter no JSW/S/CO/2025/234 dated 27/05/2025 was submitted to Regional Office, MOEF&CC, Bhubaneswar, SEIAA, Bhubaneswar, Zonal Office, CPCB, Kolkata, MS and RO Offices SPCB, Odisha.
36	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.	Agreed to comply	We will extend full cooperation to the officers of the Regional Office during their visit and furnish the required data, information, and monitoring reports.
37	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied	A copy of the EC letter is marked to the concerned Panchayat.
38	State Pollution Control Board should display a copy of the clearance letter at the regional office. District Industry Centre and collector's office / Tehsildar's Office for 30 days.	Complied	State Pollution Control Board/Committee has displayed the EC letter at its Regional Office, District Industries Centre, and Collector 's Office/ Tehsildar 's Office.
39	The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate	Complied	It was Published in the Newspaper informing that the project has been accorded environmental clearance. A photo of the same has been attached as **Annexure XV.**

	Change at www.environmentclearanee.nic.in and a copy of the same should be forwarded to the Regional Office.		
40	The SEIAA, Odisha, or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environmental protection	Noted	Noted
41	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in the withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.	Agreed to comply	Noted
42	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 of Odisha and any other Court of Law relating to the subject matter.	Noted	Noted
43	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	Noted	There is no such appeal against EC given.

ANNEXURE I

Steel Limited

Regd. Office: JSW CentreBandra
Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925Phone :
+91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

No. JSW/S/CO/2025/230 Date: 22/05/2025

To,
The Member Secretary
State Pollution Control Board, Odisha,
Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-8,
BHUBANESWAR- 751012

Sub: - Submission of 9 Points NEERI Compliance Status Report of FY 2024-25 for **Gonua Iron Ore Mine of M/s JSW Steel Ltd.**

Ref: - 1. Vested Consent Order No 1371 vide letter no 573/IND-I-CON-1539, dated 14.01.2020
2. New Consent Order No 2941 vide letter no 4854/IND-I-CON-1539 dated 31.03.2024.

Dear Sir,

With reference to aforesaid subject, please find enclosed herewith the 9 Points NEERI Compliance Status Report of FY 2024-25 for **Gonua Iron Ore Mine ofM/s JSW Steel Ltd**.

Seeking your co-operation as always.

Thanking you, Yours

Faithfully
For JSW Steel Ltd

Vijay 22/5/25

Vijay Kumar
(Authorized Signatory)

Encl: As above

Copy to- The Regional Officer, Regional Office, Rourkela, Office of the State Pollution ControlBoard, At- Near Panposh Hockey Chowk, AT/PO. - Panposh, Rourkela – 769 004, Dist – Sundargarh, Odisha.

NEERI REPORT COMPLIANCE STATUS – GONUA MINE

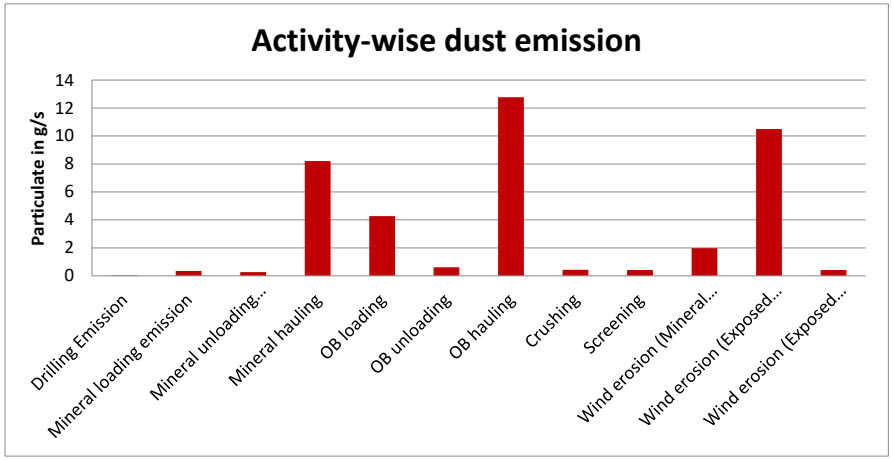
Sl. No.	Recommendation by CSIR-NEERI	Action Taken
1	The individual lease **holders shall make assessment and quantification of emission load generation (in terms of air pollution, noise, wastewater and** solid waste) from each of the mining activity (including transportation) forthe period starting from 1st April to 31stMarch and submit report by June of every year. Efforts should be made to further eliminate/ minimize generation of air pollution/ dust, noise, wastewater,solid waste generation in successive years through use of better technology. Necessary guidance many be sought from Regional Officer, SPCB on load calculation.	The project has already been practicing different environmental safeguard measures for pollution prevention The measures are- Mobile water sprinkling arrangement has been provided for the haul roads, processing area and loading / unloading points tominimize dispersion of air borne dust particles. Wet drilling arrangement with acoustic enclosure is in practice to control dust right atthe source. Dust Suppression System (Dry fog system) being provided at all appropriate places of mineral handling plants (crusher & screeningplant) and other areas. Same are being maintained for proper dust control. No process water being discharged from the mine. Noise producing equipment's are covered as far as practicable. Workers engaged in Operations are provided with ear plugs / muffs. Besides this, acoustic enclosures are provided for all machines operating within themines. The overburden generated as solid waste is stacked at the earmarked areas and are covered by Coir matting followed by tree plantation. The vehicles carrying the loaded materials are being covered with tarpaulin. Annual Assessment and quantification of emission load generation is enclosed as Annexure I.
2	Monitoring of ambient air and fugitive emission in core zone shall be carried out on daily basis. Minimum four ambient air quality monitoring stationsshall be installed in the core zone. Out of four, at least one on-line monitoring station shall be installed in case of mines having EC capacity of 3 MTPA of more. Moreover, one station should be located near the ore carrying truck entry and exit gate of mine. A letter in this regard has already been communicated to individual leaseholder of capacity 3 MTPA and above vide Board's Letter no-7807, dt. 30.06.2018.	Three Continuous Ambient Air Quality Monitoring Stations (CAAQMS) are installed at the site in consultation with Regional Officer, Rourkela. All 3 CAAQMS are equipped with data transfer facility to OSPCB. In addition, regular environmental monitoring is conducted through a third-party NABL-accredited laboratory, Ecomen Mining Pvt. Ltd.
3	Monitoring in buffer zone shall be carried out by through NABET accredited agency preferably, at locations of nearest human habitation including	Monitoring in buffer zone (in consultation with RO, SPCB) is also carried out by M/s Ecomen Mining Pvt Ltd (NABL Accredited Laboratory).

	schools and other public amenities located nearest to source of dust generation as applicable. The monitoring station shall be installed in core and buffer zone in consultation with Regional Officer, SPCB.	
4	Monitoring stations shall be facilated for measurement of CO as an additionalparameter to the other parameters SPM,PM10, PM2.5, SO_2 and NO_2. The monitoring result shall be compiled and submitted to Board on annual basis.	CO is also measured along with PM10, PM2.5, SO_2 and NO_2. Consolidated monitoring report for FY 2024-25 is submitted to the Regional Officer, SPCB.
5	All the vehicles engaged in mining and transporting activity in the mine shall have Pollution under Control (PUC) certificate. A record of the same shall be maintained for verification of inspecting agency.	Transportation vehicles without a valid PUC is not permitted inside the mines. Mineral carrying trucks are not allowed to leave the lease area without tarpaulin cover and is being monitored by security personnel at the exitgate.
6	Noise level should be monitored near the major sources of noise generationwithin the core zone once in week and submit the report annually. Further, date, time and distance of measurement shall also be indicated with the noise levels in the report. The data shall be used to map the noise generation from different activities and efforts should bemade to maintain the noise levels with the acceptable limits of CPCB. The monitoring schedule shall be informed to Regional Officer, SPCB in order to ensure his presence 25% of the monitoring program.	Noise level is monitored weekly near the major sources like the crushing and screening unit, loading and unloading areas, haul roads, drilling units, excavator, dumper etc. It is carried out through M/s Ecomen Mining Pvt Ltd (NABL Accredited Laboratory). Consolidated monitoring report for FY 2024-25 is submitted to the Regional Officer, SPCB.
7	Measurement of flow rate of the springs and perennial nallah passing through the mining lease area shall be done on monthly basis. Identification of the perennial streams to be brought under the monitoring program and the location the flow measurement shall be determined in consultation with Regional Officer, SPCB. The consolidated report shall be submitted to Board on annual basis.	Flowrate of nearby surface water bodies are monitored on a monthly basis. Consolidated monitoring report for FY 2024-25 is submitted to the Regional Officer.
8	Effort shall be made to recycle or reuse the treated wastewater from ETP of work shop and STP of residential colony instead of discharging to outside.	An ETP with an Oil & Grease trap is also provided to treat wastewater from washing machineries, and the treated water is recirculated and is used for washing.
9	Annual environmental sustainabilityreport (ESR) shall be made highlighting the efforts made towards environmentalprotection with respect to different environmental components vis-à-vis	Annual environmental sustainability report(ESR) is enclosed as **Annexure II.**

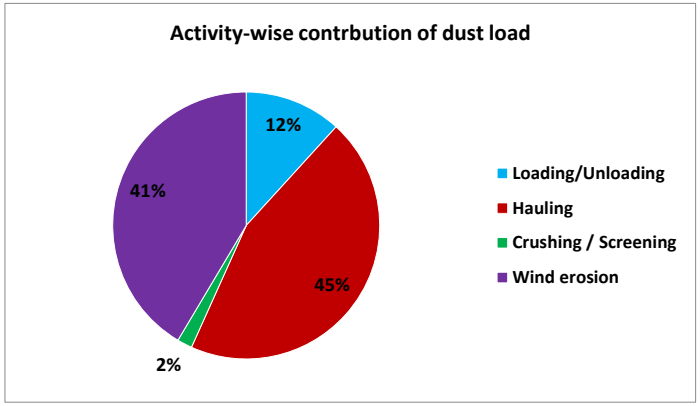
	production performance of the mine onmonthly basis. The data collected as perEC and CTE/CTO conditions should be utilized to prepare the annualsustainability report. The report shall be submitted to SPCB and RO, MoEF&CC by June of every year.	

RESULTS OF DUST LOAD CALCULATIONS

	Particulate matter in (g/s)	Particulate matter in (kg/d)	Particulate matter (kg per ton of ore)
Drilling Emission	0.04294477	2.473619009	0.001177914
Mineral loading emission	0.34601345	19.93037454	0.009490655
Mineral unloading emission	0.27205595	15.67042278	0.007462106
Mineral hauling	8.21114936	472.9622034	0.225220097
OB loading	4.2645656	245.6389786	0.116970942
OB unloading	0.60766552	35.00153374	0.016667397
OB hauling	12.772899	735.7189831	0.350342373
Crushing	0.43402778	25	0.011904762
Screening	0.41666667	24	0.011428571
Wind erosion (Mineral stack)	1.98549735	171.546971	0.081689034
Wind erosion (Exposed pit)	10.4977722	907.0075212	0.431908343
Wind erosion (Exposed OB dump)	0.41431955	35.79720952	0.01704629
Total	**40.26558**	**2690.7478**	**1.2813085**



Major Activity	Dust load (kg/day)
Loading/Unloading	316.24131
Hauling	1208.68119
Crushing / Screening	49
Wind erosion	1114.3517



GO TO MAIN PAGE

GO TO DATA ENTRY PAGE

Annual Environmental Sustainability Report (ESR) for Gonua Iron Ore Mine of M/s JSW Steel Ltd.

Introduction-

The Gonua Iron Ore Mine (erstwhile lessee M/s Pawan Kumar Ahluwalia) was one of the mines whose lease expired on 31.03.2020. The lease area is located in villages Ganua and Patabeda, Tehsil Koira, District Sundargarh, Odisha State.

In pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015, Govt. of Odisha issued the notice inviting tender dated 6th December, 2019 for commencement of the auction process to grant the mining lease in respect of Gonua Iron Ore Block over an area of 88.516 ha (As per DGPS) / 86.886 ha(As per ROR) in villages Ganua and Patabeda under Koira Tehsil of Sundergarh District, Odisha for a resource size of about 118.731 Million tonnes (Mt). The e-auction process was conducted in accordance with the tender document and the mineral auction rule, 2015for the said mineral block and M/s JSW Steel Limited was declared as the preferred bidder under Rule 9(9)(iii) of Mineral (Auction) Rules 2015.

Without prejudice to the generality of the provisions of section 8B (2) of the MMDR Act, 1957, the details of the valid rights, approvals, clearances, licenses and the like held by the previous lessee are vested in favor of M/S JSW Steel Ltd by the Govt. of Odisha for a period of 2 years from the date of execution of lease deed or till the date of getting fresh approvals, clearances, licenses, permits, and the like, whichever is earlier vide vesting order No-4253/SM, dated 30.05.2020. M/s JSW Steel Limited being successful bidder upon execution of mining lease deed, the successful bidder shall immediately, but not later than one hundred twenty days from the date of execution of mining lease, apply afresh for all necessary rights, approvals, clearances, licenses and the like under the applicable statutes, rules or regulations, as the case may be, for obtaining the necessary clearances to enable further continuance of the mining operations beyond two years and vesting order shall be valid for a period of two years from the date of execution of new lease deed or till the date of getting all fresh approvals, clearances, licenses, permits, and the like, whichever is earlier.

The mining lease was granted in favor of M/s JSW Steel Limited for a period of 50 years w.e.f 27.06.2020. Subsequent to signing of the MDPA with the Collector, Sundargarh**, M/s JSW Steel Limited** has made payment of the third instalment being the eighty percent of the upfront value and executed and registered the mining lease with the Government of Odisha on 27.06.2020.

Indicative Coordinates Range of the Gonua Iron Ore Mine

Latitudes	:	21°55’00.52356” N - 21°55’46.03440” N
Longitudes	:	85°22’04.13616” E - 85°22’36.35616” E

Fully mechanized open cast method of mining by drilling and blasting and by deploying HEMM equipment’s like hydraulic drills and excavators, wheel loaders, dumpers, will be undertaken. The height and width of the benches for iron ore will be kept at 9 m and 15 m respectively. The working of benches will be commenced from top and extended to bottom benches. The excavated ROM ore is proposed to be processed in the crushing and screening plants to obtain the lump and fine ore as product mix. The iron ore lumps and iron ore fines extracted from the mine will be transported through railway/port/road to JSW Steel Plants.

Production in FY 2024-25

From April 2024 to March 2025, Gonua Mine has produced 620126.63 MT Iron Ore (ROM) and same is dispatched to steel plants.

Environment Management in Gonua Mine Air Management- Blasting Operation

- Controlled blasting method is in practice by restriction of explosive charge in the holes.
- Well-designed blast by effective stemming and use of mili second delay detonators, Proper blasting designing to see that the optimum breakage occurs.
- To control ground vibrations and arrest fly rocks, advanced initiation system is being used for blasting
- Ground vibrations are also being monitored and the results are well within limits.

