

INDRANI PATNAIK

(Mines Owner)

A/6, COMMERCIAL ESTATE, CIVIL TOWNSHIP, ROURKELA-769 004

Phone : 0661-2400139, 2400014, FAX : 0661-2402226

REF. No. : IP/MM/APR-2025/ 010

DATE: 22.04.2025

To

The Director (S)

Eastern Regional Office,
Ministry of Environment & Forest,
Government of India,
A-3 Chandrasekharapur,
Bhubaneswar – 751 023

Subject : Submission of Environmental Clearance compliances stipulated in approved EC for iron ore production of 4.00 MTPA in respect of Unchabali Iron & Mn. Mines of Smt. Indrani Patnaik.

Reference: 1. Ministry's Clearance letter no. J-110515/214/2008-IA.II (M), dated 23.07.2009 for 4.00 MTPA Iron ore Production.
2. MoEF &CC notification no. 4624 (Published in Gazette of India) Dt. 26.11.2018.

Sir,

With reference to the above cited subject and gazette notification, we are submitting herewith the six monthly compliance report **by uploading in the Parivesh portal** and also uploading the same in our company website for 4.00 MTPA Iron ore production with comprehensive data analysis reports (supporting photographs and monitoring reports) for the period **October 2024 to March 2025** in respect of Unchabali Iron & Mn. Mines of Smt. Indrani Patnaik.

Thanking you.

Yours faithfully

For Unchabali Iron & Mn. Mines of Smt Indrani Patnaik

Anil Kumar
Mines Manager 22/4/25

Mines Manager
Unchabali Iron & Mn. Mines

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

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village(s) Unchabali & Balda, Sub-division Champua, District Keonjhar, Odisha.**

SP. Cond. NO.	SPECIFIC CONDITION	PRESENT STATUS
I.	The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa, and effectively implement all the conditions stipulated therein.	As per requirement, the project has been obtained Consent to establish & Consent to Operate from SPCB, Odisha for 4.00 MTPA Iron ore production. The obtained Consent to Operate includes two numbers of 200 TPH mobile crusher plant, two numbers of 150 TPH mobile crusher plant, three numbers of 250 TPH mobile screen plant. The compliance to the conditions stipulated in the approved consent to establish & consent to operate has been implemented effectively. The latest consent to operate compliance report has been submitted to SPCB, Odisha for the year 2024-25 , and the same is enclosed as ANNEXURE-1 .
II.	Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 103.432ha forest land involved in the project shall be obtained before starting mining operation in that area. Till such time mining activities shall be restricted to an area of 35.275 ha forestland for which approval under section-2 of the forest (Conservation) Act, 1980 was granted by the Ministry of Environment and Forests on 03.05.2007. Environmental Clearance is subject to grant of forestry clearance. No mining shall be undertaken in the forest area without obtaining requisite prior forestry clearance.	As per condition, the forest clearance has been obtained from MoEF for an area of 103.432 Ha in two phases under the Forest (Conservation) Act, 1980. First phase forest clearance was obtained on 03.05.2007 for an area of 35.275 Ha., vide MoEF letter no: 8 (21)40/2004-FCE dated 03.05.2007, and second phases forest clearance has been obtained on 11.09.2015 over an area of 68.157 Ha., vide MoEF&CC letter no F.NO.8-67/2014-FC dated on 11.09.2015. The copy of the forest clearances obtained from MoEF&CC is attached as ANNEXURE - 2 (First phase for 35.275 Ha) & ANNEXURE - 3 (Second phase for 68.157 Ha)
III.	The environmental clearance is subject to the approval of the State Land use Department, Government of Orissa for the	There is no agricultural land within the mine lease area. Therefore, the said diversion from the state land use department is not applicable.

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	diversion of agricultural land for Non-agricultural use.	
IV.	The mining operations shall be restricted to above groundwater table and it should not intersect the groundwater table. In case of working below the groundwater table, prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained, for which a detailed hydrological study shall be carried out.	<p>The present mining operation is restricted to above the groundwater table and there is no proposal to intersect the groundwater table as per the approved Scheme of Mining.</p> <p>The Project has carried out detailed hydrology and hydrogeological study through and as per the hydrology study report the groundwater table exists at 478 AMSL and the present mine working operation is above 530 AMSL.</p> <p>In case of groundwater table intersection in the future, the project will abide by the said condition and will get prior approval from MoEF and CGWA.</p>
V.	The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the seasonal streams if any emanating from the mine lease area during the course of mining operation.	<p>No watercourse and/or water resources are being obstructed due to our mining operation. To ensure the same project has been undertaken runoff management study and prepared site-specific runoff management plan through KRG Rain Water Foundation, Chennai. Under the site-specific runoff management plan, the project has undertaken various mitigating measures in and around the mine lease area.</p> <p>Mines runoff management during monsoon period:</p> <p>The mines' runoff water is not allowed for direct discharge from the mine lease area. Hence, the entire generation of mines runoff water (during monsoon period) is collected to the bottom of the pit, checks dams and check weirs and after treatment through silt cum Sedimentation by giving adequate retention period, the final water is allowed to discharge. However, the entire mine area and check dams/check weirs connectivity is properly made by proper drainage pattern.</p> <p>All the implementations have been carried out with consideration of maximum rainfall</p>

