M/s DHARAMCHAND JAIN
(Mining Lessee)

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Ref. No.: DCJ/25-26/APR-25/010

DATE: 29/04/202

To,
The Member Secretary,
State Environment Impact Assessment Authority, Odisha
(Ministry of Environment, Forests & Climate Change)
Qr. No-5RF-2/1, Unit-IX, Bhubaneswar -751 022

Subject : Submission of Environmental Clearance compliances status of the stipulate conditions for iron production of 0.31 MTPA & Manganese ore 0.094 MTPA respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain th period OCT 2024 to MAR 2025-Reg.

Reference: SEIAA File No: 55644/46-NCMB1/02-2021 & Letter No. 2260/SEIAA date 19.08.2021.

Dear Sir,

With reference to the above cited subject and gazette notification, we are submittin herewith the compliance report for iron production of 0.31 MTPA & Manganese ore 0.0 MTPA) OCT 2024 to MAR 2025 in respect of M/s Dalpahar Iron and Manganese Ore Mines Sri D.C. Jain.

Thanking you.
Yours faithfully,
For M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain

Mines Manager
Dalpahar Iron & Mn. Mines
M/s. D. C. Jain
Dalpahar

Enclosed : As above & Compliance Copy with detailed analysis report and supporti photographs and monitoring data.

Copy to :

(1) The Director (S)
Eastern Regional Office, Ministry of Environment & Forest, Government of India,
A-3 Chandrasekharpur, Bhubaneswar – 751 023
(2) The Chairman,
Sate Pollution Control Board, Orissa A/118, Nilakantha nagar, Unit – VIII, Bhubaneswar – 751 012
(3) The Member Secretary, Central Ground Water Authority, A2, W3 Curzan Road Barracks, K.G. Marg, New Delhi – 110 001.

NAME OF THE PROJECT:

Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain

Mine Lease Area:

89.961 Ha.

CLEARANCE LETTER NO. & DATE:

SEIAA LETTER NO.: 2260/SEIAA DATED: 19.08.2021

PRODCUTION CAPACITY:

0.31 MTPA (Iron Ore) & 0.094 MTPA (Manganese)

Compliance reports of conditions laid down vide letter no.2260/SEIAA dated 19.08.2021 of SEIAA in respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain.

SL.NO	STIPULATED CONDITONS: **Part 'A': Specific Conditions of Clearance**	STATUS
I	This Environmental Clearance is granted with a Condition that "the Mining activity shall be restricted to 10.594 Ha (diverted land) for which forest clearance has been obtained. Mining activity over the rest of the lease area shall be taken only after obtaining forest clearance for the same.	Mining activity and allied works are being restricted to 10.594 Ha (diverted land) only for which forest clearance has been obtained as per the stipulated condition. We would like to assure that we will do the Mining activity over the rest of the lease area only after obtaining forest clearance for the same. Supporting copy of Forest Clearance (16.464 Ha.) obtained & declaration submitted to Member Secretary, OSPCB are attached as **Annexure -1 &1A.**
ii	Additional air quality monitoring station shall be installed at entry and exit of mines and haulage road, buffer zone and schools and habitations.	The additional air quality monitoring stations have already been installed at the entry and exit gate of the mines in consultation with the Regional office, OSPCB. Supporting photos of the same is attached as **Photo-1 &** details are given **in Table-01.**
iii	The mine shall implement the Pollution Control Measures and safeguards as proposed in the Environment Management Plan (EMP) of Environment Impact Assessment (EIA) report.	We have implemented the Pollution Control Measures and safeguards as proposed in the Environment Management Plan (EMP) of Environment Impact Assessment (EIA) report. Effective Water Spraying is being carried out regularly in all the mine areas say crushing & screening areas, mineral stock yards, loading areas etc. with 02 no. of 08 KL water tankers capacity. Supporting photos for the same is attached as **Photo-02.** Screen plant has already been installed with the pollution control measures such as dry fog systems. Supporting photos for the same is attached as **Photo-03.** Wheel washing facility (WWSF) at the exit gate of mineral dispatch route has been commissioned. Supporting photos for the same is attached as **Photo-04.**
iv	The proponent shall install STP of adequate capacity for treatment of domestic waste water and treated water shall be reused.	There is no residential camp available inside the ML area, however, the generated domestic waste water from office(of temporary containers) premises are treated through soak pit.
V	The proponent shall obtain permission from appropriate authority including WR Deptt, Govt. of Odisha for drawl of ground water.	We have obtained the necessary permission like NOC from CGWA for drawl of @188 KLD per day quantity of ground water to run the mines operation vide letter No. NOC/MIN/OD/2024/476/R-1/1 dated 25.02.2025

		which is valid up to 01.02.2027.However,we have made an agreement with Superintending Engineer, Baitarani Division, Salapada, WR Dept, Govt. of Odisha for drawl of ground water vide agreement No.845 dated 25.02.2025.Supporting documents for the same are attached as **Annexure – 2 & 2A.**
vi	Adequate mitigation measures shall be taken for dust suppression, environment protection in catchment area	Drilling machines equipped with wet provision. Effective Water Spraying is being carried out regularly in all the mine areas say crushing & screening areas, mineral stock yards, loading areas etc. with 02 no.s of 08 KL water tanker capacity. Supporting photos for the same is attached as **Photo-02.** Screen plant has already been installed with the pollution control measures such as dry fog systems. Supporting photos for the same is attached as **Photo-03.** Wheel washing facility (WWSF) at the exit gate of mineral dispatch route has been commissioned. Supporting photos for the same is attached as **Photo-04.** Covering of loaded trucks with tarpaulin is being implemented at side during dispatch of minerals. Supporting photos for the same is attached as **Photo-05.**
vii	The proponent shall carryout periodical health check-up of employees due to Occupational Health Hazards by occupational health expert, at least once in six months, both for employees as well as people of neighboring habitation.	The IME & MPE is being carried as per/in compliance to Mines Act 1952 & rules 1956 and amendments thereto. The IME & PME tests included PFT, X-Ray, and lung spirometer, etc.. We have carried out such periodical health check-up of 188 Nos. of persons across the employees, sub-contractors as well as people of neighboring habitation engaged in our mine operation. Supporting Documents in this regard is attached as **Annexure-3.**
Viii	The transportation of mineral shall be carried out through the covered trucks. Vehicular emissions shall be kept under control and regularly monitored. The vehicles carrying the mineral shall not be overloaded.	The mineral transportation is being carried out through the covered trucks only and we are further ensuring that the vehicles carrying the mineral shall not be overloaded. Supporting photos for the same is attached as **Photo-05.** The project is ensuring vehicle emission monitoring for all mining and other supporting vehicles/equipment. The monitoring of vehicle emission is carried out through Diesel Smoke Meter by Pollution Testing Centre. A sample HEMM emission test result is attached as **Annexure-4**.

ix	Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	Effective Water Spraying is being carried out regularly in all the mineral handling areas say crushing & screening areas, mineral stock yards, loading areas etc. with 02 no. of 08 KL water tanker capacity. Supporting photos for the same is attached as **Photo-02.** In addition to that screen plant has already been installed with the pollution control measures such as dry fog systems. Supporting photos for the same is attached as **Photo-02.** These are being properly maintained and operated by the maintenance team.
X	Garland drains with appropriate size, gradient and length shall be constructed to arrest silt and sediment flows from ore dumps and directly into the water bodies. The water so collected shall be utilized for watering the roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.	In due course of mine development garland drains with appropriate size, gradient and length are to be constructed to arrest silt and sediment flows from ore dumps and directly into the nearby water bodies. The water so collected will be utilized for watering the roads, green belt development etc.. The proposed details of retaining wall, garland drain, settling pond are enclosed as **Table-02.**
xi	Public Hearing for the project was conducted on 26th August 2011. The proponent shall comply with all the commitments made to the issues raised by the Public during the public hearing.	The project is complying all the commitments raised by the Public during the public hearing. Point wise compliance is enclosed-**as table-3**
xii	The proponent shall comply to the NEERI recommendations.	The project is complying all the NEERI recommendations.
xiii	The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.	We are abiding by the said condition. We are assuring to comply with the condition after completion of the mining activities.
I	Part 'B': Standard Conditions : **Statutory compliance:**	
i	This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.	We are abiding by the said condition and order issued by the competent authority with assurance to do due compliance from time to time.
ii	The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus	We are abiding by the said condition of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014.

	Union of India & Others before commencing the mining operations.	
iii	The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.	The State Government of Odisha is ensuring compliance with the stipulation and all compensation is being deposited by the us while undertaking mining operations in the broken up forest land.
iv	This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF & CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project,	The project is not coming near or within 10 KMs of any Eco Sensitive Zone. The NOC from NBWL is not applicable for this project.
v	This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, and subsequent amendments thereto as applicable for the project.	It is being complied. The project has obtained the Forest Clearance over the 16.464 forest area involved in the project i.e. 89.961 Ha from the MOEFCC, GOI under the under section 2 of FC Act, 1980. c F. No. 8-103/2000-FC dated 14.11.2005. Copy enclosed as **Annexure # 1.**
vi	Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board.	We have obtained the consent to Operate (CTO) order no. 2970 from the SPCB, Odisha vide Letter 6577/IND/I-CON-4882 Dated 28.03.2025 Valid up to 31.03.2026. Copy of the same is attached herewith as **Annexure-5**.
vii	The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.	The project is abiding by the said condition and is always adhered to the provisions, order issued, rules & regulations made there under and circulars issued by the competent authority as stated with due communication & compliance from time to time.
viii	The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.	The granted lease area is inside the reserve forest. There is no such private land involved in this project. Lessee has taken forest clearance for working inside the forest area. Mining Operation is being carried out on the surface right areas only and as per the approved land use plan approved in Mining Plan by IBM. Copy of the same is attached herewith as **Annexure-6**.

Compliance reports of conditions laid down vide letter no.2260/SEIAA dated 19.08.2021 of SEIAA in respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain.

ix	The Project Proponent shall follow the mitigation measures provided in MoEF & CC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29'h 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".	The granted lease area is inside the reserve forest. The mining Lease area is not a part of any habitation area or not surrounded by any habitation area. The mining operations and transportation of iron ore does not pass through any village or habitation surrounding.
x	The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of groundwater for the project.	We will obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water if required. However, we have already obtained the necessary NOC from CGWA for the drawl of 188 KLD ground water vide letter no. NOC/MIN/OD/2024/476/R-1/1 dated 25.02.2025 which is valid up to 01.02.2027. Copy of the same is attached herewith as **Annexure-2**.
xi	A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.	The Project Proponent has submitted the copies of the environmental clearance to the Heads of local bodies, Panchayats and Municipal Bodies in addition to that to the relevant offices of the Government.
xii	State Pollution Control Board shall be responsible for display of this EC letter at its Regional Office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.	It has been complied.
xiii	The Project Authorities should widely advertise about the grant of this EC letter by printing the same m at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board and web site of the Ministry of Environment, Forest and Climate Change (www.environmentclearance.nic.in). A copy of the advertisement may be forwarded to the concerned MoEF & CC Regional Office for compliance and record.	The Project Proponent advertised in the local newspapers Odia Daily (vernacular language) and The Odisha English daily newspaper within stipulated time period. Copy of the advertisement published in the English Daily, 'The Statesman' published on 23.07.2011 and copy of the advertisement published in Odia Daily (vernacular language) The Samaya Published on 23.07.2011 has already been submitted to the MoEF & CC Regional Office for compliance and record.. Copy attached-**Annexure -7.**
xiv	The Project Proponent shall inform the MoEF & CC/SEIAA, Odisha for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only	We are agreed & abiding by the said condition.

	be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.	
II	**Air quality monitoring and preservation**	
i	The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2. CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.	It is being complied and we have installed 6 nos. of AAQ station in core and buffer zone areas of the mines. The data for the same is being displayed at the mines main gate for public information. The supporting photo of the digital display board is attached as **photo-6.** The parameters being monitored are PM2.5, PM10, Sox, NOx, CO. The values reported are within the stipulated norms. Details on the air quality monitored in the project attached as **Annexure-8.** This is being monitored on a regular basis by a Third Party, M/s Green Force Associates Private Limited, a NABL accredited laboratory.
ii	Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metaled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2 s are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from ah sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.	Effective safeguards measures like dry fog system has been installed in crusher/screen plants and Water Spraying is being carried out regularly in all the mineral handling areas say crushing & screening areas, mineral stock yards, loading areas etc. with 02 no.s of 08 KL water tanker capacity for the prevention of dust generation. Supporting photos for the same is attached as **Photo-02 & 03.** These are being properly maintained and operated by the maintenance team to ensure that air pollution level conform to the standards prescribed by the MoEF & CC/ Central Pollution Control Board. . The monitoring reports on fugitive dust emission of site shows that the values are well within the stipulated norms. The monitoring report of the project is attached as **Annexure-9.** .
III	Water quality monitoring and preservation	

Compliance reports of conditions laid down vide letter no.2260/SEIAA dated 19.08.2021 of SEIAA in respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain.

i	In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF & CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.	As per the approved mining plan by the Indian Bureau of Mines, GoI the groundwater table exists at 460m RL and present mines operation is restricted at 530m RL. So, presently there is no occurrence of groundwater intersection during the reporting period. We have obtained approval from the Central Ground water Authority for extraction of fresh ground water for a total quantity of 188.00 m3/day or 68620 m3/year, which is valid up to 01.02.2027.
ii	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 maintain. The natural water bodies and or streams which are flowing in an 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. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.	Regular Monitoring of the flow rate and quality of the springs and perennial nallah in and around the mining lease is being carried out and records of the same are also maintained. The surface water quality from Suna Nadi and Baitarani River, both upstream and downstream, it is noted that the flow rate varies from 2.3 m/sec and 2.4 m/s for the rivers Baitariani and Suna Nadi in the upstream and 2.9 m/s as well as 3.0 m/s respectively in the downstream direction. Copy of the same are attached herewith as **Annexure-10 & 10A.** We are monitoring the quality and the depth of the Ground water / dug wells located within and surrounding the mine area. From the data monitored during the month of February, 2025, it is noted that the values reported from the four villages are within the range of 3.8 mtrs to 5.3 mtrs. Copy of the ground water quality and level are attached herewith as **Annexure-10,11 & 11A.**
iii	Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six- monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.	We are monitoring and maintaining the record of the ground water level and quality in and around the mining lease on regular basis by establishing a network of existing wells.. Copy of the same is attached herewith as **Annexure-11 & 11 A.** The ground water quality and depth is being monitored from dug wells located in the surrounding villages like Bichakundi, Jalahari, Joda and Khandbond. The values reported have been found to be within the permissible limits.
iv	The Project Proponent shall undertake	We are monitoring and maintaining the record

	regular monitoring of natural water course/water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis- a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC / SEIAA, Odisha. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, SEIAA, Odisha, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.	of flow rate and water quality of the natural water course/springs and perennial nallhas in and around the mining lease including the monitoring of water quality upstream and downstream of the same on regular basis(six monthly) as prescribed in the condition. The record of monitored data is being sent to the said authorities on six monthly basis through the submission of compliance reports time to time. The project has engaged a NABL accredited laboratory, M/s Green Force Associates Private Limited for the monitoring and analysis of the parameters of the same. The values mentioned in the reports found to conforms to the prescribed standards.
v	Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1 /2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change	The quality of discharged/run off water during monsoon is being monitored and analysed regularly (for COD, TDS, DO, PH and Total Suspended Solids (TSS)]. The monitoring data results are being updated in the company website and the display of results are being done in the digital display board which is present in entrance of mines main gate. The analysis report of the discharged/run off water is attached as **Annexure-12.**

	may also be referred in this regard.	
vi	The project proponent shall construct retaining wall and settling pond within the lease area. Further, check dams shall be co constructed at strategic locations in which rain water passes in rainy season. Finally, the excess superannuated after sedimentation shall be allowed to spill away through stone pitch structure to the nearby valley.	We are assuring the implementation of the necessary precautionary measures by construction of retaining wall, check dams, check weirs, settling pits at strategic locations in due course of mining development/operations through which rain water will pass in rainy season. Finally, the excess superannuated after sedimentation shall be allowed to spill away through stone pitch structure to the nearby valley. For prevention and control of soil erosion and management of silt. The proposed construction measures are explained in **table-2.** For the time being project has a small active OB dump is in progress at Block-II area of mines. The same been provided with a retaining wall at its toe followed by a garland drain. The supporting photos of the same are attached as **Photo-08.**
vii	De-silting of agricultural lands in buffer zone and beyond including nearby Nalas/rivers perennially periodically and perpetually caused due to wash up of minerals/OB/dumps shall be done as per SOP submitted. A legal affidavit shall be submitted within 6 months from the date of issue of Environmental Clearance to this effect with periodicity of de-silting.	We have undertaken to de-silt the agricultural lands in buffer zone and beyond including nearby Nallas/rivers perennially periodically and perpetually caused due to wash up of minerals/OB/dumps, if any occurs.
viii	Detail design of the existing retaining wall and the proposed for the expansion from a chartered Civil Engineer shall be submitted within 6 months from the date of issue of Environmental Clearance to ensure that no silt after wash up is escaped from the core / buffer zone of the mines.	The project is abiding to the condition and ensuring to implement the construction of guard wall, check dams, check weirs, settling pits, etc. at the toe of the dumps for prevention and control of soil erosion and management of silt in due course of mine development as stated in the condition.
ix	Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office, MoEF&CC annually.	Based on the Hydrogeology report, the project has started the construction of the Roof Top Rain water harvesting facilities within the temporary container type office structure premises along with ground water recharge wells so as to augment the ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. Other applicable recharge measures shall be developed after receiving necessary forestry and other

		clearances from the competent authorities. Supporting photos of the same is attached as **Photo-7.** A report on amount of water recharged shall be submitted to Regional Office, MoEF & CC annually through compliance report status conditions after completion of the ongoing projects.
x	Industrial waste water (workshop and waste water from the mine) should be properly collected and treated in an ETP as proposed so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.	Oil & Grease Separation unit has already been planned for the proposed workshop within the mining lease area with the provisions of sediment settling and filtering of oil and grease. The final outlet is having provision for reuse of treated water for workshop, plantation, dust suppression etc. purposes. The oil and grease collected from the unit are collected into the leak proof barrels/drums and sold to the authorized re-processors.
xi	The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF & CC and State Pollution Control Board.	The water balance/water audit will be carried out through certified third party as applicable and the recommended /suggested measures for reducing the consumption of water will be taken up accordingly.
IV	**Noise and vibration monitoring and prevention**	
i	The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.	Drilling and blasting shall be carried out as per the recommendation of CIMFR, Dhanbad. The Peak particle velocity (PPV) will be monitoring regularly through minimat instrument.
ii	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is nol disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.	We have only a small establishment at the mine site with hardly 50 people working there. The lighting system is barely sufficient for the project activities to be undertaken. Therefore, presently, it is noted that risk of animal / humans being affected due to light and sound at night is minimal. Further, we are ensuring that no lighting system should face towards the outside of mining area or towards the forest area or villages, so that there is no disturbance of the biological clock of the villagers. The project is also take necessary measure to control the noise level in night time. The noise quality, is being monitored around the surrounding villages, both during the daytime as

		well as night time, the values are found within prescribed limits. The report of the same is attached as **annexure-13**.
iii	The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The worker engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.	The Workers engaged in Operations are already been provided with earplugs/muffs, besides this acoustic enclosure for all machine operating cabins will also be provided. Noise Level monitoring is being carried out through the sound level meter by the third party and values of the reports are found well within the norms. Copy of the same is attached herewith as Annexure-13. All personnel including laborers who are working in dusty areas are provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. Supporting photo of the same is attached as **Photo-11**.
V	**Mining Plan**	
i	The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.	The project proponent is carrying the mining operation as per the approved Mining plan which is approved by IBM, GoI and if any change in the technology, we will take the approval of SEIAA. The copy of approved mining plan is attached herewith as **Annexure-6.**
ii	The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the	The date of financial closure, final approval of the project and date of land development of the project will be intimated from the Indian Bureau of Mines.. A Final mine closure plan along with a detailed corpus fund will be submitted to the Ministry of Environment & Forest, 2 years in advance of

	approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.	final mine closure for approval. There are only two mine quarries within the 10 ha of land in which all the mining operations are being carried out. So far, the project has not started reclamation of the mined out areas.
iii	The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEF & CC and its concerned Regional Office / SEIAA, Odisha.	The Project Proponent is carrying out the mining operation as per the approved Mining plan as approved by IBM, GoI and if any change required in the technology, we will take the approval of SEIAA.
VI	**Land Reclamation**	
i	The over burden (OB) generated during the mining operation shall be stacked at earmarked OB dump site(s) only and it should not be kept active for long period of time. The physical parameters of OB dumps like height, width and angle of slopes shall be governed as per approved mining plan as per the guidelines/circulars issued by D.G.M.S. w.r.t. safety in mining operations shall strictly adhere to maintain the stability of top soil/OB dumps. The top soil shall be used for land reclamation and plantation.	The overburden (OB) generated during the mining operation shall be stacked at the earmarked dump site(s) only as per the approved mining plan followed by proper terracing of OB dump so that the overall slope shall not exceed as per the approved mining plan. The dumps are to be provided with a retaining wall at the toe followed by a garland drain and settling pits. No Topsoil is being generated from mining operation as its operation is restricted to already broken up area only. If any, it will be stored at earmarked site(s) only with proper protection measures.
ii	The rejected/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of OB dumps like height, width and angle of slopes shall be governed as per approved mining plan as per the guidelines/circulars issued by D.G.M.S. w.r.t. safety in mining operations shall strictly adhere to maintain the stability of top soil/OB dumps.	The overburden (OB) generated during the mining operation has been stacked at the earmarked dump site(s) only as per the approved mining plan followed by proper terracing of OB dump so that the overall slope shall not exceed as per the approved mining plan. However, a small active OB dump is in progress at Block-II area of mines. The same been provided with a retaining wall at its toe followed by a garland drain. The supporting photos of the same are attached as **Photo-08.**

iii	The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.	The reclamation of dumps will be done in scientific manner as per the approved mining plan. Plantation and environment safeguard measures like provision of Coir mating, plantation, retaining wall, garland drainage provided at the bottom of the dump slopes.
iv	The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.	The maximum heights of the dumps are to be maintained as per the Mining plan. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, we will use the geo textiles for stabilization of the dump. The entire excavated area shall be backfilled and afforested.
v	The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF & CC, Govt. of India, Bhubaneswar as well as SEIAA, Odisha.	The dumps height shall be maintained within the height of 30 meters as per the approved mine plan. We will carry out the slope stability study in case the height of the dump increases beyond the stipulated 30 meters height and the report shall be submitted to the office of MoEF & CC, Govt. of India, Bhubaneswar as well as SEIAA, Odisha accordingly.
vi	Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and topsoil / OB / waste dumps to prevent runoff of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.	Proposed Catch drains, check dams, check weirs, settling pits, etc. of adequate and appropriate size will be constructed at the toe of the dumps for prevention and control of soil erosion and management of silt. Apart from that, the project will also construct concrete structures of RCC wall at the toe of the dump and strategic locations for prevention of the soil erosion and management of silts. The collected water is being used for the dust suppression and gardening purpose. The de-siltation of the check dams, and catch drains will be done in regular basis. The proposed action plan with time schedule for the same is attached as **table-2.** However, a small active OB dump is in progress at Block-II area of mines. The same been provided with a retaining wall at its toe followed

		by a garland drain. The supporting photos of the same are attached as **Photo-08.**
vii	Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the comers of the garland drains. (viii)	Proposed check dams of adequate and appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies will be constructed at the toe of the dumps for prevention and control of soil erosion and management of silt to prevent storm run-off and sediment flow into adjoining water bodies as prescribed in the condition. The proposed action plan with time schedule for the same is attached as **table-2.**
viii	The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.	No Topsoil is being generated from mining operation as its operation is restricted to already broken up area only, if any, it will be stored at earmarked site(s) only with proper protection measures.
ix	The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth o1 fodder, flora, fauna etc.	The project proponent would like to assure that the implementation of the said condition will be carried out as per the approved mining plan.
VII	**Transportation**	
i	No Transportation of the minerals shall be allowed in case of roads passing through transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be	The transportation of the mineral is being carried out in the specified road and the road is being maintained by the project proponent up to main road. The mineral is being transported through road as permitted by District Administration, Keonjhar. The pollution due to transportation load on the environment is being effectively controlled by engaging dry fog systems, water sprinkling tankers regularly. Vehicular emissions are being kept under control by regularly maintaining the vehicles. Project ensures to obtain Pollution

	allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.	Under Control (PUC) certificate for all the vehicles which run in the mines from authorized pollution testing centres. We are also ensuring that all the trucks used for the mineral transportation are covered with tarpaulin to avoid the spillage of ore. Supporting photos and annexures are attached as photo-2, 3 & 5 and **annexure-4**.
ii	The Main haulage road within the mine lease should be provided with a permanent water arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.	After the establishment of the main haulage road in mine development activity permanent sprinkling arrangement systems of 500 meters will be arranged as applicable. The applicable air pollution control systems like dry fog system, etc. already been installed in our Crusher and screen plant areas to avoid the air borne dust.
iii	Traffic management shall be done as per recommendation of Traffic Management Study Report.	Traffic management is being followed as per the Traffic Management Study Report prepared by CRRI.
iv	The Project Proponent shall provide parking plaza for the heavy vehicles within the lease area as recommendation of NEERI.	The Project Proponent has earmarked the parking plaza for the heavy vehicles within the lease area as recommended by NEERI. The supporting parking plaza plan is attached as **Photo-09**
VIII	**Green Belt Development**	
i	The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC	Safety zone plantation over 7.5 meters all along the lease boundary is already occupied with pre-existing plantation of native saplings. As per the last plan period it was planned for plantation of 2900 saplings over 1.49 Ha within safety zone area .As the total area is coming under forest .Hence, we have done the gap filling plantation of 1900 no.s over the vacant space available, safety zone area and core

	granted by the Ministry irrespective of the stipulation made in approved mine plan.	drilling left out land @0.44 Ha. area during the reporting period 2024-25.Beside this project has distributed 1000 no.s of native as well as fruit bearing saplings among the villagers in around the mine lease area. The above said saplings were procured from nearby nursery developed by the Forest Department. Supporting photos of the same are attached as **Photo-10**.
ii	The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.	As per the prescribed standard in the condition we will do the needful plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species as per the approved mining plan and in consultation with the State Forest Department/ Agriculture Department and the authorities as applicable.
iii	The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease, The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.	No grazing land is involved in the project as all of the mine project area belongs to the Forest land. Presently, the stipulation is not applicable.
iv	The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.	The project has prepared the Wild Life Conservation Plan in consultation with DFO for conservation and protection of endangered flora and fauna and the same got approved by PCCF (Wildlife) & Chief Wild Life Warden, Bhubaneswar with an estimated cost of Rs.250.254 Lakhs which includes Rs.64.374 Lakhs towards activities to be implemented within the ML area and Rs.185.520 Lakhs towards activities to be implemented by the DFO in the project impact area. Copy attached-

		Annexure -14.
V	And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.	We have prepared the Wildlife Conservation Plan and has deposited the money with the State Forest Department. The implementation is to be carried out by the State Forest and Wildlife authorities. Progress made with this regard to the implementation of the plan shall be reported to the Regional Office along with the Half yearly compliance reports by the project proponents.
IX	**Public hearing and human health issues**	
i	The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.	We have appointed an Occupational Health Specialist for Initial Medical Examination. During the reporting period Periodical Medical Examination of the 188 no.s workers, employees who are engaged in the process of mining & are likely to expose to dust to observe & any contractions due to exposure to dust. This is being carried as per in compliance to Mines Act 1952 & rules 1956 and amendments thereto. The various tests include PFT, X-Ray, and lung spirometry, etc. Based on the above tests, there is none of the above-mentioned employees was found by Silicosis/ Pneumoconiosis or occupational health-related diseases during the examination. A status report on the same is attached as **Annexure-03.**
ii	A commitment in form of an undertaking for periodical occupational health checkup of the employee and the local people shall be done through an occupational health expert as per the detailed action plan submitted with the proposal within 6 months from the date of issue of Environmental Clearance.	The project proponent appointed and Occupational Health Specialist for Initial Medical Examination. The periodical Medical Examination of 188 no.s of workers/employees as well as for the local villagers those are engaged in the project was being undertaken during the reporting period. Supporting document for the same is attached as **Annexure-03.**
iii	The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine	The Project Proponent is committed towards 'Zero Harm' from their mining activities and is being carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and appropriate control measures are being taken for protect the

	appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.	health and wellbeing of workers and nearby community. The project is maintaining accurate and systematic records of the HRA.
iv	The proponent shall carry out occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria	Initial Medical Examination & Periodical Medical Examination of the 188 no.s employees, who are engaged in the process of mining & are likely exposed to dust to observe any contractions due to exposure to dust. This was carried as per in compliance to Mines Act 1952 & rules 1956 and amendments thereto. The various tests include PFT, X-Ray, and lung spirometry, etc.. Supporting document for the same is attached **as Annexure-03**.