Excavation, Hauling and Crushing & Screening

- Dry fog system for crusher & screen plants are provided.
- Proper maintenance of HEMM
- Using sharp teeth for shovels and other soil excavation equipment, and their periodical replacements.
- Acoustic enclosures for operator cabin.
- Avoiding overloading of dumpers.
- Provision of dust filters / masks to workers working at highly dust prone and affected areas.
- Imparting sufficient training to operators on safety and Environmental parameters.

Transportation

- Regular water sprinkling is being carried out by engaging mobile water tankers on the mine benches, mine haul, loading and unloading points and transfer points for dust suppressions.
- Maintenance of haul road by regular grading is carried out through grader, dozer.
- Ensuring that all mineral trucks are covered by tarpaulin.
- Vehicular emissions controlled through regular and proper preventive maintenance schedules.
- It is ensured that there is no overloading of trucks by having Quick Dispatch system at the weigh bridge near the dispatch gate.
- Regular water sprinkling arrangements have been made on the transportation roads/public road through mobile water tankers.

Wet Drilling System in Drilling Operation

Water Tanker Arrangement for Haul Road Dust Suppression

Fixed water sprinkling arrangements

Dry Fog System in Mineral Handling Plants

Consolidated Air Quality Monitoring Data of FY 2024-2025

GONUA MINE AAQ DATA FOR THE PERIOD APRIL 2024 TO MARCH 2025					
	PM10	**PM2.5**	**SO2**	**NO2**	**CO**

	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
CORE ZONE										
Mines Office	78.7	44.2	36.8	21.5	17.7	10.3	18.7	11.2	0.55	0.31
Near Pillar no 22 & 23	76.0	45.3	38.6	20.8	15.9	11.6	17.5	10.1	0.54	0.35
Near Dispensary	70.0	40.1	30.6	20.5	14.3	10.0	23.5	11.1	0.51	0.32
Near Entry and Exit Gate no 2	80.4	50.1	45.7	30.6	18.6	18.2	15.9	12.2	0.55	0.42
BUFF ER ZON E										
Palsa Village	72.5	35.6	45.4	29.7	14.7	10.1	15.5	10.2	0.42	0.31
Khandbandh Village	80.5	50.3	35.5	22.2	15.7	11.1	18.2	11.6	0.56	0.33
Sargighar Village	71.6	45.3	32.7	16.1	14.5	12.9	17.6	12.5	0.54	0.34
Malda Village	70.8	44.2	35.3	28.1	14.5	12.1	17.9	10.1	0.52	0.32
NAAQ (24hr Standard)	**100 [µg/m3]**		**60 [µg/m3]**		**80 [µg/m3]**		**80 [µg/m3]**		**2 [mg/m3] (8 hourly)**	

Water & OB Dump Management

- Garland drains maintained of suitable size around mine area and dump with proper gradients to prevent rain water descent into active mine area.
- Settling ponds maintained to prevent flow of fine particles from OB / Waste dumps, check dams, parapet / retaining walls & garland drains.
- Usage of stored water in the settling ponds for watering of haul roads, vehicle washing and green belt development etc.
- De- silting of garland drains & settling ponds is being carried out at regular intervals.
- Maintenance of all the runoff management structures.

Retaining Wall

Series of Settling Ponds

Dump Plantation

Safety Zone Plantation

Coir Matting on Dump

Plantation on BHQ Dump

Consolidated Ground Water Quality Monitoring Data of FY 2024-2025

Gonua Village (Borewell)

Parameter	Units	Max	Min	Acceptable Limits	Permissible Limits
pH	-	7.3	6.4	6.5-8.5	No Relaxation
Total Dissolved Solids as TDS	mg/l	140	100.6	500	2000

Total Hardness as CaCO3	mg/l	55	42	200	600
Sulfate as SO4	mg/l	7.10	3.4	200	400
Chloride as Cl	mg/l	20	15	250	1000
Fluorides as F	mg/l	0.18	0.14	1	1.5
Iron as Fe	mg/l	0.21	0.10	1	No Relaxation
Canabeda Village (Borewell)					
Parameter	Units	Max	Min	Acceptable Limits	Permissible Limits
pH	-	7.02	6.8	6.5-8.5	No Relaxation
Total Dissolved Solids as TDS	mg/l	146	120	500	2000
Total Hardness as CaCO3	mg/l	58	25	200	600
Sulfate as SO4	mg/l	15	13.5	200	400
Chloride as Cl	mg/l	20.5	18.2	250	1000
Fluorides as F	mg/l	0.36	0.25	1	1.5
Iron as Fe	mg/l	0.20	0.11	1	No Relaxation
Munjoda Village (Dug Well)					
Parameter	Units	Max	Min	Acceptable Limits	Permissible Limits
PH	-	7.02	6.25	6.5-8.5	No Relaxation

Total Hardness	mg/l	60	52	500	2000
Iron	mg/l	0.21	0.14	200	600
Chlorides	mg/l	15	12	200	400
Total Dissolved Solids	mg/l	210	120	250	1000
Sulphates	mg/l	21.5	10.5	1	1.5
Fluoride	mg/l	0.27	0.21	1	No Relaxation
Doughar Village (Borewell)					
Parameter	Units	Max	Min	Acceptable Limits	Permissible Limits
pH	-	7.01	6.54	6.5-8.5	No Relaxation

Total Dissolved Solids as TDS	mg/l	156	90	500	2000
Total Hardness as CaCO3	mg/l	65	53	200	600
Sulfate as SO4	mg/l	17.5	14.2	200	400
Chloride as Cl	mg/l	15.8	12.1	250	1000
Fluorides as F	mg/l	0.27	0.11	1	1.5
Iron as Fe	mg/l	0.22	0.14	1	No Relaxation

Consolidated Surface Water Quality Monitoring Data of FY 2024-2025

Gonua Nala Up Stream				
Parameter	Units	Max	Min	Limits for Stream Water Standards
PH	-	7.30	6.21	6.5-8.5
Total Dissolved Solids	mg/l	240	150	1500
BOD	mg/l	3.1	2.2	3
DO	mg/l	7.5	5.5	4
Chlorides	mg/l	30	15	600
Fluorides	mg/l	0.25	0.11	1.5
Iron	mg/l	0.35	0.15	50
Gonua Nala Down Stream				
Parameter	Units	Max	Min	Limits for Stream Water Standards
PH	-	7.2	6.17	6.5-8.5
Total Dissolved Solids	mg/l	290	135	1500
BOD	mg/l	3.3	2.1	3
DO	mg/l	7.1	5.6	4
Chlorides	mg/l	30	21	600
Fluorides	mg/l	0.25	0.13	1.5

Iron	mg/l	0.32	0.22	50
Kakarpani Nala Up Stream				
Parameter	Units	Max	Min	Limits for Stream Water Standards
PH	-	7.51	6.5	6.5-8.5
Total Dissolved Solids	mg/l	220	140	1500
BOD	mg/l	4.6	2.5	3
DO	mg/l	7.5	4.8	4
Chlorides	mg/l	25	14	600
Fluorides	mg/l	0.35	0.18	1.5
Iron	mg/l	0.85	0.51	50
Kakarpani Nala Down Stream				
Parameter	Units	Max	Min	Limits for Stream Water Standards
PH	-	7.45	6.51	6.5-8.5
Total Dissolved Solids	mg/l	270	152	1500
BOD	mg/l	7.6	3.5	3
DO	mg/l	7.8	5.1	4
Chlorides	mg/l	28	11	600
Fluorides	mg/l	0.28	0.15	1.5
Iron	mg/l	0.78	0.56	50

Noise Management

- Providing sound proof operator's cabin for equipment like dumpers, shovel, tippers, etc.
- Planting trees at various places within the lease area to act as acoustic barriers.
- Proper and regular maintenance of vehicles, machinery and other equipment. All HEMMs are monitored for any abnormal sound and rectified with due precaution by maintenance personnel.
- Providing workers with ear muffs & earplugs against high noise levels.
- Conducting regular health check-ups of workers including Audiometry test
- Controlling the time of exposure of workers towards high noise areas.

- Providing sound proof operator's cabin for equipment like dumpers, shovel, tippers, etc.
- Planting trees at various places within the lease area to act as acoustic barriers.
- Proper and regular maintenance of vehicles, machinery and other equipment. All HEMMs are monitored for any abnormal sound and rectified with due precaution by maintenance personnel.
- Providing workers with ear muffs & earplugs against high noise levels.
- Conducting regular health check-ups of workers including Audiometry test • Controlling the time of exposure of workers towards high noise areas.

Consolidated Noise Quality Monitoring Data of FY 2024-2025

Gonua Iron Ore Mine			
CORE ZONE	**max**	**min**	**Standards**
Near Ore Crushing Plant	74.7	65.3	**75 dB(A)**
Near Weigh Bridge	73.6	63.5	
Near Workshop	71.5	62.1	
Near Mines Office	72.1	50.6	

BUFFER ZONE					**STANDARDS**	
	Leq Day		Leq Night		**Day Equivalent**	**Night Equivalent**
	MAX	**MIN**	**MAX**	**MIN**		
EAST BOUNDARY	71.5	54.2	68.1	42.7	75 dB(A)	70 dB(A)

WEST BOUNDARY	72.1	55.5	69.7	42.3		
NORTH BOUNDARY	71.3	50.4	68.9	42.5		
SOUTH BOUNDARY	74.1	51.7	67.6	41.5		

Electronic Digital Display Board at Gonua Mine Gate

Expenditure Incurred on Environmental Protection Measures for the Financial Year 2024-25		
Sl No	**Expenditure head -Particulars**	**Gonua**
1	Construction of Retaining walls	172800
2	Construction of Garland drains, desiltation of settling ponds	105000
3	Geotextile works for dump stabilization	-
5	Greenbelt development- Pit digging, plantation and maintenance	798280
6	Operation of Road sweeping machines	-
7	Operation of fixed sprinklers	-
8	Operation of mobile sprinklers	1816820
9	Use of chemical dust suppressants in sprinkling	118000
10	Online air quality monitoring	493065.36
11	Environment monitoring through NABL Accredited third party	927522
12	Installation of Sewage treatment Plant	-
13	Study conducted on hydrogeology from CGWA Accredited Agency	250000
14	Nursery Development	-
15	Landscape development	212300
16	Environmental Awareness Programmes	350000
17	Flowmeter calibration and stamping	21000
18	Drip irrigation for plantation	-
Total		5264787.36

ANNEXURE II

BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA]
A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
Phone-2561909, Fax: 2562822, 2560955 E-mail: paribesh1@ospcboard.org, Website: www.ospcboard.org

CONSENT ORDER

No. 4854 / IND-I-CON-1539 Dt. 31.03.2024 /

CONSENT ORDER NO. 2941

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

Ref: Your online application No. 5229043, Dated 16-12-2023.

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

Name of the Industry: GONUA IRON & MANGANESE MINES OF JSW STEEL LTD.

Name of the Occupier& Designation: DR. VINOD NOWAL, DY. MD

Address: AT: GONUA, PO: MALDA, DIST: SUNDARGARH, PIN-770048.

This consent order is valid for the period from 01.04.2024 to 31.03.2026.

Details of Products Manufactured

Sl. No	Product	Quantity
01.	*Iron Ore [ROM]*	*1.2 MTPA*

Details of Mineral Handling Plants /Units

01	Operation of mobile crushing plant of capacity 1X 100 TPH
02.	Operation of mobile screening plant of capacity 2X 60 TPH, 1 X 250 TPH, 1 x 350 TPH

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

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

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge KL/Hr	Prescribed Standard				
				pH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Oil & Grease (mg/l)
01	Mine drainage water/ surface runoff/ other wastewater	On land/ Inland surface water body.	--	5.5-9.0	100 (Rainy day) 50 (Non-Rainy day)	-	-	10

B. Fugitive Emission Standards

Particulate Matter	1200 $\mu g/m^3$
Note : Fugitive emission shall be monitored in the predominant downwind direction at a distance 25.0 ± 2.0 metres from the source of fugitive emission as per following :	
Area	**Monitoring Location**
Mine face / Benches	Drilling, excavation and loading applicable for operating benches above water table
Haul Roads/ Service Roads	Haul roads to ore processing plant, waste dumps and loading areas and service road.
Crushing plant	Run-off mine unloading at hopper, crushing areas, screens and transfer points.
Screening plant	Screens, conveying and transportation of ore discharge points.
Ore storage and loading	Intermediate stock bin / pile areas, ore stock bin / pile areas, wagon / truck loading areas.
Waste dump	Active waste / reject dumps

C. Disposal of solid waste permitted in the following manner

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

D. GENERAL CONDITIONS FOR ALL UNITS

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

23. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.

24. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.

25. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner so as to meet the standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).

26. The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.

27. There shall not be any fugitive or episodal discharge from the premises.

28. In case of such episodal discharge/emissions the occupier shall take immediate action to bring down the emission within the limits prescribed by the Board and stop the operation of the plant if required. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.

29. The applicant shall keep the premises and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.

30. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned shall be reported to the Headquarters and Regional Office of the Board by E-mail within 2 hours of its occurrence.

31. The occupier has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the premises. This plantation is stipulated over and above the bulk plantation of trees in that area.

32. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the shall be disposed off scientifically to the satisfaction of the Board.

33. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :

    i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.

    ii) Controlled incineration, wherever possible in case of combustible organic material.

    iii) Composting, in case of bio-degradable material.

34. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.

35. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.

36. The applicant, his/heirs/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.

37. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.

38. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.

39. The conditions imposed as above shall continue to be in force until revoked under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.

40. The occupier shall comply to the conditions stipulated in CTE order issued by Odisha State Pollution Control Board and conditions stipulated in Environmental Clearances issued by MoEF&CC, Govt. of India.

41. The occupier shall abide by E(P) Act, 1986 and Rules framed there-under.

42. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.

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

1. The applicant shall analyse the emissions every month for the parameters indicated in TABLE. B & C as mentioned in this order and shall furnish the report thereof to the Board by the 10th of the succeeding month.

2. The applicant shall provide and maintain at his own cost three ambient air quality monitoring stations for monitoring Suspended Particulate Matter, Sulphor Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monoxide and monitor the same once in a day/week/fortnight/month. The data collected shall be maintained in a register and a monthly extract be furnished to the Board.

3. The applicant shall provide and maintain at his own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and the daily reading shall be recorded and the extract sent to the Board once in a month.

4. The applicant shall forward the following information to the Member Secretary, State Pollution Control Board, Odisha, Bhubaneswar regularly.
   a. Report of analysis of stack monitoring, ambient air quality monitoring meteorological data as required every month.
   b. Progress on planting of trees quarterly.

5. The applicant shall install mechanical composite sampling equipment and continuous flow measuring / recording devices on the effluent drains of trade as well as domestic effluent. A record of daily discharge shall be maintained.

6. The following information shall be forwarded to the Member Secretary on or before 10th of every month.

   a. Performance / progress of the treatment plant.
   b. Monthly statement of daily discharge of domestic and/or trade effluent.

7. Non-compliance with effluent limitations

   a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.

      i) Causes of non-compliance

      ii) A description of the non-compliance discharge including its impact on the receiving waters.

      iii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.

      iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and

      v) Steps to be taken by the applicant too prevent the condition of non-compliance.

   b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

   c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.