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		<p>and technical design followed as per KRG rainwater harvesting recommendation. The detailed implementation of check dams and check weirs is given in Table -1.</p> <p>Nallah Protections measures:</p> <p>In addition to the site-specific mitigation measures, the project has been carried out various Nallah protection measures around the mine's premises. The implementations are as follows.</p> <ul style="list-style-type: none">✓ Nallah banks are protected by a Guard wall with proper filtration arrangements to avoid entry of any silt carried over to the water bodies during the rainy season from other sources.✓ Check weirs/check dams are conferred along the Nallah passing area to persuade silt sedimentations.✓ Nallah de-siltation is undertaken during the pre-monsoon period to maintain its bio cycle.✓ Nallah both side slopes are pitched with loose boulders to avoid barrier erosion during the monsoon period. <p>Plantation and Vettiver plantation was carried out all along the Nallah boundaries and a few areas is converted as green barriers. The detailed implementation is given in table -2 and photo evidence for the same is given below.</p> <p>Water Harvesting:</p> <p>The project has constructed/ developed four numbers water harvesting ponds in surrounding villages to encourage the water</p>
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		<p>table. The ponds are regularly de-silted and well maintained on regular basis. The detailed implementation is given in table -3.</p> <p><u>Dump Management:</u></p> <p>Dump Preparation: Proper terracing, slope level, and sub benches are maintained in all mines waste/subgrade dump.</p> <p>Retention wall: Bottom of the OB dump and subgrade dump provided/constructed with adequate size of retention wall to avoid the dump failure during the monsoon period. Drainage Pattern: Proper drainage pattern is provided at bottom of the waste/subgrade dumps and other required areas to collect & treat the mine's runoff water.</p> <p>Coir-mat and plantation: The surface area of the waste /subgrade dump is covered with plantation/coir geotextile application along with local grass seeds to avoid dump erosion during the monsoon period. The detailed implementation is given in Table – 4.</p> <p>Photo evidence is given below as PHOTOS-1.</p>
VI.	<p>The top soil, if any shall temporarily be stored at the earmarked site(s) only and should not be kept unutilized for long. The topsoil should be used for land reclamation and plantation.</p>	<p>No topsoil was generated during this reporting period because the current mining operation is restricted within the already diverted forest area and there is no new development in the reporting period. In case top soil generation takes place in the future, it will be stored in an earmarked area and necessary safeguard measures will be undertaken to preserve its nutrient values so</p>

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		that it will be used for future land reclamation and raising of plantations.
VII.	<p>The project proponent shall not undertake beneficiation of the mineral as part of this project. For understanding beneficiation, necessary prior approval under the provisions of EIA Notification, 2006 shall be obtained.</p>	<p>In this regard project has been obtained Environment clearance from the Ministry of Environment & Forest, Government of India vide letter no. J-11015/273/2009-IA.II (M) dated 31.05.2011 for setting up an iron ore beneficiation plant for a capacity of 2.0 MTPA (2 x 185 TPH). A copy of the same has been given as Annexure – 4. The same got established inside the mines and was in operation till Jan 2016. In the meantime, the detailed mineral exploration indicated that there is no such requirement of beneficiation of iron ore. Accordingly, the mining plan got approved by the Indian Bureau of Mines, Govt. of India vide No. MS/FM/25-ORI/BHU/2017-18 dated 10.11.2017 by mentioning that there is no more requirement for beneficiation of iron ore as <i>“the total ROM will be handled by the dry method of size separation with the help of crusher and screen plants, so there will no requirement of wet beneficiation plant due to the following reasons: After detailed exploration, the resource has been estimated under G1 category. No additional resource has been established by drilling. The average grade of iron ore is coming around 62% Fe. Based on the estimation of the resource, it can be observed that only 10% of the total quantity is coming under sub-grade ore. That sub-grade ore can easily be bendable with high-grade ore. Hence, it is not worth using the wet beneficiation plant as far as cost-benefit analysis is concerned.</i></p> <p>In view of the above, we would like to inform you that; since there is no such requirement for beneficiation of ore, so we have dismantled the 2.0 MTPA iron beneficiation plant located within our mines premises and the same got informed to your good office through our letter no. IP/MM/OCTOBER 19/004 dated 03.10.2019. The copy of the submission of the letter at your good office is enclosed as ANNEXURE – 4 & 4A & the</p>

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		copy of the approved mining plan is enclosed as Annexure – 4B.
VIII.	The overburden (OB) generated during the mining operation shall be temporarily stacked at the earmarked dump site(s) only for backfilling. Backfilling shall commence from the year 2011-2012 onwards. The accumulated waste shall be liquidated by the year 2016 and there shall be no external dump thereafter. The back-filled area shall be reclaimed by plantation. Monitoring and management of rehabilitated areas shall continue until vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional office, Bhubaneswar on a six-monthly basis.	The generated overburden and / waste is stacked at earmarked dump site As per the approved review of mining plan duly approved by Indian Bureau of Mines, Govt. of India vide No. MRMP/A/04-ORI/BHU/2021-22/904 dated 10.09.2021, 2670480 CUM quantity of overburden/waste has to be backfilled for the period of 2021-23. Accordingly, the project has backfilled 2991775 Tons quantity of waste inside the mines at the earmarked area till For this reporting year of 2022-23. As <i>the concurrent backfilling</i> is going on and it will continue once it reaches its ultimate level. However, the existing O.B/ waste dump is properly stabilized at an earmarked area with proper terracing, dozing, sloping, etc. with the construction of a retaining wall followed by garland drains at the toe of the dump.
IX.	Catch drains and siltation ponds of appropriate size shall be constructed around the mine working the soil, mineral and temporary OB dumps to prevent runoff water and flow of sediments directly into the Baitarani river, the Jalpanadi, the Kasinallah, the Dolkonallah, Dalkinallah, the Ghaghara nallah, the Jagdharanadi, the Gahirjalanallah, the Mithida spring, and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development, etc. The drains shall be regularly de-silted particularly after the monsoon and maintained properly. Garland drains, settling tanks, and check	The project has undertaken various Mitigate measures on the above. The detailed implementation is as follows. <u>Dump Management:</u> Dump Preparation: Proper terracing, slope level, and sub benches are maintained in all mines waste/subgrade dump. Retention wall: Bottom of the OB dump and subgrade dump provided/constructed with adequate size of retention wall to avoid the dump failure during the monsoon period. Drainage Pattern: Proper drainage pattern is provided at bottom of the waste/subgrade dumps and other required areas to collect & treat the mine's runoff water. Coir-mat and plantation: The surface area of the waste /subgrade dump is covered