	(17 xl4 inches and of good quality).	
v	The proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1),Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.	It is being complied through the Initial Medical Examination & Periodical Medical Examination time to time as per the guidelines.
vi	The project proponent shall ensure that personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.	The personnel's working at dusty areas is provided with proper PPEs i.e. nose masks etc. The working force is also being trained with safety and health norms as per Mines and DGMS guidelines. The year-wise distribution report of the PPEs to the workers for the FY-2024-25 is attached **as Photo-11 & Annexure-15.**
vii	Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic	The is no such housing being made for the labours within the lease area however the project will provided a temporary housing facility for the work force by facilitating fuel for cooking, septic tank followed by soak pit for domestic effluents (STP-Ultra Filtration Unit), drinking water, medical health care etc. outside the ML area.

	waste water should be treated with STP in order to avoid contamination of underground water.	
Viii	The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.	We are committed to comply all the issues raised during the public hearing in all aspects. The Status Report on implementation submitted to the concerned Regional Office of the Ministry along with District Administration. Detail of the status report is explained in **table-03.**
Ix	Issues raised and recorded in proceedings of public hearing w.r.t. environment/pollution / CER shall be complied by the Mining Authority as per OM F.No.22-65/2017-IA.III, dated 30.09.2020 of MoEF&CC, Govt. of India.	We are committed to comply all the issues raised during the public hearing in all aspects and it is being complied in due course of time. The Status Report on implementation of Action Plan submitted to the concerned Regional Office of the Ministry along with District Administration. Detail of the status report is explained in **table-03.**
X	**Corporate Environment Responsibility(CER)**	
i	The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M dated 30.09.2020 or as proposed by SEAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.	We are abiding by the provisions made in the CER and a time bound action plan is to be submitted and the same for its implementation in phased manner. The project has earmarked the funds for implementation of environment protection measures and the same is being used for environmental protection measures. Copy attached-**Annexure -16**
ii	Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF & CC and its concerned Regional Office / SEIAA, Odisha.	The project has earmarked the funds for implementation of environment protection measures separately and the same is being used for environmental protection measures only. The Year wise expenditure of such funds reported to the MoEF & CC and its concerned Regional Office / SEIAA, Odisha on regular basis. Copy attached-**Annexure -16.**
XI	Miscellaneous	
	The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring	The Digital procession of the entire lease area using remote sensing technique has already been carried out engaging the third party named

Compliance reports of conditions laid down vide letter no.2260/SEIAA dated 19.08.2021 of SEIAA in respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain.

	land use pattern and submit a report to concerned Regional Office of the MoEF&CC.	M/s Geosensing Information Pvt. Ltd., Chennai .We are herewith communicating the same to SEIAA, Odisha and MOEF & CC as **Annexure-17.**
ii	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.	The Project is in working condition, therefore, the date of financial closure, final approval of the project and date of land development of the project will be intimated.
iii	The project proponent shall establish a solar power plant with 30KVA capacity within the lease area as proposed.	The project has established and commissioned a solar power plant with 30KVA capacity Within the lease area. Supporting Photo of the same is attached as **Photo-12.**
Iv	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MoEF & CC & its concerned Regional Office, SEIAA, Odisha, Central Pollution Control Board and State Pollution Control Board.	The project has submitted the half yearly compliance report to SEIAA, Odisha, uploaded in Parivesh portal as well as the Integrated Regional Office (IRO) of MOEF&CC, Bhubaneswar. Copy attached-**Table-4.**
V	A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the conlrol of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.	A separate Environmental management cell with suitable qualified personnel is already set-up under the control of a Senior Executive, who is directly reporting to the Head of the Organization Cell of our mines. The detail of the same with name and designation of the members of the Environment Management Cell is attached as **Annexure -18.**
vi	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.	We are committed to comply all the specific conditions as recommended by CSIR-NEERI on carrying capacity study.
Vii	The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.	We are committed and abiding by the said condition.
Viii	The project proponent shall augment infrastructure on drinking water, health care and education in nearby villages as per time bound action plan submitted.	We are abiding by the said condition. The details on budgetary provisions made for the purpose, to be implemented in phase wise, are attached as **Annexure-19.**
ix	The project proponent shall obtain permission from DGMS under 106(2b) to carry out blasting operation within the lease area.	The project proponent has obtained the 106(2)(b) permission from the DGMS Chaibasa Region. Copy attached as **Annexure -20.**

Compliance reports of conditions laid down vide letter no.2260/SEIAA dated 19.08.2021 of SEIAA in respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain.

x	The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.	We will extend all our cooperation during any such inspections by the Authority.
xi	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.	We are abiding by the said condition.

Supporting Photos:

Photo-1 Ambient Air Quality monitoring station at entry and exit gate.

Compliance reports of conditions laid down vide letter no.2260/SEIAA dated 19.08.2021 of SEIAA in respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain.

<u>Photo</u>-2 Mobile Water sprinkler tanker for dust suppression.

Compliance reports of conditions laid down vide letter no.2260/SEIAA dated 19.08.2021 of SEIAA in respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain.

Photo-3 Mobile screen Plant Equipped with dry fog system for dust suppression

Photo-4 Wheel Wash Facility near exit gat

October 2024 to March 2025

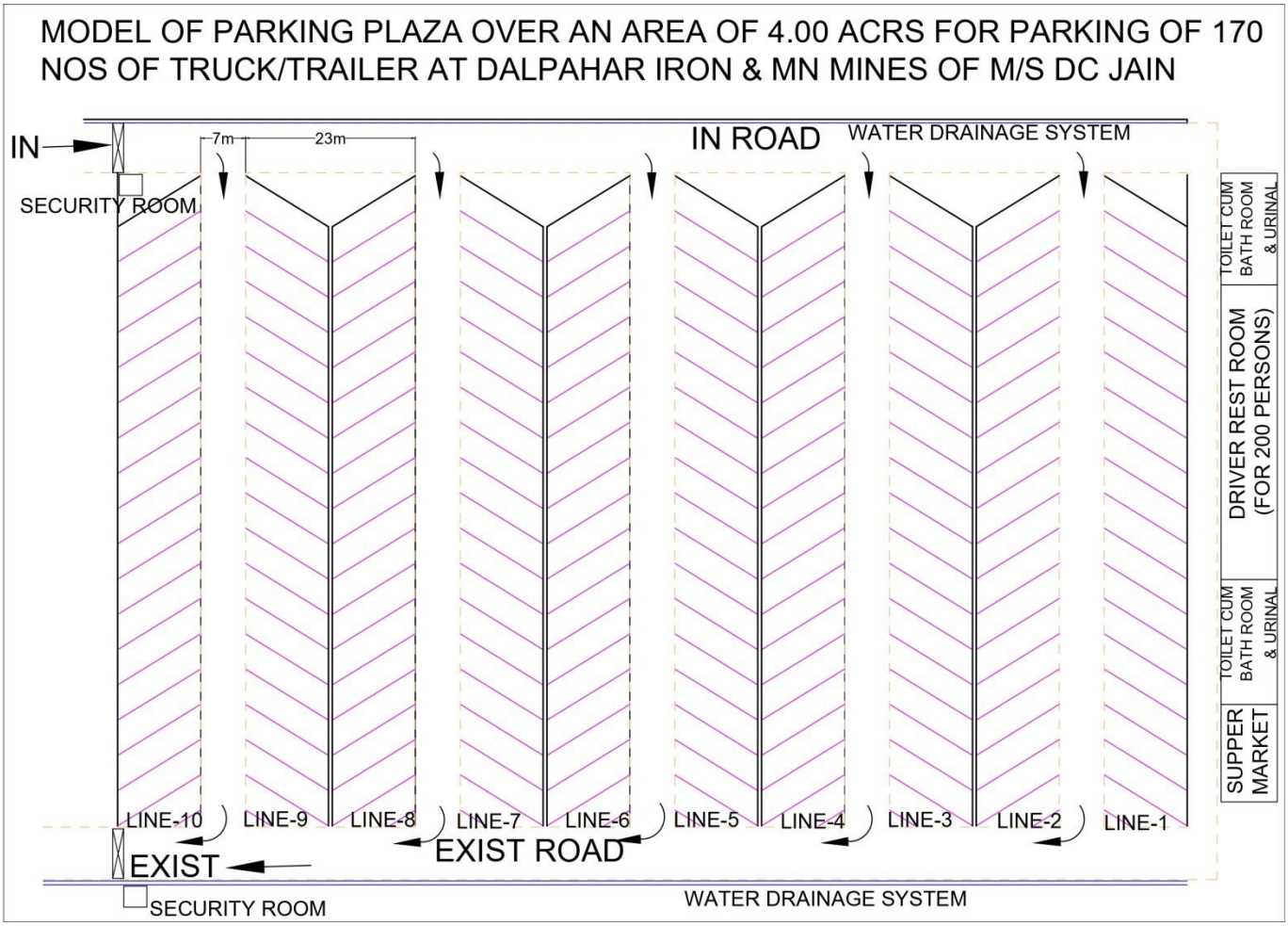
Photo-5 Trucks carrying ore from mines covered with Tarpaulin

Photo-6 Digital Display board for public information

Photo-7 ROOF TOP RAINWATER HARVESTING PROJECT AT OFFICE CAMPUS

Photo-8 Retaining wall with garland drain at the toe of OB dump at Block II area

<u>Photo</u>-9 Proposed Parking Plaza lay out and Location inside ML area



Compliance reports of conditions laid down vide letter no.2260/SEIAA dated 19.08.2021 of SEIAA in respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain.

Photo-10 Plantation activity in core & buffer zone and saplings distribution to peripheral villagers

Compliance reports of conditions laid down vide letter no.2260/SEIAA dated 19.08.2021 of SEIAA in respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain.

October 2024 to March 2025

Compliance reports of conditions laid down vide letter no.2260/SEIAA dated 19.08.2021 of SEIAA in respect of M/s Dalpahar Iron and Manganese Ore Mines of Sri D.C. Jain.

Photo-11 Employees with PPEs while working at site

Photo-12 Solar power plant with 30KVA capacity Within the lease area.

F. No. 8-103/2000-FC
Government of India
Ministry of Environment & Forests
(F.C. Division)

Paryavaran Bhawan,
C.G.O. Complex, Lodhi Road,
New Delhi-110003

Dated : 14th November 2005

To

The Secretary (Forests),
Government of Orissa,
Bhubaneshwar.

Sub: Diversion of 16.464 ha of forest land (originally proposed 97.084 ha) for mining of iron and manganese ore in favour of M/s D. C. Jain in Keonjhar District, Orissa.

Sir,

Kindly refer to your letter No. 10F(Cons) 71/2000/14739/F&E dated 14.09.2000 and subsequent letter No. 10F(Cons) 65/2002/18564/F&E dated 27.10.2005 whereunder the above proposal was forwarded to this office seeking prior approval of the Central Government in accordance with the Section-2 of the Forest (Conservation) Act, 1980.

2. After careful consideration of the proposal of the State Government, the Central Government hereby conveys its approval under Section-2 of the Forest (Conservation) Act, 1980 for diversion of 16.464 ha of forest land for mining of iron and manganese ore in favour of M/s D. C. Jain in Keonjhar District, Orissa, subject to the fulfilment of following conditions :-

(i) Legal status of the forest land shall remain unchanged.
(ii) Compensatory Afforestation shall be raised over equivalent non-forest land, and shall be maintained at the project cost.
(iii) The non-forest land identified for Compensatory Afforestation shall be declared as Reserved Forest/Protected Forest under Indian Forest Act, 1927.
(iv) Penal Compensatory Afforestation shall be raised over degraded forest land double in extent to the area used in violation, i.e., over 32.928 ha, and shall be maintained at the project cost.
(v) The mining lease period under the Forest (Conservation) Act, 1980 shall be co-terminus with the current lease granted under MMRD Act, 1957.
(vi) The State Government should transfer amount of NPV and other funds to Compensatory Afforestation Fund Management and Planning Authority (CAMPA), which has already been constituted and notified by the Central Government on 23.04.2004. Till such time, the CAMPA intimates the Head of Accounts for deposition of funds, the funds will be maintained in the form of fixed deposits in the name of Nodal Officer or concerned Divisional Forest Officer of the State Government. The funds realized towards the NPV shall not be utilized by the State Government.
(vii) RCC pillars of 4 feet height shall be erected to demarcate the area by the user agency at the project cost and will be marked with forward and back bearings.

(viii) The user agency shall raise, fence and maintain a safety zone around the mining area and will also raise and maintain the plantation over an area one and half times in extent of the safety zone at the project cost.

(ix) The concurrent reclamation plan shall be executed by the user agency from the very 1st year and an annual report shall be sent to the Nodal Officer and the RCCF, Bhubaneshwar. If it is found from the annual report that the concurrent reclamation plan is not being adhered to by the user agency, the mining activities shall remain suspended till such time, the annual programme is completed for that year.

(x) The top soil shall be protected at the project cost.

(xi) Trees shall be felled only when it becomes necessary and that too under strict supervision of State Forest Department, and at the cost of the project.

(xii) No labour camps shall be established on the forest land.

(xiii) All necessary measures should be taken by the user agency to protect the environment.

(xiv) Sufficient firewood shall be provided by the user agency to the labourers at the project cost after purchase from the State Forest Department/Forest Development Corporation.

(xv) The user agency shall ensure that there should be no damage to the available wildlife.

(xvi) The forest land shall not be used for any purpose other than that specified in the proposal.

(xvii) The forest land thus diverted shall be non-transferable. Whenever the forest land is not required, it shall be surrendered to the State Forest Department under intimation to this Ministry.

Yours faithfully,

(Pankaj Asthana)
Assistant Inspector General of Forests

Copy to:

1. The Principal Chief Conservator of Forests, Government of Orissa, Bhubaneshwar.
2. The Nodal Officer, Forest Department, Government of Orissa, Bhubaneshwar.
3. The Chief Conservator of Forests (Central), Regional Office, Bhopal.
4. User Agency.
5. Guard file.
6. Monitoring Cell.

(Pankaj Asthana)
Assistant Inspector General of Forests

M/s DHARAMCHAND JAIN
(Mining Lessee)

"DHARAM VILLA"
12-A, Mahatma Gandhi Marg,
Ring Road, Lajpat Nagar-IV,
New Delhi-110024
Phone: 011-41642414
Email: mdmpl@rediffmail.com
avinjain999@gmail.com

Ref. No: DCJ/DIMM/23-24/005

Date: 03.04.2024

To,

Member Secretary,

State Pollution Control Board,

A/118, Nilakantha Nagar, Unit- VIII,

Bhubaneswar, Odisha – 751012

Sub: Declaration of working within the diverted forest land of 10.594 Ha in our Dalpahar Iron and Manganese Mines of Sri DC Jain.

Ref: Consent Order issue vide letter no. 4296/IND-I-CON, Dated. 27.03.2024

Sir,

With reference to the subject cited above, the Special Condition no. 5 of Consent order states that, *"The Mining Operation shall be restricted to the diverted forest land 10.594 Ha for which FC is available. Mining operation over rest area shall be taken up after obtaining FC for the same".*

We, hereby declare that our Mining operations will be restricted within the diverted forest land of 10.594 Ha only for which FC is available. The operations will not be carried out outside this diverted area. After obtaining FC for the remaining area, the same shall be taken up for Mining operation.

Thanking You,

Yours Faithfully,

For Dalpahar Iron and Manganese Mines

DALPAHAR IRON & MANGANESE MINES
D.C. JAIN

Authorized Signatory

CC: Regional Officer, SPCB, Keonjhar, Odisha

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन विभाग,
केंद्रीय भूमि जल प्राधिकरण
GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
CENTRAL GROUND WATER AUTHORITY

सत्यमेव जयते

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

PROJECT NAME **DALPAHAR IRON AND MN ORE MINES OF SRI D C JAIN**		
PROJECT ADDRESS **12-A, MAHATMA GANDHI MARG (RING ROAD), LAJPAT NAGAR IV, NEW DELHI, 110024**		PIN CODE **758035**
STATE **ODISHA**	DISTRICT **KENDUJHAR**	TOWN/BLOCK **JODA**
COMMUNICATION ADDRESS **DALPAHAR IRON AND MANGANESE MINES**		
ADDRESS OF CGWB REGIONAL OFFICE **Bhujal Bhawan, Khandagiri Square, NH-5,Bhubaneshwar 751001, Odisha**		

1. NOC NO. **NOC/MIN/OD/2024/476/R-1/1**	2. DATE OF ISSUANCE **25/02/2025**
3. APPLICATION NO. **MIN/OD/2024/476/R-1**	4. APPLICATION TYPE **Mining**
5. PROJECT STATUS **Existing Project**	6. NOC TYPE **Renew**
7. VALID FROM **02/02/2025**	8. VALID UP TO **01/02/2027**
9. WATER QUALITY TYPE **Fresh Water**	10. AREA TYPE CATEGORY **Safe** (GWRE - **2024**)

11. Ground Water Abstraction Permitted

GW Abstraction		Dewatering		Total	
m^3/day	m^3/year	m^3/day	m^3/year	m^3/day	m^3/year
188.00	68620.00	**0.00**	0.00	**188.00**	68620.00

12. Details of Ground Water Abstraction /Dewatering Structures

EXISTING 1					PROPOSED 2					TOTAL 3				
DW	DCB	BW	TW	Pu	DW	DCB	BW	TW	Pu	DW	DCB	BW	TW	Pu
0	0	1	0	0	0	0	2	0	0	0	0	3	0	0

*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; Pu Pumps;

13. No. Of Mine Pits

EXISTING	PROPOSED	TOTAL
0	0	0

Validity of this NOC shall be subject to mandatory compliance of the following conditions:
Phase I (within 30 days)

1. Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) is mandatory for all users seeking No Objection Certificate. Intimation regarding their installation shall be updated in Self-Compliance Module (Phase-I) of BhuNeer APP portal within 30 days of grant of No Objection Certificate.

Phase II (after 11 months)

1. Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.
2. Construction of purpose-built observation wells (piezometers) for ground water level monitoring is 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 notified guidelines.
3. Proponents shall monitor quality of ground water from all 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 analyzed in NABL accredited or Govt. approved 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.
4. In case of mining projects, additional key wells in core as well as buffer zones of the mine 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).
5. In case of mining project, the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.

All the above-mentioned mandatory compliance conditions are to be filed online in BHUNEER APP (https://cgwa-bhuneer.mowr.gov.in)timely.

General Conditions:

1. 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 and amendment thereto, if any.
2. 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.
3. 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.
4. 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).
5. The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction as permitted in NOC.
6. Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws.
7. Proponents, who have installed/constructed rain water harvesting and artificial recharge structures shall continue to regularly maintain the water conservation structures.
8. 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.
9. 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), no recharge measures shall be taken up by such firms inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm. The firm need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the notified guidelines
10. Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.
11. 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.
12. 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.
13. This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.
14. 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.
15. 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 6 months of taking over possession of the premises.
16. 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.
17. In case of infrastructure projects, paved/parking area must be covered with interlocking/perforate tiles or other suitable measures to ensure groundwater infiltration/harvesting.

18. 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.
19. 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 Governmen rules shall be taken.
20. Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent. In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines

Agt. No- 845 Dt- 25/02/2025

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N 919442

FORM K

(See Rule 23-A (2) (e) & Rule -26)

AGREEMENT FOR SUPPLY OF WATER FOR THE PURPOSE OF INDUSTRIAL (MINING) USE

This agreement is made on the 25th. day of February 2025 between **Dalpahar Iron & Mn. Ore Mines of Sri. D.C.Jain**, located at Village (S) - Dalpahar, Bichakundi, Joda in the district of Keonjhar, Odisha with its works office located At: Dalpahar village, P.O.: Joda, Dist.: Keonjhar, Odisha, Pin: 758034 represented by its **Mines Manager, Shri. Utpal jana** (hereinafter called the **"Applicant"**) of the **"First part"(1)**

And

Shri. Kamakshya Prasad Sahu (Foreman-Mines) of Dalpahar Iron & Mn. Ore Mines of Sri. D.C.Jain, located at Village (S) - Dalpahar, Bichakundi, Joda, in the district of Keonjhar, Odisha with its works office located At: Dalpahar, Bichakundi, Joda in the district of Keonjhar, Odisha with its works office located At: Dalpahar village, P.O.: Joda, Dist.: Keonjhar, Odisha, Pin: 758034 (hereinafter referred to as the **"Sureties"**) of the **"Second Part"** (2)

And

The Governor of Odisha represented by, **Superintending Engineer, Baitarani Division, Salapada, Dist - Keonjhar** which expression unless repugnant to the context shall include his successors and assigns (hereinafter call **"The Government"**) of the **"Third part"**. Whereas the applicant has made an application for supply of water from Own Bore Wells, within the lease premises for the period as mentioned in the schedule.

Superintending Engineer
Baitarani Irrigation Division
Salapada
25.2.25

Mines Manager
Dalpahar Iron & Mn. Mines
M/s. D. C. Jain
Dalpahar

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And whereas the Government has agreed to supply of water for the purpose specified in the schedule.

SCHEDULE

Purpose for which water will be supplied	Volume of water, if any	Period of supply	The place of which it will be supplied
1	2	3	4
Dust suppression, domestic, plantation & service centre, etc. under Dalpahar iron & Mn. Mines	**Average of 95 CUM/DAY** @ Rs. 12.92	**06 Months** w.e.f 13.2.2025	***Site-specific service centre, haulage dust suppression, etc. related water storage tanks, etc. within the mine lease area.***

NOW THIS AGREEMENT witness as follows:

1. In pursuance of the said agreement and in consideration of supply of water to be made to the applicant hereby covenant with the Government as follows:

a. The applicant shall pay Rs. 12.92/-per CUM at the rate as prescribed by the Govt. from time to time to the Superintending Engineer, Baitarani Division, Salapada.

b. The applicant shall make suitable arrangement to take the water from the Government water sources at which it will be supplied.

c. The applicant shall not use the water supplied to him for any purpose other than that which is specified in the Schedule.

Superintending Engineer
Baitarani Irrigation Division
Salapada
25.2.25

Mines Manager
Dalpahar Iron & Mn. Mines
M/s. D. C. Jain
Dalpahar

2. If the sum aforesaid or any part thereof is not paid on or before the date specified in this agreement, it shall become payable at once (unless the Government sanctions for special reason as extension of time) and the applicant shall be liable to pay the same with interest at the rate of 2% per menses from the date of default. All amount due to the Govt under terms of these presents shall if not paid in time, be recoverable as a public demand under the Orissa Public Demands recovery Act, 1962.

3.

(i) The applicant shall be liable for criminal and civil action if be drawl of water rights of any third party are affected and shall indemnify the Government against all claims for damage preferred by person or persons affected by the permission granted.