8. The applicant shall at his own cost get the effluent samples collected both before and after treatment and get them analysed at an approval laboratory every month for the parameters indicated in Part-D and shall submit in duplicate the report thereof to the Board.

9. The addition of various treatment chemicals should be done only with mechanical dozers and proper equipment for regulation of correct dosages determined daily and for proper uniform feeding. Crude practices such as dumping of chemicals in drains or sumps or trickling of acids or alkalies arbitrarily and utilizing poles for stirring etc. should not be resorted to.

10. In the disposal of treated effluent on land for irrigation, the industry shall keep in view of the need for;

    a) Rotation of crops

    b) Change of point of application of effluent on land

    c) A portion of land kept fallow.

11. The adoption of these would avoid soil becoming sick or slate, the industry may ensure this in consultation with the Agriculture Department.

12. It is the sole responsibility of the industry to ensure that there are no complaints at any time from the royats in the surrounding areas as a result of discharge of sewage or trade effluent if any.

13. Proper housekeeping shall be maintained by a dedicated team.

14. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned. Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.

E. SPECIAL CONDITIONS:

1) This consent order is subject to compliance of orders of the Hon'ble Supreme Court of India in the matter of W. P. (Civil) 114/2014.
2) This consent order is subject to permission from Steel and Mines Department, Government of Odisha to continue of mining operation.
3) Mining operation is subject to availability of all other statutory clearances.
4) The mine shall confine its activity within the previous lease area of 86.886 ha as EC & CTE are not yet obtained for the new lease deed executed over increased area of 88.516 ha. A declaration to this effect shall be submitted to the Board within 07 days.
5) Drills shall either be operated with dust extractors or equipped with water injection system to minimize dust generation in the work environment.
6) Controlled blasting shall be practiced to minimize generation of dust and fly rocks.
7) Regular water sprinkling shall be carried out in critical areas prone to air pollution such as around crushing and screening plant. Water sprinkling shall also be carried out on haul roads at frequent interval so that it should always remain in wet condition. Haulage roads shall be devoid of ruts and potholes and shall be maintained properly to avoid generation of dust during movement of vehicles.
8) Fixed auto sprinklers shall be provided on both sides of major haul road and approach road of the mine.
9) Dust suppression measures (preferably dry fog system) shall be provided at all appropriate places of mineral handling plants (crusher & screening plant). Loading and unloading areas including all the transfer points shall also have efficient dust suppression arrangements (dry fog system). These shall be properly maintained and operated.
10) Effort shall be made to use chemical binders/wetting agents alongwith sprinkled water in order to reduce water consumption and to improve retention and re-absorption capacity of water.
11) Mechanized wheel washing facility for the ore transport vehicles shall be provided at the exit point of the mine. The wheel washing facility shall be integrated with complete recirculation system.
12) The vehicles carrying ore for transportation from the mine shall be covered with tarpaulin (both bottom & top).

13) A truck parking plaza shall be developed with its runoff management facilities.
14) Regular water sprinkling on mineral transportation roads passing through the habitation area as well as other strategic point on the National Highway shall be done jointly by the mining lessees in consultation with the Regional Officer.
15) Four Ambient Air Quality Monitoring Stations shall be established in core zone and buffer zone for monitoring of ambient air quality and location of the stations shall be decided in consultation with the Regional Officer, State Pollution Control Board based on the metrological data, topographical features and environmentally and ecologically sensitive targets.
16) Fugitive Dust Emission Monitoring shall be carried out at the places as stated in Part-B of this order. The monitoring of ambient air quality and fugitive dust shall be carried out twice in a week (24 hourly) at a particular site and the consolidated data shall be submitted to the State Pollution Control Board, once in a year.
17) The topsoil generated shall be stored at earmarked site (s) only and stabilized with plantation or shall be used for land reclamation and plantation.
18) The over burden generated during the course of mining shall be stacked at earmarked dump site (s) and stabilized with plantation or used for reclamation of excavated land followed by plantation.
19) The project proponent shall ensure that no natural watercourse and / or water resources are obstructed due to any mining operations.
20) Check dams and check weirs shall be constructed at appropriate places of the mine lease area to prevent direct flow of runoff to nearby water bodies. The surface runoff water from the existing runoff management system shall meet the prescribed standards as stated in Part A of the consent order.
21) Retention wall shall be constructed at the toe of topsoil dump and OB dump. Garland drain shall be constructed around topsoil dumps, over burden dumps and mineral stack yards terminating at settling pit to prevent direct disposal of runoff to nearby water bodies. The existing runoff management facilities shall be maintained and additional facilities shall be constructed at the new dumping area and other areas as per requirement.
22) Garland drains, toe wall and check dams shall be constructed to prevent direct flow of surface run-off from the mining area to nearby water bodies.
23) The mine shall quantify the surface runoff based on maximum rainfall in the active mining area. The mine shall provide settling ponds of adequate size at strategic

location for collection of runoff and settlement of suspended solids. The settled water shall be reused for dust suppression / plantation / wheel washing / workshop. In case of heavy rain and during monsoon, the excess settled shall be discharged to outside after meeting the prescribed standard for discharge to inland water surface [pH-5.5-9.0, SS-100, O & G-10, Iron (as Fe)-3.0].

24) The mine shall carry out a study on surface runoff management of the mining lease engaging institute having core competency in this field. Action shall be taken according to the study report to prevent flow of untreated runoff water to outside.

25) Domestic effluents shall be treated in a sewage treatment plant (STP) and or shall be discharged to soak pit via septic tank constructed as BIS specification. The treated wastewater quality of STP shall remain within the following standards and shall be used for plantation:

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

26) ETP comprising of oil and grease trap with sedimentation pit shall be provided for treatment of workshop effluent and treated effluent shall remain within the following prescribed standards and shall be re-used for washing of vehicles:

pH	-	6.5 -8.5
TSS	-	50 mg/l
Oil & Grease	-	10 mg/l
COD	-	150 mg/l

27) Regular monitoring of water quality of upstream and downstream of surface water bodies existed if any within 5 Km shall be carried out once in every month and record shall be maintained and submitted to the State Pollution Control Board once in every year. Monitoring shall be carried out through MoEF& CC accredited laboratory.

28) Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), monsoon (August), post-monsoon (November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly.

29) The mine shall take necessary action for compliance with the air and water quality standards as stipulated in Part-A and Part-B of this order.

30) Adequate measures shall be taken for control of noise levels in the work environment of mine area so that noise levels at the boundary line of mining lease area shall not exceed 75 dB(A) during daytime (6.00 AM to 9.00 PM) and 70 dB(A) during night time (9.00 PM to 6 AM).

31) Adequate noise barriers shall be provided surrounding the crushing and screening plants to control noise pollution and avoid impact on wildlife due to operation of crushing and screening plants during night hours.

32) Online noise monitoring system shall be installed to monitor noise level during night hours.

33) Protective barriers shall be provided for the lights to prevent illumination towards the forest area during night hours.

34) Ambient air quality monitoring data, noise monitoring data and water / wastewater quality monitoring data shall be electronically displayed at the entry point of the mine or at a suitable location of the mine.

35) The height of the stack connected to DG sets of capacity more than 800 KVA shall conform to the following:
   i) $14Q^{0.3}$, Q = Total SO_2 emission from the plant in kg/hr.
   ii) Minimum 6m. above the building where generator set is installed.
   iii) 30 m.

36) The height of the stack connected to DG set of capacity less than and upto 800 KVA shall conform to the following:
   i) $H = h+0.2\sqrt{KVA}$
   ii) h= Height of the building where it is installed in meter
   iii) KVA = Capacity of DG set
   iv) H = Height of the stack in meter above ground level.

37) All DG sets installed before 1.7.2004 shall be scrapped. DG sets complying with either State-I or Stage-II emission norms shall reduce Particulate Matter Emission by 70% by installing RECD without affecting any other emission parameters as per the CPCB guidelines and Board's letter vide No.17927, dated 14.11.2023, in this regard.

38) Plantation of trees shall be undertaken in the colony/ township, over topsoil dumps, OB dumps, along the side of haul road and in other areas of the mines not being utilized for mining activities. The mine shall take up avenue plantation and plantation in nearby village areas in consultation with DFO/Horticulture Department. The plantation details shall be submitted to the Board before end of April every year.

39) A copy of the annual return (annual return submitted to IBM, Govt. of India/ Directorate of Mines, Govt. of Odisha) shall be submitted to this Board every year.

40) The environmental statement report for the financial year ending 31st March shall be submitted to the Board in Form -V on or before 30th September every year.

31/03/21.

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ODISHA

TO,

DR. VINOD NOWAL, DY. MD
GONUA IRON & MANGANESE MINES,
JSW STEEL LTD,
AT; GONUA, PO: PATAMUNDA, PS: KOIRA,
DIST: SUNDARGARH, PIN-770048

Memo No._____/Dt._____/

Copy forwarded to :

i) Regional Officer, State Pollution Control Board, **Rourkela**
ii) District Collector, **Sundargarh**
iii) Director of Mines, Govt. of Odisha, Bhubaneswar
iv) Director, Environment-cum-Special Secretary, F, E & CC, Dept. Govt. of Odisha, Bhubaneswar.
v) D.F.O., **Bonai**
vi) Deputy Director of Mines, **Koira**
vii) Chief Env. Scientist, Central Lab., SPCB, Bhubaneswar
viii) Addl. Chief Env. Engineer, (Hazardous Waste Management Cell)
ix) Consent Register

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

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS

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

Sl. No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Costal Areas
		(a)	(b)	(c)	(d)
1.	Colour & odour	Colourless/ Odourless as far as practible	--	See 6 of Annex-1	See 6 of Annex-1
2.	Suspended Solids (mg/l)	100	600	200	a. For process wastewater – 100 b. For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	--	--	--
5.	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	Shall not exceed 5°C above the receiving water temperature	--	--	Shall not exceed 5°C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	--	--	1.0
9.	Ammonical nitrogen (as N) mg/l max.	50	50	--	50
10.	Total Kajeldahl nitrogen (as NH_3) mg/1 max.	100	--	--	100
11.	Free ammonia (as NH_3) mg/1 max.	5.0	--	--	5.0
12.	Biochemical Oxygen Demand (5 days at (20°C) mg/1 max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/1 max.	250	--	--	250
14.	Arsenic (as As) mg/1 max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg) mg/1 max.	0.01	0.01	--	0.001
16.	Lead (as pb) mg/1 max.	01.	1.0	--	2.0

Sl. No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Costal Areas
		(a)	(b)	(c)	(d)
17.	Cardmium (as Cd) mg/1 max.	2.0	1.0	--	2.0
18.	Hexavalent Chromium (as Cr + 6) mg/l max.	0.1	2.0	--	1.0
19.	Total Chromium (as Cr) mg/l max.	2.0	2.0	--	2.0
20.	Copper (as Cu) mg/l max.	3.0	3.0	--	3.0
21.	Zinc (as Zn) mg/l max.	5.0	15	--	15
22.	Selenium (as Sc) mg/l max.	0.05	0.05	--	0.05
23.	Nickel (as Nil) mg/l max.	3.0	3.0	--	5.0
24.	Cyanide (as CN) mg/l max.	0.2	2.0	0.2	0.02
25.	Fluoride (as F) mg/l max.	2.0	15	--	15
26.	Dissolved Phosphates (as P) mg/l max.	5.0	--	--	--
27.	Sulphide (as S) mg/l max.	2.0	--	--	5.0
28.	Phennolic compounds as (C_6H_5OH) mg/l max.	1.0	5.0	--	5.0
29.	Radioactive materials a. Alpha emitter micro curle/ml. b. Beta emitter micro curle/ml.	 10^{7} 10^{6}	 10^{7} 10^{6}	 10^{8} 10^{7}	 10^{7} 10^{6}
30.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
31	Manganese (as Mn)	2 mg/l	2 mg/l	--	2 mg/l
32.	Iron (Fe)	3 mg/l	3 mg/l	--	3 mg/l
33.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	--	0.2 mg/l
34.	Nitrate Nitrogen	10 mg/l	--	--	20 mg/l

NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual *	50	20	-Improved west and Gaeke
		24 Hours **	80	80	- Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual *	40	30	- Modified Jacob &Hochheiser (Na-Arsenite)
		24 Hours **	80	80	- Chemiluminescence
3.	Particulate Matter (size less than 10µm) or $PM_{10}\mu g/m^3$	Annual *	60	60	-Gravimetric - TOEM
		24 Hours **	100	100	- Beta Attenuation
4.	Particulate Matter (size less than 2.5µm) or $PM_{2.5}\mu g/m^3$	Annual *	40	40	-Gravimetric - TOEM
		24 Hours **	60	60	- Beta Attenuation
5.	Ozone (O_3) $\mu g/m^3$	8 Hours **	100	100	- UV Photometric - Chemiluminescence
		1 Hours **	180	180	- Chemical Method
6.	Lead (Pb) $\mu g/m^3$	Annual *	0.50	0.50	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper. - ED-XRF using Teflon filter
		24 Hours **	1.0	1.0	
7.	Carbon Monoxide (CO) mg/m^3	8 Hours **	02	02	- Non Dispersive Infra Red (NDIR) Spectroscopy
		1 Hours **	04	04	
8.	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence
		24 Hours**	400	400	- Indophenol Blue Method
9.	Benzene (C_6H_6) $\mu g/m^3$	Annul *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)-Particulate phase only, ng/m^3	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), ng/m^3	Annual*	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel (Ni),ng/m^3	Annual*	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

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

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

ANNEXURE III

SUMMARY

OF

ENVIRONMENTAL MONITORING REPORT

(APRIL 2025 TO SEPTEMBER 2025)

FOR

GONUA IRON ORE MINE

DISTRICT—SUNDERGARH, ODISHA

OF

M/S JSW STEEL LIMITED, ODISHA

Environmental Monitoring Report- Gonua Iron Ore Mines of M/s JSW Steel Limited, Odisha during the period (April 2025 to September 2025)

1. Ambient Air Quality Lease Area

Si. No.	Location	Month	Concentration	PM_{10} µg/m^3	$PM_{2.5}$ lug/m^3	SO_2 lug/m^3	NO_2 lug/m^3	CO mg/m^3
1.	Near Mines Office	April'25	Maximum	74.5	22.8	20.2	19.8	0.65
			Minimum	67	189.2	17.1	14	0.53
			Average	72.0	21.6	17.3	16.8	0.6
		May'25	Maximum	70.5	23.3	22.6	18.9	0.63
			Minimum	62.0	18.6	14.3	13.6	0.52
			Average	70.0	21.9	18.1	16.2	0.60
		June'25	Maximum	69.9	33.8	21.9	23.9	0.75
			Minimum	54.1	28.2	15.2	18.4	0.57
			Average	62.5	32.2	17.9	22.3	0.66
		July'25	Maximum	68.9	35.6	22.7	24.0	0.71
			Minimum	57.1	28.0	15.7	19.0	0.62
			Average	63.1	32.4	17.4	22.2	0.60
		August'25	Maximum	74.1	24.9	19.3	18.7	0.64
			Minimum	69.1	18.2	16.2	15.2	0.55
			Average	71.3	22.0	17.5	16.9	0.58
		September'25	Maximum	74.1	24.7	19.8	18.9	0.65
			Minimum	63.3	18.4	16.2	15.3	0.55
			Average	68.8	22.1	17.8	17.1	0.60
		April'25	Maximum	76.2	25.9	19.0	19.9	0.65
			Minimum	68.1	18.3	17.1	15.0	0.54
			Average	72.0	21.9	17.6	16.9	0.60