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<p>dams of appropriate size, gradient and length shall be constructed both around the mine pit and the temporary OB dumps to prevent runoff water and flow of sediments directly into the Baitarani river, the Jalpanadi, the Kasinallah, the Dolkonallah, Dalkinallah, the Ghagaranallah, the Jagdharanadi, the Gahirjalanallah, the Mithida spring and other water bodies and dump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Dump capacity should also provide an adequate retention period to allow the proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals.</p>	<p>with plantation/coir geotextile application along with local grass seeds to avoid dump erosion during the monsoon period.</p> <p><u>Mines runoff management during monsoon period:</u></p> <p>The mine's runoff water is not allowed to be directly discharged from the mine lease area. Hence, the entire generation mines runoff water (during monsoon period) is collected to the bottom of the mines pit, checks dams and check weirs and after treatment (Silt Sedimentation by giving adequate retention period) process the final water is allowed to discharge. However, the entire mine area and check dams/check weirs connectivity is properly made by a preplanned drainage pattern.</p> <p>All the implementations have been carried out with consideration of maximum rainfall and technical design is followed as per KRG rainwater harvesting recommendation.</p> <p><u>Nallah Protections measures:</u></p> <p>In addition to the site-specific mitigation measures, the project has been carried out various Nallah protection measures around the premises of the mine. The implementations are as follows.</p> <ul style="list-style-type: none"> ✓ Nallah banks are protected by a Guard wall with proper filtration arrangements to avoid entry of any silt carried over to the water bodies during the rainy season from other sources. ✓ Check weirs/check dams are conferred along the Nallah passing area to persuade silt sedimentations.
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		<ul style="list-style-type: none"> ✓ Nallah de-siltation is undertaken during the pre-monsoon period to maintain its bio cycle. ✓ Nallah both side slopes are pitched with loose boulders to avoid barrier erosion during the monsoon period. ✓ Plantation and Vettiver plantation was carried out all along the Nallah boundaries and a few areas is converted as green barriers. <p><u>Water Harvesting:</u></p> <p>The project has been constructed/ developed four numbers of water harvesting ponds in surrounding villages to encourage the water table. The ponds are regularly de-silted and well maintained regularly.</p>
X.	Dimension of the retaining wall at the toe of the temporary overburden dumps and the OB benches within the mine to check run-off and siltation shall be based on the rainfall data.	Based on rainfall data, the retaining wall has been constructed at various locations like the bottom of the OB dump, subgrade dump & other required areas to check the runoff. Photos are attached below as PHOTO-2
XI.	Plantation shall be raised in an area of 98.8627ha including a 7.5 m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, mine benches, along the roads, etc. by planting the native species in consultation with the local DFO / Agriculture Department. The density of the trees should be around 2500 plants per hectare.	As per condition, the plantation will be raised for an area of 98.8627 Ha after completion of the mines life/end of the mine operation in mine lease, backfilled area, and reclaimed area, mine benches, along with the roads, etc. However, during running mine operation project has carried Plantation at various locations like a safety zone, waste dump, mines plant area, mines haul road, village roads, villages schools, and railway sidings in consultation with the local DFO. Till reporting period a total number of 140649 numbers of saplings has been planted which comprises of gap-filling planation over the years on the damaged

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		<p>area/replacement of the dead plants and the survival rate is 85%, on an average of 119552 species survived up to this reporting period. In this reporting period we have planted 8100No. in the mines OB dump area and work out benches. The comprised year-wise plantation details are enclosed as TABLE-5A and the type of plants planted in the year was given in TABLE- 5B. Photo evidence for the plantation inside and out lease area is given below. Photos Are Given Below As PHOTOS-3</p>
XII.	<p>Effective safeguard measures such as regular water sprinkling should be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as haul road, loading and unloading point, and all transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.</p>	<p>The project has implemented a different type of dust suppression system to arrest the air pollution from the source level in and around the mine's premises. The detailed implementations are as follows.</p> <ul style="list-style-type: none"> ✓ Fixed type water sprinklers of the length of 2500 meters implemented in mines permanent haul roads and dispatch roads. ✓ Mines benches, temporary haul roads, and other processing areas dust generation are suppressed by the use of mobile water tankers. In this regard, the project has engaged three no. of 25 KL mobile water tanker, which is inbuilt with a high-pressure hydraulic sprinkling system. ✓ Three numbers of 8 KL capacity mobile water tankers are being used for dust suppression in the Public roads, railway sidings approaching roads & railway yards. <p>Haulage roads are being maintained with grader and water sprinkling to avoid any sort of ruts and potholes. Detailed implementation is given in table – 6.</p>

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		<p>DUST SUPPRESSION IN CRUSHER & SCREEN PLANT: An effective dry fog system is implemented in all the crusher and screen plants. To avoid the flow of air-born dust from conveying belt movement the conveyor belts of crusher and screen Plants are covered with hoods.</p> <p>MONITORING The monitoring of AAQ is being done in the core as well as the buffer zone of the ML area, there are 4 no. of monitoring stations in the core zone i.e. Mines Entry and exit area, employees camp, New store area, and near office area and there are 3 no. of monitoring stations in the buffer zone such as Unchabali Village, Balda Village, Nayagarh Village, Monitoring of AAQ is carried out every month. The monitoring report reveals that parameters like PM10, PM2.5, SO2, and NOx are well within the norms as per NAAQs notifications made by the CPCB. A comprised AAQ monitoring report for the reporting period is enclosed as TABLE.-7. Photos Are Given Below As PHOTOS-4</p>
XIII.	Regular monitoring of the flow rate of the springs and perennial Nallah flowing in and around the mine lease shall be carried out and records maintained.	Regular monitoring of the flow rate of different water bodies is being carried out seasonally by covering the Nallah/rivers i.e. Baitarani River, Unchabali Nallah, Kashi Nallah, Jalpa Nallah, Gahirajala Nallah, Dolko Nallah & Dalki Nallah. The latest flow rate monitoring reports are enclosed as TABLE-8.
XIV.	Regular monitoring of water quality upstream and downstream of the Kasinallah, the Dolkonallah, the Dalkinallah, the Ghagranallah, the Gahirajalanallah, and the Mithida spring shall be carried out and record of monitored data	Monitoring of water quality of Baitarini River, Unchabali Nallah, Kasi Nallah, Jalpa Nallah, Gahirjala Nallah, Mithida Spring, and Dalco Nallah is being carried out seasonally. The monitoring data results are very well within the norms. The data is being maintained and submitted to authorities