(ii) The applicant shall not without prior permission in writing from the Government lay pipeline on Government or communal lands. If the pipelines have to pass through the Government lands permission of the Government for this shall be taken separately which may be granted subject to the protection of rights of Government or community, as the case may be.

(iii) The applicant shall not draw or lift water more than the quantity mentioned in the requisition or order and not exceeding the volume mentioned in the schedule except with the prior approval of the Government.

(iv) The permission granted shall not be deemed to exempt the applicant from liability to payment of water charges lawfully assessable at the rate as may be prescribed by the government from time to time.

(v) Government reserves the right to suspend or cancel the permission in case of violation of any of the covenants.

4. The applicant at his own cost install a Flow meter or a suitable measuring device for measurement of water drawn or lifted by him from the Government water source / irrigation works and an intimation to this effect shall be forwarded to the Superintending Engineer for assessment of water rate on such drawl and lifting. The Superintending Engineer shall visit the location of drawl or lifting of water, verify the quantities of water drawn or lifted by the applicant and ensure such control as may be necessary for administering the drawl or lifting of water. Assessment of water rate shall be made as per the quantity of water drawn, or allocated whichever is higher. In case of any defect or non-functioning of the flow meter , the license shall bring the fact to the notice of the concerned Superintending Engineer forthwith and take appropriate steps to remove the defects in the meter or for replacement thereof within a period of two months and in such cases the fees shall be changed on the quantity of water allocated for the said period of three months or till the defect in the meter is removed or the meter is replaced, as the case may be, whichever is earlier, and where the license fails to

Superintending Engineer
Baitarani Irrigation Division
Salapada
25.2.25

Mines Manager
Dalpahar Iron & Mn. Mines
M/s. D. C. Jain
Dalpahar

bring the defect or non-functioning of the meter to the notice of the Superintending Engineer or fails to remove the defects in the meter or to replace the same a the case may be within the stipulated period the agreement shall be liable to cancellation and thereafter the water supply shall be stopped.

5. The applicant shall construct full proof effluent discharge plant before commissioning of the project. For proper test of such effluent there shall be computerized testing system and the applicant shall give details of effluent discharged in the natural source (in river and nala).

6. For construction of head works and control mechanism i.e. Intake well, pumps house and other related facilities **Dalpahar Iron & Mn. Ore Mines** will get the land leased in their favour through IDCO as it is done in respect of any other government land required by the industry. IDCO will make available of land on long term lease to **Dalpahar Iron & Mn. Ore Mines** the continuance of the lease agreement will be subject to the condition that the industry shall pay water charges as per prevailing water rate and all other dues of Government and IDCO form time to time.

7. **Dalpahar Iron & Mn. Ore Mines** would be required to pay advance water charges for six months in shape of Bank Draft in favour of Superintending Engineer concerned or in shape of bank draft in favour of Superintending Engineer concerned or in shape of FDR duly discharged by the company as non - interest bearing security deposit to be adjusted against defaults. The water charges will be paid by the company one month in advance.

8. In case of water supply for the Dalpahar Iron & Mn. Mines is to be met from a common source through a sharing mechanism, such common infrastructure for drawl of water will be constructed, maintained and operated either by IDCO or special purpose vehicle (SPV) after taking due clearance from IDCO. Water will be supplied to **Dalpahar Iron & Mn. Ore Mines** by IDCO/SPV and they would also be liable for payment of water rate to the government and will in turn have arrangements as similar therein as clauses (6) and (7) of this agreement.

9. They will not disturb the normal flow of water so that riparian rights in the downstream will be affected and the company shall have no claim on the account.

10. The drawl mechanism for raw water and disposal system of effluent to be established by the industry without disturbing existing eco system and environmental set up.

11. The Rehabilitation & Resettlement action plan/ welfare action plan, if so required will be prepared in conformity with the current Orissa Rehabilitation & Resettlement policy and executed by the company at its own cost under the supervision of water Resources Department and the Collector of the District Keonjhar.

25/2/25
Superintending Engineer
Baitarani Irrigation Division
Salapada
25.2.25

Mines Manager
Dalpahar Iron & Mn. Mines
M/s. D. C. Jain
Dalpahar

12. **Dalpahar Iron & Mn. Ore Mines** should not claim a matter or right to get the desired quantity of water during non-monsoon and lean period to meet their full industrial use and the company has to make adequate storage provision for a minimum period or two months in their own land for supply of water to their plant during such period.

13. The safety design of all the structures lies fully on the company.

14. In case of any dispute/ interpretation required, the decision of the Government in water Resources Department shall be final.

15. The allocation of water will automatically lapse if the company does not use the water for the purpose applied for within 3 years of allotment.

16. This agreement shall be valid for a particular period of 06 months subject to the renewal of the same by the Superintending Engineer. For renewal of the agreement, the concerned drawee has to apply minimum three months before the expiry of the agreement.

17. If the industry is found to be drawing water unauthorized before signing the agreement / installation of flow meter, the concerned Superintending Engineer, will charge a penal rate of six times the normal rate as provided in Schedule II and III.

18. Government shall be at liberty to review the water allocation unilaterally in case of exigencies.

19. The Superintending engineer or his authorized representative reserves the right to inspect all installations of drawal mechanism during and after construction including intake structure, flow meter and treatment plant.

20. **Dalpahar Iron & Mn. Ore Mines** will have to show clearly in water management plan as to what storage facility the company will create for the lean season and to what extent and how the water is going to be recycled which shall be part of the project report of the unit.

21. **Dalpahar Iron & Mn. Ore Mines** may engage at their own cost consultant(s), experienced in the field, to take up filed investigations, prepare design and drawing to set up the water supply scheme for drawing water from the river for their proposed plant. The actual work will start after approval of the scheme by the CE &

Superintending Engineer
Baitarani Irrigation Division
Salanada
25.2.25

Mines Manager
Dalpahar Iron & Mn. Mines
M/s. D. C. Jain
Dalpahar

BM of Water Resources Department who can inspect the work during the construction.

22. The exact place for lifting will be decided in consultation with the authority of Water Resources Department.

23. Department of Water Resources shall not be held responsible for non-availability of water due to dry season, disruption, repair and maintenance of the canal/reservoir.

24. The agreement to be executed by the industry / commercial establishment with local authority / Superintending Engineer must be approved by the DOWR before drawal of water.

In witness where of the parties here to have put their hands and seals the day & year first above written.

In the presence of Witness

1. Subhasmita Parija

2. Md. Imtiyazul Quadri

Signature of the Applicant.

Managing Director
Dalpahar Iron & Mn. Mines
M/s. D. C. Jain
Dalpahar

Signature of the Surety

SIGNATURE OF THE SUPERINTENDING ENGINEER
Acting in the Premises for and on behalf of the Government of Orissa.

Superintending Engineer
Baitarani Irrigation Division
Sukinda

25.2.25

HI-TECH DIAGNOSTIC CENTRE

BANSPANI ROAD, OPPOSITE MAA MANGALA TEMPLE
JODA- 758034, DIST. : KEONJHAR, ODISHA

Date: 20.04.25

Certificate

As per Occupational Health Surveillance Programme of **Dalpahar Iron &Mn. Mines , (Owner Shri D.C.JAIN) Dalpahar** of having a lease area over an extent of 89.961 Ha, routine **Periodical Medical Examination and Initial Medical Examination** of the persons engaged in the process of mining, crushing and who are likely to be exposed to dust and noise was conducted for **188** numbers of employees.

The employees were subjected to various tests including Lung Spirometery and High resolution X- Ray of the chest to observe the condition and functioning of lungs due to exposure of dust.

On the basis of the above tests, none of the employees was found to have any of the occupational health diseases like Siderosis, Silicosis and Pneumoconiosis etc.

We have also enclosed the list of persons who have undergone the above test during the period 01-10-2024 to 31-03-2025.as per the norms.

20/4/2025

Dr. Rabi Narayan Kar, M.B.B.S.
Reg.No. – 6220

Dr. Rabi Narayan Kar
M.B.B.S.
Regd. No - 6220
Sr. Medical Officer
Thriveni Earthmovers (P) Ltd.

HI-TECH DIAGNOSTIC CENTRE

BANSPANI ROAD, OPPOSITE MAA MANGALA TEMPLE

JODA- 758034, DIST. : KEONJHAR, ODISHA

List Of Emplloyees Under gone IME/PME for the Period from OCT 24 to MAR 25 (DALPHAR)

SL NO	EMP.ID	DATE	CERTIFICATE No	EMPLOYEE NAME	TYPE	AGE
1	10004155	21-11-24	T-12183	SANJIT KUMAR	PME	53
2	10000535	09-12-24	T-12209	SAILENDRA BAL	PME	55
3	10019359	04-01-25	T-12242	BIDYADHAR SETHY	IME	39
4	10012518	22-10-24	T-12141	DHABELSWAR BEHERA	PME	30
5	10011008	19-12-24	T-12231	JITENDRA KUMAR MAHANTA	PME	50
6	10018990	09-10-24	T-12131	SONU KUMAR	IME	27
7	10019496	26-10-24	T-12146	JAYANTA SETHY	PME	35
8	DCJAVK50	27-11-24	A-15199	ALBINUS MINZ	IME	43
9	SJNHSM09	10-10-24	A-14920	GOBINDA CHANDRA KISHAN	IME	29
10	DCJBIS20	23-10-24	A-14982	SHANBAJ	IME	23
11	DCJBIS21	23-10-24	A-14983	YUDHISTHIRA MAHAKUD	IME	20
12	DCJBIS22	26-10-24	A-15000	HERMAN DUNGDUNG	IME	49
13	DCJBIS23	26-10-24	A-15001	MERAJ ANSARI	IME	21
14	DCJBIS24	05-11-24	A-15045	MAKABUL ALI	IME	41
15	DCJBIS31	25-11-24	A-15162	SAMIR PATRA	IME	20
16	DCJBIS25	25-11-24	A-15161	ARUN KUMAR PATRA	IME	41
17	DCJBIS26	04-12-24	A-15263	SUKRA JAMUDA	IME	40
18	DCJBIS27	29-11-24	A-15208	KARUNA GOPE	IME	43
19	DCJBIS28	27-11-24	A-15200	SUKRA PATRA	IME	41
20	DCJBIS34	25-11-24	A-15163	BHARAT PATRA	IME	41
21	DCJOSP22	05-11-24	A-15044	BHUBANANANDA SINGH	IME	19
22	DCJOSP24	08-11-24	A-15068	MAHANTY TIRIA	IME	29
23	DCJOSP25	09-11-24	A-15074	HIMANSHU SEKHAR GIRI	IME	26
24	DCJOSP26	09-11-24	A-15076	SATYABRATA LENKA	IME	31
25	DCJOSP34	09-12-24	A-15321	MANAS KUMAR NAYAK	IME	21
26	DCJBSM07	04-12-24	A-15261	AJAYA KUMAR NAYAK	IME	61
27	DCJBSM05	03-12-24	A-15258	GOPINATH PATRA	IME	21
28	DCJBSM08	04-12-24	A-15262	RAMACHANDRA MUNDA	IME	56
29	DCJBSM15	11-12-24	A-15344	AGASTI LAGURI	IME	25
30	DCJBSM03	02-12-24	A-15238	RANJAN SETHY	IME	43
31	DCJBSM04	02-12-24	A-15237	DINABANDHU BHATTA	IME	53
32	DCJBSM09	05-12-24	A-15271	SUKRA ORAM	IME	51
33	DCJBSM10	05-12-24	A-15272	KARTIK LOHAR	IME	21
34	DCJBSM13	07-12-24	A-15309	RATIKANTA NAIK	IME	34
35	DCJBSM14	07-12-24	A-15308	SATYA PRAGYAN NATH	IME	25
36	DCJBSM17	12-12-24	A-15430	PINTU ORAM	IME	41

37	DCJBS154	22-01-25	A-15761	ANIL CHAUDHARY	IME	50
38	DCJBS164	06-02-25	A-15890	BINAY KUMAR PARIDA	IME	49
39	DCJBS165	02-01-25	A-15861	LULU MAHANTA	IME	26
40	DCJBS172	12-03-25	A-16062	HARISH CHANDRA MAHAKUD	IME	32
41	DCJBS173	12-03-25	A-16061	SANDIP PURTY	IME	28
42	DCJBSM16	11-12-24	A-15345	RAMACHANDRA MUNDA	IME	23
43	DCJBSM20	10-12-24	A-15332	RAJ TIRIYA	IME	21
44	DCJBSM23	13-12-24	A-15364	RUPAMANI PATRA	IME	34
45	DCJBSM24	13-12-24	A-15365	ARCHANA PATRA	IME	31
46	DCJBSM25	13-12-24	A-15366	SAKUNTALA MUNDA	IME	28
47	DCJBSM26	18-12-24	A-15460	RAIBARI PATRA	IME	35
48	DCJBSM27	13-12-24	A-15374	BHANU PATRA	IME	40
49	DCJBSM28	13-12-24	A-15367	SUBHADRA PATRA	IME	21
50	DCJBSM29	14-12-24	A-15383	KAIRI MUNDA	IME	45
51	DCJBSM31	13-12-24	A-15363	JAYANTI GOPE	IME	46
52	DCJBSM32	13-12-24	A-15370	SANJULATA NAIK	IME	38
53	DCJBSM33	13-12-24	A-15371	BASANTI NAIK	IME	31
54	DCJBSM34	13-12-24	A-15369	PUJA NAIK	IME	30
55	DCJBSM35	13-12-24	A-15376	TARUN NAIK	IME	42
56	DCJBSM36	13-12-24	A-15372	GITA PATRA	IME	40
57	DCJBSM37	14-12-24	A-15384	SUKURMUNIN SANDIL	IME	30
58	DCJBSM38	26-12-24	A-15550	RASMITA MUNDA (A)	IME	22
59	DCJBSM39	14-12-24	A-15387	NIRASHA MUNDA	IME	29
60	DCJBSM40	16-12-24	A-15412	GURUBARI MUNDA	IME	39
61	DCJBSM41	14-12-24	A-15380	KESHAB CHAMPIA	IME	30
62	DCJBSM42	14-12-24	A-15381	LACHMAN CHAMPIA	IME	42
63	DCJBSM43	14-12-24	A-15382	SUKURA MUNDA	IME	33
64	DCJBSM44	14-12-24	A-15389	RAIBARI SOY	IME	24
65	DCJBSM45	14-12-24	A-15390	SURU CHAMPIA	IME	29
66	DCJBSM46	14-12-24	A-15391	PHULASWARI LOHAR	IME	20
67	DCJBSM47	13-01-25	A-15680	MANJU MUNDA (A)	IME	43
68	DCJBSM48	17-12-24	A-15433	SASMITA SUNDHI	IME	28
69	DCJBSM49	14-12-24	A-15393	BINITA SUNDHI	IME	25
70	DCJBSM50	16-12-24	A-15420	CHITARANJAN ORAM	IME	42
71	DCJBSM51	16-12-24	A-15418	BIMALA ORAM	IME	39
72	DCJBSM53	16-12-24	A-15415	MALATI ORAM	IME	42
73	DCJBSM54	16-12-24	A-15410	RESMA MUNDA	IME	37
74	DCJBSM55	16-12-24	A-15411	KUMARI MAHAKUD	IME	29
75	DCJBSM56	17-12-24	A-15438	SIMA ORAM	IME	31
76	DCJBSM58	16-12-24	A-15409	SABITA KHALKA	IME	32
77	DCJBSM60	16-12-24	A-15413	BASANTI KHAN	IME	34
78	DCJBSM62	17-12-24	A-15431	MANOJ KHAN	IME	35
79	DCJBSM63	17-12-24	A-15439	KUNI MUNDA	IME	53
80	DCJBSM64	17-12-24	A-15436	MINU KARUA	IME	28
81	DCJBSM65	17-12-24	A-15437	SUNITA MUNDA	IME	39
82	DCJBSM66	16-12-24	A-15407	BINITA NAGBANSI	IME	31
83	DCJBSM67	16-12-24	A-15419	KARTTIKA NAGBANSI	IME	31

84	DCJBSM68	18-12-24	A-15464	MINA MUNDA	IME	26
85	DCJBSM69	18-12-24	A-15465	PINKI PURTTI	IME	22
86	DCJBSM70	18-12-24	A-15468	SULOCHANA MUNDA	IME	37
87	DCJBSM71	18-12-24	A-15459	BASANTI TOPONO	IME	28
88	DCJBSM72	09-01-25	A-15653	DASAMI NAIK	IME	38
89	DCJBSM73	14-12-24	A-15385	TIKI MAHAKUD	IME	27
90	DCJBSM74	18-12-24	A-15463	BANDANA ORAM	IME	48
91	DCJBSM75	06-02-25	A-15892	GURUCHARAN MUNDA	IME	40
92	DCJBSM76	05-02-25	A-15878	BIJAY MUNDA	IME	27
93	DCJBSM79	06-02-25	A-15893	MANGAL MUNDA	IME	29
94	DCJBSM80	17-12-24	A-15440	MINU KHATUN	IME	24
95	DCJBSM81	17-12-24	A-15432	GOVINDO NAGRI	IME	52
96	DCJBSM82	17-12-24	A-15434	CHAMANU MUNDA	IME	41
97	DCJBSM83	16-12-24	A-15408	GEETANJALI MUNDA	IME	26
98	DCJBSM84	17-12-24	A-15435	BOBI CHAMPIA	IME	40
99	DCJBSM85	18-12-24	A-15467	PINKY MAHAKUD	IME	49
100	DCJBSM86	18-12-24	A-15457	RINKU MUNDA	IME	24
101	DCJBSM87	13-12-24	A-15373	CHANDRABATI JAMUDA	IME	36
102	DCJBSM89	26-12-24	A-15548	NIKITA KUJUR	IME	20
103	DCJBSM90	28-01-25	A-15810	VIKRAM SINKU	IME	34
104	DCJBSM91	26-12-24	A-15551	DILIP MUNDA	IME	31
105	DCJBSM92	28-01-25	A-15811	KANDA MUNDA	IME	41
106	DCJBSM93	26-12-24	A-15552	BIRSA MUNDA	IME	48
107	DCJBSM94	30-01-25	A-15829	SITA SAMANTA	IME	51
108	DCJBSM95	30-01-25	A-15830	CHAMI HEMBRAM	IME	30
109	DCJBSM96	18-12-24	A-15466	PADMINI LAGURI	IME	22
110	DCJBSM97	06-01-25	A-15629	PUNAM MUNDA (A)	IME	30
111	DCJBSM98	06-01-25	A-15630	PUNAM MUNDA (B)	IME	45
112	DCJBSM99	26-12-24	A-15549	ARATI ORAM	IME	24
113	DCJBS100	06-01-25	A-15628	RITA KUJUR	IME	41
114	DCJBS101	06-01-25	A-15626	GANGI HEMBRAM	IME	43
115	DCJBS102	06-01-25	A-15627	SUSILA NAIK	IME	42
116	DCJBS103	09-01-25	A-15655	ANTHONI MUNDA	IME	35
117	DCJBS104	23-01-25	A-15777	DILIP NAYAK	IME	49
118	DCJBS105	13-01-25	A-15681	BHANU NAIK	IME	27
119	DCJBS106	03-01-25	A-15844	SANICHARI ORAM	IME	34
120	DCJBS107	23-01-25	A-15776	JEMA NAIK	IME	47
121	DCJBS108	03-01-25	A-15843	SUKUMAR SURI	IME	43
122	DCJBS109	23-01-25	A-15774	GITA MUNDA	IME	41
123	DCJBS110	09-01-25	A-15651	SUKUMARI MUNDA	IME	36
124	DCJBS111	30-01-25	A-15832	SRIMATI MAHAKUD	IME	33
125	DCJBS112	30-01-25	A-15831	RENU KARUA	IME	30
126	DCJBS113	17-01-25	A-15711	SARAT MUDI	IME	33
127	DCJBS114	09-01-25	A-15652	RAIMANI MAHAKUD	IME	34
128	DCJBS117	20-01-25	A-15735	LAXMI HEMBRAM	IME	28
129	DCJBS118	06-01-25	A-15631	BELAMATI SETHY	IME	21
130	DCJBS120	20-01-25	A-15734	SABITRI ORAM	IME	40

131	DCJBS121	17-01-25	A-15707	GITA LOHAR	IME	29
132	DCJBS122	06-01-25	A-15632	DRUPATI MAHAKUD	IME	32
133	DCJBS123	17-01-25	A-15709	SANJAY PURTI	IME	49
134	DCJBS124	09-01-25	A-15654	JANA NAG	IME	33
135	DCJBS125	18-01-25	A-15719	LUSI MUNDA	IME	36
136	DCJBS126	06-01-25	A-15625	SURESH CHANDRA LOHAR	IME	42
137	DCJBS127	17-01-25	A-15708	LAXMI ORAM	IME	43
138	DCJBS129	18-01-25	A-15722	KUNTI PATRA (A)	IME	48
139	DCJBS130	18-01-25	A-15720	CHANDAMANI MAHANTA	IME	33
140	DCJBS131	18-01-25	A-15723	DASAMA MUNDA	IME	39
141	DCJBS132	03-01-25	A-15845	PADMA MAHAKUD	IME	23
142	DCJBS133	18-01-25	A-15721	PARVATI KARUA	IME	29
143	DCJBS134	20-01-25	A-15736	GURUBARI KARUA	IME	44
144	DCJBS135	30-01-25	A-15828	PARVATI ORAM	IME	31
145	DCJBS136	18-12-24	A-15458	SALIM KHAN	IME	23
146	DCJBS137	06-01-25	A-15633	DHANUMATI DAS	IME	25
147	DCJBS138	17-01-25	A-15710	KABIRAJ MAHANTA	IME	32
148	DCJBS139	20-01-25	A-15732	SUMAN MUNDA	IME	18
149	DCJBS141	18-12-24	A-15461	RANJITA GOPE	IME	32
150	DCJBS142	16-12-24	A-15414	SAKUNTALA DARAI	IME	55
151	DCJBS143	20-01-25	A-15733	SIMI PATRA	IME	25
152	DCJBS144	09-01-25	A-15656	SAMA MUNDA	IME	37
153	DCJBS145	28-01-25	A-15808	JAYANTI SAMAD	IME	34
154	DCJBS146	28-01-25	A-15812	RAMA SAMAD	IME	39
155	DCJBS147	14-12-24	A-15392	MANJU MUNDA (B)	IME	39
156	DCJBS149	28-01-25	A-15809	BELA MUDI	IME	24
157	DCJBS150	18-12-24	A-15462	SUNITA GOPE	IME	34
158	DCJBS151	05-02-25	A-15874	PUJA GOPE	IME	34
159	DCJBS152	05-02-25	A-15875	SAMBARI ORAM	IME	25
160	DCJBS153	05-02-25	A-15876	JASODA ORAM	IME	33
161	DCJBS155	22-01-25	A-15759	KUNTI PATRA (B)	IME	43
162	DCJBS156	22-01-25	A-15758	BIJAYANTI PATRA	IME	24
163	DCJBS157	22-01-25	A-15762	RAMA CHANDRA MUNDA	IME	29
164	DCJBS158	22-01-25	A-15760	JASHODA NAIK	IME	40
165	DCJBS159	23-01-25	A-15773	BASANTI PATRA	IME	33
166	DCJBS160	23-01-25	A-15775	BHARATI PATRA	IME	33
167	DCJBS161	04-01-25	A-15858	SAROJINI NAYAK	IME	22
168	DCJBS162	03-01-25	A-15859	NIRUPAMA PATRA	IME	39
169	DCJBS163	03-01-25	A-15862	MANIKA PATRA	IME	20
170	DCJBS167	05-02-25	A-15877	ROHIT NAG	IME	22
171	DCJBS170	04-01-25	A-15860	REBATI PATRA	IME	25
172	DCJBS171	06-02-25	A-15894	GOPINATHA PATRA	IME	24
173	DCJBSM88	14-12-24	A-15386	RASMITA MUNDA	IME	39
174	DCJBS168	03-01-25	A-15847	BIRJU CHANDRA PATRA	IME	23
175	DCJBS116	13-01-25	A-15683	JOGEN MUNDA	IME	37
176	DCJBSM12	06-12-24	A-15293	ROHIT GOPE	IME	20
177	DCJBS140	13-12-24	A-15375	BINOD MUNDA	IME	43

178		06-02-25	A-15891	NANAK PATRA	IME	33
179	DCJBSM40	14-12-24	A-15388	GURUBARI MUNDA	IME	39
180	DCJBSM06	03-12-24	A-15259	BALARAM PATRA	IME	63
181	DCJBSM57	16-12-24	A-15416	PURNIMA MUNDA	IME	30
182	DCJBSM61	16-12-24	A-15417	SANIA BEGUM	IME	31
183	DCJBS128	03-01-25	A-15846	NIKITA NAGA	IME	26
184		10-12-24	A-15333	HABIL NAG	IME	24
185	DCJBSM11	06-12-24	A-15294	MANGULU TUTI	IME	20
186		13-12-24	A-15368	RAM PATRA	IME	27
187		14-12-24	A-15379	VINOD KUMAR SINKU	IME	26
188	DCJBS119	13-01-25	A-15684	SANCHU ORAM	IME	56

29/4/2025

Dr. Rabi Narayan Kar
M.B.B.S.
Regd. No - 6220
Sr. Medical Officer
Thriveni Earthmovers (P) Ltd.

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**04/04/2025**
Time	:	**11:11:38 AM**
Validity upto	:	**03/04/2026**

OD09AA4321

Certificate SL. No.	:	OR90100040022197
Registration No.	:	OD09AA4321
Date of Registration	:	17/Jul/2023
Month & Year of Manufacturing	:	July-2023
Valid Mobile Number	:	******5567
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.28

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

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. 6577 / **IND-I-CON-4882** Dt. 28.03.2025 /

CONSENT ORDER NO. 2970.

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. 5962989, dated 08-01-2025 and online reply dated 21-02-2025.