Si. No.	Location	Month	Concentration	PM_{10} µg/m^3	PM2.5 lug/m^3	SO2 lug/m^3	NO2 lug/m^3	CO mg/m^3
2.	Near Pillar No 22 & 24	May'25	Maximum	70.6	24.6	21.1	17.4	0.61
			Minimum	68.2	17.8	15.3	14.8	0.58
			Average	71.1	20.5	18.4	16.2	0.60
		June'25	Maximum	66.7	36.1	20.8	23.8	0.72
			Minimum	57.2	28.3	15.3	19.3	0.59
			Average	62.3	32.5	18.2	22.1	0.65
		July'25	Maximum	67.9	36.9	20.8	23.9	0.75
			Minimum	58.3	29.4	14.1	19.6	0.58
			Average	63.9	33.7	17.4	22.2	0.66
		August'25	Maximum	73.8	24.9	19	18.8	0.64
			Minimum	69.3	18.3	16	15.4	0.55
			Average	72.1	21.4	17.7	17.0	0.60
		September'25	Maximum	72.7	26	19.9	19.4	0.64
			Minimum	66.1	18.7	16.4	15.1	0.55
			Average	69.4	22.4	18.3	17.3	0.60
3.	Near Dispensary (Hutting Area)	April'25	Maximum	76.5	24.9	19.0	18.9	0.64
			Minimum	69.4	18.3	16.1	15.1	0.55
			Average	72.2	21.3	17.9	17.3	0.60
		May'25	Maximum	72.5	22.2	19.2	17.1	0.62
			Minimum	64.4	16.6	15.6	14.6	0.51
			Average	70.2	20.3	16.8	16.8	0.58
		June'25	Maximum	67.1	36.9	21	24.9	0.73
			Minimum	58.6	28.1	15.5	19	0.60
			Average	62.8	32.4	18.2	22.0	0.68
		July'25	Maximum	67.7	36.7	20.5	23.8	0.73
			Minimum	58.7	28	15.1	19.2	0.59
			Average	62.8	32.6	17.7	21.5	0.67

Sl. No.	Location	Month	Concentration	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO mg/m^3
		August'25	Maximum	74	25	18.8	18.7	0.64
			Minimum	69.1	18.5	16	15.1	0.55
			Average	71.4	21.9	17.4	17.0	0.58
		September'25	Maximum	72.9	25.5	19.9	19.9	0.65
			Minimum	66.2	18.5	16.1	15.2	0.55
			Average	69.3	22.3	17.7	17.5	0.61
4.	Entry And Exit Gate (Gate No-2)	April'25	Maximum	76.9	24.7	18.8	18.8	0.64
			Minimum	69.1	18.1	16.0	15.2	0.55
			Average	71.5	21.9	17.5	16.8	0.60
		May'25	Maximum	74.2	23.8	17.5	19.2	0.62
			Minimum	65.6	17.6	15.6	16.7	0.54
			Average	70.5	20.5	16.2	17.3	0.58
		June'25	Maximum	67.7	36.9	20.8	24.8	0.72
			Minimum	58.3	28	15.4	19.4	0.59
			Average	63.3	33.0	18.0	21.8	0.6
		July'25	Maximum	67.9	36.5	20.8	24.8	0.73
			Minimum	59	28.3	15.1	19.1	0.59
			Average	63.9	33.0	17.8	21.8	0.68
		August'25	Maximum	74	25	18.9	18.7	0.64
			Minimum	69	18.4	16.3	15.1	0.55
			Average	71.2	22.0	17.8	16.9	0.60
		September'25	Maximum	72.8	25.4	20	19.6	0.64
			Minimum	65.2	18.3	16.1	15.1	0.56
			Average	69.0	22.1	17.8	16.9	0.60
CPCB Standard			**24 Hrly**	**100**	**60**	**80**	**80**	**4 (1Hrly)**
			Annual Average	**60**	**40**	**40**	**50**	**--**

2. Ambient Air Quality Buffer Area

Si. No.	Location	Month	Concentration	PM_{10} µg/m^3	$PM_{2.5}$ lug/m^3	SO_2 lug/m^3	NO_2 lug/m^3	CO mg/m^3
1.	Palssa Village	April'25	Maximum	37.7	12.3	12.9	12.6	0.41
			Minimum	34.6	10.2	9.7	10	0.32
			Average	36.6	11.4	11.3	11.4	0.4
		May'25	Maximum	38.5	13.6	13.4	12.5	0.42
			Minimum	32.2	12.8	10.2	9.8	0.31
			Average	35.3	11.5	12.1	10.8	0.39
		June'25	Maximum	39.7	26.3	17.9	23.2	0.43
			Minimum	35.2	22.7	14.7	15	0.39
			Average	37.3	24.6	16.7	20.1	0.41
		July'25	Maximum	43.9	25.7	17.7	24	0.42
			Minimum	37.2	22.4	13.8	17.1	0.38
			Average	40.5	23.5	15.9	20.8	0.40
		August'25	Maximum	37.4	12.5	12.7	12.4	0.41
			Minimum	34.3	10.5	9.2	10.3	0.3
			Average	35.7	11.675	11.4	11.2	0.36
		September'25	Maximum	41.9	15.7	13.5	14	0.43
			Minimum	34.3	10.3	10.4	11	0.31
			Average	38.3	12.4	12.0	12.6	0.36
		April'25	Maximum	37.6	12.8	12.7	13	0.4
			Minimum	34.7	11	9.1	10	0.32
			Average	36.8	11.7	11.2	11.4	0.35

Si. No.	Location	Month	Concentration	PM_{10} $\mu g/m^3$	PM2.5 lug/m^3	SO2 lug/m^3	NO2 lug/m^3	CO mg/m^3
2.	Khandbandh Village	May'25	Maximum	35.4	12.2	13.9	13.1	0.48
			Minimum	32.3	10.6	11.6	10.6	0.39
			Average	34.9	11.8	12.7	11.8	0.36
		June'25	Maximum	39.3	26.9	17.3	23.9	0.43
			Minimum	35.8	22.4	13.6	19	0.38
			Average	37.6	25.1	15.5	21.1	0.41
		July'25	Maximum	44	26.6	17.3	23.7	0.43
			Minimum	35	22.9	13.5	15.1	0.38
			Average	38.1	24.4	15.7	20.0	0.40
		August'25	Maximum	38.8	12.9	11.1	12.8	0.43
			Minimum	35.1	10.3	9.1	10.4	0.32
			Average	37.1	11.8	9.9	11.9	0.38
		September'25	Maximum	40.1	15.6	13.8	13.9	0.39
			Minimum	34.5	10.3	10.2	10.3	0.32
			Average	36.2	13.1	11.6	11.6	0.35
3.	Sargighar Village	April'25	Maximum	37.5	12.6	12.9	12.1	0.39
			Minimum	34.3	10.4	9.9	10.1	0.31
			Average	35.7	11.8	10.9	11.04	0.34
		May'25	Maximum	34.5	13.9	12.3	13.4	0.36
			Minimum	32.3	11.6	9.5	10.1	0.30
			Average	30.7	12.5	11.2	11.5	0.35
		June'25	Maximum	39.4	26.3	17.4	23.7	0.43
			Minimum	35	22	12.5	16.4	0.38
			Average	36.7	24.2	15.6	21.2	0.41
		July'25	Maximum	44.3	26.6	18	22.4	0.43
			Minimum	38.5	22.8	14.4	16.2	0.39
			Average	41.3	24.2	16.0	20.3	0.41

Sl. No.	Location	Month	Concentration	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO mg/m^3
		August'25	Maximum	38.8	13	12.6	12.8	0.4
			Minimum	34	10.1	10.4	10.2	0.32
			Average	37.4	11.5	11.5	11.1	0.37
		September'25	Maximum	41	15.6	13.8	11.8	0.41
			Minimum	34.1	10	11.1	10	0.33
			Average	36.3	12.3	12.3	11.0	0.37
4.	Malda Village	April'25	Maximum	38	12.5	12.6	12.8	0.42
			Minimum	34.6	10.2	9.7	10.1	0.31
			Average	35.9	11.2	11.4	10.9	0.36
		May'25	Maximum	38.9	13.8	14.2	13.6	0.49
			Minimum	35.3	11.5	10.8	12.4	0.38
			Average	36.4	12.9	13.1	11.1	0.37
		June'25	Maximum	39.9	26.1	17.8	23.9	0.42
			Minimum	35.1	23.6	13.1	15.2	0.4
			Average	38.0	24.5	14.8	20.6	0.41
		July'25	Maximum	44.7	27	17.8	21.7	0.43
			Minimum	38.1	21.3	13.1	18.1	0.39
			Average	42.5	24.5	14.6	19.5	0.41
		August'25	Maximum	39.7	12.1	12.8	12.9	0.39
			Minimum	34.6	10.1	9.3	10	0.3
			Average	37.9	10.9	10.9	11.8	0.34
		September'25	Maximum	41.6	15	13.6	13.9	0.4
			Minimum	34.7	12.9	10.6	11	0.31
			Average	37.5	13.8	12.4	12.0	0.36
CPCB Standard			**24 Hrly**	**100**	**60**	**80**	**80**	**4 (1Hrly)**
			Annual Average	**60**	**40**	**40**	**50**	**--**

3. Fugitive Emission Monitoring (µg/m³)

Sl. No.	Month	Crusher Plant		Mines Haulage Road		Screen Plant	
		Max	Min	Max	Min	Max	Min
1.	April'25	723.6	682.4	730.9	669.3	728.9	655.7
2.	May'25	768.6	692.1	763.6	687.9	770.2	690.7
3.	June'25	715.5	650.0	725.9	652.3	709.4	645.8
4.	July'25	692.7	647.4	735.8	678.2	720.6	652.1
5.	August'25	720.2	670.2	695.4	645.7	735.5	650.3
6.	September'25	728.1	648.3	721.7	659.9	722.5	659.9
Six Month Average		**724.78**	**665.06**	**728.88**	**665.55**	**731.18**	**659.08**

Sl. No.	Month	Mines face Bench		Ore storage & Loading Point		Waste Dump	
		Max	Min	Max	Min	Max	Min
1.	April'25	731.7	664.3	728.9	667.8	726.4	671.7
2.	May'25	784.4	681.1	782.1	688.7	770.2	708.5

3.	June'25	718.5	658.3	712.8	669.3	695.5	649.6
4.	July'25	730	670	707.6	651.1	729.4	656.8
5.	August'25	738.2	675	719.0	682.7	728.6	661.5
6.	September'25	700.4	651.4	710.6	651.0	729.2	649.5
Six Month Average		**733.86**	**666.68**	**726.83**	**668.43**	**729.88**	**666.26**

4. ILLUMINATION MONITORING (Lux)

	April 25		May 25		June 25	
LOCATION	**Horizontal**	**Vertical**	**Horizontal**	**Vertical**	**Horizontal**	**Vertical**
Workshop Area	168.0	125.0	200.0	148.0	168.0	115.0
Screen Plant	129.0	87.0	141.0	99.0	118.0	89.0
Haul Road	75.0	55.0	85.0	55.0	80.0	58.0
Loading Point	110.0	88.0	115.0	82.0	105.0	87.0
Crusher Plant	148.0	151.0	138.0	131.0	150.0	142.0
Parking Yard	82.0	70.0	89.0	65.0	75.0	68.0
Permanent Path	107.0	77.0	113.0	75.0	118.0	88.0
Electric Substation	128.0	87.0	105.0	98.0	123.0	97.0
Rest Shelter	58.0	51.0	62.0	51.0	78.0	62.0
Mines Bench Foot Path	89.0	68.0	98.0	65.0	90.0	57.0
	July 25		**August 25**		**September 25**	
LOCATION	**Horizontal**	**Vertical**	**Horizontal**	**Vertical**	**Horizontal**	**Vertical**
Workshop Area	179.0	128.0	163.0	115.0	146.0	114.0
Screen Plant	120.0	93.0	105.0	97.0	111.0	98.0
Haul Road	65.0	59.0	65.0	57.0	79.0	53.0
Loading Point	117.0	88.0	97.0	86.0	99.0	87.0
Crusher Plant	133.0	131.0	123.0	125.0	124.0	110.0
Parking Yard	78.0	70.0	61.0	70.0	59.0	71.0
Permanent Path	108.0	76.0	88.0	77.0	87.0	73.0
Electric Substation	119.0	87.0	107.0	83.0	108.0	72.0
Rest Shelter	59.0	58.0	59.0	49.0	59.0	71.0
Mines Bench Foot Path	90.0	57.0	87.0	57.0	85.0	68.0

5. Noise Level {dB(A)}

A. Ambient Noise Monitoring

Location	April-25		May-25		June-25		Standards	
	Leq Day	Leq Night	Leq Day	Leq Night	Leq Day	Leq Night	Leq Day	Leq Night
EAST BOUNDARY	67.9	60.4	66.3	56.6	64.4	62.6	75 dB(A)	70 dB(A)
WEST BOUNDARY	65.0	54.1	68.8	59.3	60.6	59.2	75 dB(A)	70 dB(A)
NORTH BOUNDARY	61.8	57.2	62.0	61.3	68.7	61.1	75 dB(A)	70 dB(A)
SOUTH BOUNDARY	60.3	59.5	67.1	55.3	66.6	62.8	75 dB(A)	70 dB(A)
Location	**July-25**		**August-25**		**September-25**		**Standards**	
	Leq Day	**Leq Night**	**Leq Day**	**Leq Night**	**Leq Day**	**Leq Night**	**Leq Day**	**Leq Night**
EAST BOUNDARY	68.6	58.2	60.0	60.1	65.2	53.2	75 dB(A)	70 dB(A)
WEST BOUNDARY	65.9	60.1	62.1	59.3	63.9	51.2	75 dB(A)	70 dB(A)
NORTH BOUNDARY	63.5	57.5	68.9	57.2	62.1	55.9	75 dB(A)	70 dB(A)
SOUTH BOUNDARY	67.4	61.4	64.5	61.9	66.0	50.9	75 dB(A)	70 dB(A)

B. Source Noise Monitoring

CORE ZONE	April-25				May-25			
	Week-1	Week-2	Week-3	Week-4	Week-1	Week-2	Week-3	Week-4
	Leq				Leq			
Near Ore Crushing Plant	73.5	74.3	73.2	67.1	72.0	69.9	71.5	67.1
Near Weigh Bridge	72.7	65.3	72.2	72.3	71.4	70.6	68.6	69.0
Near Workshop	67.4	64.8	71.3	67.4	67.9	66.8	72.4	69.2
Near Mines Office	70.9	73.4	70.9	75.4	66.6	71.9	72.7	71.4