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	<p>should be maintained and submitted to the Ministry of Environment and Forest, its Regional Office, Bhubaneswar, the Central Ground Water Authority, the Regional Director, the Central Ground Water Board, the State Pollution Control Board and Central Pollution Control Board.</p>	<p>regularly. The latest surface water quality report analyzed during the last monsoon is enclosed as Annexure - 5.</p>
<p>XV.</p>	<p>The project authority should implement suitable conservation measures to augment ground resources in the area in consultation with the Regional Director, Central Ground Water Board.</p>	<p>In this regard, the project has been engaged KRG RAINWATER FOUNDATION, CHENNAI in consultation with Regional Director, CGWB, and Bhubaneswar for technical guidelines and implemented various conservation measures to augment the groundwater resources in and around the mine lease area. The detail for the same is as follows;</p> <p>ROOFTOP RAINWATER HARVESTING: Rooftop rainwater harvesting system has been implemented at mines employee camp and Unchabali Medical Center towards water augment. The technical design and other parameters are followed as recommended by KRG rainwater harvesting with the consultation of the regional director, CGWB, Bhubaneswar. From this establishment 4200, CUM/ANNUAL water is recharged to the ground. The project has developed/ constructed four numbers of water harvesting ponds in mines surrounding villages to encourage water to augment. The ponds are regularly de-silted and well maintained. Total harvesting pond water holding capacity is 1.5 Lakh CUM/ANNUM. The details are given in TABLE.-3.</p> <p>SETTLING CUM PERCOLATION POND & CHECK DAMS: Based on the hydrology study the project has implemented five check dams where the soil is having a high percolation rate and one</p>

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		percolation pond is provided at the south side ML area by considering the water flow. The same details are given in TABLE.NO.-1 . The photo evidence is attached as PHOTOS-5
XVI.	Regular monitoring of groundwater level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year Pre-monsoon (April-May), Monsoon (August), Post monsoon (November) and Winter (January); once in each season)] shall be carried out in consultation with the state Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to Ministry of Environment and Forests and its Regional Office, Bhubaneswar, Central Ground Water Authority and Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.	<p>- GROUNDWATER QUALITY:</p> <p>Groundwater quality is being monitored regularly by seasonally at 6 locations including core and buffer zone. The monitoring locations are namely 1) Inside Mining lease area, 2) Unchabali village, 3) Balda Village, 4) Nayagarh Village, 5) Belda Village, 6) Employee’s camp. The latest groundwater quality report is enclosed as Annexure - 6.</p> <p>- GROUNDWATER LEVEL: The groundwater level is being monitored seasonally i.e. pre-monsoon, monsoon, post-monsoon, and winter. The latest groundwater level report is given in Table-09.</p> <p>-</p> <p>- INSTALLING OF PIEZOMETER:</p> <p>The project has installed Piezometers at mines observation bore wells. The groundwater fluctuations are being observed in the bore well & results are recorded at regular intervals. The latest month piezometer observation data is given as ANNEXURE -7.</p>
XVII.	Appropriate mitigation measures shall be taken to prevent pollution of the Baitarani river, the Jalpanadi, and Jagdharanadi in consultation with the State Pollution Control Board.	Site-specific mitigation measures to prevent silt carried into nearby natural water bodies got implemented like; surface run-off management structures, retaining wall followed garland drains, check dam, settling cum percolation ponds, etc. Apart from that, guard walls have been constructed across the bank of the natural water bodies. The above structures got developed in consultation with SPCB, Odisha. The

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		detailed Site implementation details are given in TABLE.NO.-1, 2, 3 & 4.
XVIII.	The project proponent shall obtain necessary prior permission of the competent Authorities for the drawl of the requisite quantity of water (surface water and groundwater) required for the project.	The project has obtained the groundwater NOC from Central Ground Water Authority vide letter NOC No. GGWA/NOC/MIN/REN/1/2025/10626 dated 19.02.2025 for withdrawal quantity of 379 CUM/Day of groundwater. The annexure was attached herewith as Annexure – 8.
XIX.	Suitable rainwater harvesting measures on long-term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.	<p>- ROOFTOP RAINWATER HARVESTING:</p> <p>The project has implemented a rooftop rainwater harvesting system at the project employee’s camp and Unchabali Medical Center towards groundwater re-charges. The technical design and other parameters are followed as recommended by KRG rainwater harvesting with the consultation of the regional director, CGWB, Bhubaneswar. From this establishment 4200, CUM quantity of groundwater is recharged to the groundwater table every year.</p> <p>- WATER HARVESTING PONDS AT VILLAGES:</p> <p>The project has developed four numbers of water harvesting ponds to encourage water percolation and water harvesting in surrounding villages. The ponds are regularly de-silted and well maintained. Total harvesting pond water holding capacity is 1.5 lakh CUM/ANNUM. Details of harvesting ponds developed in surrounding villages are given in TABLE NO.-3.</p> <p>- PERCOLATION POND & CHECK DAMS:</p> <p>Based on the hydrology study the project has implemented five check dams, settling cum percolation pits where the soil is having a highly percolating rate and one number of percolation ponds is provided at the south side of the broken up area. Details of check</p>