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: **DALPAHAR IRON AND MANGANESE MINE OF SRI D.C. JAIN (89.961 ha)**

Name of the Occupier & Designation: **SRI AVIN JAIN, POWER OF ATTORNEY HOLDER**

Address: **AT: DALPAHAR, PO: BICHHAKUNDI, JODA, DIST: KEONJHAR, PIN-758034.**

This consent order is valid for the period from **01.04.2025 to 31.03.2026.**

Details of Products Manufactured

Sl. No	Product	Quantity
01.	*Iron Ore*	*0.31 MTPA*
02	*Manganese Ore*	*0.094 MTPA*

Details of Mineral Handling Plants /Units

01	*Operation of Mobile Crushing Plant of capacity 1 x 100 TPH*
02	*Operation of Mobile Screening Plant of capacity 1 x 200 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.	234	5.5-9.0	100 (Rainy day)	-	250	10
					50 (Non-Rainy day)			

B. Fugitive Emission Standards

Particulate Matter	1200 µg/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 leacnate 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, Sulphur Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monoxide and monitor the same once in a day/week/fortnight/month. The data collected shall be maintained in a register and a monthly extract be furnished to the Board.

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

4. The applicant shall forward the following information to the Member Secretary, State Pollution Control Board, Odisha, Bhubaneswar regularly.

   a) Report of analysis of stack monitoring, ambient air quality monitoring meteorological data as required every month.
   b) Progress on planting of trees quarterly.

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

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

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

7. Non-compliance with effluent limitations

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

      i) Causes of non-compliance

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

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

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

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

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

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

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

9. The addition of various treatment chemicals should be done only with mechanical 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. The Consent Order is subject to execution of supplementary mine lease deed from State Government.
3. This consent order is subject to permission from Steel and Mines Department, Government of Odisha for continuing of mining operation.
4. Mining operation is subject to all other statutory clearances required under relevant Acts & Rules, as applicable.
5. The mining operation shall be restricted to the diverted forest land 10.594 ha for which FC is available. Mining operation over rest area shall be taken up after obtaining FC for the same.
6. Drills shall either be operated with dust extractors or equipped with water injection system to minimize dust generation in the work environment.
7. Controlled blasting shall be practiced to minimize generation of dust and fly rocks.
8. 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.
9. Dust suppression measures preferably dry fog system shall be provided at all appropriate places of mineral handling plants (crusher & screening plant). Loading the unloading areas including all the transfer points shall also have efficient dust suppression arrangements (dry fog system). These shall be properly maintained and operated.
10. Fog cannon of at least 40 m throw shall be deployed at fine ore stock piles and loading areas in the mine.
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 at the locations of the stations as decided in consultation with the Regional Officer, State Pollution Control Board based

on the metrological data, topographical features and environmentally and ecologically sensitive targets.

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 top soil 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. 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].
21. 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 run off water from the existing runoff management system shall meet the prescribed standards as stated in Part A of the consent order.
22. 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.
23. Garland drain and sedimentation pit shall be de-silted after monsoon or as and when required.
24. 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.

25. 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

26. 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.
27. 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.
28. 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.
29. Adequate measures shall be taken for control of noise levels below the following limits.

    (06.00 AM -0 9.00 PM) - Leq 75 dB(A)
    (09.00 PM - 06.00 AM) - Leq 70 dB(A)

30. Ambient air quality monitoring data, noise monitoring data and water / wastewater quality monitoring data shall be electronically displayed at the entry point of the mine or at a suitable location of the mine.
31. The height of the stack connected to DG sets of capacity more than 800 KW (1000 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.
32. The height of the stack connected to DG set of capacity less than and upto 800 KW (1000 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.
33. 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 and letter No.7146, dated 10.05.2024, in this regard.

34. Plantation of trees shall be undertaken in the colony/ township, over top soil dumps, OB dumps, along the side of haul road and in other areas of the mines not being utilized for mining activities. The mine shall take up avenue plantation and plantation in nearby village areas in consultation with DFO/Horticulture Department. The annual plantation details shall be submitted to the Board by 30th April every year.
35. 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.
36. 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.

28/3/2025

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ODISHA

TO,

THE POWER OF ATTORNEY HOLDER,
DALPAHAR IRON AND MANGANESE MINES OF SRI D. C. JAIN.
12-A, MAHATMA GANDHI MARG, RING ROAD,
LAJPAT NAGAR-IV, NEW DELHI-110024.

Memo No._____/Dt._____/

Copy forwarded to :

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

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

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENT 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 5^0C above the receiving water temperature	--	--	Shall not exceed 5^0C 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 (20^0C) 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.	1.0	1.0	--	2.0
17.	Cardmium (as Cd) mg/1 max.	2.0	1.0	--	2.0

Sl. No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Costal Areas
		(a)	(b)	(c)	(d)
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 - Indophenol Blue Method
		24 Hours**	400	400	
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.

By e-mail

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
OFFICE OF THE REGIONAL CONTROLLER OF MINES, BHUBANESHWAR

No. MRMP-2273/2023-24-IBM_RO_BBS Dt : 27/05/2024

Shri/M/s. Avin Jain,
Plot No.-500/2702 GADAMAHAVIR LANE, UNIT-36, GARAGE CHOWK Bhubaneswar

DALPAHAR (30ORI08063) (38533102)

Sub : Approval of the Modification of Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) in respect of Dalpahar Iron & Manganese Mine over an area of 89.961 Ha of Shri. Avin Jain situated in Village-Baitarani, Tahsil- Bameberi, District- Keonjhar of Odisha State

Sir,

In exercise of the powers conferred by clause (b) of sub-section (2) of section 5 of the Mines & Minerals (Development & Regulation) Act, 1957 and clause (3) of Rule 17 of the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 read with Government of India Order No. S.O. 1857(E) dated 18th May, 2016; I hereby **Approve** the Modification of Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) in respect of Dalpahar Iron & Manganese Mine over an area of 89.961 ha of Shri. Avin Jain situated in Village-Baitarani, Tahsil- Bameberi, District- Keonjhar of Odisha State. This approval is subject to the following conditions:-

A--General Conditions:

(1)The Modification of Review of Mining Plan is approved without prejudice to any other law applicable to the mine area from time to time whether made by the Central Government, State Government or any other authority and without prejudice to any order or direction from any court of competent jurisdiction.

(2)That this approval of aforesaid Modification of Review of Mining Plan does not in any way imply the approval of the Government in terms of any other provision of Mines & Minerals (Development & Regulation) Act, 1957, or the Mineral Concession Rules, 2016 and any other laws including Forest (Conservation) Act, 1980, Environment (Protection) Act, 1986 or the rules made there under and other relevant statutes, order and guidelines as may be applicable to the lease area from time to time

(3)The provisions of the Mines Act, 1952 and Rules and Regulations made thereunder including submission of notices of opening, appointment of manager and other statutory officials as required by the Mines Act, 1952 shall be complied with.

(4)The execution of Modification of Review of Mining Plan shall be subjected to vacations of prohibitory orders / notices, if any.

(5) If anything is found to be concealed as required by the Mines Act in the contents of the mining plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.

(6)This approval for proposed mining operations and associated activities is restricted to the mining lease area only from this date. The mining lease area is as shown on the statutory plans by the Lessee/QP/Applicant and Indian Bureau of Mines has not undertaken any survey verification of mining lease boundary on the ground.

(7)Your attention is invited to the Supreme Court interim order in W.P. (C) No. 202 dated 12.12.1996 for compliance. The approval of above said Mining Plan is therefore, issued without prejudice to and is subject to the said directions of the Supreme Court as applicable.

(8) This department does not undertake any responsibility regarding correctness of the boundaries of the lease area shown on the ground.

(9) At any stage, if it is observed that the information furnished in the document are incorrect or misrepresent facts, the approval of the

document shall be revoked with immediate effect.

(10) If this approval conflicts with any other law or court order/ Direction under any statute, it shall be revoked immediately.

(11) It shall be mandatory for the project proponent, abstracting ground water, to obtain “No Objection Certificate” from Central Ground Water Authority or, the concerned State/Union Territory Ground Water Authority, as the case may be.

(12) Lessee shall ensure grassing/re-grassing of worked out mining lease area in accordance with Hon’ble Supreme Court Order dated 8/1/2020.

(13) This approval has been given for mining proposal for the year 2024-25 to 2025-26 and is subject to the validity of lease period.

(14) The next Review of Mining Plan for the subsequent period of five years shall become due 180 days before expiry of this document proposal period.

(15) The validity period of the financial assurance shall be renewed before the expiry of the same and should be submitted to this office on or before 01.04.2026.

(16) The feasibility report considered for reserve/resource estimation as per UNFC is submitted by the lessee which is prepared based on the current data as reported and it may not establish the future economic viability of mining project, which may be affected by the market dynamics and other related factors.

DALPAHAR (30ORI08063) (38533102)

(17) Disposal of OB/Waste as minor mineral shall be carried out only after obtaining permission under Rule 12(1)(k) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

(18) The augmented production quantity is subject to further Environment Clearance. A Copy of such Environment Clearance received should be submitted to Regional Office, Indian Bureau of Mines, Bhubaneshwar within one month of receipt of such clearance.

Yours Faithfully

(ARUN KUMAR)

Regional Controller of Mines,

Indian Bureau of Mines, Bhubaneswar

Copy for information to:-

(1).The Controller of Mines (EZ), Indian Bureau of Mines, CP-13, Sector V, Salt Lake City, Kolkata- 700 091, Email. zo.kol@ibm.gov.in

(2).The Director of Mines, Directorate of Mines, Government of Odisha, Heads of the Department Building, Bhubaneswar– 751001, Email- directorateofmines@orissaminerals.gov.in

(3).Qualified Person. E-mail: pmohapatra_07@yahoo.com

STATE POLLUTION CONTROL BOARD, ORISSA

(Department of Forest & Environment, Govt. of Orissa)
Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII, Bhubaneswar-751012
Fax: 2562822 / 2560955, Tel.: 2564033 / 2563924, EPABX: 2561908 / 2562847
E-mail: paribesh1@dataone.in Website: www.ospcboard.org

No. 11974-IND-II-PH-473 Date: 21-07-2011

NOTICE

It is brought to notice of all concerned that Sri Avin Jain have proposed to have Envirdnmental Assessment for Dalpahar Iron and Manganese Mines for enhancement of production of Iron Ore from 708 TPA to 0.31 MTPA and Manganese up to 0.094 MTPA over an area of 101.171 Ha. At - Champua, Joda In the District of Keonjhar to obtain Environmental Clearance from the Ministry of Environment & Forests, Government of India, the proponent has applied to the State Pollution Control Board, Orissa, Bhubaneswar for a public hearing.

By virtue of the notification of Ministry of Environment & Forests, Govt. of India, No. S.O. 1533 (E) dtd. 14-09-2006, the Board has been authorized to conduct environmental public hearing and as such invites suggestions, views, comments and objections on matters relating to environmental aspects of the proposed project from all the persons including bona fide residents, environmental groups and other located at the proposed site / sites of displacement / sites likely to be affected.

For the above purpose a person will only mean:

A. Any person who is likely to be affected by the Grant of Environmental Clearance.
B. Any person who owns his control over the project with respect to which an application has been submitted for Environmental Clearance.
C. Any association of persons whether incorporated or likely to be affected by the project and / or functioning in the field of environment.
D. Any local authority within any part of whose limit is within the neighbourhood wherein the project is proposed to be located.

Persons as above who desire to submit their views, comments, objections etc. relevant to the project may do so in writing within 30 days from the date of publication of this notice addressing the same to the Member Secretary, Orissa Pollution Control Board through Registered Post. Besides this, persons interested to submit their views, relevant to the proposed project in writing or orally may also do so during the public hearing to be conducted at **Dalpahar Village, Keonjhar on 26-08-2011 at 11-00 a.m.**

Persons desirous of participating in the public hearing may go through the Environmental Impact Assessment / EMP of the said project which will be available at the following offices. Copy of the Executive Summary both in English & Oriya also available in the following offices and the same can also be downloaded from the Website www.ospcboard.org free of cost.

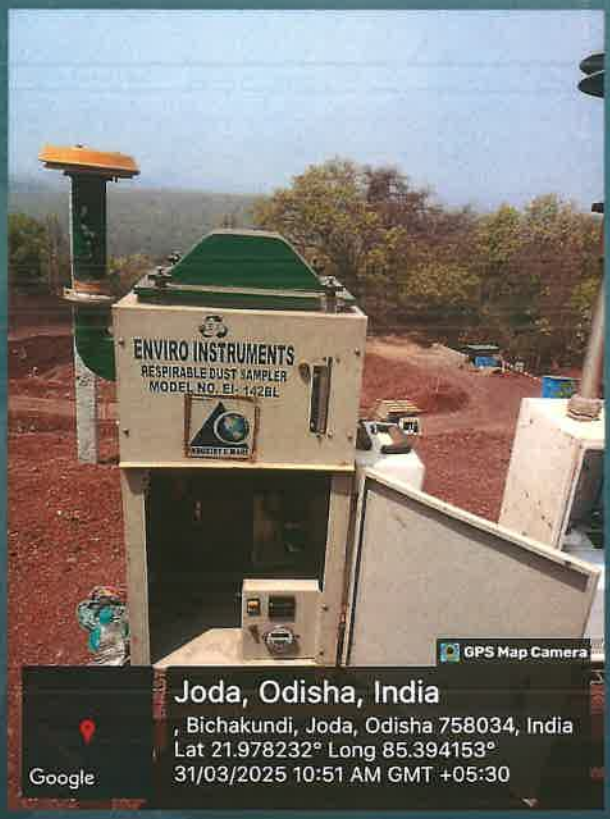
1. District Collector's Office, Keonjhar.
2. District Industries Center, Keonjhar.
3. In the Office of the Chief Executive Officer, Zilla Parishad, Keonjhar.
4. In the Head Office of the Orissa Pollution Control Board, Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII, Bhubaneswar-12.
5. Regional Office, State Pollution Control Board, Orissa, Keonjhar.
6. Department of Forest & Environment (Environment), Government of Orissa, Bhubaneswar.

For any further clarification in the matter, the Regional Officer, State Pollution Control Board, Keonjhar or the Member Secretary, Orissa Pollution Control Board at Bhubaneswar may be contacted. Suggestions, comments, objections etc will not be entertained if not submitted in writing within the stipulated period or not submitted in writing or orally during the public hearing.

MEMBER SECRETARY

The Statesman dt. 23.7.11 p. 13

PHOTOGRAPHS
OF
ENVIRONMENT MONITORING



GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
Baramunda, Bhubaneswar, Dist - Khurdha

Mail Id: greenforceassociates@gmail.com

TC-12258

Report No- GFAPL/24-25/DIOM/152 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ambient Air Quality Monitoring (AAQ)**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per IS: 5182
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Sampling Location & Coordinates	**AAQ1- Mine area** Lat: 21°97'80.32"N & Long: 85°39'44.32"E		
Instrument Used	**Respirable Dust Sampler, Fine Particulate Dust Sampler**		

Date of Sampling	PM_{10} (µg/m3)	$PM_{2.5}$ (µg/m3)	SO_2 (µg/m3)	NO_2 (µg/m3)
03.03.2025	65.8	33.1	10.8	17.4
06.03.2025	67.2	33.7	11.4	17.8
10.03.2025	69.4	34.8	11.8	18.8
13.03.2025	66.5	33.5	11.4	18.4
17.03.2025	68.4	34.3	11.8	18.8
20.03.2025	61.8	30.6	9.2	15.4
24.03.2025	54.6	27.2	6.4	12.8
27.03.2025	56.8	28.3	7.4	13.4
31.03.2025	58.9	29.5	7.8	14.4
Max	**69.40**	**34.80**	**11.80**	**18.80**
Min	**54.60**	**27.20**	**6.40**	**12.80**
Average	**63.27**	**31.67**	**9.78**	**16.36**
NAAQ* Standard	**100**	**60**	**80**	**80**
Methods of Analysis	**IS:5182 (Part-23)**	**IS:5182 (Part-24)**	**IS:5182 (Part-2)**	**IS:5182 (Part-6)**

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Technical Manager
Mr. S.K. Parhi

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END OF REPORT

Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
Cuttack, Odisha, India 754001

GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
Baramunda, Bhubaneswar, Dist - Khurdha

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TC-12258

Report No- GFAPL/24-25/DIOM/153 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ambient Air Quality Monitoring (AAQ)**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per IS: 5182
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Sampling Location & Coordinates	**AAQ2- Dalpahar camp;** Lat: 21°58'41.32"N & Long: 85°23'20.41"E		
Instrument Used	**Respirable Dust Sampler, Fine Particulate Dust Sampler**		

Date of Sampling	PM_{10} (µg/m3)	$PM_{2.5}$ (µg/m3)	SO_2 (µg/m3)	NO_2 (µg/m3)
03.03.2025	61.2	30.6	9.2	16.4
06.03.2025	60.8	30..5	9.2	16.6
10.03.2025	63.7	31.6	9.4	16.8
13.03.2025	62.4	31.2	9.4	17.2
17.03.2025	64.5	32.4	9.8	17.8
20.03.2025	58.4	29.2	7.6	14.8
24.03.2025	52.8	26.2	5.8	11.8
27.03.2025	55.4	27.2	6.4	12.8
31.03.2025	58.1	29.1	6.8	13.4
Max	**64.50**	**32.40**	**9.80**	**17.80**
Min	**52.80**	**26.20**	**5.80**	**11.80**
Average	**59.70**	**29.69**	**8.18**	**15.29**
NAAQ* Standard	**100**	**60**	**80**	**80**
Methods of Analysis	**IS:5182 (Part-23)**	**IS:5182 (Part-24)**	**IS:5182 (Part-2)**	**IS:5182 (Part-6)**

Reviewed By

GREENFORCE ASSOCIATES PRIVATE LIMITED BHUBANESWAR, ODISHA CHIEF ANALYST

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER GREENFORCE ASSOCIATES PRIVATE LIMITED BHUBANESWAR, ODISHA

Technical Manager
Mr. S.K. Parhi

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END OF REPORT

Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
Cuttack, Odisha, India 754001

GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
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Mail Id: greenforceassociates@gmail.com

TC-12258

Report No- GFAPL/24-25/DIOM/154 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ambient Air Quality Monitoring (AAQ)**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per IS: 5182
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Sampling Location & Coordinates	**AAQ3- Village Bichhakhundi;** Lat: 21°99'13.80"N & Long: 85°40'05.32"E		
Instrument Used	**Respirable Dust Sampler, Fine Particulate Dust Sampler**		

Date of Sampling	PM_{10} (µg/m3)	$PM_{2.5}$ (µg/m3)	SO_2 (µg/m3)	NO_2 (µg/m3)
04.03.2025	59.2	29.7	6.8	13.8
07.03.2025	61.4	30.7	7.2	14.4
11.03.2025	64.1	32.2	7.6	14.8
14.03.2025	62.5	31.4	7.4	14.4
18.03.2025	64.8	32.5	7.8	15
21.03.2025	51.6	25.5	4.8	9.8
25.03.2025	53.2	27.1	5.2	10.2
28.03.2025	55.6	27.8	5.4	10.4
Max	**64.80**	**32.50**	**7.80**	**15.00**
Min	**51.60**	**25.50**	**4.80**	**9.80**
Average	**59.05**	**29.61**	**6.53**	**12.85**
NAAQ* Standard	**100**	**60**	**80**	**80**
Methods of Analysis	**IS:5182 (Part-23)**	**IS:5182 (Part-24)**	**IS:5182 (Part-2)**	**IS:5182 (Part-6)**

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Technical Manager
Mr. S.K. Parhi

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END OF REPORT

Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
Cuttack, Odisha, India 754001

GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
Baramunda, Bhubaneswar, Dist - Khurdha

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/DIOM/155 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ambient Air Quality Monitoring (AAQ)**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per IS: 5182
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Sampling Location & Coordinates	**AAQ4- Village Jalahari;** Lat: 21°94'98.66"N & Long: 85°41'81.87"E		
Instrument Used	**Respirable Dust Sampler, Fine Particulate Dust Sampler**		

Date of Sampling	PM_{10} (µg/m3)	$PM_{2.5}$ (µg/m3)	SO_2 (µg/m3)	NO_2 (µg/m3)
04.03.2025	57.5	28.8	6.4	12.8
07.03.2025	59.2	29.7	6.4	13.2
11.03.2025	58.4	29.2	6.8	13.8
14.03.2025	60.2	30.2	7.2	14
18.03.2025	59.7	30.1	7.4	14.4
21.03.2025	52.4	25.8	5.2	10.4
25.03.2025	54.2	27.1	5.4	10.8
28.03.2025	56.4	28.2	5.6	11.2
Max	**60.20**	**30.20**	**7.40**	**14.40**
Min	**52.40**	**25.80**	**5.20**	**10.40**
Average	**57.25**	**28.64**	**6.30**	**12.58**
NAAQ* Standard	**100**	**60**	**80**	**80**
Methods of Analysis	**IS:5182 (Part-23)**	**IS:5182 (Part-24)**	**IS:5182 (Part-2)**	**IS:5182 (Part-6)**

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Chief Analyst
Miss. Anti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Technical Manager
Mr. S.K. Parhi

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END OF REPORT

Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
Cuttack, Odisha, India 754001

GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
Baramunda, Bhubaneswar, Dist - Khurdha

Mail Id: greenforceassociates@gmail.com

TC-12258

Report No- GFAPL/24-25/DIOM/156 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ambient Air Quality Monitoring (AAQ)**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per IS: 5182
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Sampling Location & Coordinates	**AAQ5- Village Pataberha;** Lat: 21°94'37.35"N & Long: 85°34'75.83"E		
Instrument Used	**Respirable Dust Sampler, Fine Particulate Dust Sampler**		

Date of Sampling	PM_{10} (µg/m3)	$PM_{2.5}$ (µg/m3)	SO_2 (µg/m3)	NO_2 (µg/m3)
04.03.2025	56.2	28.2	5.4	11.4
07.03.2025	58.4	29.4	5.8	11.8
11.03.2025	55.9	28.1	5.4	10.8
14.03.2025	57.6	28.8	5.8	11.8
18.03.2025	59.5	29.5	6.4	12.4
21.03.2025	51.4	25.5	5.2	10
25.03.2025	53.6	26.6	5.4	10.4
28.03.2025	55.8	27.8	5.8	10.8
Max	**59.50**	**29.50**	**6.40**	**12.40**
Min	**51.40**	**25.50**	**5.20**	**10.00**
Average	**56.05**	**27.99**	**5.65**	**11.18**
NAAQ* Standard	**100**	**60**	**80**	**80**
Methods of Analysis	**IS:5182 (Part-23)**	**IS:5182 (Part-24)**	**IS:5182 (Part-2)**	**IS:5182 (Part-6)**

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Technical Manager
Mr. S.K. Parhi

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END OF REPORT

Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
Cuttack, Odisha, India 754001

GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
Baramunda, Bhubaneswar, Dist - Khurdha

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Report No- GFAPL/24-25/DIOM/157 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ambient Air Quality Monitoring (AAQ)**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per IS: 5182
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Sampling Location & Coordinates	**AAQ6- Village Dalpahar;** Lat: 21°97'90.19"N & Long: 85°38'87.91"E		
Instrument Used	**Respirable Dust Sampler, Fine Particulate Dust Sampler**		

Date of Sampling	PM_{10} (µg/m3)	$PM_{2.5}$ (µg/m3)	SO_2 (µg/m3)	NO_2 (µg/m3)
04.03.2025	55.4	27.7	5.8	11.2
07.03.2025	57.6	28.6	6.2	11.4
11.03.2025	56.2	28.1	6.2	11.8
14.03.2025	58.3	29.2	6.4	12.4
18.03.2025	59.7	29.9	6.8	12.8
21.03.2025	50.1	24.8	4.8	9.6
25.03.2025	52.4	26.2	5.4	10.4
28.03.2025	53.8	26.6	5.4	10.4
Max	**59.70**	**29.90**	**6.80**	**12.80**
Min	**50.10**	**24.80**	**4.80**	**9.60**
Average	**55.44**	**27.64**	**5.88**	**11.25**
NAAQ* Standard	**100**	**60**	**80**	**80**
Methods of Analysis	**IS:5182 (Part-23)**	**IS:5182 (Part-24)**	**IS:5182 (Part-2)**	**IS:5182 (Part-6)**

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Technical Manager
Mr. S.K. Parhi

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END OF REPORT

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Cuttack, Odisha, India 754001

GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
Baramunda, Bhubaneswar, Dist - Khurdha

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(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/DIOM/158 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ambient Air Quality Monitoring (AAQ)**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per IS: 5182
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Sampling Location & Coordinates	**AAQ1- Mine area**; Lat: 21°97'80.32"N & Long: 85°39'44.32"E; **AAQ2- Dalpahar camp**; Lat: 21°58'41.32"N & Long: 85°23'20.41"E;		
Instrument Used	CO Analyser		

Date of Sampling	CO (mg/m3)	
	AAQ1	AAQ2
03.03.2025	0.44	0.41
06.03.2025	0.43	0.42
10.03.2025	0.45	0.42
13.03.2025	0.44	0.44
17.03.2025	0.46	0.46
20.03.2025	0.39	0.39
24.03.2025	0.31	0.3
27.03.2025	0.33	0.32
31.03.2025	0.35	0.34
Max	**0.46**	**0.46**
Min	**0.31**	**0.30**
Average	**0.40**	**0.39**
NAAQ* Standard	**4**	
Methods of Analysis	**IS: 5182 (Part- 10)**	

Reviewed By
CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA
Chief Analyst
Miss. Arti Sahoo