CORE ZONE	June-25				July-25			
	Week-1	Week-2	Week-3	Week-4	Week-1	Week-2	Week-3	Week-4
	Leq				Leq			
Near Ore Crushing Plant	61.8	61.4	61.8	59.9	59.8	60.0	60.5	62.3
Near Weigh Bridge	62.1	60.7	59.8	58.1	62.9	59.1	59.2	59.0
Near Workshop	59.8	61	60.1	59.9	61.1	60.4	59.9	58.8
Near Mines Office	62.7	60.3	60.9	58.4	60.5	61.3	59.1	59.8
CORE ZONE	**August-25**				**September-25**			
	Week-1	Week-2	Week-3	Week-4	Week-1	Week-2	Week-3	Week-4
	Leq				Leq			
Near Ore Crushing Plant	73.9	71.7	68.4	67.4	71.4	72.2	70.2	74.3
Near Weigh Bridge	67.4	72.3	69.2	67.8	73.1	67.3	72.1	71.5
Near Workshop	73.6	71.9	67.7	72.9	70.7	70.7	72.9	68.7
Near Mines Office	73.5	70.0	71.7	69.3	71.0	72.2	70.6	73.7

6. Surface Water Quality

GONUA IRON ORE MINE								
Gonua nala UpStream								
Parameter	**Units**	**April-25**	**May-25**	**June-25**	**July-25**	**August-25**	**September-25**	**Limits for Stream Water Standards**
PH	**-**	7.38	7.28	7.12	7.14	7.41	7.50	**6.5-8.5**
Total Dissolved Solids	**mg/l**	54	201	180	197	188	215	**1500**
BOD	**mg/l**	2.5	2.3	2.8	2.3	2.1	2.2	**3**
DO	**mg/l**	6.4	6.3	6.1	6.1	6.8	6.3	**4**
Chlorides	**mg/l**	20	22	25	26	28	27	**600**
Fluorides	**mg/l**	0.16	0.18	0.14	0.12	0.10	0.19	**1.5**
Iron	**mg/l**	0.1	0.09	0.14	0.1	0.32	0.1	**50**
Gonua Nala DownStream								
Parameter	**Units**	**April-25**	**May-25**	**June-25**	**July-25**	**August-25**	**September-25**	**Limits for Stream Water Standards**
PH	**-**	7.63	7.67	7.30	7.29	7.35	7.41	**6.5-8.5**
Total Dissolved Solids	**mg/l**	278	274	188	228	199	224	**1500**
BOD	**mg/l**	2.4	2.6	2.9	2.3	2.5	2.8	**3**
DO	**mg/l**	6.2	6.2	6.4	6.4	6.6	6.2	**4**
Chlorides	**mg/l**	41	44	30	32	24	36	**600**
Fluorides	**mg/l**	0.23	0.26	0.14	0.27	0.13	0.21	**1.5**
Iron	**mg/l**	0.17	0.14	0.12	0.23	0.34	0.04	**50**

Kakarpani Nala Upstream								
Parameter	**Units**	**April-25**	**May-25**	**June-25**	**July-25**	**August-25**	**September-25**	**Limits for Stream Water Standards**
PH	**-**	7.68	7.79	7.22	7.44	7.37	7.6	**6.5-8.5**
Total Dissolved Solids	**mg/l**	188	172	182	152	154	180	**1500**
BOD	**mg/l**	2.7	2.4	2.6	2.8	3	3	**3**
DO	**mg/l**	6.6	6.5	6.7	6.7	6.5	6.3	**4**
Chlorides	**mg/l**	20	24	24	24	20	26	**600**
Fluorides	**mg/l**	0.22	0.21	0.2	0.27	0.24	0.24	**1.5**
Iron	**mg/l**	0.19	0.18	0.16	0.38	0.42	0.16	**50**
Kakarpani Nala Downstream								
Parameter	**Units**	**April-25**	**May-25**	**June-25**	**July-25**	**August-25**	**September-25**	**Limits for Stream Water Standards**
PH	**-**	7.56	7.42	7.46	7.14	7.34	7.58	**6.5-8.5**
Total Dissolved Solids	**mg/l**	278	264	224	220	200	196	**1500**
BOD	**mg/l**	2.5	2.2	2.4	2.3	3.0	2.8	**3**
DO	**mg/l**	6.1	6.8	6.7	6.8	6.4	6.7	**4**
Chlorides	**mg/l**	34	36	30	26	22	28	**600**
Fluorides	**mg/l**	0.22	0.24	0.2	0.24	0.24	0.26	**1.5**
Iron	**mg/l**	0.21	0.19	0.2	0.15	0.36	0.17	**50**

7. Surface Water Flow Rate

LOCATION NAME	April-25	May-25	June-25	July-25	August-25	September-25
Gonua nala	0.60	0.78	0.82	0.85	0.64	0.60
Kakarpani nala	0.71	0.87	0.80	0.81	0.77	0.63

8. Ground Water Quality

Location		Gonua Village	Canabeda Village	Minjoda Village	Doughar Village
Parameter	Units	May-25			
pH	-	6.85	7.1	6.91	6.98
Total Dissolved Solids as TDS	mg/l	114.5	131	122	99
Total Hardness as CaCO3	mg/l	42	55	73	5.0
Sulfate as SO4	mg/l	7.02	16.1	22.3	18.2
Chloride as Cl	mg/l	14	17.2	18.2	16.3
Fluorides as F	mg/l	0.16	0.31	0.28	0.22
Iron as Fe	mg/l	BDL	0.12	0.17	0.04
Location		Gonua Village	Canabeda Village	Minjoda Village	Doughar Village
Parameter	Units	August-25			
pH	-	6.7	6.66	6.88	6.9
Total Dissolved Solids as TDS	mg/l	88.2	114	114	111
Total Hardness as CaCO3	mg/l	42	54	70	56
Sulfate as SO4	mg/l	7.12	14.6	13.4	12.6
Chloride as Cl	mg/l	12	14	12	14
Fluorides as F	mg/l	0.11	0.24	0.27	0.2
Iron as Fe	mg/l	BDL	0.12	0.22	0.12

9. Drinking Water Quality

Parameter	Units	April-25	May-25	June-25	July-25	August-25	September-25	Acceptable Limits	Permissible Limits
pH	-	6.92	6.98	7.1	6.88	7.06	6.92	6.5-8.5	No Relaxation
Total Dissolved Solids as TDS	mg/l	180.0	188.0	176.0	176.0	164.0	180.0	500	2000
Total Hardness as CaCO3	mg/l	88.0	80.0	72.0	78.0	70.0	74.0	200	600
Sulfate as SO4	mg/l	10.5	9.45	9.2	11.32	9.87	8.5	200	400
Chloride as Cl	mg/l	12.0	10.0	12.0	11.0	12.0	12.0	250	1000
Fluorides as F	mg/l	0.12	0.10	0.12	0.12	0.08	0.13	1	1.5
Iron as Fe	mg/l	0.06	0.08	0.10	0.08	0.14	0.06	0.3	No Relax

10. ETP

Parameter	Units	April-25	May-25	June-25	July-25	August-25	September-25	Detection Range
ETP Inlet								
pH	-	6.85	6.96	6.90	6.82	6.91	6.88	2.0 -12
Total Suspended Solid as TSS	mg/l	74.5	69.5	87.0	73.2	80.2	74.5	5 - 5000
Total Dissolved Solids as TDS	mg/l	596	588.0	542.0	492.0	466.0	596.0	10-10000
Biochemical Oxygen Demand as BOD 3days at 27^0C	mg/l	27.5	28.0	31.0	31.0	28.0	32.0	5-10000
Chemical Oxygen Demand as COD	mg/l	288.0	296.0	276.0	312.0	278.0	288.0	5-50000
Oil & Grease as O & G	mg/l	6.56	8.50	6.50	8.22	7.68	7.90	5-600
Parameter	Units	April-25	May-25	June-25	July-25	August-25	September-25	Acceptable Limits
ETP Outlet								
pH	-	7.64	7.54	7.24	7.50	7.18	7.38	6.5-9.0
Total Suspended Solid as TSS	mg/l	32.5	27.5	25.6	24.5	22.9	32.0	100.0
Total Dissolved Solids as TDS	mg/l	688.0	672.0	606.0	522.0	544.0	684.0	-
Biochemical Oxygen Demand as BOD 3days at 27^0C	mg/l	14.0	16.0	16.0	14.0	14.0	14.5	30.0
Chemical Oxygen Demand as COD	mg/l	132.0	140.0	128.0	122.0	131.0	132.0	250.0
Oil & Grease as O & G	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	10.0

11. Mines Run Off

Parameter	Unit	August-25		September-25		INDIAN STANDARDS as IS-2296(C)
		Near Mines office	Near Haulage Road	Near Workshop Area	Near Screen Plant	
Colour	Hazen	25.0	20.0	15.0	20.0	300
pH	-	7.23	7.20	7.72	7.23	6.5-8.5
Total Suspended Solids as TSS	mg/l	56.0	40.0	34.0	23.3	-
Total Dissolved Solids as TDS	mg/l	256.0	214.0	256.0	234.0	1500

Biochemical Oxygen Demand as BOD	**mg/l**	10.0	20.0	2.5	2.4	**3.0**
Chemical Oxygen Demand as COD	**mg/l**	108.0	128.0	16.0	20.0	**-**
Oil & Grease as O&G	**mg/l**	6.80	5.80	BDL	BDL	**0.1**
Dissolved Oxygen as DO	**mg/l**	5.40	5.60	6.2	6.4	**4**
Chloride as Cl	**mg/l**	21.80	23.0	28.0	22.0	**600**
Sulfate as SO4	**mg/l**	15.60	16.0	18.2	13.8	**400**
Nitrate Nitrogen as NO3	**mg/l**	8.20	8.20	5.12	5.25	**50**
Fluorides as F	**mg/l**	0.21	0.24	0.13	0.14	**1.5**
Iron as Fe	**mg/l**	0.18	0.17	0.09	0.12	**50.0**
Arsenic as As	**mg/l**	BDL	BDL	BDL	BDL	**0.2**
Hexavalent Chromium as Cr+6	**mg/l**	BDL	BDL	BDL	BDL	**0.05**
Copper as Cu	**mg/l**	BDL	BDL	BDL	BDL	**1.5**
Zinc as Zn	**mg/l**	0.13	0.15	0.02	0.11	**15**
Phenolic Compound as C6H5OH	**mg/l**	BDL	BDL	BDL	BDL	**0.005**
Anionic Detergent as MBAS	**mg/l**	BDL	BDL	BDL	BDL	**1.0**
Cyanide as CN	**mg/l**	BDL	BDL	BDL	BDL	**0.05**
Lead as Pb	**mg/l**	BDL	BDL	BDL	BDL	**0.1**
Cadmium as Cd	**mg/l**	BDL	BDL	BDL	BDL	**0.01**

ANNEXURE IV

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

Letter No.- JSW/S/CO/2023/613 **Date-27.09.2023**

To,

The Divisional Forest Officer
Bonai Forest Division
Bonai

Sub: Diversion of 32.875 ha of forest land (Including 1.693 ha Safety Zone) within the mining lease of 88.516 Ha in Ganua Iron ore Block of M/s. JSW Steel Ltd. under Bonai Forest Division, District Sundargarh, Odisha (Single Window No. SW/118326/2023, Proposal No. FP/OR/MIN/QRY/418017/2023)

Sir,

In reference to the subject cited above, we would like to inform you that we have submitted the online application of diversion proposal over 32.875 ha forest land (Including 1.693 Ha Safety zone) in respect of Ganua Iron Ore Mines of M/s JSW Steel Ltd under Bonai Forest Division of Sundargarh District.

Now, we are submitting herewith the hard copy of the said proposal for your kind information and necessary action.

Thanking You

Yours faithfully

FOR JSW STEEL LTD.

Mrityunjaya Mahapatra

(Authorized Signatory)

Encl: Hard Copies of Forest Diversion proposal.

Received
27.9.23

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

Letter No.- JSW/S/CO/2023/612 **Date-27.09.2023**

To,

The Principal Chief Conservator of Forests
(Forest Division & Nodal Officer, FC Act)
O/o the Principal Chief Conservator of Forests
Odisha, Bhubaneswar

Sub: Diversion of 32.875 ha of forest land (Including 1.693 ha Safety Zone) within the mining lease of 88.516 Ha in Ganua Iron ore Block of M/s. JSW Steel Ltd. under Bonai Forest Division, District Sundargarh, Odisha (Single Window No. SW/118326/2023, Proposal No. FP/OR/MIN/QRY/418017/2023)

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Thanking You

Yours faithfully

FOR JSW STEEL LTD.

Mrutyunjaya Mahapatra
(Authorized Signatory)

JSW STEEL LIMITED MUMBAI

Encl: Hard Copies of Forest Diversion proposal.

PRINCIPAL CHIEF CONSERVATOR OF FORESTS & HOFF
ODISHA, BHUBANESWAR
6243
29 SEP 2023
Received No.....
Sec.....

JINDAL O. P. Jindal Group

NO.8-47/93-FC

तार :
Telegram : PARYAVARAN,
NEW DELHI
दूरभाष :
Telephone :
टेलेक्स : 4360704
Telex : W-66185 DOE IN
FAX : 4360678

भारत सरकार
पर्यावरण एवं वन मंत्रालय
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
पर्यावरण भवन, सी० जी० ओ० कॉम्प्लेक्स
PARYAVARAN BHAWAN, C.G.O. COMPLEX
लोदी रोड, नई दिल्ली-110003
LODI ROAD, NEW DELHI-110003

Dated the 7th August, 1996

To

The Secretary
Forest Department
Government of Orissa
Bhubaneshwar.

Subject: Diversion of 54.40 ha. of forest land for mining of Iron and Manganese Ore in Village Gauna in Bonai Forest Division in favour of Smt. Maitri Shukla in Sundergarh district of Orissa.

Sir,

I am directed to refer to your letter No.10F(Cons)29/93/14421/F& E dated 29.5.93 and No.10F(Cons)-17/96/15518/F&E dated 6.7.96 on the above mentioned subject seeking prior approval of the Central Government in accordance with Section-2 of the Forest (Conservation) Act, 1980 and to say that the proposal has been examined by the Advisory Committee constituted by the Central Government under section-3 of the aforesaid act.

2. After careful consideration of the proposal of the State Government and on the basis of the recommendation of the above mentioned Advisory Committee, the Central Government hereby conveys its approval under Section-2 of the Forest (Conservation) Act, 1980 for diversion of 54.40 ha. of forest land for mining of Iron and Manganese Ore in village Gauna in Bonai Forest Division in favour of Smt. Maitri Shukla in Sundergarh district subject to the following conditions:-

i) Legal status of the forest land will remain unchanged.

ii) Compensatory afforestation to be raised over 41.25 ha. of non-forest land which will be notified as protected forest under Indian Forest Act.

iii) Penal compensatory afforestation to be raised over 26.72 ha. of degraded forest land at the cost of user agency.

iv) The responsibility for violation of Forest (Conservation) Act, 1980 may kindly be fixed against the concerned officials and disciplinary action taken against them may please be reported to this Ministry within a period of 6 months.