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		dams and check weirs are following as TABLE NO.-1.
XX.	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of minerals. The mineral transportation shall be carried out through the covered trucks only and vehicles carrying the mineral shall not be overloaded. No transportation of ore outside the mine lease area shall be carried out after the sunset.	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-09. Apart from testing of transporting vehicles emission on a random basis, the project has been introduced a software technology RF-ID system in entry gate of the mines, this system is having automatic functions to read the status of the vehicle pollution certificate validity and other relevant parameters. The mineral transportation is being carried out through the covered trucks only and vehicles carrying the mineral shall not be overloaded. Photo of the same is attached as Photo-11
XXI.	No blasting shall be carried out after the sunset. Blasting operation shall be carried out only during daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	No blasting is carried out after the sunset and blasting are carried out only in the daytime. The control blasting is practiced using a larger top stemming column, the Nonel technology, and proper blast design& firing pattern with effective supervision of total blasting operations as per the recommendation of the CIMFR, DHANBAD. As of date, no records reveals beyond the permissible limit during the reporting period.
XXII.	Drills shall either be operated with the dust extractors or equipped with a water injection system.	The drilling operation is being carried out with both a dust extractor and a water injection system. Presently the project is using an excavator-mounted drill machine for drilling operation. The said drilling machine is inbuilt with both a water injection system and dust extraction systems. The photo evidence for the same is given below. PHOTO evidence is given below as PHOTOS-6
XXIII.	Mineral handling area shall be	1) Effective dry fog system is implemented in

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	provided with an adequate number of high-efficiency dust extraction systems. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	all the crusher and screen plants. 2) The conveyor belts of the crusher and screen Plants are covered with hoods. 3) Regular water sprinkling is carried out in the loading and unloading area.
XXIV.	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for workshops and wastewater generated during the mining operation.	STP is provided/implemented along with the skimmer mechanism at the mines employee’s camp for treatment and reuse of the waste domestic water from the Kitchen, toilet, etc. The treated water is used for plantation and dust suppression activities. ETP is provided at mines workshop for the treatment of wastewater from water service of equipment. The existing ETP is having a physical separation of oil and grease by oil trapping system and silt sedimentation pit. Both STP and ETP final discharge water is being monitored fortnightly once to ensure the final discharge water is in line with the approved CTO and record maintained for the same. The latest monitoring data is enclosed here as Table. No – 10 and Table. No 11. Photo evidence is given below as PHOTOS-7.
XXV.	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For this purpose, a schedule of health examinations of the workers should be drawn and followed accordingly.	Initial Medical Examination & Periodical Medical Examination is being carried out to all company & contractors employees on regular basis. The IME & MPE is being carried as per in compliance to Mines Act 1952 & rules 1956 and amendments thereto. The IME & PME tests include PFT, X-Ray, and lung spirometer, etc.
XXVI.	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear, etc. spotted in the study area. Action plan for the conservation of flora and fauna shall be	The Site-Specific Wildlife Conservation Plan got prepared by Sri. S. K. Patnaik, Retd. IFS & Shri S.K.Mohanty, Retd. OFS with an estimated cost of Rs. 104 lakh and approved by PCCF-Wild Life and Chief Wild Life Warden. In which Rs. 34 lakh has been earmarked for implementation of Site-Specific Wild Life Conservation Plan within

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	<p>implemented in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the wildlife conservation plan prepared specifically to this project site shall be effectively implemented. Necessary allocation of the funds for implementation of the conservation plan shall be made and funds so allocated shall be included in the project cost. A copy of the action plan may be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.</p>	<p>the Mining Lease area and Rs. 70 Lakh has been earmarked for implementation for the purpose in the buffer zone i.e. within the zone of influence. An amount of Rs. 15, 91, 691/- rupees has been made towards Regional Wild Life Management Plan and Rs. 21, 75, 000/- rupees towards the site-specific Wild Life Management Plan. Various activities have been undertaken towards the protection of wild animals by the implementation of solar electric fencing in mines operation boundary area to avoid the fall down of any wild animals to mines operation, awareness program among local and staffs members, etc. The approved budgetary forecast for the site-specific wildlife conservation plan is enclosed as ANNEXURE – 10 & Photo-10.</p>
XXVII.	<p>Provision shall be made for the housing of the construction labor within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche, etc. The housing may be in the form of temporary structures to be removed after the completion of the project.</p>	<p>Not Applicable. As there is no such construction activity</p>
XXVIII	<p>The critical parameters such as SPM, RSPM, NOx in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharge water shall also be monitored [TDS, DO, pH, and total suspended solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at</p>	<p>All these critical parameters are being monitored periodically & uploaded on the company website i.e. www.Uimmip.com. The said monitored parameters i.e. for AAQ; PM10, PM2.5, SO2, NOx, STP, ETP discharge, for surface runoff discharge from the mine (treated), etc. is being displayed through an Electronic display board installed at the main gate of the project site of the company for the public domain. photo of the display board are given below AS PHOTO-9.</p>

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	<p>a suitable location near the main gate of the company in the public domain. The circular no. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.</p>	
XXIX.	<p>A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.</p>	<p>The Project has submitted a bank guarantee of Rs. 17,43,693/-for reclamation and rehabilitation of 69.7477 Ha mined out and other allied activities area @ 25, 000/- Ha as a part of the management of the closure of the mines of the Project.</p>

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General Conditions:

Sl. No	General condition	Present Status																
I.	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forest.	The Mining method of the project is fully mechanized having shovels, dumper combinations, and sorting and sizing of Iron Ore and it's being followed as per the approved Scheme of Mining/Plan.																
II.	No change in the calendar plan including excavation, the quantum of mineral iron ore, and waste should be made.	There is no change in the calendar plan, the excavation, quantum of mineral iron ore, and waste are being produced as per the approved mining plan/scheme. The details of the iron ore and waste are as follows; <table border="1" data-bbox="803 808 1490 1039"> <thead> <tr> <th>Year</th> <th>Approved Quantity (In Mt.)</th> <th>ROM (In Mt.)</th> <th>OB Removed (In Mt.)</th> </tr> </thead> <tbody> <tr> <td>2021-22</td> <td>3989312</td> <td>1621310</td> <td>4240920</td> </tr> <tr> <td>2022-23</td> <td>3999752</td> <td>1054740</td> <td>2991775</td> </tr> <tr> <td>2023-24</td> <td>4000000</td> <td>532080</td> <td>426476</td> </tr> </tbody> </table>	Year	Approved Quantity (In Mt.)	ROM (In Mt.)	OB Removed (In Mt.)	2021-22	3989312	1621310	4240920	2022-23	3999752	1054740	2991775	2023-24	4000000	532080	426476
Year	Approved Quantity (In Mt.)	ROM (In Mt.)	OB Removed (In Mt.)															
2021-22	3989312	1621310	4240920															
2022-23	3999752	1054740	2991775															
2023-24	4000000	532080	426476															
III.	At least Four Ambient Air Quality – Monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO₂& NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically Sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	The monitoring of AAQ is being done in the core as well as the buffer zone of the ML area, There are 4 no. of monitoring stations in the core zone i.e. and there are 3 no. of monitoring stations in the buffer zone such as Unchabali Village, Balda Village, Nayagarh Village, Monitoring of AAQ is carried out every month. The monitoring report for the period of October to March 2023 reveals that parameters like PM ₁₀ , PM _{2.5} , SO ₂ , and NO _x are as per NAAQs notifications made by the CPCB, are very well within the norms. The detailed monitoring location is enclosed as ANNEXURE-11 .																
IV.	Data on ambient air quality (RPM, SPM SO₂&NO_x) should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar, and the State Pollution Control Board / Central Pollution Control Board once in six months.	Data on ambient air quality (PM ₁₀ , PM _{2.5} , and SO ₂ & NO _x) is being submitted once in yearly is to State Pollution Control Board.																