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TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA
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Report No- GFAPL/24-25/DIOM/159 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ambient Air Quality Monitoring (AAQ)**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per IS: 5182
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Sampling Location & Coordinates	**AAQ3- Village Bichhakhundi;** Lat: 21°99'13.80"N & Long: 85°40'05.32"E; **AAQ4- Village Jalahari;** Lat: 21°94'98.66"N & Long: 85°41'81.87"E; **AAQ5- Village Pataberha;** Lat: 21°94'37.35"N & Long: 85°34'75.83"E; **AAQ6- Village Dalpahar;** Lat: 21°97'90.19"N & Long: 85°38'87.91"E;		
Instrument Used	CO Analyser		

Date of Sampling	**CO (mg/m3)**			
	AAQ3	**AAQ4**	**AAQ5**	**AAQ6**
04.03.2025	0.37	0.34	0.32	0.31
07.03.2025	0.38	0.36	0.33	0.31
11.03.2025	0.39	0.38	0.3	0.33
14.03.2025	0.38	0.38	0.33	0.34
18.03.2025	0.39	0.39	0.34	0.36
21.03.2025	0.28	0.29	0.29	0.27
25.03.2025	0.3	0.31	0.3	0.28
28.03.2025	0.31	0.33	0.32	0.29
Max	**0.39**	**0.39**	**0.34**	**0.36**
Min	**0.28**	**0.29**	**0.29**	**0.27**
Average	**0.35**	**0.35**	**0.32**	**0.31**
NAAQ* Standard	**4**			
Methods of Analysis	**IS: 5182 (Part- 10)**			

Reviewed By
CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA
Chief Analyst
Miss. Arti Sahoo

Authorized Signatory
TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA
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END OF REPORT

Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
Cuttack, Odisha, India 754001

GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
Baramunda, Bhubaneswar, Dist - Khurdha

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/DIOM/160 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** At/PO- Dalpahar, Dist- Keonjhar, Odisha		
Nature of Sampling	**Fugitive Dust Emission (F)**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per IS: 5182
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Sampling Location & Coordinates	**F1- Excavation Area;** Lat: 21°.97'18.46"N & Long: 85°39'74.04"E; **F2- Crushing & Screening Area;** Lat: 21°96'89.65"N & Long: 85°39'25.77"E		
Instrument Used	**Respirable Dust Sampler (RDS)**		

Sl. No.	Date of Sampling	Result (µg/m³)	
		F1	F2
1.	05.03.2025	556.2	550.4
2.	19.03.2025	489.6	472.5
Max		556.2	550.4
Min		489.6	472.5
Average		522.9	511.45
Fugitive Standard		1200 µg/m³	
Methods of Analysis		IS:5182 (Part-4)	

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Technical Manager
Mr. S.K. Parhi

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Report No- GFAPL/24-25/ DIOM /141 **Issued Date-04.02.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Surface Water Flow Rate**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per CPCB Guidelines
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**16.01.2025**		

Sl. No.	Sampling Location	Result
1	**Baitarani River (Upstream)**	**2.3 m/sec**
2	**Baitarani River (Downstream)**	**3.0 m/sec**
3	**Suna Nadi (Upstream)**	**2.4 m/sec**
4	**Suna Nadi (Downstream)**	**2.9 m/sec**

Reviewed By **Authorized Signatory**

CHIEF ANALYST GREENFORCE ASSOCIATES PRIVATE LIMITED BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

TECHNICAL MANAGER GREENFORCE ASSOCIATES PRIVATE LIMITED BHUBANESWAR, ODISHA

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TC-12258

Report No- GFAPL/24-25/ DIOM /137 **Issued Date-04.02.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Surface Water Quality**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per APHA 24th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**16.01.2025**	**Date of Receiving**	**17.01.2025**
Date of Analysis	**17.01.2025**	**Date of Complete**	**21.01.2025**
Sampling Location & Coordinates	**SW1- Baitarani River (Upstream)** **SW2- Baitarani River (Downstream)**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296Class-C	SW1	SW2
01	Colour	IS 3025: (Part 4)- 1983	Hazen	300	<5.0	<5.0
02	Turbidity	APHA 24th ED: 2130-B -2023	NTU	--	<1	<1
03	pH Value @250C	APHA 24th ED 4500- H+B:2023	--	6.0-9.0	7.22	7.28
04	Conductivity	APHA 24th ED 2510-B: 2023	ms/cm	--	145.6	158.4
05	Total Dissolved Solids	APHA 24th ED 2540-C: 2023	mg/l	1500	91	99
06	Chloride (as Cl)	APHA 24th Ed 4500- Cl- B:2023	mg/l	600	9	11
07	Cyanide	APHA 24th ED 4500 CN-F:2023	mg/	0.05	<0.02	<0.02
08	Hexavalent Chromium (as Cr+6)	APHA 24th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
09	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.17	0.19
10	Sulfate (as SO4)	APHA 24th ED 4500- SO4 D: 2023	mg/l	400	3.7	4.2
11	Fluoride (as F)	APHA 24th ED 4500-F-C: 2023	mg/l	1.5	<0.05	<0.05
12	Oil & Grease	IS 3025 PART 39-1991 RA-2003	mg/l	0.1	<2.0	<2.0
13	Dissolved Oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	6.4	6.2

Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
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Sl.No.	Parameter	Testing Methods	Unit	Standard as per IS-2296Class-C	SW1	SW2
14	Biological Oxygen Demand	IS 3025 (PART 44) : 1993 REA-2009	mg/l	3.0	<2.0	<2.0
15	Chemical Oxygen Demand	APHA 24th ED 5220 C:2023	mg/l	--	<4.0	6

REMARKS:- US- Upstream; DS- Downstream;

Reviewed By

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Chief Analyst
Miss. Arti Sahoo

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Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
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Report No- GFAPL/24-25/ DIOM/137 **Issued Date-04.02.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	Surface Water Quality		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	**Sampling Method**	As per APHA 24th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**16.01.2025**	**Date of Receiving**	**17.01.2025**
Date of Analysis	**17.01.2025**	**Date of Complete**	**21.01.2025**
Sampling Location & Coordinates	**SW1- Baitarani river (Upstream)** **SW2- Baitarani river (Down stream)**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW1	SW2
01	**Nitrate as (NO3)**	APHA 24th ED 4500-NO3-E: 2023	**mg/l**	50	**0.42**	**0.48**
02	**Phenolic Compound (as C6H5OH)**	APHA 24th ED 5530 B,D: 2023	**mg/l**	0.005	**<0.001**	**<0.001**
03	**Copper (as Cu)**	IS: 3025(Part 42)	**mg/l**	1.5	**<0.02**	**<0.02**
04	**Lead (as Pb)**	APHA 24th ED 3500 Pb: 2023	**mg/l**	0.1	**<0.01**	**<0.01**
05	**Zinc (as Zn)**	APHA 24th ED 3500 Zn: 2023	**mg/l**	15	**<0.02**	**<0.02**
06	**Arsenic (as As)**	APHA 24th ED 3500As: 2023	**mg/l**	0.2	**<0.001**	**<0.001**
07	**Selenium (as Se)**	APHA 24th ED 3500 B: 2023	**mg/l**	0.05	**<0.001**	**<0.001**
08	**Cadmium (as Cd)**	IS: 3025(Part 41)	**mg/l**	0.01	**<0.001**	**<0.001**
09	**Total Coliforms**	APHA 24th ED 9222-H: 2023	**MPN/ 100ml**	5000	**450**	**510**

Reviewed By

CHIEF ANALYST
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BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
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TC-12258

Report No- GFAPL/24-25/ DIOM /138 **Issued Date-04.02.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Surface Water Quality**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per APHA 24th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**16.01.2025**	**Date of Receiving**	**17.01.2025**
Date of Analysis	**17.01.2025**	**Date of Complete**	**21.01.2025**
Sampling Location & Coordinates	**SW3- Suna nadi (Up stream)** **SW4- Suna Nadi (Down Stream)**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296Class-C	SW3	SW4
01	**Colour**	IS 3025: (Part 4)- 1983	**Hazen**	300	**<5.0**	**<5.0**
02	**Turbidity**	APHA 24th ED: 2130-B -2023	**NTU**	--	**<1**	**<1**
03	**pH Value @250C**	APHA 24th ED 4500- H+B:2023	**--**	6.0-9.0	**7.2**	**7.26**
04	**Conductivity**	APHA 24th ED 2510-B: 2023	**ms/cm**	--	**156.8**	**172.8**
05	**Total Dissolved Solids**	APHA 24th ED 2540-C: 2023	**mg/l**	1500	**98**	**108**
06	**Chloride (as Cl)**	APHA 24th Ed 4500- Cl- B:2023	**mg/l**	600	**10**	**12**
07	**Cyanide**	APHA 24th ED 4500 CN-F:2023	**mg/**	0.05	**<0.02**	**<0.02**
08	**Hexavalent Chromium (as Cr+6)**	APHA 24th ED 3500-Cr-B: 2023	**mg/l**	0.05	**<0.05**	**<0.05**
09	**Iron (as Fe)**	APHA 24th ED 3500-Fe-B: 2023	**mg/l**	0.5	**0.18**	**0.2**
10	**Sulfate(as SO4)**	APHA 24th ED 4500- SO4 D: 2023	**mg/l**	400	**3.9**	**4.3**
11	**Fluoride (as F)**	APHA 24th ED 4500-F-C: 2023	**mg/l**	1.5	**<0.05**	**<0.05**
12	**Oil & Grease**	IS 3025 PART 39-1991 RA-2003	**mg/l**	0.1	**<2.0**	**<2.0**
13	**Dissolved Oxygen**	APHA 24th ED 4500 O-C:2023	**mg/l**	4	**6.3**	**6.2**

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Sl.No.	Parameter	Testing Methods	Unit	Standard as per IS-2296Class-C	SW3	SW4
14	Biological Oxygen Demand	IS 3025 (PART 44) : 1993 REA-2009	mg/l	3.0	<2.0	<2.0
15	Chemical Oxygen Demand	APHA 24th ED 5220 C:2023	mg/l	--	6	8

REMARKS:- US- Upstream; DS- Downstream;

Reviewed By

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Report No- GFAPL/24-25/ DIOM/138 **Issued Date-04.02.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	Surface Water Quality		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	**Sampling Method**	As per APHA 24th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**16.01.2025**	**Date of Receiving**	**17.01.2025**
Date of Analysis	**17.01.2025**	**Date of Complete**	**21.01.2025**
Sampling Location & Coordinates	**SW3- Suna nadi (Up stream)** **SW4- Suna Nadi (Down Stream)**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW3	SW4
01	**Nitrate as (NO3)**	APHA 24th ED 4500-NO3-E: 2023	**mg/l**	50	**0.38**	**0.44**
02	**Phenolic Compound (as C6H5OH)**	APHA 24th ED 5530 B,D: 2023	**mg/l**	0.005	**<0.001**	**<0.001**
03	**Copper (as Cu)**	IS: 3025(Part 42)	**mg/l**	1.5	**<0.02**	**<0.02**
04	**Lead (as Pb)**	APHA 24th ED 3500 Pb: 2023	**mg/l**	0.1	**<0.01**	**<0.01**
05	**Zinc (as Zn)**	APHA 24th ED 3500 Zn: 2023	**mg/l**	15	**<0.02**	**<0.02**
06	**Arsenic (as As)**	APHA 24th ED 3500As: 2023	**mg/l**	0.2	**<0.001**	**<0.001**
07	**Selenium (as Se)**	APHA 24th ED 3500 B: 2023	**mg/l**	0.05	**<0.001**	**<0.001**
08	**Cadmium (as Cd)**	IS: 3025(Part 41)	**mg/l**	0.01	**<0.001**	**<0.001**
09	**Total Coliforms**	APHA 24th ED 9222-H: 2023	**MPN/ 100ml**	5000	**450**	**570**

Reviewed By

CHIEF ANALYST
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BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
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Report No- GFAPL/24-25/ DIOM /142 **Issued Date-04.02.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ground Water Level**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per CPCB Guidelines
Location of performance of Laboratory activities	Site Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**16.01.2025**		

Sl. No.	Locations	Result
1	**GWL1- Bore well of Dalpahar Camp**	**4.9 m**
2	**GWL2- Bore well of Village Bichhakhundi**	**4.6 m**
3	**GWL3- Bore well of Village Jalhari**	**5.3 m**
4	**GWL4- Bore well of Village Joda**	**3.8 m**

Reviewed By **Authorized Signatory**

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TC-12258

Report No- GFAPL/24-25/ DIOM /139 **Issued Date-04.02.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ground Water**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per APHA 24th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**16.01.2025**	**Date of Receiving**	**17.01.2025**
Date of Analysis	**17.01.2025**	**Date of Complete**	**21.01.2025**
Sampling Location & Coordinates	**GW1: Bore Well of Village Dalpahar Camp** **GW2: Bore Well of Village Bichhakhundi**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW1	GW2
				AL	PL		
1	Colour	IS 3025: (Part 4)- 2021	Hazen	5	15	<5.0	<5.0
2	Turbidity	APHA 24th ED: 2130-B -2023	NTU	1	5	<1	<1
3	Ph Value @25°C	APHA 24th ED 4500- H+B:2023	--	6.5-8.5	NR	7.04	6.86
4	Total Dissolved Solids	APHA 24th ED 2540-C: 2023	mg/l	500	2000	93	89
5	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	250	1000	12	14
6	Total Hardness	APHA 24th ED 2340-C: 2023	mg/l	200	600	44	38
7	Calcium	APHA 24th Ed 3500- Ca-B:2023	mg/l	75	200	10.8	9.6
8	Magnesium	APHA 24th ED 3500-Mg-B: 2023	mg/l	30	100	4.1	3.4
9	Total Alkalinity	APHA 24th ED 2320-B: 2023	mg/l	200	600	35	29
10	Residual Free Chlorine	APHA 24th ED 4500 CL-B:2023	mg/l	0.2	1.0	<0.2	<0.2
11	Cyanide	APHA 24th ED 4500 CN-F:2023	mg/l	0.05	NR	<0.02	<0.02
12	Total Chromium	APHA 24th ED 3500-Cr-B: 2023	mg/l	0.05	NR	<0.05	<0.05
13	Iron	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.3	NR	0.19	0.2
14	Sulfate	APHA 24th ED 4500-SO4 E: 2023	mg/l	200	400	4.7	5.2
15	Fluoride	APHA 24th ED 4500-F-C: 2023	mg/l	1.0	1.5	<0.05	<0.05

Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
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Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW1	GW2
16	Boron	APHA 24th ED 4500 B-B:2023	mg/l	0.5	1.0	<0.01	<0.01
17	Manganese	IS 3025 PART-59 :2006 RA 2012	mg/l	0.1	0.3	<0.05	<0.05
18	Sodium as Na	APHA 24th ED 3500- Na-B: 2023	mg/l	--	--	6.7	8.6
19	Potassium as K	APHA 24th ED 3500- K-B: 2023	mg/l	--	--	0.6	0.7

REMARKS: NR- not relaxable; AL-Acceptable Limit; PL- Permissible Limit;

Reviewed By

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Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Technical Manager
Mr. S.K. Parhi

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END OF REPORT

Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
Cuttack, Odisha, India 754001

GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
Baramunda, Bhubaneswar, Dist - Khurdha

Mail Id: greenforceassociates@gmail.com

(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/ DIOM /139 **Issued Date-04.02.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ground Water**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per APHA 24th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**16.01.2025**	**Date of Receiving**	**17.01.2025**
Date of Analysis	**17.01.2025**	**Date of Complete**	**21.01.2025**
Sampling Location & Coordinates	**GW1: Bore Well of Village Dalpahar Camp** **GW2: Bore Well of Village Bichhakhundi**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW1	GW2
				AL	PL		
1	Odour	APHA 24th ED: 2150-B: 2023	--	Agreeable	Agreeable	U/O	U/O
2	Taste	APHA 24th ED: 2160-B: 2023	--	Agreeable	Agreeable	al	al
3	Nitrate	APHA 24th ED 4500-NO3-B: 2023	mg/l	45	NR	1.62	1.58
4	Cadmium (as Cd)	IS: 3025(Part 41)	mg/l	0.003	NR	<0.001	<0.001
5	Copper (as Cu)	IS: 3025(Part 42)	mg/l	0.05	1.5	<0.02	<0.02
6	Zinc (as Zn)	APHA 24th ED 3500 Zn: 2023	mg/l	5	15	<0.02	<0.02
7	Lead (as Pb)	APHA 24th ED 3500 Pb: 2023	mg/l	0.01	NR	<0.01	<0.01
8	Selenium (as Se)	APHA 24th ED 3500 B: 2023	mg/l	0.01	NR	<0.001	<0.001
9	Mercury (as Hg)	APHA 24th ED3500Hg: 2023	mg/l	0.001	NR	<0.001	<0.001
10	Vanadium	ICP-AS	mg/l	--	--	<0.001	<0.001
11	Arsenic (as As)	APHA24th ED 3500As: 2023	mg/l	0.01	0.05	<0.01	<0.01
12	Aluminum (as Al)	APHA24th ED 3500Al: 2023	mg/l	0.03	0.2	ND	ND
13	Mineral Oil	APHA 24th ED5220B: 2023	mg/l	0.5	NR	ND	ND
14	Anionic Detergents	APHA24th ED 5540 C: 2023	mg/l	0.2	1.0	<0.001	<0.001
15	Phenolic Compounds	APHA 24th ED 5530 B,D: 2023	mg/l	0.001	0.002	<1.8	<1.8
16	Total Coliforms	APHA 24th ED 9222-H: 2023	MPN/ 100 ml	--	--	1.62	1.58

REMARKS: NR- not relaxable; AL-Acceptable Limit; PL- Permissible Limit; al- Agreeable; ND- Not Detected;

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

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TECHNICAL MANAGER
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GREEN FORCE ASSOCIATES PRIVATE LIMITED

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Mail Id: greenforceassociates@gmail.com

TC-12258

Report No- GFAPL/24-25/ DIOM /140 **Issued Date-04.02.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ground Water**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per APHA 24th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**16.01.2025**	**Date of Receiving**	**17.01.2025**
Date of Analysis	**17.01.2025**	**Date of Complete**	**21.01.2025**
Sampling Location & Coordinates	**GW3- Bore Well of Village Jalhari** **GW4- Bore Well of Village Joda**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW3	GW4
				AL	PL		
1	Colour	IS 3025: (Part 4)- 2021	Hazen	5	15	<5.0	<5.0
2	Turbidity	APHA 24th ED: 2130-B -2023	NTU	1	5	<1	<1
3	Ph Value @25°C	APHA 24th ED 4500- H+B:2023	--	6.5-8.5	NR	7.01	6.88
4	Total Dissolved Solids	APHA 24th ED 2540-C: 2023	mg/l	500	2000	81	81
5	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	250	1000	10	11
6	Total Hardness	APHA 24th ED 2340-C: 2023	mg/l	200	600	35	36
7	Calcium	APHA 24th Ed 3500- Ca-B:2023	mg/l	75	200	9.2	8.8
8	Magnesium	APHA 24th ED 3500-Mg-B: 2023	mg/l	30	100	2.9	3.4
9	Total Alkalinity	APHA 24th ED 2320-B: 2023	mg/l	200	600	25	28
10	Residual Free Chlorine	APHA 24th ED 4500 CL-B:2023	mg/l	0.2	1.0	<0.2	<0.2
11	Cyanide	APHA 24th ED 4500 CN-F:2023	mg/l	0.05	NR	<0.02	<0.02
12	Total Chromium	APHA 24th ED 3500-Cr-B: 2023	mg/l	0.05	NR	<0.05	<0.05
13	Iron	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.3	NR	0.18	0.22
14	Sulfate	APHA 24th ED 4500-SO4 E: 2023	mg/l	200	400	5.1	4.9
15	Fluoride	APHA 24th ED 4500-F-C: 2023	mg/l	1.0	1.5	<0.05	<0.05

Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
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Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW3	GW4
16	Boron	APHA 24th ED 4500 B-B:2023	mg/l	0.5	1.0	<0.01	<0.01
17	Manganese	IS 3025 PART-59 :2006 RA 2012	mg/l	0.1	0.3	<0.05	<0.05
18	Sodium as Na	APHA 24th ED 3500- Na-B: 2023	mg/l	--	--	5.6	6.6
19	Potassium as K	APHA 24th ED 3500- K-B: 2023	mg/l	--	--	0.5	0.6

REMARKS: NR- not relaxable; AL-Acceptable Limit; PL- Permissible Limit;

Reviewed By
CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA
Chief Analyst
Miss. Arti Sahoo

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GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA
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Report No- GFAPL/24-25/ DIOM /140 **Issued Date-04.02.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** *At/PO- Dalpahar, Dist- Keonjhar, Odisha*		
Nature of Sampling	**Ground Water**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per APHA 24th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**16.01.2025**	**Date of Receiving**	**17.01.2025**
Date of Analysis	**17.01.2025**	**Date of Complete**	**21.01.2025**
Sampling Location & Coordinates	**GW3- Bore Well of Village Jalhari** **GW4- Bore Well of Village Joda**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW3	GW4
				AL	PL		
1	Odour	APHA 24th ED: 2150-B: 2023	--	Agreeable	Agreeable	U/O	U/O
2	Taste	APHA 24th ED: 2160-B: 2023	--	Agreeable	Agreeable	al	al
3	Nitrate	APHA 24th ED 4500-NO3-B: 2023	mg/l	45	NR	1.64	1.88
4	Cadmium (as Cd)	IS: 3025(Part 41)	mg/l	0.003	NR	<0.001	<0.001
5	Copper (as Cu)	IS: 3025(Part 42)	mg/l	0.05	1.5	<0.02	<0.02
6	Zinc (as Zn)	APHA 24th ED 3500 Zn: 2023	mg/l	5	15	<0.02	<0.02
7	Lead (as Pb)	APHA 24th ED 3500 Pb: 2023	mg/l	0.01	NR	<0.01	<0.01
8	Selenium (as Se)	APHA 24th ED 3500 B: 2023	mg/l	0.01	NR	<0.001	<0.001
9	Mercury (as Hg)	APHA 24th ED3500Hg: 2023	mg/l	0.001	NR	<0.001	<0.001
10	Vanadium	ICP-AS	mg/l	--	--	<0.001	<0.001
11	Arsenic (as As)	APHA24th ED 3500As: 2023	mg/l	0.01	0.05	<0.01	<0.01
12	Aluminum (as Al)	APHA24th ED 3500Al: 2023	mg/l	0.03	0.2	ND	ND
13	Mineral Oil	APHA 24th ED5220B: 2023	mg/l	0.5	NR	ND	ND
14	Anionic Detergents	APHA24th ED 5540 C: 2023	mg/l	0.2	1.0	<0.001	<0.001
15	Phenolic Compounds	APHA 24th ED 5530 B,D: 2023	mg/l	0.001	0.002	<1.8	<1.8
16	Total Coliforms	APHA 24th ED 9222-H: 2023	MPN/ 100 ml	--	--	1.64	1.88

REMARKS: NR- not relaxable; AL-Acceptable Limit; PL- Permissible Limit; al- Agreeable; ND- Not Detected;

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Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/DIOM/068 Issued Date-06.08.2024

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** At/PO- Dalpahar, Dist- Keonjhar, Odisha		
Nature of Sampling	**Surface Runoff**		
Sampling By	**GFAPL's Representative**		
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**22.07.2024**	**Date of Receiving**	**23.07.2024**
Date of Analysis	**23.07.2024**	**Date of Complete**	**27.07.2024**
Sampling Location & Coordinates	**SR1 - Near Mines Office;** **SR2 - Near Crusher Plant;**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SR1	SR2
1.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	50	70
2.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	10	16
3.	pH	APHA 24th ED 4500- H+B:2023	---	6.0-9.0	6.87	6.92
4.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	153.2	160.4
5.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	92	98
6.	Total Suspended Solid	APHA 24th ED 2540-D: 2023	mg/l		68	72
7.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	600	9	10
8.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
9.	Hexavalent Chromium(asCr+6)	APHA 24th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
10.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.32	0.3
11.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	7.2	7.6
12.	Fluoride (as F)	APHA 24th ED 4500-F-C: 2023	mg/l	1.5	<0.05	<0.05
13.	Oil & Grease	IS 3025 PART 39-1991 RA-2003	mg/l	--	<2.0	<2.0
14.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	6.5	6.3
15.	BOD (3) days at 27°C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	<2.0
16.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	8	8

Verified By

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BHUBANESWAR, ODISHA

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Report No- GFAPL/24-25/DIOM/068 **Issued Date-06.08.2024**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** At/PO- Dalpahar, Dist- Keonjhar, Odisha		
Nature of Sampling	**Surface Runoff**		
Sampling By	**GFAPL's Representative**		
Location of performance of Laboratory activities	**Laboratory Permanent Facility**	**Deviation from the method (if any)**	**NO**
Discipline	**Chemical**	**Group**	**Water**
Date of Sampling	**22.07.2024**	**Date of Receiving**	**23.07.2024**
Date of Analysis	**23.07.2024**	**Date of Complete**	**27.07.2024**
Sampling Location & Coordinates	**SR1 - Near Mines Office;** **SR2 - Near Crusher Plant;**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SR1	SR2
1.	**Nitrate (as NO3)**	APHA 24th ED 4500-NO3-E: 2023	**mg/l**	50	**1.62**	**1.78**
2.	**Phenolic Compounds as C6H5OH**	APHA 24th ED 5530 B,D:2023	**mg/l**	--	**<0.001**	**<0.001**
3.	**Copper (as Cu)**	IS: 3025(Part 42)	**mg/l**	0.05	**<0.03**	**<0.03**
4.	**Lead (as Pb)**	APHA 24th ED 3500 Pb: 2023	**mg/l**	0.01	**<0.01**	**<0.01**
5.	**Zinc (as Zn)**	APHA 24th ED 3500 Zn: 2023	**mg/l**	5	**0.08**	**0.1**
6.	**Arsenic as As**	IS: 3025 (Part 37)	**mg/l**	--	**<0.001**	**<0.001**
7.	**Selenium (as Se)**	APHA 24th ED 3500 B: 2023	**mg/l**	0.005	**<0.001**	**<0.001**
8.	**Cadmium (as Cd)**	IS: 3025(Part 41)	**mg/l**	0.003	**<0.001**	**<0.001**
9.	**Total Coliform**	APHA 24th ED 9222-H: 2023	**MPN/ 100ml**	---	**570**	**510**