...2/-

v) The forest land should not be used for any purpose other than specified in the proposal.

vi) Any other condition stipulated by the State Government.

Yours faithfully,

(INDER DHAMIJA)
Sr.Asstt.Inspector General of Forests

Copy to:-

1. Principal Chief Conservator of Forests, Government of Orissa, Bhubaneshwar.
2. Nodal Officer, Office of PCCF, Government of Orissa, Bhubanesh
3. The CCF (Central) Regional Office, Bhubaneshwar.
4. The AIG RO(HQ) New Delhi.
5. Guard file.

(INDER DHAMIJA)
Sr. Asstt. Inspector General of Forests

ANNEXURE V

PLANTATION PHOTOS


GONUA IRON MINE
SAFETY ZONE PLANTATION
2024-2025
Trees on, global warming gone


May 21, 2024 17:54:59
21°55'3.08939"N 85°22'5.12324"E
Altitude:537.8m
Speed:0.0km/h


REDMI 13C 5G
01/10/2024 15:58

ANNEXURE VI

Comprehensive Hydrogeological Report

for

Gonua Iron Ore Mine

of

M/s JSW Steel Limited

Address
Gonua Iron Ore Mine,
Village- Gonua & Patabeda,
Tehsil- Koira, District- Sundargarh,
Odisha

Prepared By

Geo Climate Risk Solutions Pvt Ltd
Accredited by CGWA and ISO 9001:2015 Certified Company
CGWB Accreditation number & Validity: CGWB/RGI/005 & 14.02.2026
APIS, Sunrise Incubation Tower, Hill No.3, Madhurawada,
Visakhapatnam, 530048
Website: www.gcrs.co.in
Email: business@gcrs.co.in

MAY 2024

1 SALIENT FEATURES OF THE PROPOSAL

Sl No.	Particulars	Information
1	Application No.	21-4/3339/OR/MIN/2022
2	Submission Date	09.05.2024
3	Fresh or Renewal	Renewal
4	Existing or New/Proposed	Existing
5	If Renewal, date of validity of existing /last NOC	Valid upto: 09.05.2024
6	CTE issue Date	13.04.2021
7	Name of the Project with Address	**Gonua Iron Ore Mine** Village: Ganua, Post: Patamunda, Gp: Malda, Ps: Koira, Block: Koira, Tehsil-Koira, District-Sundargarh, Odisha -770048
8	State	Odisha
9	District	Sundargarh
10	Block/Taluka	Koida
11	Category of Block/Taluka (as per Prevailing GWRE	Koida block comes under “Safe” category
12	Quantum of GW Applied (KLD)	75 KLD
13	Quantum of GW Applied ($m^{3/}$year)	27,375m^3/year
14	Alluvium/ Non-alluvium	Non-Alluvium
15	Ground water Modelling Required (Yes/No)	No
16	Name of Authorized Signatory of the Project and Designation	Mr. Baswaraj Dalgade, General Manager Administration
17	Consultant Details with Name of Authorized Signatory (If Institution)	Geo Climate Risk Solutions Pvt. Ltd. Mr. G Prasad Babu (Founder & CEO)
18	In case the report is prepared jointly by accredited Institute and Individual consultant, name details of chapters prepared by the Individual consultant	NA
19	Accreditation Certificate No. and Date/ Validity (In case jointly as per Point No. 18, No. and validity of both institution and individual are to be given)	CGWB Accreditation number & Validity: CGWB/RGI/005 & 14.02.2026

Mr. G Prasad Babu (Founder & CEO)
Signature with Name

2 ABOUT THE PROJECT

Gonua Iron Ore Mine of M/s JSW Steel Ltd is an existing mine located in village Gonua & Patabeda of Koira tehsil in Sundargarh district of Odisha (Figure **2.1**). The mine lease area falls under Survey of India Toposheet No. 73 F/8 & G/5. The indicative coordinates of the Gonua Iron Ore Mine are: Latitudes:21^{0}55'00.52356" N to 21^{0}55'46.03440" N and Longitudes:85^{0}22'04.13616" E to 85^{0}22'36.35616" E. The Gonua Iron Ore mine targets for production of 2.99 MTPA (ROM) of Iron ore with total excavation of 3.4086 MTPA (ROM 2.99 MTPA + OB/SB/IB 0.4186 MTPA) along with screening, crushing, 1000 TPH Central processing unit (CPU) in lease area of 88.516 ha (As per DGPS) / 86.886 ha (As per ROR) in Villages Gonua and Patabeda, Tehsil Koira, District Sundargarh, Odisha State. The total lease area includes Forest: 82.724 ha and non-Forest: 5.662 ha.

Forest clearance was approved by Ministry of Environment and Forest, GOI, for the forest clearance of Out of total 76.882Ha of forest land Forest Clearance obtained over an area of 54.50Ha vide MoEF letter No 847/93-FC dated 07/09.08.1996 for mining and ancillary activities.

The aforesaid project area is approachable from Barbil or Koira via public road NH-520 at 9 km, which further connecting to Panikoili at NH-5 and Rourkela, via Keonjhar, Joda, Barbil and Koida. The nearest railway station is Jaroli railway station at 5 km & Barbil railway station is at 40 km away from the block on Tatanagar-Barbil section from South-Eastern railway.

The existing NOC of Gonua Iron Ore Mine has been issued from CGWA vide NOC no. CGWA/NOC/MIN/ORIG/2022/15411 for groundwater abstraction/ dewatering quantum of 75 m^3/day with a validity from 10.05.2022 to 09.05.2024. Presently, this application is for applying the total abstraction quantum of 75 m^3/day (from borewell only) for the issue of groundwater NOC from the authority.

OBJECTIVE

The study's overall objective is to carry out hydrogeological study as per the new SOP notified on May 2023 (Version 9.1) by the CGWA for the preparation of comprehensive hydrogeological report on the groundwater conditions in the core and buffer zones within the radius of 2 km and 10 km respectively from the project boundary in order to obtain NOC approval from the Central Ground Water Authority for dewatering of 75 m^3/day of ground water abstraction.

APPROACH AND METHODOLOGY

In order to achieve the objectives hand in hand with the scope of work outlined above, a multidisciplinary approach has been adopted, dovetailing the domain skills of hydrogeological

and groundwater modelling, giving equal opportunities to arrive at an optimal strategy addressing the issues holistically. The methodology encompasses detailed hydrogeological investigation in and around the mine lease area, establishing an aquifer extent and an optimal groundwater monitoring network to monitor water quantity and quality changes. Estimating mine seepage in time and space has been attempted, evaluating the influence on groundwater in terms of space and quantifying contribution from groundwater. Further, an attempt has been made to arrive at technically viable engineering interventions for water harvesting and groundwater recharge following standard norms and guidelines within the statutory framework of various regulatory authorities.

For the hydrogeological study and assessment of groundwater resources, a core zone of 2 km and a buffer zone of 10 km from the mine lease boundary have been considered as per the norms of the Central Ground Water Authority (CGWA). The Toposheet map and Google Earth Imagery of the study area are given in Figure 2.2 and Figure **2.3**, respectively.

4 APPROVED MINE PLAN

The Modification of Mining Plan of Gonua Iron Ore Mine along with Progressive Mine Closure Plan (PMCP) is approved by The Regional Controller of Mines, IBM, Bhubaneswar and communicated its approval vide no. MPMA/A/26-ORI/BHU/2021-22 dated 22.02.2022. The copy of Mining plan approval letter is enclosed as Annexure-III.

The Gonua Iron Ore mine is an "A" category mine & mining operation is fully mechanized and opencast. There are two pits in the mine lease area namely Gonua Quarry & Patabeda Pit. Gonua Quarry is active and fully developed while Patabeda Pit is partially worked by the ex-lessee. In both the pits the bench height is maintained upto 9m and with upto 10m. The type of ore in the mining lease area is lateritic iron ore, soft laminated ore, blue dust etc which is processed by crushing and screening. The current production capacity of the mine is 2.99 MTPA. The year wise tentative in-situ exaction is given in Table 4.1.

Table 4.1: Year wise in-situ excavation

SI.No.	Year	Total Handling (t)	Waste Quantity (t)	ROM Quantity (t)	ROM Quantity Saleable Mineral (t) [85%]	ROM Quantity Mineral Reject (t) (15%]	OB to Ore Ratio (Waste Quantity / ROM Quantity)	Grade Range (%)
1	Year 1 (2020-21)	NA	NA	NA	NA	NA	NA	NA
2	Year 2 (2021-22)	NA	NA	NA	NA	NA	NA	NA
3	Year 3 (2022-23)	2414643	414643	2000000	1700000	300000	1: 0.21	> 45 % Fe
4	Year 4 (2023-24)	2415538	415538	2000000	1700000	300000	1 :0.21	> 45 % Fe
5	Year 5 (2024-25)	3408600	418600	2990000	2541500	448500	1 :0.14	> 45 % Fe

5 ESTIMATION OF MINE SEEPAGE AND ADVANCED DEWATERING PLAN

5.1 ESTIMATION OF MINE SEEPAGE

In open-cast mining, as soon as the water table is encountered in the mine pit, the groundwater seepages start.

The mine pits are situated in the hilly area. The ultimate pit limit of the mine pits will be about 608 mamsl during the plan period (2020-2021 to 2024-2025) and also in the next five year, while the water table near mine lease area is about 545.58 to 547.48 mamsl. So, it is envisaged that there will be no mine seepage during the plan period. If any seepage is encountered during the NOC period, it will be immediately inform to the Authority.

5.2 ESTIMATION OF RAINWATER QUANTUM DEWATERED

There will be no abstraction of rainwater accumulated in the mine pit for this project. This water will be kept in the mine pits to recharge naturally to ground without dewatering. So, there will be no dewatering from the mine pits during the plan period.

5.3 ADVANCED DEWATERING PLAN IN CASE OF COAL/LIGNITE MINES

Not applicable as this is a metal mine project (Iron Ore).

5.4 GROUNDWATER MODELLING

The ground water modelling study report is not required because the ground water abstraction for this project (75 KLD) is below 500 KLD.

6 MINE WATER MANAGEMENT

There is no mine water dewatering envisaged during the plan period. Only one borewell is existing in the lease area. The total ground water abstraction through that borewell is 75 m^3/day. Out of which, 4 m^3/day will be used for drinking and domestic purposes, 65 m^3/day will be used for mining activities and dust suppression on haul & village roads, 3 m^3/day for plantation, 2 m^3/day will be used in dry fogging system and 1 m^3/day will be used for wet drilling. The water utilization details are given in Table 6.1 and the water balance chart for the same is shown in Figure 6.1.

Table 6.1: Details of water utilization.

Sl. No.	Activities	Water utilization (m^3/day)	Water utilization (m^3/year)
1	Drinking & Domestic	4	1,460
2	Mining activities and Dust suppression on haul and village roads	65	23,725
3	Plantation	3	1,095
4	Dry Fogging system	2	730
5	Wet drilling	1	365
Total		**75**	**27,375**

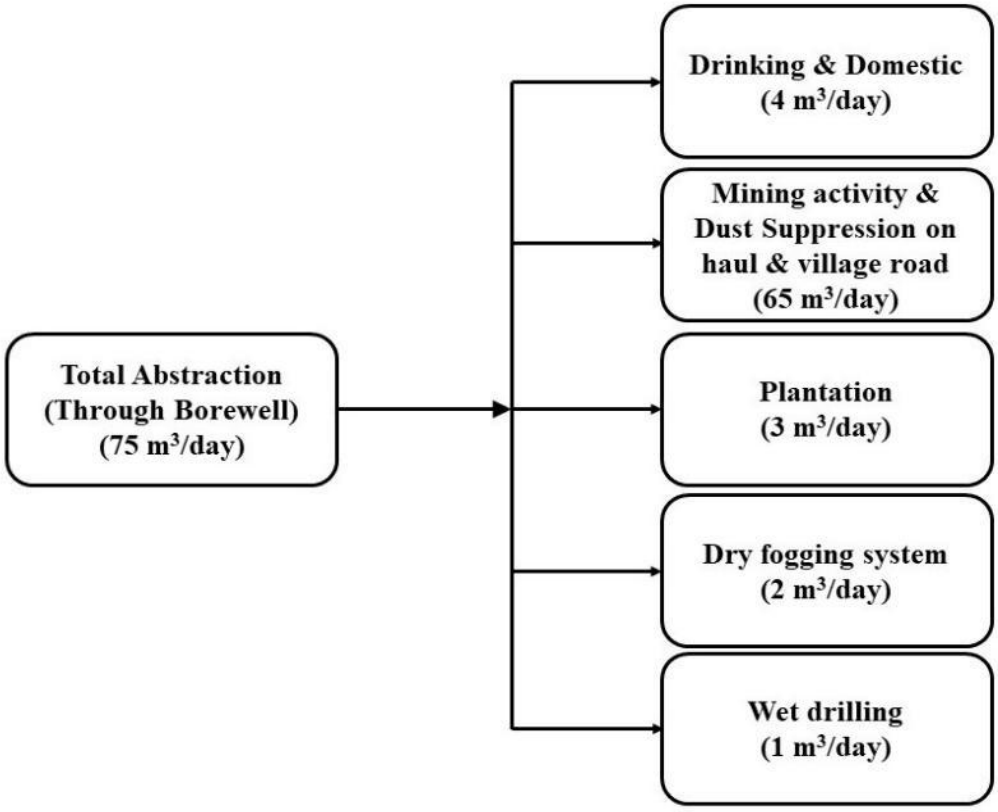

Figure 6.1: Water balance chart.

There is one piezometer with DWLR with non-telemetry system has been installed in the project area & one abstraction structure (borewell) has been constructed. The detail of borewell is given in

Table 6.2: Details of borewell

S.N.	Borewell Location	Lat/Long	Remark	Pump Capacity
1.	Dispensary area near gate-01	N 21° 55' 4.63"/ E 85^0 22' 5.92"	Flow meter Installed and bore well is fully functional	5HP

6.1 IMPACT OF MINE DEWATERING/ABSTRACTION AND MITIGATION MEASURES.

The mining plays an important role towards the development of the socio-economy. In the other hand, mining activities will invariably have an impact on water environment through direct or indirect contact of either the surface or ground water. Groundwater resources which constitute the main use for the extraction and different mining activities are accompanied by a strong withdrawal affecting quantitative and qualitative parameters. Indeed, without preventive measurements, the mining activities can have a negative effect on the environment: hazardous tailings, the mine drainage, infiltration of the polluted liquid effluents in the underground, the degradation of the water quality, and the ecological environment (vegetal and animal biodiversity). Proper mitigation measure can reduce these impacts.

6.2 IMPACT ON THE GROUNDWATER REGIME

The downward movement of the toxic substances from the stack, dump and exposed quarry faces during seepage and percolation of ground water normally affects the ground water quality adversely in mining area. The water table in the area is comparatively at a greater depth (10m below ground level). Since the ground water table will not be punctured during the course of mining water pollution will be negligible. Therefore, the chances of ground water pollution will be nil. There is also no occurrence of toxic materials which can pollute the water & jeopardize the human health.