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V.	<p>Fugitive dust emissions from all the sources should be controlled regularly water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.</p>	<p>The project has implemented a different type of dust suppression system to arrest the fugitive dust emission from the source level in and around the mine's premises.</p> <p>The detailed implementations are as follows.</p> <ul style="list-style-type: none"> ✓ Fixed type water sprinklers are implemented in mines permanent haul roads and dispatch roads. ✓ Mines benches, temporary haul roads, and other processing areas dust generation are suppressed by the use of mobile water tankers. In this regard, the project has engaged three no. of 25 KL mobile water tanker, which is inbuilt with a high-pressure hydraulic sprinkling system. ✓ Three numbers of 8 KL capacity mobile water tankers are being used for dust suppression in the Public roads, railway sidings approaching roads & railway yards. ✓ A portable type trolley mounted sprinkler has been placed in loading & unloading points to avoid dust generations. ✓ Haulage roads are being maintained with grader and water sprinkling to avoid any sort of ruts and potholes. <p>The latest monitoring report is enclosed here as Table. No - 12.</p>
VI.	<p>Measures should be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in operations of HEMM, etc. should be provided with earplugs/muffs.</p>	<p>Regular maintenance of HEMM & Processing plants is being carried out to minimize the noise level from the source. Apart from that, proper PPEs like an earplug, muffs are also provided to employees. Further, to ensure the noise limit, regular noise monitoring is carried out on fortnightly basis for work zones like crusher plant premises, screen plant premises, ROM loading point & workshop. The noise levels are well within prescribed norms, the monitoring reports are given in Table -13.</p>
VII.	<p>Industrial wastewater (workshop</p>	<p>STP is provided/implemented at mines</p>

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	<p>and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. Oil and grease traps should be installed before the discharge of workshop effluents.</p>	<p>employee’s camp for treatment and reuse of the waste domestic water from the Kitchen, toilet, etc. The treated water is used for plantation and dust suppression activities.</p> <p>ETP is provided at mines workshop for the treatment of wastewater from water service of equipment. The existing ETP is having a physical separation of oil and grease by oil trapping system and silt sedimentation pit.</p> <p>Both STP and ETP final discharge water are being monitored fortnightly once to ensure the final discharge water is in line with the approved CTO and record maintained for the same. The test results are very well within the norms. The latest monitoring report is enclosed here as Table. No – 10 and Table. No 11.</p>
VIII.	<p>Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures if needed</p>	<p>Initial Medical Examination & Periodical Medical Examination is being carried out to all company & contractors employees on regular basis. The IME & PME is being carried as per in compliance to Mines Act 1952 & rules 1956 and amendments thereto..The IME & PME tests include PFT, X-Ray, and lung spirometer, etc..</p>
IX.	<p>A separate environmental management cell with suitably qualified personnel should be set up under the control of a senior executive, who will report directly to the head of the organization.</p>	<p>We have established an Environmental Cell headed by the General Manager to look after the implementation of the various pollution control measures and other Environment Management System requirements. The detail of the Environment Cell structure is enclosed as ANNEXURE- 12.</p>
X.	<p>The funds earmarked for environmental protection measures should be kept in a separate account and should not be diverted for other proposes. Year-wise expenditure should be reported to the Ministry and Regional Office located at</p>	<p>The funds earmarked for environmental Protection are being utilized for the same only. The same expenses details are mentioned in Table no.-14</p>

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	Bhubaneswar.	
XI.	The project authorities should inform the Regional Office located at Bhubaneswar regarding the date of financial closures and final approval of the project by the concerned authorized and the date of start of land development work.	We will abide by the said condition.
XII.	The Regional Office of the Ministry located at Bhubaneswar shall monitor complaints of the stipulated conditions. The project authorities should extend full co-operations to the officer (S) of the regional office by furnishing the requisite data/information/monitoring reports.	We are extending all our cooperation during inspections by the Authority.
XIII.	The project proponent shall submit six-monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environmental and Forests, its regional Office, Bhubaneswar, the respective zonal offices of CPCB and the SPCB. The proponent shall upload the status of compliance of the EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of CPCB, and the SPCB.	The Project is uploading the last six-monthly EC Compliance reports on the website bearing address www.Uimmip.com on regular basis. The details of submission of the six-monthly compliance reports on the status of the implementation of the stipulated conditions are enclosed as TABLE NO.-15.
XIV.	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zillah Parishad /Municipal Corporation,	It has been complied with intimating the letters to local Gram Panchayat, Municipality, DDM Office, Zillah Parishad, Divisional Forest Officer, etc. and a copy of environmental clearance

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	Urban local body, and local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	letter also made available in the company's website i.e. www.Uimmip.com .
XV.	The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre, and Collector's office/ Tehsildar's Office for 30 days.	It has already been complied.
XVI.	The environmental statement for each financial year ending 31st March in form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent the Regional Office of the Ministry of Environment and forests, at Bhubaneswar by e-mail.	The Environmental statement in Form – V is being submitted regularly to the state pollution control board for the financial year. We are also uploading the annual environment statement along with the six-monthly environmental compliance reports on the company website i.e. www.Uimmip.com .
XVII.	The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at the web site of the Ministry of	The Project has already advertised for iron ore mining and projects in two newspapers about the issuance of the environment clearance of the Project, one is advertised in the vernacular language of the locality concerned.