Verified By **Authorized By**

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BHUBANESWAR, ODISHA

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Report No- GFAPL/24-25/DIOM/078 Issued Date-04.09.2024

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** At/PO- Dalpahar, Dist- Keonjhar, Odisha		
Nature of Sampling	**Surface Runoff**		
Sampling By	**GFAPL's Representative**		
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**19.08.2024**	**Date of Receiving**	**20.08.2024**
Date of Analysis	**20.08.2024**	**Date of Complete**	**26.08.2024**
Sampling Location & Coordinates	**SR1 - Near Mines Office;** **SR2 - Near Crusher Plant;**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SR1	SR2
17.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	70	100
18.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	14	18
19.	pH	APHA 24th ED 4500- H+B:2023	---	6.0-9.0	6.94	6.98
20.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	150.4	166.9
21.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	90	100
22.	Total Suspended Solid	APHA 24th ED 2540-D: 2023	mg/l		42	50
23.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	600	8	11
24.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
25.	Hexavalent Chromium(asCr+6)	APHA 24th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
26.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.28	0.29
27.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	6.9	7.2
28.	Fluoride (as F)	APHA 24th ED 4500-F-C: 2023	mg/l	1.5	<0.05	<0.05
29.	Oil & Grease	IS 3025 PART 39-1991 RA-2003	mg/l	--	<2.0	<2.0
30.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	6.4	6.4
31.	BOD (3) days at 27^{0}C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	<2.0
32.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	7.6	8.2

Verified By **Authorized By**

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Report No- GFAPL/24-25/DIOM/078 **Issued Date-04.09.2024**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** At/PO- Dalpahar, Dist- Keonjhar, Odisha		
Nature of Sampling	**Surface Runoff**		
Sampling By	**GFAPL's Representative**		
Location of performance of Laboratory activities	**Laboratory Permanent Facility**	**Deviation from the method (if any)**	**NO**
Discipline	**Chemical**	**Group**	**Water**
Date of Sampling	**19.08.2024**	**Date of Receiving**	**20.08.2024**
Date of Analysis	**20.08.2024**	**Date of Complete**	**26.08.2024**
Sampling Location & Coordinates	**SR1 - Near Mines Office;** **SR2 - Near Crusher Plant;**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SR1	SR2
1.	Nitrate (as NO3)	APHA 24th ED 4500-NO3-E: 2023	mg/l	50	1.54	1.62
2.	Phenolic Compounds as C6H5OH	APHA 24th ED 5530 B,D:2023	mg/l	--	<0.001	<0.001
3.	Copper (as Cu)	IS: 3025(Part 42)	mg/l	0.05	<0.03	<0.03
4.	Lead (as Pb)	APHA 24th ED 3500 Pb: 2023	mg/l	0.01	<0.01	<0.01
5.	Zinc (as Zn)	APHA 24th ED 3500 Zn: 2023	mg/l	5	0.07	0.08
6.	Arsenic as As	IS: 3025 (Part 37)	mg/l	--	<0.001	<0.001
7.	Selenium (as Se)	APHA 24th ED 3500 B: 2023	mg/l	0.005	<0.001	<0.001
8.	Cadmium (as Cd)	IS: 3025(Part 41)	mg/l	0.003	<0.001	<0.001
9.	Total Coliform	APHA 24th ED 9222-H: 2023	MPN/ 100ml	---	900	900

Verified By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized By

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Technical Manager
Mr. S.K. Parhi

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Plot No- 1363-3892, Baibhab Realcon, Fulnakhara,
Cuttack, Odisha, India 754001

GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
Baramunda, Bhubaneswar, Dist - Khurdha

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/DIOM/090 **Issued Date- 04.10.2024**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** At/PO- Dalpahar, Dist- Keonjhar, Odisha		
Nature of Sampling	**Surface Runoff**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per APHA 24th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**23.09.2024**	**Date of Receiving**	**24.09.2024**
Date of Analysis	**24.09.2024**	**Date of Complete**	**28.09.2024**
Sampling Location & Coordinates	**SR1 - Near Mines Office;** **SR2 - Near Crusher Plant;**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SR1	SR2
33.	**Colour**	IS 3025: (Part 4)- 2021	**Hazen**	300	**100**	**120**
34.	**Turbidity**	APHA 24th ED: 2130-B - 2023	**NTU**	--	**18**	**20**
35.	**pH**	APHA 24th ED 4500- H+B:2023	**---**	6.0-9.0	**7.08**	**7.1**
36.	**Conductivity**	APHA 24th ED 2510-B: 2023	**µS/cm**	--	**160.4**	**171.2**
37.	**Total Dissolved Solid**	APHA 24th ED 2540-C: 2023	**mg/l**	1500	**96**	**102**
38.	**Total Suspended Solid**	APHA 24th ED 2540-D: 2023	**mg/l**		**60**	**58**
39.	**Chloride (as Cl)**	APHA 24th Ed 4500- Cl-B:2023	**mg/l**	600	**10**	**11**
40.	**Cyanide (as CN)**	APHA 24th ED 4500-CN-F	**mg/l**	0.05	**<0.02**	**<0.02**
41.	**Hexavalent Chromium(asCr+6)**	APHA 24th ED 3500-Cr-B: 2023	**mg/l**	0.05	**<0.05**	**<0.05**
42.	**Iron (as Fe)**	APHA 24th ED 3500-Fe-B: 2023	**mg/l**	0.5	**0.27**	**0.26**
43.	**Sulfate (as SO4)**	APHA 24th ED 4500-SO4 D: 2023	**mg/l**	400	**6.5**	**6.8**
44.	**Fluoride (as F)**	APHA 24th ED 4500-F-C: 2023	**mg/l**	1.5	**<0.05**	**<0.05**
45.	**Oil & Grease**	IS 3025 PART 39-1991 RA-2003	**mg/l**	--	**<2.0**	**<2.0**
46.	**Dissolved oxygen**	APHA 24th ED 4500 O-C:2023	**mg/l**	4	**6.5**	**6.4**
47.	**BOD (3) days at 27°C**	IS 3025 (PART 44): 1993 REA-2009	**mg/l**	3.0	**<2.0**	**<2.0**
48.	**Chemical Oxygen Demand as COD**	APHA 24th ED 5220 C:2023	**mg/l**	--	**7.2**	**9.2**

Reviewed By

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BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Technical Manager
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GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
Baramunda, Bhubaneswar, Dist - Khurdha

Mail Id: greenforceassociates@gmail.com

(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/DIOM/090 **Issued Date- 04.10.2024**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** At/PO- Dalpahar, Dist- Keonjhar, Odisha		
Nature of Sampling	**Surface Runoff**		
Sampling By	**GFAPL's Representative**		
Environmental Condition	Good	**Sampling Method**	As per APHA 24th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Water
Date of Sampling	**23.09.2024**	**Date of Receiving**	**24.09.2024**
Date of Analysis	**24.09.2024**	**Date of Complete**	**28.09.2024**
Sampling Location & Coordinates	**SR1 - Near Mines Office;** **SR2 - Near Crusher Plant;**		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SR1	SR2
1.	**Nitrate (as NO3)**	APHA 24th ED 4500-NO3-E: 2023	**mg/l**	50	**1.58**	**1.54**
2.	**Phenolic Compounds as C6H5OH**	APHA 24th ED 5530 B,D:2023	**mg/l**	--	**<0.001**	**<0.001**
3.	**Copper (as Cu)**	IS: 3025(Part 42)	**mg/l**	0.05	**<0.03**	**<0.03**
4.	**Lead (as Pb)**	APHA 24th ED 3500 Pb: 2023	**mg/l**	0.01	**<0.01**	**<0.01**
5.	**Zinc (as Zn)**	APHA 24th ED 3500 Zn: 2023	**mg/l**	5	**0.06**	**0.08**
6.	**Arsenic as As**	IS: 3025 (Part 37)	**mg/l**	--	**<0.001**	**<0.001**
7.	**Selenium (as Se)**	APHA 24th ED 3500 B: 2023	**mg/l**	0.005	**<0.001**	**<0.001**
8.	**Cadmium (as Cd)**	IS: 3025(Part 41)	**mg/l**	0.003	**<0.001**	**<0.001**
9.	**Total Coliform**	APHA 24th ED 9222-H: 2023	**MPN/ 100ml**	---	**900**	**900**

Reviewed By

Chief Analyst
Miss. Arti Sahoo

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Authorized Signatory

Technical Manager
Mr. S.K. Parhi

TECHNICAL MANAGER
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BHUBANESWAR, ODISHA

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Mail Id: greenforceassociates@gmail.com

TC-12258

Report No- GFAPL/24-25/DIOM/161 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** At/PO- Dalpahar, Dist- Keonjhar, Odisha		
Nature of Sampling	**Workzone Noise Monitoring**		
Sampling By	**GFAPL's Representative**		
Location of performance of Laboratory activities	Site Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Environmental Condition	Good	**Time Integration**	1 second
Time Weighing	Fast	**Frequency Weighing**	A- Weighing
Sampling Duration	24 hrs	**Area categorization**	Industrial Area
Date of Sampling	**19.03.2025**	**Date of Completion**	**20.03.2025**
Instrument Used	**Noise Meter**	**Sampling Method**	As per IS: 9989

Sl. No.	Sampling Locations	Day Time	Night Time
		Results in dB(A)	
1.	**Mine area ;** Lat: 21°96'87.48"N & Long: 85°39'28.07"E;	**68.5**	**62.1**
2.	**Dalpahar camp;** Lat: 21°58'41.32"N & Long: 85°23'20.41"E;	**65.2**	**56.4**

Noise permissible limits as per CPCB Norms in dB(A) Leq

Category of Area	Day Time	Night Time
Industrial Area	**75**	**70**
Commercial Area	65	55
Residential Area	55	45
Sensitive Area/ Silence Zone	50	40

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Technical Manager
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Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/DIOM/162 **Issued Date-04.04.2025**

TEST REPORT

Client Name &Address	**Dalpahar Iron & Mn Ore Mines of Sri. D.C. Jain,** At/PO- Dalpahar, Dist- Keonjhar, Odisha		
Nature of Sampling	**Ambient Noise Monitoring**		
Sampling By	**GFAPL's Representative**		
Location of performance of Laboratory activities	Site Facility	**Deviation from the method (if any)**	NO
Discipline	Chemical	**Group**	Atmospheric Pollution
Environmental Condition	Good	**Time Integration**	1 second
Time Weighing	Fast	**Frequency Weighing**	A- Weighing
Sampling Duration	24 hrs	**Area categorization**	Residential Area
Date of Sampling	**21.03.2025**	**Date of Completion**	**22.03.2025**
Instrument Used	**Noise Meter**	**Sampling Method**	As per IS: 9989

Sl. No.	Sampling Locations	Day Time	Night Time
		Results in dB(A)	
1.	**Village Bichhakhundi;** Lat: 21°99'13.80"N & Long: 85°40'05.32"E;	**50.6**	**40.4**
2.	**Village Dalpahar;** Lat: 21°94'98.66"N & Long: 85°41'81.87"E;	**49.8**	**39.5**
Noise permissible limits as per CPCB Norms in dB(A) Leq			
Category of Area		**Day Time**	**Night Time**
Industrial Area		75	70
Commercial Area		65	55
Residential Area		**55**	**45**
Sensitive Area/ Silence Zone		50	40

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

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Cuttack, Odisha, India 754001

OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION

Phone No- 06766-254315, email ID- dfokjr.od@gov.in

No. 8991 **/ 6F-Mining-57/2020**
Dated, Keonjhar the 03rd **August, 2023**

To

Sri Avin Jain, Power of Attorney Holder,
Dalpahar Iron & Mananganese Mines of D.C. Jain,
Dharam Villa, 12-A, Mahatma Gandhi Marg,
Ring road, Lajpat Nagar-IV, New Delhi-110024.

Sub: Revision of Site Specific Wildlife Conservation Plan in respect of Dalpahar Iron & Manganese Mines of D.C. Jain.

Ref: Memo No. 9070/WL dated 27.11.2014 of Principal Chief Conservator of Forests (WL) & CWLW, Odisha, Bhubaneswar.
This office letter No. 8804 dated 29.12.2014.

Sir,

With reference to the letters cited above on the captioned subject,this is to intimate that, you were requested to deposit the approved cost i.e. 185.520 lakh (for activities to be implemented by DFO, Keonjhar Division in the project impact area) towards the Site Specific Wildlife Conservation Plan in respect of your Dalpahar Iron & Manganese Mines of D.C. Jain But, after lapses of 9 years you have not deposited the same in the Orissa CAMPA Account.

Now the Govt. of Odisha in Steel & Mines Department has extended the validity period of mining lease over 89.961 ha in Block-A vide his letter No.3957/SM dated 28.04.2022 up to 08.06.2036 and mining lease deed has been executed with the Collector, Keonjhar over 89.961 ha (in Block-A) of Dalpahar Iron & Manganese Mines of D.C. Jain.

In view of the above, the Site Specific Wildlife Conservation Plan in respect of the above mining lease will be revisited as per current wage rate & current wildlife scenario as per existing guideline issued by the Principal Chief Conservator of Forests (WL) & CWLW, Odisha, Bhubaneswar. So afresh Site Specific Wildlife Conservation Plan over 89.961 ha is to be prepared.

This is for your information and necessary action.

Yours faithfully,

03/08/23

Divisional Forest Officer,
Keonjhar Division.

(3)

Memo No. 8992 **/ Dated.** 03-08-2023

Copy submitted to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela / Principal Chief Conservator of Forests, FD&NO, FC Act, O/o the PCCF, Odisha, Bhubaneswar / Principal Chief Conservator of Forests (WL) & CWLW, Odisha, Bhubaneswar for favour of kind information.

03/08/23

Divisional Forest Officer,
Keonjhar Division.

Dalpahar Iron & Manganese Ore Mines of Sri D.C. Jain					
Details of Personal protective Equipments (PPEs) Distribution					
For the Period APRIL 2024 to MARCH 2025					
Sl.No.	**M.Code**	**Item(PPEs)**	**Qty**	**Unit**	**Remarks**
1	270000888	Helmet White	12	Nos	To workers and Executives of Mines.
2	270000902	Helmet Yellow	170	Nos	
3	270000903	Helmet Blue	5	Nos	
4	270000909	Reflective Jacket	73	Nos	
5	270001696	Reflective Jacket Belt Typ	21	Nos	
6	270000889	Safety Shoes Leather	193	PAA	
7	270000890	Nose Mask	80	Nos	
8	270000891	Ear Plug	28	Nos	
9	270000893	Rain Coat	83	Nos	
10	270000920	Sweater	27	Nos	
11	270000923	Hand Gloves Cotton Dotte	158	PAA	
12	270000924	Hand Gloves Rubber	130	PAA	
13	270001137	Safety Jacket Green	145	Nos	
14	270001138	Goggles White	195	Nos	
15	260002695	Leg Guard Leather	100	Nos	

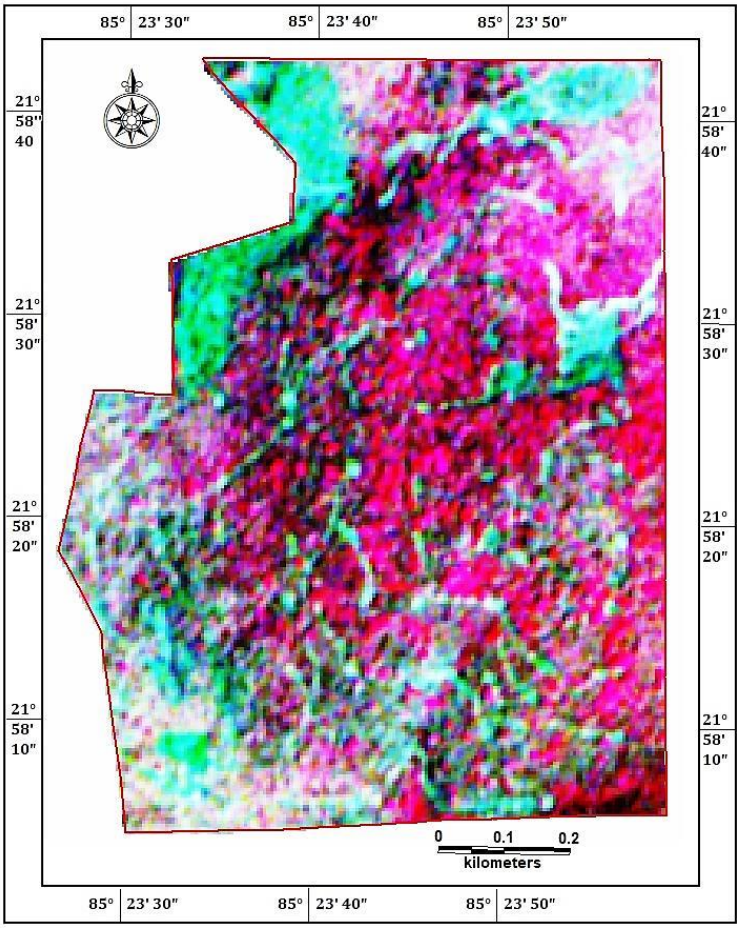
ANNEXURE- 16 (Yearly Environmental Expenses)

Sl. No	DESCRIPTION	From 19.08.2021 To 2023-2024 (in Rs./Lakhs)	2024-2025 (Apr 2024-Mar 2025) (in Rs./Lakhs)
Environmental Monitoring Parameter Testing charges			
1	AAQ, Ground Water, Surface Water, STP, ETP, Soil Test, Fugitive Test, etc.	**3.96**	**11.67**
Dump Stabilization & Plantation			
1	**Plantation**, dump stabilization by coir matting	**0.26**	**2.00**
2	**Drip Irrigation** at Safety zone	**0**	**0.25**
Dust Suppression			
1	Mobile water Sprinkler Tanker maintenance	**12.00**	**4.92**
2	Dry fog system for crusher and screen	**2.50**	**0.95**
Environmental Instruments and its maintenance & calibration			
1	Instruments, etc.(**Display Board)**	**5.48**	**0.50**
2	ETP and its maintenance**(Wheel wash system)**	**2.0**	**11.20**
Miscellaneous Expenses			
1	Occupational Health & Hygiene monitoring	**0**	**3.15**
2	Others (EIA/EMP Studies like:-Traffic study ,socio-economic study, Hydrology study, etc.)& blasting vibration studies, GO SWIFT	**25.57**	**9.99**
3	Website Development	**0.50**	**0.25**
4	Solar Panels construction office campus	**12.91**	**0.94**
Total		**65.18**	**46.77**

Statutory Expenses incurred in EMP till date

SL No.	Type of Statutory Expenses	Expenses in lakhs
01	Ground water drawal Charges (NOC)	2.33
02	Consent to Operate (CTO) application	28.98
03	Wildlife Management plan Expenses	579.30
04	Tree felling Expenses	182.12
05	Enhanced Ground water NOC Application	1.47
Total		**794.2**

LANDUSE/ LAND COVER (LULC) STUDY USING REMOTE SENSING SATELLITE DATA AROUND 10 KM BUFFER AREA OF DALPAHAR IRON AND MANGANESE ORE MINING LEASE (89.961 HA) OF BARBIL TEHSIL, KEONJHAR DISTRICT, ODISHA



Prepared by

Geosensing Information Pvt. Ltd, Chennai

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LANDUSE/ LAND COVER (LULC) STUDY USING REMOTE SENSING SATELLITE DATA AROUND 10 KM BUFFER AREA OF DALPAHAR IRON AND MANGANESE ORE MINING LEASE (89.961 HA) OF BARBIL TEHSIL, KEONJHAR DISTRICT, ODISHA

1. INTRODUCTION

Developmental activities of any scale would directly impact the terrain condition especially Landuse and Land cover (LULC) of an area. Such activities will reshape the surface representation and may have a vital significance in the local environment. The study of LULC helps not only mapping the surface features but at the same time would also reflect the subsurface terrain condition. Study of LULC is formidable since it reflects terrain features such as soil condition, ground water, surface water condition, gradient of terrain, contour, rock types and landforms. Moreover, land use and Land Cover (LULC) indicates significant information on the environmental condition of the area and indicates any changes in local environment. Because of such imperative and intrinsic nature of LULC and environment, spatial pattern of LULC needs to be studied periodically and at various levels such as 10 Km radial buffer, 2 Km radial buffer and within the Core zone.

Spatial pattern of LULC could be well studied using remote sensing satellite image (RSI) data because of it synoptic nature and uniform illumination. RSI data also has the capability to revisit the terrain at uniform frequency so that temporal data could be obtained to study the changes in the spatial pattern of LULC of the study area. Changes in spatial pattern of LULC could be a corroborative parameter authenticating the impact due to development activities including mining area.

With this background, a study has been conducted to generate LULC around 10Km buffer area, 2 Km buffer area and Coe zone using remote sensing satellite data for Iron and Manganese ore mining lease (ML) of Shri. D.C. Jain, area of 89.961 Ha, near Dalpahar village of Barbil Tehsil, Sundargarh district of Odisha.

2. PHYSIOGRAPHIC SETTING OF THE TERRAIN

Study area around the 10Km radial buffer of the Mining Lease (ML) shows rugged mountain as major landform feature with their continuity broken with many intermittent narrow passages and valleys. Apart from this, many small isolated hillocks covered with dense vegetation are witnessed. The maximum altitude of such hills ranges around 800 mts above MSL. The general strike direction of the hill ranges is NE to SW direction.

The study with its 10 Km radial buffer around the ML is endowed with Baitarani River in the east and Suna or Kundra River in the western part. They are mainly fed by many smaller order nalas flowing down from hills or some surface overland flow contributing to these two main river courses. These rivers form integral part in the life of local people, supporting their domestic demands and requirements, including irrigation activities.

Settlements are scattered and very small and many such hamlets such as Banshapani, Dalko, Jururhi, Jijing, Langilata, Palsha, Katasahi, Kunaposi, Kalmang and Topodihi are seen within the buffer area. Larger settlements such as Joda, Bichakundi and Bhadrasahi are also within the buffer area.

Buffer area enjoys predominance of southwest monsoon that contributes major precipitation in the region followed by relatively lesser precipitation during retreating northeast monsoon. Southwest monsoon occurs from June to September followed by NE monsoon during October and November. Monsoon season is followed by winter from December to early February. Temperature ranges as low as around 10°C during winter and soars up to 37°C during summer from March to May. Excellent receipt of precipitation and presence of high altitude hills and mountains encourage presence of medium to dense forest cover in this region.

3. GEOLOGICAL SETTING OF THE TERRAIN

The regional geology of the area shows succession of Iron ore group at the base succeeded by Kolhan group, laterites of Late tertiary and overlain by sedimentary of early Quarternary period, which may be shown as follows:

Recent / Quaternary	- Soil / Alluvium
Late Tertiary	- laterites / kankar
Proterozoic	
Kolhan Group	- Shale, Sandstone< conglomerate
Koira Group	- Formation of Upper Shale-Banded Iron- Lower Shale, S.St, Quartzite, Singhbum & Bonai Granites
……..Unconformity…….	
Pre-cambrian	
Iron ore Group	- Upper shale, BHQ, BHJ, Hematites, Ferric shale, Acid volcanic and ferrugenous chert

Structural hills, buried pediment, residual hills and intermontane valleys are some of the landforms exhibited in the buffer area and suggesting an active geomorphic condition as well.

4. REMOTE SENSING SATELLITE DATA USED FOR THE STUDY

Remote sensing satellite data of larger resolution - IRS Resourcesat2 of LISS IV - has been used to generate LULC maps of 10 Km radial buffer as well as 2 Km radial buffer around the Dalpahar Iron and Manganese ore ML area (Figure 1). Study area of 10 Km radial buffer falls within the longitude of 85° 17' 24"E and 85°29' 53"E longitude and 21°52' 33" N to 22°04' 13"N latitude, covering a spatial extent of 359.447 sq.km.