The Depth to water level and long-term water level data analysis (sections 3.3.3 & 3.3.4) along with the groundwater modelling study depict that there has not been any significant decline in water level observed in the study area due to this project. It is envisaged that there will be no significant impacts on the groundwater regime due to this mining activity.

6.3 IMPACT ON SURFACE WATER SOURCES

As there is no perennial water body near the work zone & no mine discharge is involved in this project, so it doesn't have any impact on surface water sources. Secondly, Ore as well as waste material does not contain any toxic elements and precipitated water passing through the quarry floor will not contaminate surface water.

Heavy rainfall can cause the runoff of pollutants from mine sites into nearby water sources. This can occur when rainwater picks up pollutants from the mining site and carries them into nearby streams, rivers, or groundwater sources. The runoff can carry heavy metals, acids, and other substances that can contaminate the water supply and have long-lasting environmental consequences.

Precautionary measures such as constructing check dams & settling sumps at appropriate places will help in making the discharge water free from any silt during rains. Toe walls & garland drains around & dumps will be provided to check the run-off. To arrest the surface runoff into the quarry, garland drains with suitable dimensions to carry the peak discharge are constructed and these drains shift with the mine boundary in time and space.

6.4 IMPACT ON WATER QUALITY

During the plan period of this project, the ground water table will not be intersected. As there is also no occurrence of toxic materials which can pollute the water. No mine discharge is envisaged to the nearby water bodies in this project. So, no negative impacts on the water quality will be anticipitated during the plan period due to this project.

6.5 MITIGATION MEASURES

Some of the important measures that should be adopted is given below:

- The mine discharge, after passing through sedimentation tanks for removal of suspended solids will be used for dust suppression, greenbelt development, etc. and excess water will be let out into nearby streams.
- Water catchment areas should be build up in the working areas for settlement of suspended solids before pumping water out of the mine.
- Oil and grease traps must be planned in HEMM workshop for removal of TSS and Oil and Grease from vehicle wash needed to completely collect, store, treat, and redeliver. Treated water can be used for dust suppression and for raising plantations within the workshop premises.
- Regular monitoring is being carried out in the study area to access the impact the mining on groundwater quality. The groundwater chemistry indicates that the groundwater in the area is potable and not containing any toxic elements.

- Proper groundwater recharge measures have been implemented in the study area to reduce impacts on groundwater.

Rain Water Harvesting & Artificial recharge Structure:

To maintain the groundwater regime in the area unaffected, all the major buildings of the project should be facilitated by suitable rainwater harvesting structures. Rain water harvesting means collection and storage of rain water that runs off on natural or manmade catchments areas. Catchment includes rooftops, compounds, rocky surface or hill slopes or artificially prepared impervious/ semi-pervious land surface. The amount of water harvested depends on the frequency and intensity of rainfall, catchment characteristics, water demands and how much runoff occurs & how quickly or how easy it is for the water to infiltrate through the subsoil and percolate down to recharge the aquifers.

Estimation of Quantum of runoff available through rain water harvesting (within premises)

Table 6.3: Run-off water estimation

Sl. No.	Particulars	Area (Sqm)	Rainfall (m)	Runoff Coefficient*	Quantum of Run off available (Cum/Year)
	1	2	3	4	5 (2*3*4)
1	Roof Top of building/Shed/	9370	1.32	0.85	10513.14
2	Road/Paved area	12160	1.32	0.65	10433.28
3	Open Land	348690	1.32	0.20	92054.16
4	Green Belt	514940	1.32	0.15	101958.12
5	Total (sqm)	885160		Total Quantum of available runoff (cum/y)	214958.7

* Ref: Manual of Artificial Recharge of Ground Water, (CGWB, 2007)

So, the total quantity of run off rainwater available in the project area is around 214958.7 m^3/year (Table 6.3). This can be stored and used for different mining purposes, reducing groundwater consumption and minimizing the impact on groundwater. Further, any excess amount than the estimated amount may be used to increase the recharge potential in the area.

MITIGATION MEASURES ADOPTED:

Water Pollution Control System adopted:

- Garland drains maintained of suitable size around mine area and dump with proper gradients to prevent rain water descent into active mine area.

- Settling ponds maintained to prevent flow of fine particles from OB / Waste dumps, check dams, parapet / retaining walls & garland drains.
- Usage of stored water in the settling ponds for watering of haul roads, vehicle washing and green belt development etc.
- De- silting of garland drains & settling ponds are being carried out at regular intervals.
- Maintenance of all the runoff management structures.
- No workshop and effluent generation from the mines. Workshop along with Mechanised Oil Grease Trap System is in process.

7 SALINE WATER DISPOSAL STRATEGIES (IN CASE OF SALINE WATER ABSTRACTION)

In the mine lease area and surrounding there is no saline water as a source of groundwater. Accordingly, the mine has no interaction with saline water therefore this section is not applicable in the instance assessment.

8 OTHER DETAILS PERTAINING TO THE PROJECT

Not Applicable

9 SUMMARY AND CONCLUSION

Gonua Iron Ore Mine of M/s JSW Steel Ltd is an existing mine located in village Gonua & Patabeda of Koira tehsil in Sundargarh district of Odisha. The mine lease area falls under Survey of India Toposheet No. 73 F/8 & G/5. The indicative coordinates of the Gonua Iron Ore Mine are: Latitudes:21055'00.52356" N to 21055'46.03440" N and Longitudes:85022'04.13616" E to 85022'36.35616" E.

The predominant land use in the study is forest (73.07%), followed by scrub land (8.87%), crop land (8.23%), mining (7.12%), built-up (1.92%), water bodies (0.36%), river (0.30%) and barren land (0.12%). The topography of the study area is highly undulating in the southern and south-western part due presence hilly terrain with variation in slopes. The northern part of the study area also moderately elevated due to presence of few mounds. The e north-eastern & Eastern part of the study area exhibits low elevated topography which guides the surface water flow too. The elevation in the project area ranges from 586 to 718 mamsl, whereas the elevation ranges from 444 to 961 mamsl in the overall study area.

The predominant geomorphological features present in the study area, are moderately dissected hills and valleys of structural origin, followed by pediment of denudational origin, active quarry of anthropogenic origin, pediplain of denudational origin, highly dissected hills and valleys of structural origin, intermontane valley of fluvial origin and so on. The principle drainage system of the study area is controlled by Baitarani River & Suna Nadi, both are traverse from south-west to north-east direction in this region. Along with these, many Nalas/Streams can be observed in the study area which contributes towards the drainage system of the area. Jalpa Nadi, Kashi Nala, Dalko Nala flows south-east direction and Tapaikiri Nala flows in north-west direction to discharge their water into Baitarani River. Teherei Nala acts an important tributary to form Suna Nadi. Khajurdihi Nala, Archanda Nala & Gahirajala Nala contributes their water into Suna Nala. Kakarpani Nala, Kalmang Nala & Kunduru Nala are the important tributaries to the Suna Nadi in this region. No perennial drainage is flowing inside the project area. Kakarpani Nala is the perennial stream that is flowing at 0.6 km west to the project area.

The Gonua Iron Ore Mine is a part of the Bonai - Kendujhar belt falling in Sundargarh districts. The feebly metamorphosed Precambrian volcano-sedimentary rocks exposed in this belt between the Singhbhum granite on the east and Bonai granite on the west and are classified as 'Iron ore Group' (Sarkar & Saha, 1962) or 'Koira Group' (Murty and Acharya, 1975). These rocks are disposed in form of a low northerly plunging 'Horse-shoe' shaped synclinorium (Jones, 1934).

The predominant aquifer of the study area is Slate, Phyllite, Mica Schist with yield capacity of 1 to 5 lps followed by Banded Hematite Quartzite with yield of 3 to 10 lps, Sandstone & Conglomerate with yield of 3 to 10 lps and Basic Meta having yield of 10 to 15 lps.

The water table elevation in the study area & its outer periphery ranges between 479.28 to 875.25 mamsl during May 2024 and 480.75 to 875.63 mamsl during October 2023. The ground water moves both locally and regionally. The groundwater flow direction in the project area (lease area) is mainly from east to west whereas in the overall study area it is towards north-east direction.

The depth of water level in the study area and its outer periphery ranges from 1.75 to 12.54 mbgl during May 2024 and ranges from 1.03 to 7.75 mbgl during October 2023. The water level fluctuation varies from 0.38 to 4.91m in and around the study area. The long-term water level data shows, only seasonal fluctuation with cyclic and sinusoidal changes representing the recharge and discharge of ground water during the different period has been observed, which can be due to variations in rainfall patterns and no significant decline in water level is identical during observation period. It is observed that all the water quality parameters are within the permissible limits as per the IS standard.

There is no mine water dewatering envisaged during the plan period. Only one borewell is existing in the lease area. The total ground water abstraction through that borewell is 75 m^3/day. Out of which, 4 m^3/day will be used for drinking and domestic purposes, 65 m^3/day will be used for mining activities and dust suppression on haul & village roads, 3 m^3/day for plantation, 2 m^3/day will be used in dry fogging system and 1 m^3/day will be used for wet drilling.

As per the criteria for categorization of area made by Central Ground Water Authority for the development point of view (GWRA, 2023) the present study area falls under ‘Safe Category’. So, the withdrawal of 75 m^3/ day of ground water will not have any appreciable impact on ground water resources in the area.

10 BIBLIOGRAPHY

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11 ACCREDITATION CERTIFICATE

Accreditation Board of CGWA

Certificate of Accreditation

M/s. Geoclimate Risk Solutions
Vishakhapatnam, A.P.

Has been accredited as a Ground Water Professionals to prepare reports in the Functional Areas of

- *Impact Assessment of Existing / Proposed GW Extraction*
- *GW Modelling*
- *Hydrogeological conditions in mining projects.*

Valid from : 15.02.2021 *Certificate No. : CGWA/RGI/005*

Valid thru : 14.02.2026 *Dated : 07.07.2021*

क्षेत्रीय निदेशक
Regional Director
आरजीएनजीडब्ल्यूटीआरआई
RGNGWT&RI

सदस्य
Member
आरजीएनजीडब्ल्यूटीआरआई
RGNGWT&RI

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय भूमि जल प्राधिकरण
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)
NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:	M/s Jsw Steel Limited Gonua Iron Ore Mine		
Project Address:	Village: Ganua, Post:patamunda,, Gp: Malda, Ps: Koida, Block: Koida, Tehsil-koida, District-sundargarh, Odisha , 770048		
Village:	Ganua	Block:	Koida
District:	Sundargarh	State:	Odisha
Pin Code:			
Communication Address:	Village: Ganua , Post:patamunda,, Gp: Malda, Ps: Koida, Tehsil-koida, District-sundargarh, Odisha, 770048, Koida, Sundargarh, Odisha - 770048		
Address of CGWB Regional Office :	Central Ground Water Board South Eastern Region, Bhujal Bhawan, Khandagiri Square, Nh-5, Bhubaneshwar, Khordha, Odisha - 751030		

1.	**NOC No.:**	CGWA/NOC/MIN/REN/1/2024/9851	2.	**Date of Issuence**	12/08/2024
3.	Application No.:	21-4/3339/OR/MIN/2022	4.	Category: (GWRE 2023)	Safe
5.	Project Status:	Existing Ground Water	6.	NOC Type:	Renewal
7.	**Valid from:**	10/05/2024	8.	**Valid up to:**	09/05/2026

9. Ground Water Abstraction Permitted:

Fresh Water		Saline Water		Dewatering		Total	
m³/day	m³/year	m³/day	m³/year	m³/day	m³/year	m³/day	m³/year
75.00	27375.00						

10. Details of ground water abstraction /Dewatering structures

	Total Existing No.:1						Total Proposed No.:0					
	DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPu
Abstraction Structure*	0	0	1	0	0	0	0	0	0	0	0	0

*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps

11.	Ground Water Abstraction/Restoration Charges paid (Rs.):	0.00
12.	Environment Compensation (if applicable) paid (Rs.):	0.00

13.	Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers	Monitoring Mechanism		
			Manual	DWLR**	DWLR With Telemetry
	**DWLR - Digital Water Level Recorder	1	0	1	0

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

Validity of this NOC shall be subject to compliance of the following conditions:

Mandatory conditions:

1) Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate.

2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.

3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines.

4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.

5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.

6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.

7) The firm shall report compliance of the NOC conditions online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.

8) Industries abstracting ground water in excess of 100 m 3 /d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.

9) Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.

10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

General conditions:

11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).

12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).

13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.

14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.

15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.

16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.

17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.

18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.

19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.

20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.

21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.

22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.

23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.

24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.

25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.

26) In case of new infrastructure projects having ground water abstraction of more than 20 m3/day, the firm/entity shall ensure implementation of dual water supply system in the projects.

27) In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.

28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.

29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be.
30) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).
31) In the self-compliance report, the PP shall submit details of Drilling Agency/ Agencies, which has/ have constructed BW(s)/ TW(s) along with undertaking to the effect that all necessary measures have been taken as per directions of Hon'ble Supreme Court provided in Annexure-VII of guidelines dated 24.09.2020 in respect of abandoned/ failed BW(s)/ TW(s)/Piezometer(s), if any. The PP is advised to engage registered drilling agency/ agencies. In the event of any mishap/ unfortunate incident due to negligence in taking measures for prevention of accident due to falling in Bore Well, both PP and concerned drilling agency shall jointly be held responsible and penal action as per extant Government rules shall be taken.

(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)

CENTRAL GROUND WATER AUTHORITY

Department of Water Resources, River Development and Ganga Rejuvenation
Ministry of Jal Shakti, Govt. of India

Receipt

(As per the guideline Gazette Notification S.O. 3281(E) regarding the New Guidelines dated 24.09.2020 of CGWA, MoJS, Govt. of India)
https://cgwa-noc.gov.in

Application No,:	21-4/3339/OR/MIN/2022		Date of Issuence:12/08/2024
Name of Firm:	M/S JSW STEEL LIMITED GONUA IRON ORE MINE		
AppType Category:	*Iron ore*		
Application Type:	*Mining*		
PAN/GSTIN No. of Firm/Individual:		/	

SN	Description			Amount (Rs.)
1.	Application Processing Fee			5000.00
2.	Ground Water Abstraction charges			0.00
3.	Ground Water Restoration charges			0
4.	Environmental Compensation Charges (ECRGW) *(Date From to) Days-*			
5.	Penalty for non-Compliance of NOC conditions *Condition to be mentioned*			
6.	Adjustment Charges			
7.	Rebate			
8.	Charges for correction/modification in the existing issued No Objection Certificate			
	S.No.	Description	Rate	
	(i)	Change in User ID	Rs. 1000	
	(ii)	Change in firm Name	Rs. 5000	
	(iii)	Extension of No Objection Certificate	Rs. 5000	
	(iv)	Issuance of duplicate No Objection Certificate	Rs. 5000	
	(v)	Issuance of corrigendum to No Objection Certificate	Rs. 5000	
	(vi)	Any other items/correction etc.	Rs. 500	
Rs. Rupees Five Thousand Only				**5000.00**

This is an system generated invoice, hence, does not require ink signed.