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	Environment and Forests at HTTP: / / envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	
XVIII.	The mining leaseholder shall, after ceasing mining operations, undertake re-grassing the mining area, and any other areas which may have been disturbed due to their mining activities and restore the land to a condition that is fit for the growth of fodder, flora, fauna, etc.	At present project is in operational status and as per the mining plan approved by IBM, 2991775 Tons quantity of waste inside the mines at the earmarked area till in this Fy 2022-2023. As per approved Scheme of Mining. Whenever the reclamation started leaseholder was ready to make activities to restore the land to a condition that is fit for the growth of fodder, flora, fauna, etc.

PHOTOS-1:



Photo showing check dams & Check weirs implementation within ML



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Photo Showing varies Nallah protection measures undertaken outside ML



Photos showing village harvesting pond developed in surrounding villages

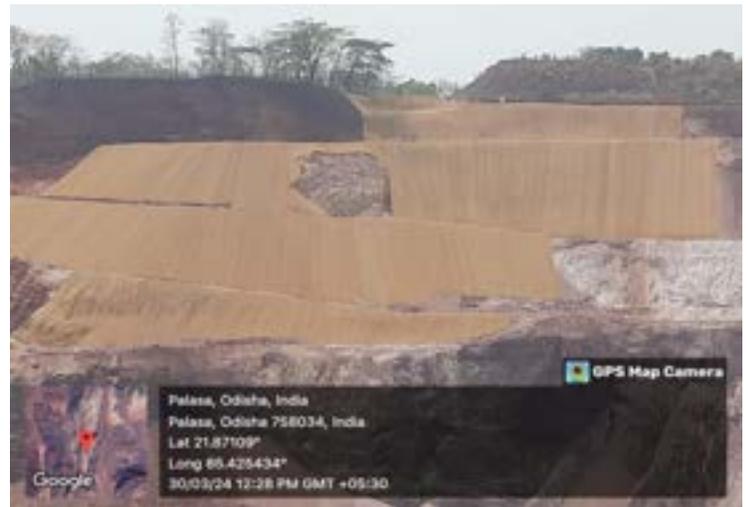
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PHOTOS -2:



Retaining wall and Garland drain provided at the toe end of the dump

PHOTOS -3:



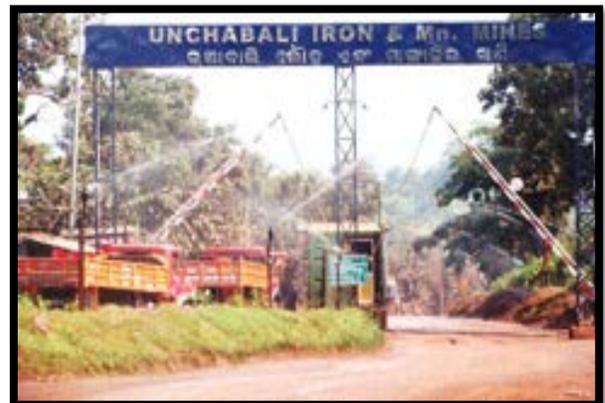
Photos showing Dump area plantations and worked out bench coir mat work

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PHOTOS -4:



Photos showing mobile water tankers engaged for dust suppression



Photos showing automatic fixed sprinkler installed at mines permanent Haul road



Photo showing motor grader under use for road maintenance

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Photos showing dry fog implementations of various screens and crusher plant.

PHOTOS -5:



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PHOTO SHOWING ROOF RAINWATER HARVESTING SYSTEMS EMPLOYEE’S CAMP



PHOTO SHOWING ROOFTOP RAINWATER HARVESTING SYSTEMS UNCHABALI DISPENSARY

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Photos showing village harvesting pond developed in surrounding villages

PHOTOS – 6:



**Photo Showing Excavated Mounted Drilling Machine equipped with dust extractor &
wet drilling mechanism**

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PHOTOS -7:



PHOTO SHOWING ETP PLANT PROVIDED IN WORK SHOP SERVICE CENTER



PHOTOS SHOWING STP EXISTING PLANT

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PHOTOS – 8:



PHOTOS – 9



Photo Showing Electronic Display board placed in the mines entrance gate to display the Environmental parameters

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Photo 10 : Solar fence for wildlife Protection



Photo 11 : Tarpauline covered trucks



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TABLE – 1

SL.NO	Description	Dimensions/Capacity
1	Check Dam cum Settling pond -1	9800 CUM
2	Check Dam - 4	689 CUM
3	Check Dam - 5	2000 CUM

TABLE – 1 SHOWING CHECK DAM AND CHECK WEIR DETAILS IMPLEMENTED WITHIN THE ML AREA

TABLE-2

SL.NO	Description	Location	Dimensions/Capacity
1	Check Dam - 13	21° 52' 41.96" N 85° 25' 41.97" E	15 M X 2 M X 1.5 M
2	Check Dam - 14	21° 52' 42.88" N 85° 25' 50.81" E	15 M X 1.5 M X 1.5 M
3	Check Dam - 15	21° 52' 36.75" N 85° 25' 58.75" E	10 M X 1.5 M X 1.5 M
4	Check Dam - 16	21° 52' 35.55" N 85° 25' 59.51" E	12 M X 1.5M X 1.5 M
5	Guard Wall	21° 52' 41.14" N 85° 25' 54.05" E	300 M
6	Nallah Slope pitching	21° 52' 45.66" N 85° 25' 2.67" E	200 M
7	Plantation	21° 52' 41.59" N 85° 25' 53.87" E	150

TABLE – 2 SHOWING CHECK DAMS IMPLEMENTATION OUT SIDE THE ML

TABLE-3

SL.NO	DESCRIPTION	CAPACITY IN CUM
1	NAMIRA POND -1	8100
2	NAMIRA POND -2	92400
3	BELDA POND -1	13200
4	BELDA POND -2	43160

TABLE – 3 SHOWING IMPLEMENTED VILLAGE HARVESTING PONDS DETAILS

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TABLE-4

Sl. No	Description of the dump/bench	Location of the dump/bench	Protections Measures
1	Worked out Pit bench	Near ML Pillar B	1.06 Ha of Worked out Pit bench surface area covered with Geotextile applications. And 500-meter garland drain with stone pitching with cement work has been constructed followed by a siltation pond; drainage water is connected to bottom check dams.