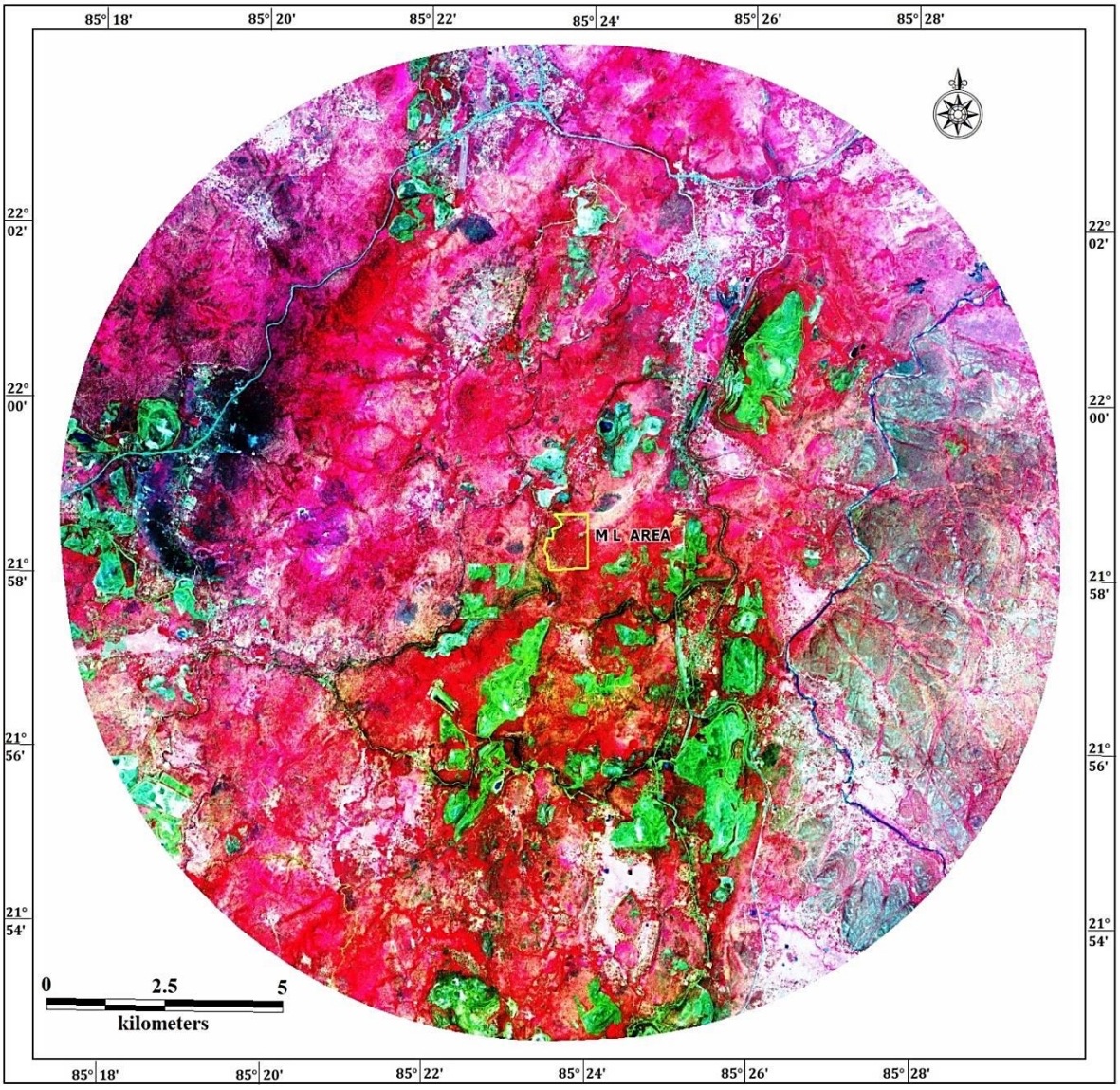


Figure 1. Remote sensing satellite image of LISS IV Apr 2024 showing 10Km buffer area

Remote sensing satellite data of LISS IV sensor aquired on 4th April 2024 has been used for the present study (Table 1). The data is particularly useful to understand the vegetaive pattern,

mostly forest cover, and its stress by implementing *digital processing* of satellite image such as NDVI. Also, the data has provided meaningful information on other landuse pattern such as mining and industrial area and settlement. Since this period is the beginning of the monsoon, many of mixed forest cover were devoid of vegetation that has shorter life span such as shrubs and scrubs. This has helped to identify and segregate forest cover of different density besides elucidating information on waterbodies.

Table 1. Details of satellite data used for the LULC study

S.No	Satellite image	Date	Generated LULC map
1.	R2 LISS IV	04 APRIL 2024	➢ LULC maps for 10 and 2 Km Buffer area ➢ LULC within the Core zone

5. METHODOLOGY FOR THE LULC STUDY OF DALPAHAR IRON AND MANGANESE ORE ML

Methodology to extract LULC details from the satellite data by digital processing and geo-referencing in GIS spatial database is illustrated in Figure 2.

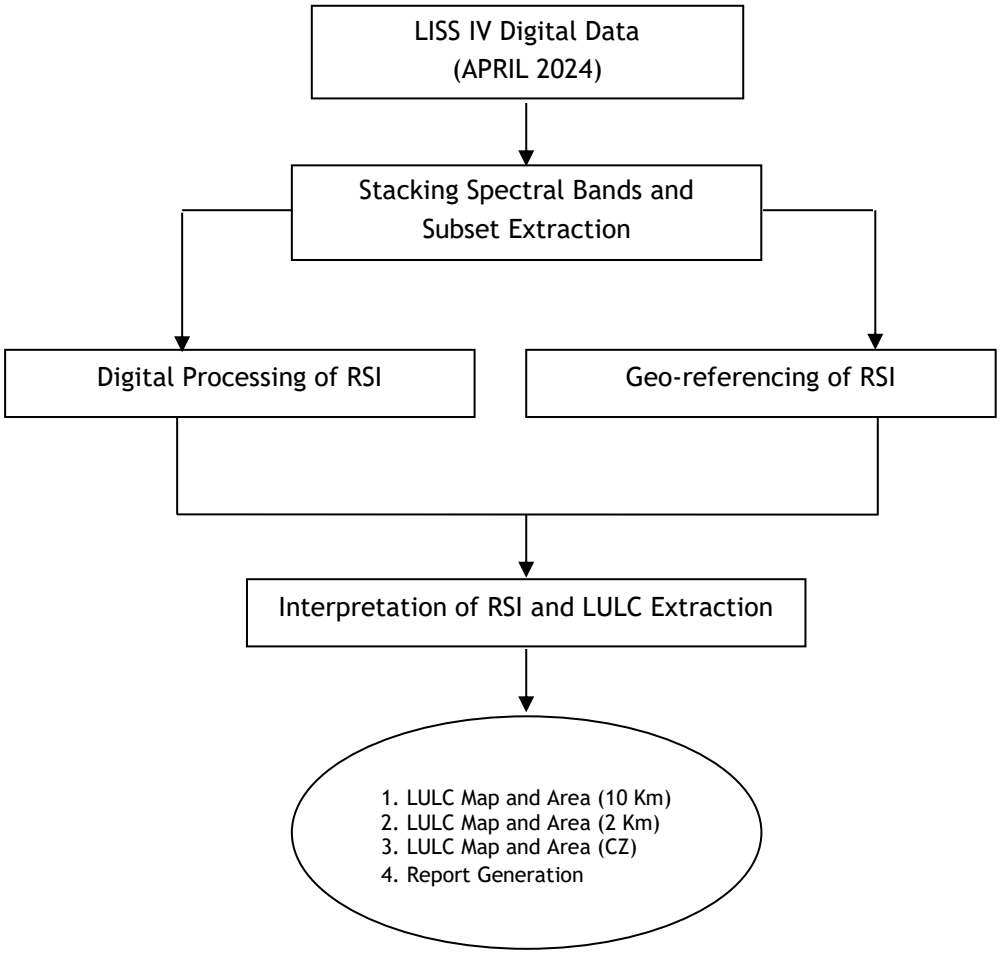


Figure 2. Flow chart showing digital processing for the analysis of LULC

LULC categories are delineated by their image characteristics using image elements such as color, tone, texture, size, shape and associated elements. The interpreted features are checked for accuracy through field verification, which has been undertaken from 28th September 2024 to 1st October 2024. Landuse categorization and nomenclature used for the LULC categories is based on the national level landuse classification system, which is adopted for the entire country as recommended by National Remote Sensing Centre (NRSC), Department of Space, Government of India (Table 2).

Table 2. Major LULC units of the study area

S.No	Major Category	Landuse unit
1	Built-up Land	Village / Town / Industries
2	Agricultural Land	Crop land Fallow land Tree Groves/ Plantation
3	Forest Land	Dense Mixed Forest Sparse Mixed Forest Open Mixed Forest Degraded Forest
4	Waste Land Mining area	Land with Scrub Barren / Stony/ Sandy Area Mines / dumps
5	Waterbodies	Rivers / Streams Tanks

6. DIGITAL PROCESSING OF SATELLITE DATA FOR TERRAIN STUDY AROUND ML AREA

The color composite of Remote Sensing Image (RSI) is the representation of spectral values of earth features and behave uniquely in different spectral wavelength in visible region. These spectral values are called “Digital Number” or DN values. Inherent nature of certain features may not be easily identified or appreciated visually and hence, processing the image digitally (DN values) could enhance or highlight such features. This would, in turn, help in delineating objects clearly or marking the boundaries of the features exactly. For this purpose, to understand the terrain, Normalized Difference Vegetation Index (**NDVI)** analysis is carried and discussed in the following section.

Normalized Difference Vegetative Index (NDVI) analysis of RSI has brought out information on the vegetative stress and to have an insight about biomass content of the area. It is done by calculating the ratio between the difference in the DN values between Band 4 and Band 3 and

added DN values in Band 4 and band 3. The resultant output of NDVI implemented on the 10 Km radial buffer is illustrated in Figure 3.

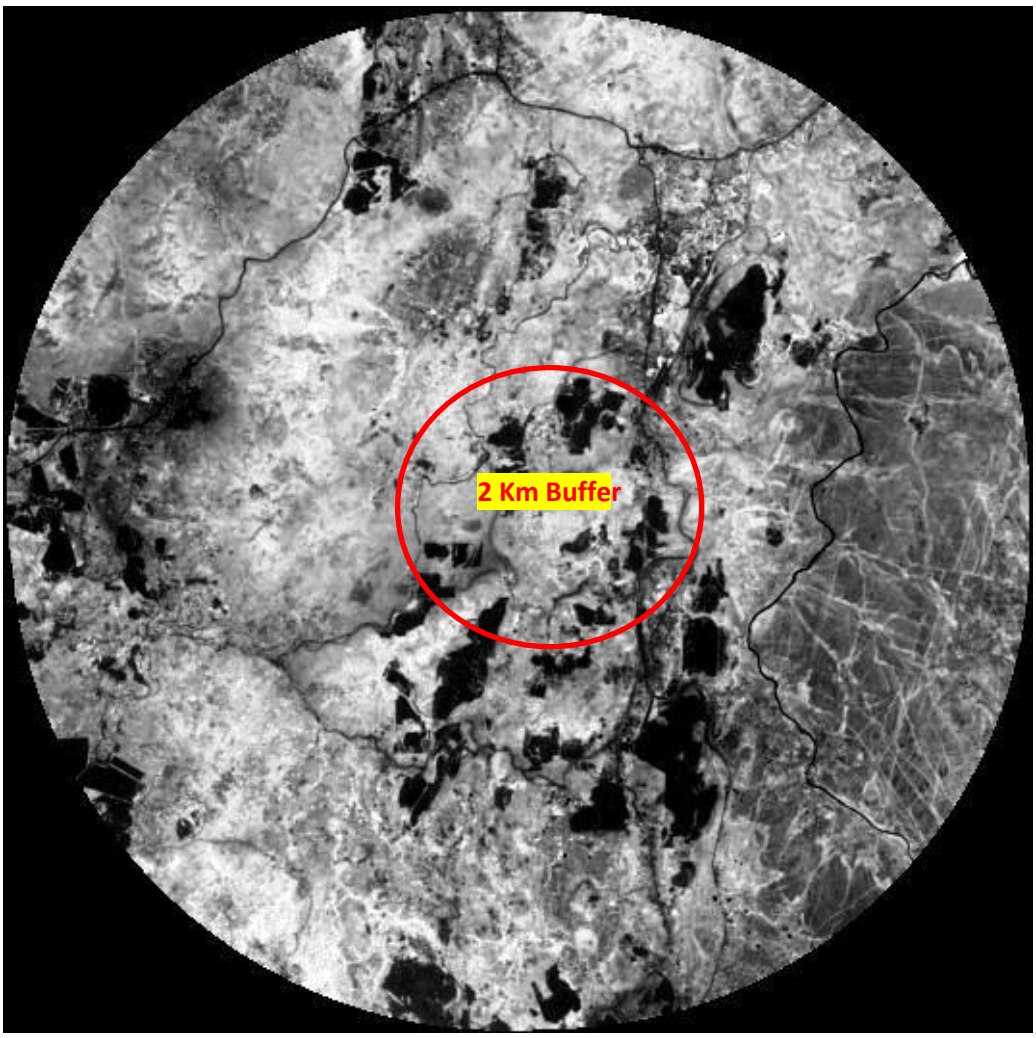


Figure 3. NDVI of 10Km Buffer area around the Dalphar ML

From the image, it could generally be seen that features are depicted from dark black to various gray levels and in some part showing bright white. The gray levels and brightness indicate the vegetation vigour and the darkness in the output indicates vegetation is absent. Various gray levels indicate such vegetation vigor or stress due to limitation of soil condition or water availability. The study area shown in Figure 3, 10 Km buffer area, is robust with healthy vegetation in most part indication the general vegetation condition of the area.

NDVI is a ratioed value and it ranges from -1, to +1. Features or region or area showing lesser values for example .05 or negative values may indicate less degree of vegetative cover or

mostly barren or rocky features. On the other hand, the higher the positive values, vegetative condition is excellent. In the buffer area, values ranging from 0.1 to 0.2 are generally indicate agriculture, shrubs, scrubs or thinly populated vegetative cover. Values ranging more that 0.3 to 0.6 indicate very dense vegetation of good vigor. In the 10 Km buffer area, NDVI values ranges from -0.12 to maximum value (of +0.61) indicating presence of water bodies / mining activities (low negative value) and dense forest cover for high positive value. Mean value of the area is estimated to be around 0.29 indicating the presence of healthy vegetative cover. Similar implementation is carried out for 2 Km buffer area (Figure 4) and within the Core Zone (Figure 5) as well.

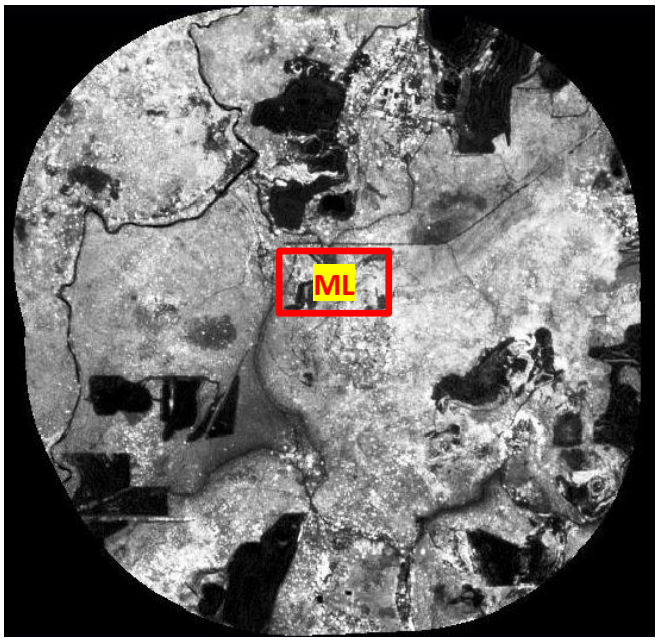


Figure 4. NDVI of 2 Km Buffer area

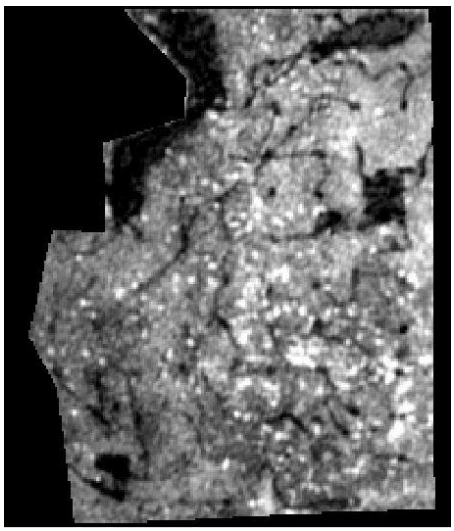
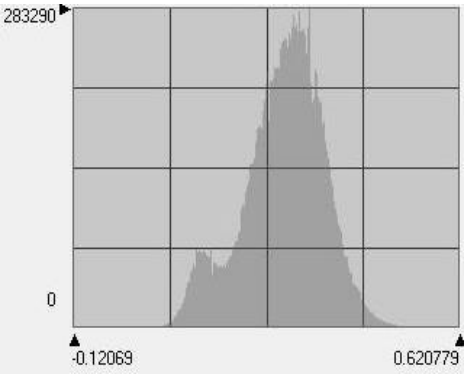


Figure 5. NDVI of Core Zone

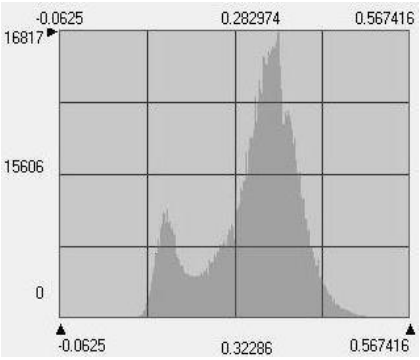
In the 2 Km buffer area, the minimum value is estimated as -0.062 whereas the maximum value is 0.567. The negative values indicate absence of vegetation, which may be due to mining activities in the peripheral part of the buffer area and at the same time, high positive values imply presence of dense vegetation. At the same time, NDVI values of Core zone does not show any negative values but shows a low positive value (+0.1), which may be due to barren pockets within; relatively high positive values may indicate presence of dense and vigorous vegetative cover.

Graphs shown with NDVI values in X-axis and number of pixels in Y-axis illustrate a relatively lesser negative value in 10 Km buffer area (Figure 6A) compared to 2 Km (Figure 6B). This may be due to the factor that vast and major presence of dense vegetation compensate for

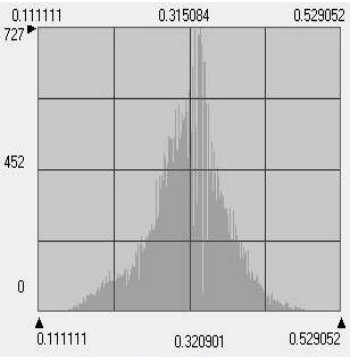
the lesser NDVI values, whereas that condition does not prevail within 2 Km buffer. But, positive values within the Core zone imply absence of water bodies or mining activities but few pockets of barren area and presence of thick vegetative cover (Figure 6C).



6A, Graph of 10 Km buffer area



6B. Graph of 2 Km buffer area



6C. Graph of Core Zone

7. LULC OF 10 KM RADIAL BUFFER AROUND DALPAHAR IRON AND MANGANESE ORE ML

From the digital analysis and subsequent visual interpretation, it is observed that the buffer area is predominantly covered with forest vegetation. Dense forest on the mountain, hill ranges and slopes indicate terrain control on the vegetative cover of the study area. Spatial pattern also suggests wooded area of various densities could be related to such terrain features. Settlement are mostly scattered, thinly populated with few huts and houses and mostly delineated and delineated along valleys and on plains. Agriculture activities are also limited and confined to narrow strip of valleys and small plains.

Various LULC features that are delineated from the selected RSI using image interpretation is geo-referenced and transformed as LULC map in GIS environment (Figure 7). Spatial distribution of various LULC categories and their respective area estimation is also carried out in GIS environment. Total buffer area of 10 Km and 2Km buffer area are **3**59.453 sq.km and 22.573 sq.km respectively and their details are discussed in the following sections.

7.1 Built-up / Settlements

Settlements and built-up area is interpreted using image elements such as light grayish green color, medium to coarse tone, medium to coarse texture, high reflectance in some places adhering to geometrical boundaries. Few patches of presence of vegetation are also seen associating with such features. Association is the key parameter in identifying and delineating built-up area apart from base reference such as toposheet and field visit. Some of the features in this category include village, town, industrial area and building structures.

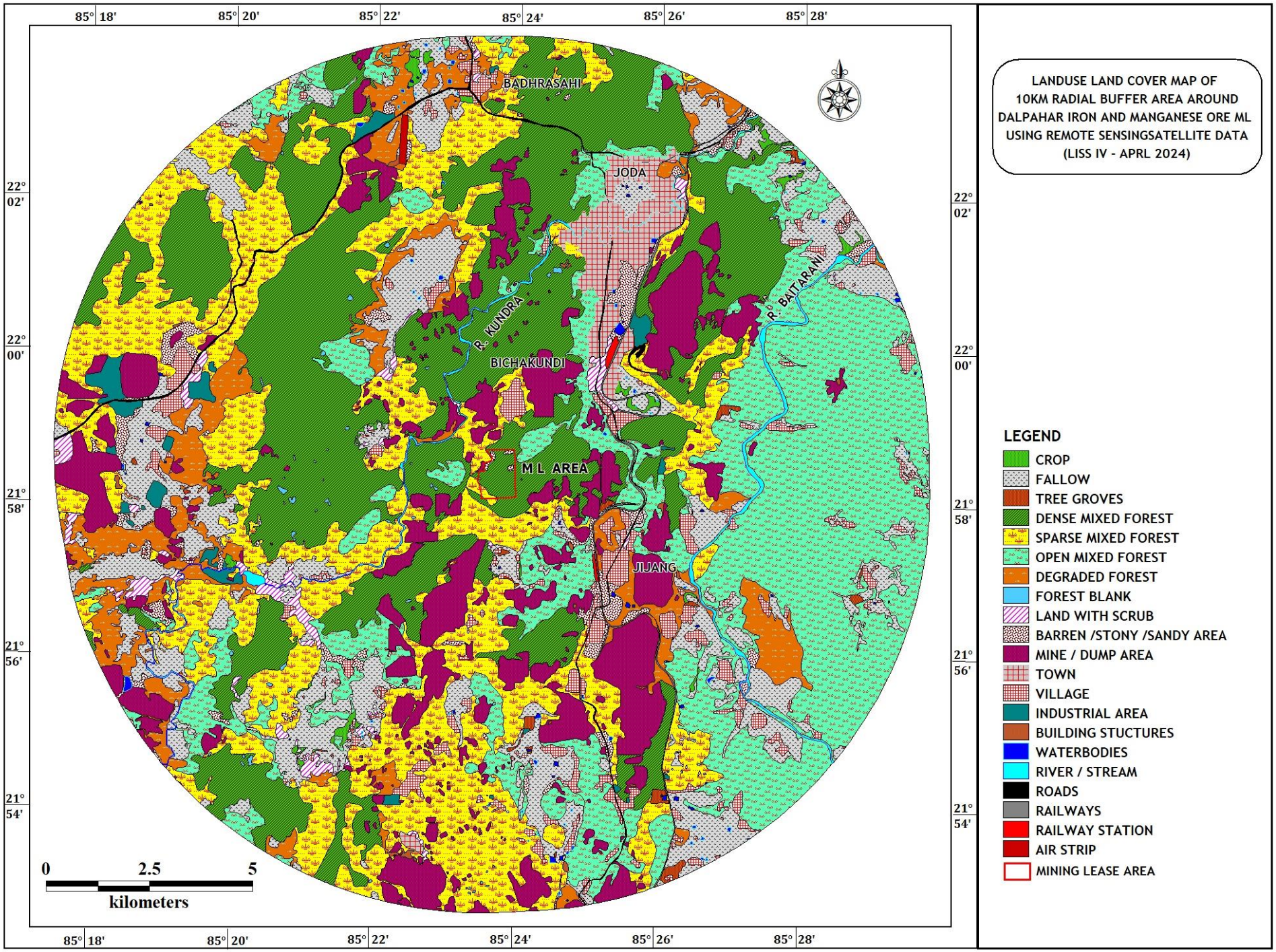


Figure 7. LULC map of 10 Km radial buffer around Dalpahar ML area using LISS IV (Apr 2024)

From the RSI, villages could be delineated by their medium to coarse tone and coarse texture, gray color and association with agriculture and water bodies. They are very small visible with only very few huts or structures and scattered in nature (Figure 8). Villages such as Jurudihi, Tanto, Ruguridihi, Topadihi, Rurhukala, Malda, Kakarpani, Pataberha, Sunapasi and Kunaposi are delineated. Similar image characters with larger spatial extent may be delineated as town and Joda is the largest settlement in the buffer area (Figure 9).

Figure 8. Juridihi Village

Figure 9. Joda Town

Figure 10. Industrial area near Ruridihi

Figure 11. A school building – Bichakundi

Industrial area is also identified in the buffer area by their typical geometrical shape, coarse tone, coarse texture and presence of vegetation interpreted by their dark brown color. Industries are not much but are scattered as well. They are mostly associated with mining activities (Figure 10). Similarly, “building structures” includes both permanent and temporary structures built by any construction materials including metal containers. Building structures support administration and execution activities in and around mining area apart from isolated school / hospital buildings and other Industrial activities (Figure 11).

Spatial extent of village is estimated to be 10.597 Sq.Km representing 2.95%, town as 6.286 Sq.Km (1.75%), industrial area with 2.762 Sq.Km representing 0.77% and building structures with 0.340 Sq.km representing 0.09%. built-up category is 19.745 Sq.Km representing 5.49% of the buffer area.

7.2 Agricultural Land

The study area, predominantly being a hilly tract, agriculture is confined to few narrow valleys and plains in few places. It mostly depends upon monsoon, tanks, ponds and small reservoirs for irrigation. Because of this much of the agricultural activities are identified closely associated with rivers, minor streams and other water bodies. Besides, many settlements are also seen near agricultural fields. Fallow land, crop land and Tree groves / plantation come under this broad category.

Figure 12. Crop and Fallow land near Topadihi

Figure 13. Tree grove near Guali

In the RSI, Crop land may be interpreted using image elements such as light red or pink color, smooth to medium tone, smooth texture, geometrical field shapes and close association with

settlement, plains, valleys and water bodies (Figure 12). Among these, association element is more significant and it allows discerning crop land from other vegetation such as scrubs or forest cover. Agriculture activities of this part mainly depend upon streams, rivers and local ponds and tanks. These water bodies are not only the irrigation source but also cater the domestic requirements of the local community. Crop land cover is seen around Guali, Topadihi, Palsha and Bhadrasahi. It covers an areal extent of 1.282 Sq.Km representing 0.36%.

Fallow land is a land without crop cover, which is either a harvested land or land tilled for cultivation. Interpretation of fallow land from RSI is similar to the image characters of crop land with same associative factors but without vegetation, where the color is grayish or light green with smooth tone. This category is seen near villages such as Guali, Topadihi, Palsha, Kantasahi, Kalmang, Bamberali, Jijing and Patamunda. Spatial extent of fallow land is estimated as 37.334 Sq.km representing 10.39%.

Tree groves and Plantation are scattered and few in numbers and mostly confined near settlements and agricultural land (Figure 13). It covers an area 0.777 Sq.km representing 0.22% in the buffer area.

Cumulatively, agricultural category including crop, fallow land and tree groves covers a total area of 39.393 Sq.km representing 10.96% of the buffer area.