Term and conditions:

i. All disputes are subject to Delhi Jurisdiction.
ii. Any complaint in regard to the rates will not be entertained.

Member-Secretary
CGWA, New Delhi

ANNEXURE VII

TRAINING AND AWARENESS CAMPAIGN ON SANITATION

ANNEXURE VIII

Medical Examination and Periodical Examination of the Workers

ANNEXURE IX

6 MINE WATER MANAGEMENT

There is no mine water dewatering envisaged during the plan period. Only one borewell is existing in the lease area. The total ground water abstraction through that borewell is 75 m^3/day. Out of which, 4 m^3/day will be used for drinking and domestic purposes, 65 m^3/day will be used for mining activities and dust suppression on haul & village roads, 3 m^3/day for plantation, 2 m^3/day will be used in dry fogging system and 1 m^3/day will be used for wet drilling. The water utilization details are given in Table 6.1 and the water balance chart for the same is shown in Figure 6.1.

Table 6.1: Details of water utilization.

Sl. No.	Activities	Water utilization (m^3/day)	Water utilization (m^3/year)
1	Drinking & Domestic	4	1,460
2	Mining activities and Dust suppression on haul and village roads	65	23,725
3	Plantation	3	1,095
4	Dry Fogging system	2	730
5	Wet drilling	1	365
Total		**75**	**27,375**

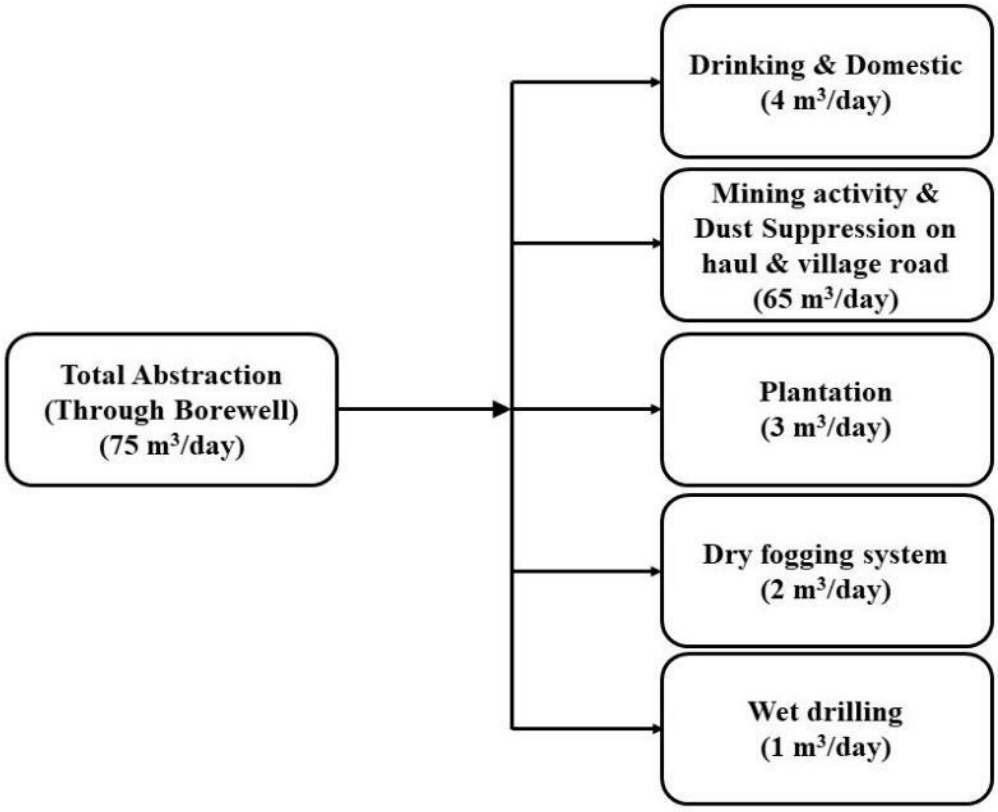


Figure 6.1: Water balance chart.

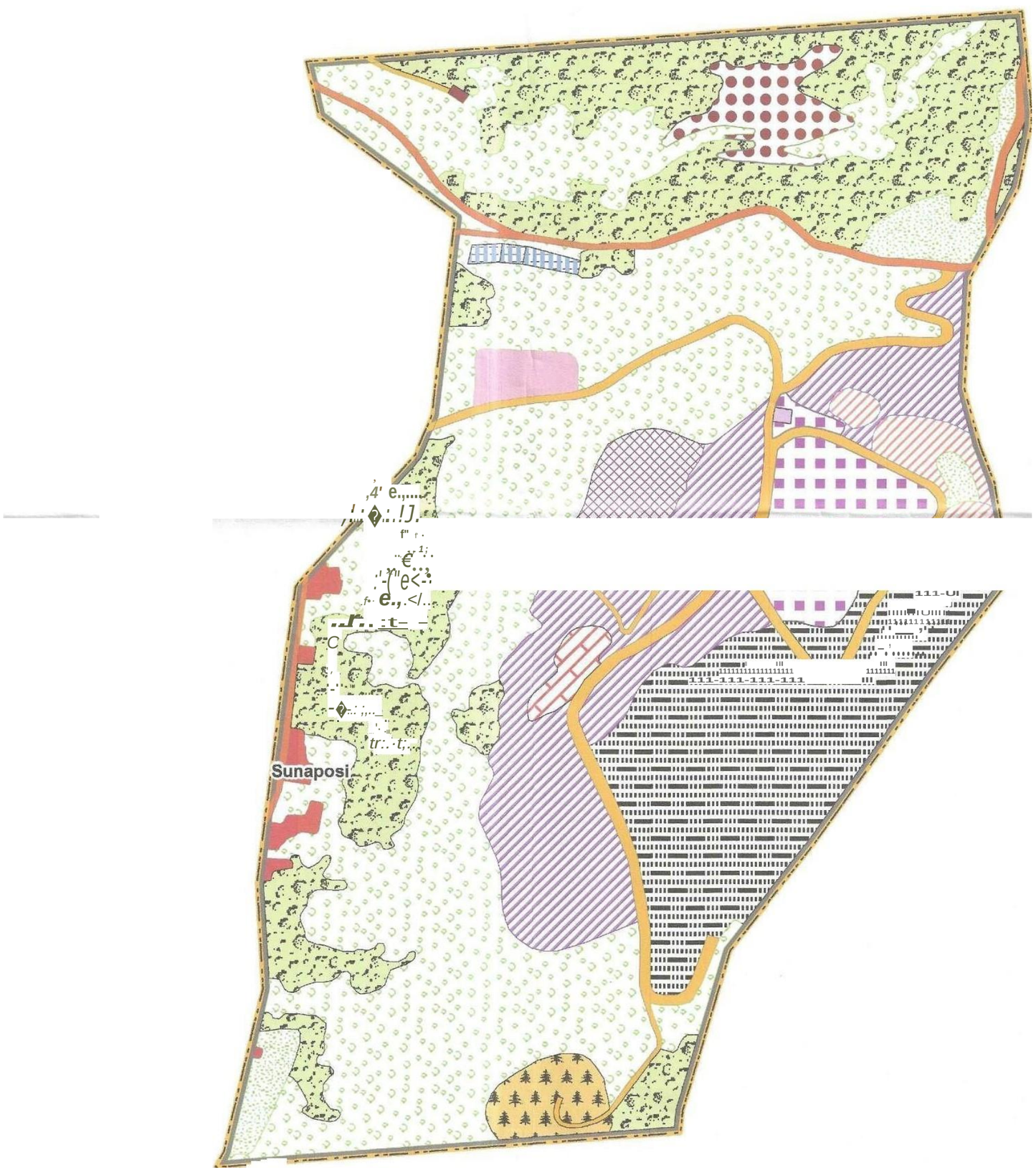
ANNEXURE X

LANDUSE / LANDCOVER MAP OF GANUA IRON ORE MINE IN SUNDERGARH DITRICT OF M/5 JSW STEEL LTD.

0 0.15 0.3 0.6 Kilometers

W. .E
S

SCALE -1 :5,000



Legend

- Habitation
- Plantation Over Dump
- Tree Clad Area
- Tree Felling Area
- Land With Scrub
- Land Without Scrub
- Mining Quarry
- Old Quarry
- Sub - Grade Dump
- OB Dump
- Stock Yard / Ore Stack
- Settling Pond
- Site Services
- Workshop
- Processing Yard
- Weigh Bridge
- Magazine
- Haul Road
- Other Road
- Safety Zone
- Mining Lease Boundary

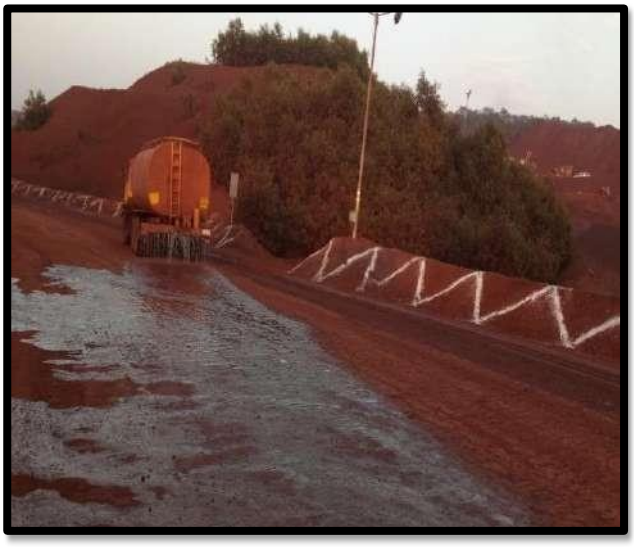
SOURCE: -

Drone Image Supplied By M/s JSW Steel Ltd.
Month -August, Year- 2021

ORSAC

ANNEXURE XI

Haul Road sprinkling



(1) Mobile water sprinkler

(2) Fixed water sprinkler

Dry Fog Arrangement at Crushing & Screening Plant

ANNEXURE XII

Retaining Wall

Garland Drain

Settling Pond

ANNEXURE XIII

Expenditure Incurred on Environmental Protection Measures for the Financial Year 2024-25		
Sl No	**Expenditure head -Particulars**	**Gonua**
1	Construction of Retaining walls	172800
2	Construction of Garland drains, desiltation of settling ponds	105000
3	Geotextile works for dump stabilization	-
5	Greenbelt development- Pit digging, plantation and maintenance	798280
6	Operation of Road sweeping machines	-
7	Operation of fixed sprinklers	-
8	Operation of mobile sprinklers	1816820
9	Use of chemical dust suppresants in sprinkling	118000
10	Online air quality monitoring	493065.36
11	Environment monitoring through NABL Accredited third party	927522
12	Installation of Sewage treatment Plant	-
13	Study conducted on hydrogeology from CGWA Accredited Agency	250000
14	Nursery Development	-
15	Landscape development	212300
16	Environmental Awareness Programmes	350000
17	Flowmeter calibration and stamping	21000
18	Drip irrigation for plantation	-
Total		5264787.36

Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

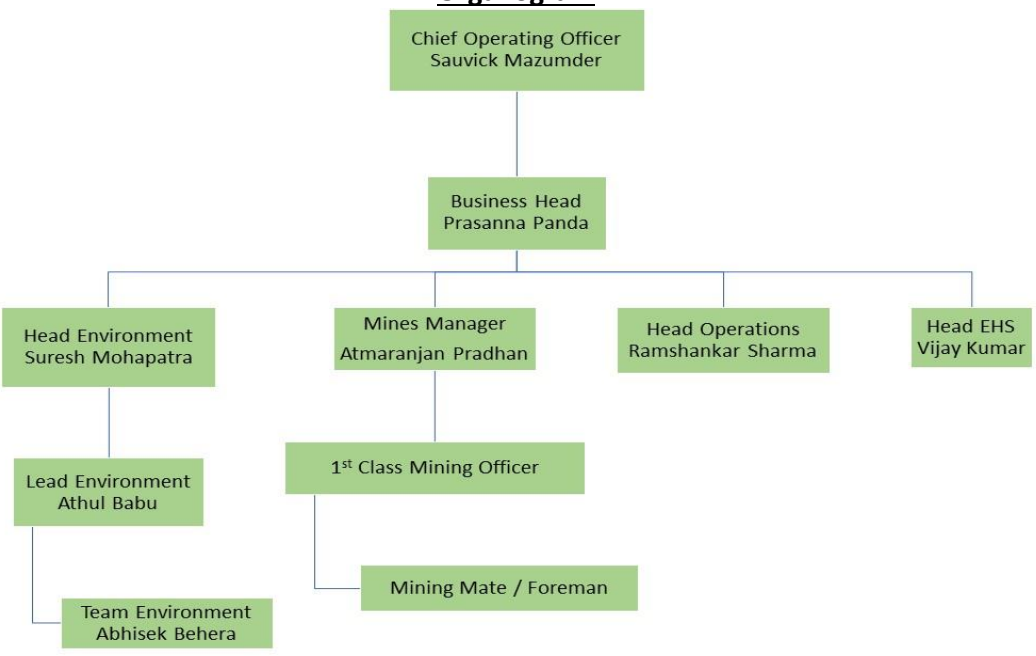
OFFICE ORDER

GONUA IRON ORE MINES
Environment Management Cell

Environment management cell (EMC) working for the management of Environmental monitoring of the mines and to act upon mitigation measures on the impacts of the production of mine with its surrounding environment so that pollution load, water and air quality can be maintained. Key functioning of EMC would be for compliance monitoring and to adhere with Environmental aspects and issues of the project during operation phase. EMC created with an objective of organizational framework for operating Environment Management System (EMS) and other functions of responsibilities for environmental betterment; and formulating Environmental Action Plans (EAPs) which specify mitigation, periodic and annual monitoring activities during project implementation and operation phase of mining.

The potential activities structured for the control mechanism by EMC, such activities are: Air pollution due to the emission of particulate matter, Gaseous pollutants and fugitive emissions; Noise pollution due to various noise generating equipment and mining activities; Wastewater generation from domestic activities; and Solid waste disposal. In order to minimize these impacts and to ensure that the environment in and around the project site as well as the neighboring population is well protected; an effective environment management plan to be developed and maintained by Environment management cell.

Organogram



ANNEXURE XV

THE NEW INDIAN EXPRESS

27.12.19

PUBLIC NOTICE

This is to inform to the public that Sri Pawan Kumar Ahluwalia is having a mining lease in Gonua Iron & Manganese Mines unde Koira Tehesil of Sundargarh District, Odisha. They have enhance f ron Ore Production from **0.36 MTPA to** 1.20 **MTPA** by the State Level Environment Impact Assessment Authority, Odisha, Bhub neswar vide their letter No. **76851/SEIAA Dt 21-12-2019.** Copy is available in the State Pollution Control Board, as well as in Forest & Environment department, Odisha, Bhubaneswar in the website www. **environmentalclearance.nic.in**

MANAGER, Mines
M/s Sri Pawan Kumar Ahluwalia