7.3 Forest Land

Forest cover is the predominant LULC in the buffer area that is encouraged by the terrain condition. Rugged mountains and hills with good precipitation have allowed proliferation of thick vegetative growth of dense forest cover. This in turn, supports thriving of plethora of vegetative species and varied fauna, tall and sturdy trees, climbers, scrubs and shrubs enrich the forest cover. Some of the noteworthy trees in this area include Teak, Seasam, Babul, Palas, Bel, Mango, Ach and Neem. It is also seen with shrubs such as Bamboo, Sisal, Ber, Calotropis and wild grass. Many of the tall trees are identified at the higher altitudes and trees intermixed with shrubs are seen on the slopes; and strand of isolated tree groves, stunted trees, shrubs and scrubs are seen in the foothills and plains. Based on the intensity and density of vegetation in a forest area, forest may be qualitatively grouped as *dense mixed forest, sparse mixed forest, open mixed forest* and *degraded forest*. Such categorization may done based on the image characteristics of vegetative species as appreciated from the interpretation of satellite image.

Dense mixed forest, first among the category, may be delineated by their typical image elements such as dark red color, fine to medium tone and fine to medium texture. It is

typically associated with high relief structural hills. As seen in the digital analysis, NDVI, most of area shows vegetation of good health and vigor and with dense and thick canopy. This is naturally interpreted in RSI by their typical dark brownish red. Density is often perceived by image elements such as smooth to medium tone and medium texture as they indicate the proximity between trees. Also, season plays an important role as seasonal scrubs and shrubs of shorter life duration may show some variation in the density and hence, oscillation of forest cover may be inferred showing temporal changes in their spatial pattern.

Figure 14. Dense Mixed Forest near Dalpahar

Figure 15. Sparse Mixed Forest - Bichakundi

Dense forest cover is interpreted in regions near Joda in the north, Kolata in the west, Bamebari in the southern part, Dalaphar in the central part of the buffer area (Figure 14). Spatial estimation of dnse forest cover is 84.49 Sq.Km representing 23.51% of the buffer area.

Sparse mixed forest shows similar image elements as relatively denser forest. Because separation of tree stands and growing distance among them causes lesser density in canopy cover that influences the spectral reflectance behavior. Image characteristics of *sparse mixed forest* show red color, relatively coarser tone and texture, which may be because of exposure of bed rock terrain apart from distance among trees. It is delineated in many parts of the buffer area such kalmang, Ghoraburhani, Dalpahar, Jijang, Bhadrasahi, Rengalberha and Bichakundi (Figure 15). As forest cover is the dominant LULC of the buffer area, sparse dense forest cover is delineated many parts and covers an extent of 70.223 sq.km (19.54%) of the study area.

Figure 16. Open Mixed Forest

Figure 17. Degraded Forest near Tanto

Open mixed forest encompasses sparsely vegetated wood cover with bedrock exposures and covered with many shrubs and scrubs. It is mainly delineated in the eastern part of the buffer area (Figure 16). In the image it is much associated with hard rock showing a spectral character of greenish red color, coarse tone and coarse texture. It is mainly confined to lesser relief structures, foothills and plains including mining area. Most of the vegetation present in this category is seasonally influenced and hence show difference in image elements during different periods. Image elements such as light red to bright red, medium to coarse tone and medium to coarse texture may help in the delineation of this category. It covers an area of 73.935 sq.km representing 20.57% of the buffer area.

Degraded forest is the one that is much influenced by human interaction or denuded due to natural causes. It shows presence of trees that are sporadic in nature, stunted trees and often dominated by shrubs, bushes and pasture land. Also, from the image it could be interpreted near mining and industrial area, settlements and near railway line and air strip (Figure 17) and along stream courses as well. The spatial estimation of degraded forest cover is estimated to be 19.651 sq.km representing 5.47% of the study area.

Another lesser significant unit is "**forest blank**" that are suddenly sprung amidst thick forest cover. This blank area may be natural or due to human kind that may be scrutinized with ground knowledge. This is very negligible covering an area of 0.352 Sq.Km (0.10%).

Cumulative forest cover in the buffer area is estimated to be 248.651 sq.km representing 69.17% of the buffer area.

7.4 Wasteland

Wasteland may be defined as “any type of land which because of neglect, overuse or degradation by climatic and / or anthropogenic factors is not being used to its fullest potential”. It shows severe constraints in land utilization and may not be able to utilize for cultivation even after implementing adequate conservation measures. L*and with scrub* and *barren / stony / sandy area* are two important land units that could be identified under Wasteland category

Figure 18. Scrub near Guali

Figure 19. Mining Area near Unchabali

Land with scrub is delineated as small pieces of land along streams, water bodies, agricultural fields and settlements. In the RSI, it is arduous to delineate this land unit because of mixing up with spectral characters of other vegetative features (Figure 18). Its association and irregular geometrical shape, red color, fine to medium tone and medium texture aids in interpreting such feature. It covers a spatial extent of 3.417 sq.km representing 0.95%.

Barren / stony / sandy area is seen as small patches scattered all over the buffer area. These land parcels are delineated by image elements such as light grey or white color, smooth tone, fine texture showing closer association with vegetation cover. In the study area, it shows a spatial extent of 5.348 sq.km representing 1.49%.

Mining activities and dump area are seen throughout the buffer area and provide major contribution to the economic activities of the area. It is interpreted by its typical spectral reflectance, shape, bright green color indicating the soil reflectance (from light to dark green), fine to medium tone and medium texture (Figure 19). Mining and dump area in total covers 37.385 sq.km representing 10.40% of the study area.

7.5 Waterbodies

Water bodies include ponds, tanks, streams, rivers and dams and reservoirs. Since, the terrain is hilly with good relief structures, precipitation not only flow as surface overland flow but also collected from hills as minor first order streams. They flow overland for a short distance and join to higher order streams to form rivers. In the buffer area, two major rivers – River Suna or Kundra in the west (Figure 20) and River Baitarani (Figure 21) in east are interpreted.

Figure 20. River Suna near Joda

Figure 21. River Baitarani

Figure 22. A pond near Bichakundi

Figure 23. A reservoir near Bamberi

There are numerous ponds and tanks near settlements and amidst agricultural fields are also identified (Figure 22) besides a larger waterbody, reservoir in the southern part (Figure 23). These water bodies help both in agricultural and domestic requirements of the local

community. Water bodies are interpreted by their light to dark blue in color and typical shape - linear in caser of rivers or streams, geometrical in the case of tanks or ponds. This category, both rivers and ponds cover an area of 2.294 sq.km (0.64%) and 0.657 sq.km (0.18%) respectively.

The area of various LULC categories as derived from the satellite data within the buffer area is given below in Table 3.

Table 3. LULC Categories within 10 Km Buffer zone and their Spatial Extent

S.No	LULC Categories	Area in Sq.Km	Percentage
01	Crop	1.282	0.36
02	Fallow	37.334	10.39
03	Tree Groves	0.777	0.22
04	Dense Mixed Forest	84.490	23.51
05	Sparse Mixed Forest	70.223	19.54
06	Open Mixed Forest	73.935	20.57
07	Degraded Forest	19.651	5.47
08	Forest Blank	0.352	0.10
09	Land with Scrub	3.417	0.95
10	Barren / / Stony / Sandy Area	5.348	1.49
11	Mining Area	37.385	10.40
12	Town	6.286	1.75
13	Village	10.597	2.95
14	Industrial Area	2.762	0.77
15	Building Structures	0.340	0.09
16	Waterbodies	0.657	0.18
17	Stream / River /	2.294	0.64
18	Road /Kachcha Road	1.257	0.35
19	Railways / Station	0.867	0.24
20	Airport Runway	0.199	0.06
	TOTAL	**359.453**	**100.00**

The above sections have elaborately thrown light on the regional LULC pattern existing within 10Km buffer area.

8. LULC PATTERN WITHIN 2 KM BUFFER AREA AROUND DALPAHAR ML

Any changes in the environment due to any developmental activities, especially mining activities, could be well addressed by assessing changes in the LULC around the area. In this

study, LULC of 2Km buffer area is carried out so that currently existing spatial pattern of LULC is recorded.

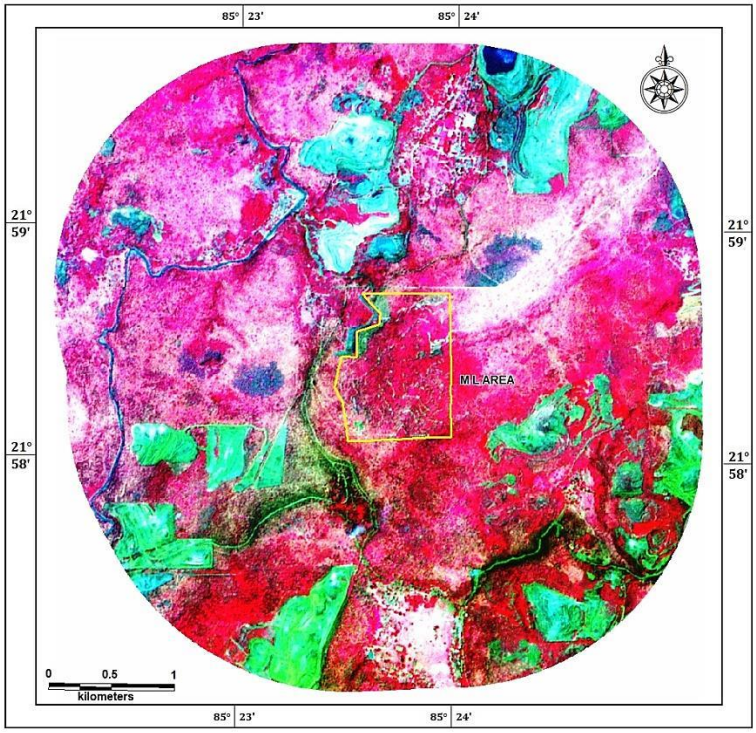


Figure 24. LISS IV Data showing 2Km Buffer area around the ML (April 2024)

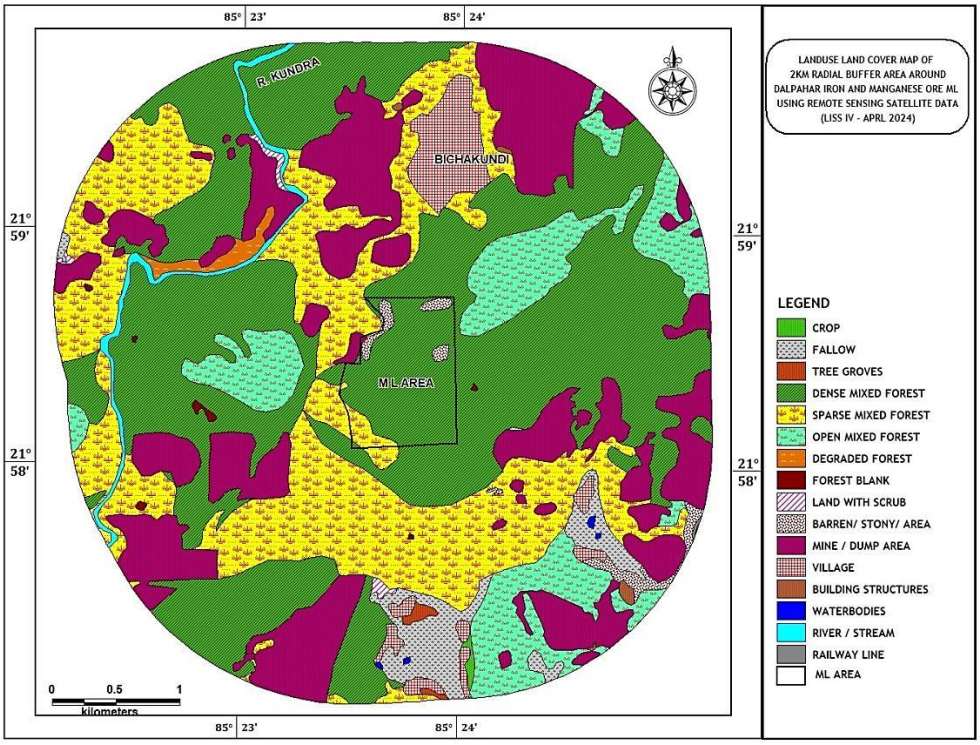


Figure 25. LULC Map around 2Km Buffer area using LISS IV Data - April 2024

The spatial database of LULC thus generated could also be used for periodical monitoring for change detection and to assess the causative factors for any changes in their spatial pattern. Such records could be used highly significant in addressing future impact studies or assessment. In this context, study on LULC around 2 Km radial buffer of the ML using RSI is carried out. Based on the digital processing of data and field visit, remote sensing satellite image (RSI) acquired on April 2024 (Figure 24) is studied and LULC map of 2km radial buffer around the ML is prepared for an area of 22.573 sq.km (Figure 25).

From the map, it could be seen that that area is predominantly covered with dense and sparse forest with a lot of mining activities. Crop and fallow land is very negligible. Spatial estimation as shown in Table 4 revealed that the forest area covers 72% of the buffer area followed by mining area (20.5%). Among the forest cover, dense mixed forest 8.891 sq.km (39.39%) followed by sparse mixed forest showing 5.097 Sq.km (22.58%).

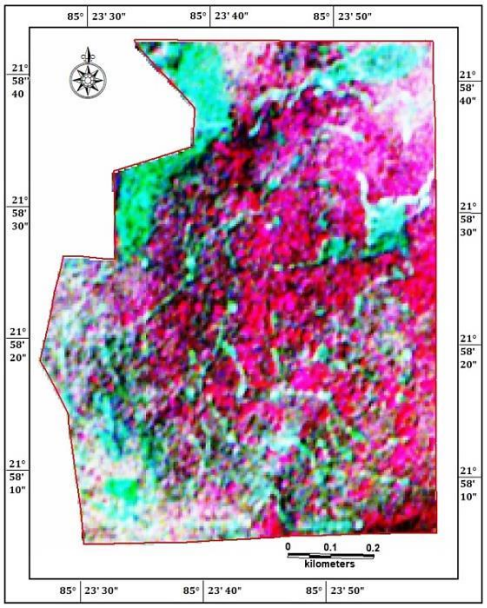
Table 4. LULC within 2 Km Buffer zone and their Spatial Extent

S.No	LULC Categories	Area in Sq.Km	Percentage
01	Crop	0.020	0.09
02	Fallow	0.575	2.55
03	Tree Groves	0.033	0.15
04	Dense Mixed Forest	8.891	39.39
05	Sparse Mixed Forest	5.097	22.58
06	Open Mixed Forest	2.144	9.50
07	Degraded Forest	0.117	0.52
08	Forest Blank	0.023	0.10
09	Land with Scrub	0.045	0.20
10	Barren / / Stony / Sandy Area	0.167	0.74
11	Mine / Dump Area	4.627	20.50
12	Village	0.596	2.64
13	Building Structures	0.026	0.12
14	Waterbodies	0.011	0.05
15	Stream / River /	0.197	0.87
16	Railways / Station	0.004	0.02
	TOTAL	**22.573**	**100.00**

Lastly, LULC within the core zone is carried out and is discussed in the following section.

9. LULC PATTERN WITHIN THE CORE ZONE (CZ) USING LISS IV DATA - APRIL 2024

Study using Remote sensing satellite data (Figure 26) revealed that the area is mostly covered with forest of both dense and sparse with few land parcels of minimal mining and allied area (Figure 27).



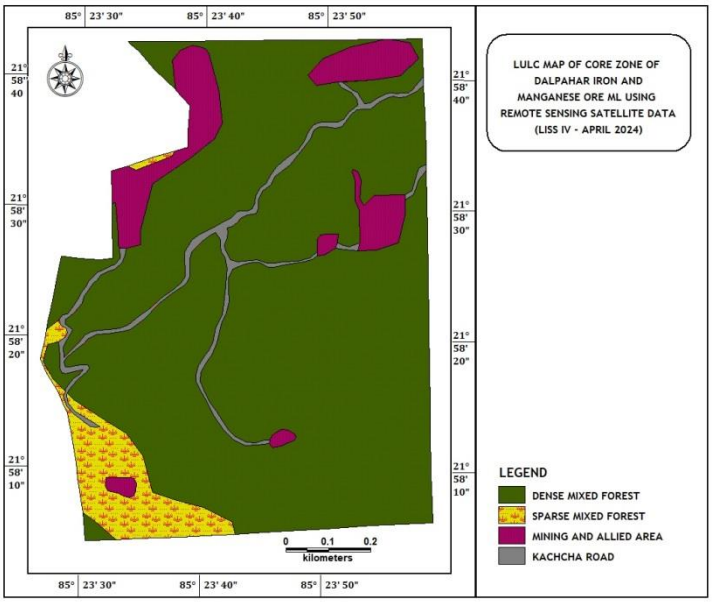


Figure 26. LISS IV Data (April 2024) **Figure 27. LULC Map of Core Zone (April 2024)**

LULC categories within the core zone and their estimated area are shown in Table 5.

Table 5. LULC Categories within the Core Zone and their Spatial Extent

S.No	LULC Categories	Area in Sq.Km	Area in Ha	Percentage
1.	Dense Mixed Forest	0.73755	73.755	81.99
2.	Sparse Mixed Forest	0.05857	5.857	6.51
3.	Mining and Allied Area	0.07503	7.503	8.34
4.	Kachcha Road	0.02846	2.846	3.16
	TOTAL	**0.89961**	**89.961**	**100.00**

From the table, it could be seen that forest cover occupies the entire core zone (CZ) nearly 88.5% indicating an undisturbed area with minimal mining and allied activities within.

10. OBSERVATION AND RECOMMENDATIONS

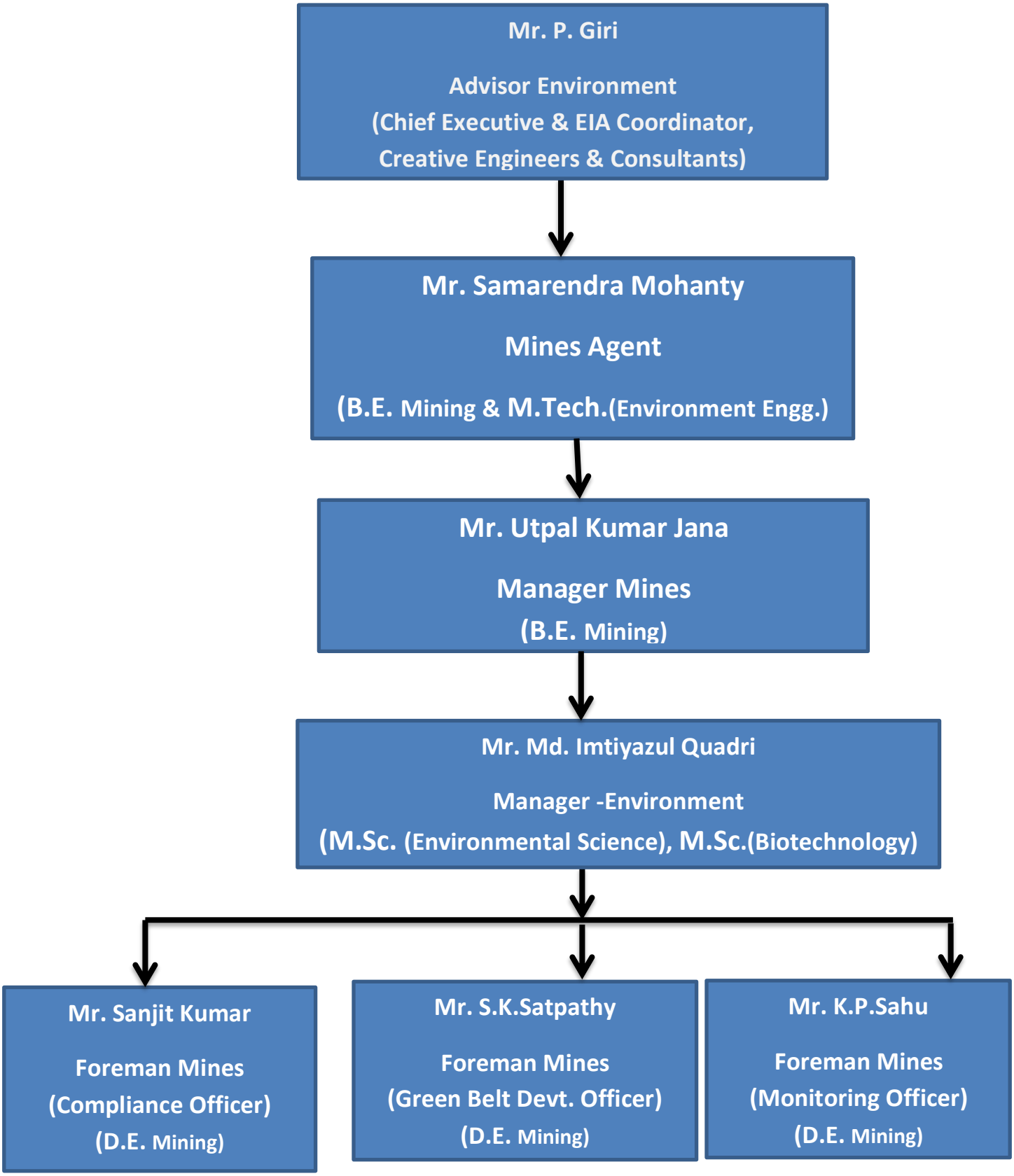
Study area is mostly rugged hard rock hilly terrain with intermittent valleys and plains. Observation brought out through the study using recent satellite data has prompted to following recommendation pertaining to the monitoring of LULC as a parameter in environmental impact assessment (EIA) around the ML area.

1. More than 70% of the land sue and land cover (LULC) is dominated by forest cover and agricultural activities are relatively minimal and depends upon natural water resources
2. This point out on the focus of two major LULC namely Forest and water bodies.
3. This necessitates a study on seasonal / temporal spatial pattern of forest cover using Remote sensing satellite Image (RSI) as it could out the changes in LULC around the ML area.
4. A careful seasonal study of 2 Km buffer area using RSI is also necessary to understand the nature of changes in the spatial pattern of vegetative cover, especially forest cover, either it is natural or due to human activities and also water bodies.

11. CONCLUSION

From the study using RSI, it could be concluded that forest is the predominant category and hence a sensitive ecosystem that requires constant monitoring and assessment using ground based system and RSI based approach. Since mining is the major economic activity seen in the buffer area, both in 10 Km radial buffer and 2 Km radial buffer, periodical monitoring of changes in LULC is required. This could be done using RSI data in GIS environment so that not only the spatial pattern of LULC but their area could also be assessed. Limited agricultural activities are interpreted and they depend upon monsoon and local segment of streams and other water bodies, which is perceived while doing field work. Hence, care to be taken to monitor forest cover and water bodies around the ML necessitating a periodical update on LULC of 2km buffer area around the ML using larger resolution multi-spectral remote sensing satellite data.

Environment Management Cell-Organization Chart



5.9 Summary of ESC cost

The cost estimated for infrastructure, Health and Education, Livelihood program, Employment program and Special programs/ Sustainable Growth has been summarized in the table below:

Table 5.14 Summary of ESC cost

Sl. No.	Item	Total Amount (In Rs. Lakhs)
1	Infrastructure Development	1,11,45,000.00
2	Health infrastructure & services	20,00,000.00
3	Education infrastructure & support	10,00000.00
4	Sustainable Livelihood	17,40,000.00
5	Vocational Training	26,50,000.00
6	Special Program	16,00,000.00
	Total	**2,01,35,000.00**

Total Amount is Rs* 2,01,35,000.00 *(Rupees Two Crore One Lakhs Thirty Five Thousand only)

भारत सरकार
Govt. of India
श्रम एवं रोजगार मंत्रालय
Ministry of Labour & Employment
खान सुरक्षा महानिदेशालय
Directorate-General of Mines Safety

NO: 33251504|SEZ|Bhubaneshwar Region 1|Perm|2024|263567 Date: @@Date

प्रेषक

खान सुरक्षा निदेशक,

भुवनेश्वर क्षेत्र-1 ।

सेवा में,

अभिकर्ता, Dalpahar Iron and Manganese Mine,

Sri Dharam Chand Jain ,

पी.ओ.: जोरुरी, जोडा,

ज़िला: केओंझर, ओडिशा-758035.

विषय: Relaxation under Regulation 106(2)(b) of the Metalliferous Mines Regulations, 1961 to deploy Heavy Earth Moving Machineries in conjunction with deep hole blasting at Dalpahar Iron and Manganese Mine of Sri Dharam Chand Jain

महोदय,

कृपया उपर्युक्त विषय पर अपना ऑनलाइन आवेदन आईडी No. 263567दिनांक 04.03.2024 और ऑफ़लाइन जमा की गई Plan और Section देखें।

इस मामले पर आपके आवेदन और संलग्न plans/sections और अन्य संलग्नकों में दी गई जानकारी के आधार पर विचार किया गया है।

In exercise of the powers conferred on the Chief Inspector of Mines (also designated as Director-General of Mines Safety) under the provisions of Regulations 106(2)(b) of the Metalliferous Mines Regulations, 1961 and by virtue of authorisation granted to me by the Chief Inspector of Mines (also designated as Director-General of Mines Safety) under Section 6(1) of the Mines Act, 1952, I, hereby permit you to work for extraction of Iron and Manganese ore by **deployment of Heavy Earth Moving Machineries (HEMMs)** in the area demarcated as **X1,X2,X3,X4,…X19 & close at X1** as shown in blue colour and **in conjunction with deep hole blasting** in the area demarcated as **a1,a2,a3,….a10 & close at a1(Block-I); b1,b2,b3…..b5 & close at b1(Block-II); c1,c2,c3… c5 & close at c1(Block-III); d1,d2,d3,d4 & close at d1 (Block-IV) and e1, e2, e3, e4 & close at e1(Block-V)** shown in violet colour as shown on the surface plan No.