TABLE-4 SHOWS VARIOUS DUMP PROTECTIONS MEASURES IMPLEMENTATION

TABLE-5A

Plantation Details				
Sl. No	Year	Number of Saplings	Survival Rate	Remarks
1	2024-2025	8100	90%	Dump & Worked out benches
2	2023-2024	26746	90%	Dump and Nallah Gap plantation and safety zone gap plantation
3	2022-2023	6500	90%	Nallah Gap Plantation
4	2021-2022	4200	90%	Dump and Safety zone
5	2020-2021	1250	70%	Dump and gap plantation

TABLE-5A SHOWING YEAR-WISE PLANTATION DETAILS

TABLE-5B

SL. NO	LOCATION	Description	2024-25	Area in Ha.	PLANTS TYPE	Remarks
1	IN Side ML	Dump & Worked out bench Plantation	8100	1.6	Neem, Mango, Gambhari, Jamu, krishna chuda, Asana, Tamarind, sishu tree, Arjuna.	OB dump(Top, No-04) and worked out benches no. 02,03,04,560,561,562
2						

TABLE-5B SHOWING PLANTATION DETAILS

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TABLE-6

SL. No.	Description	Unit	Quantity	Remarks
1	Automatic Fixed Sprinkler	R.M	2500	Dispatch Road and Permanente Haul Road
2	High-Frequency mobile water Tanker	25 KL	3	Mines Benches, Stockyard, plant area, and other mines premises including Village Roads & Railway Sidings
3	Mobile water tanker	8 KL	3	

TABLE-6 SHOWING PRACTICE OF DUST SUPPRESSING ACTIVITIES

TABLE-7

SUMMARIZED AMBIENT AIR QUALITY MONITORING REPORT: UNCHABALI IRON & MN ORE MINING PROJECT OF SMT. INDRANI PATNAIK, DISTRICT; KEONJHAR, ORISSA.							
Period: October 2024 To March 2025							
	Month	Quality Parameter, Results, micro.gm/CUM					
		Range	PM10	PM2.5	SO₂	NO_x	CO
AAQ1-C1 – Employee Camp (Core zone)	Oct-24	AVG	53.10	24.73	5.60	10.98	0.25
	Nov-24		58.01	28.23	6.65	12.65	0.32
	Dec-24		53.10	24.73	5.60	10.98	0.25
	Jan-25		54.69	27.40	6.18	11.69	0.29
	Feb-25		59.00	29.51	7.43	13.93	0.38
	Mar-25		60.14	30.08	7.22	13.22	0.37
AAQ2-C2 – New Stores Area (Core Zone)	Oct-24	AVG	55.33	25.61	6.00	11.67	0.28
	Nov-24		62.23	30.40	7.46	13.43	0.34
	Dec-24		55.33	25.61	6.00	11.67	0.28
	Jan-25		60.37	30.64	7.69	13.47	0.34
	Feb-25		63.59	31.96	9.00	16.10	0.42
	Mar-25		62.17	31.26	8.76	15.60	0.43
AAQ3-C3-Mines Main gate (Core Zone)	Oct-24	AVG	54.84	25.96	5.89	11.42	0.28
	Nov-24		58.98	29.00	6.39	12.20	0.32
	Dec-24		54.84	25.96	5.89	11.42	0.28
	Jan-25		65.96	33.30	8.82	14.18	0.37
	Feb-25		72.95	36.63	11.90	17.90	0.49
	Mar-25		69.33	34.93	11.82	17.36	0.48
AAQ4-B1 Village Balda (Buffer Zone)	Oct-24	AVG	42.86	18.63	<4.0	<9.0	0.16
	Nov-24		47.55	22.81	<4.0	<9.0	0.18
	Dec-24		42.86	18.63	<4.0	<9.0	0.16
	Jan-25		51.32	25.61	5.17	10.50	0.22

**Six Monthly Compliance Status of Environmental Clearance Conditions –
“Unchabali Iron and Manganese Ore Mines of Smt. Indrani Patnaik” located in
village(s) Unchabali & Balda, Sub-division Champua, District Keonjhar, Odisha.**

	Feb-25		55.41	27.51	5.50	11.03	0.28
	Mar-25		55.61	27.78	5.78	11.03	0.30
AAQ5-B2 Village Nayagarh (Buffer Zone)	Oct-24	AVG	42.82	19.40	<4.0	<9.0	0.17
	Nov-24		46.48	22.01	<4.0	<9.0	0.17
	Dec-24		42.82	19.40	<4.0	<9.0	0.17
	Jan-25		52.42	26.17	5.64	10.99	0.25
	Feb-25		59.98	30.11	6.70	13.08	0.34
	Mar-25		56.01	28.30	6.13	11.85	0.33
AAQ6-B3 Village Unchabali (Buffer Zone)	Oct-24	AVG	43.32	20.06	<4.0	<9.0	0.16
	Nov-24		48.28	23.49	<4.0	<9.0	0.18
	Dec-24		43.32	20.06	<4.0	<9.0	0.16
	Jan-25		52.38	26.22	5.83	11.29	0.26
	Feb-25		58.35	29.28	6.85	13.20	0.35
	Mar-25		55.58	27.71	5.73	12.10	0.34
AAQ7-B4 Village Kalimati (Buffer Zone)	Oct-24	AVG	43.34	19.89	<4.0	<9.0	0.18
	Nov-24		47.56	22.95	4.50	9.60	0.18
	Dec-24		43.34	19.89	4.50	9.60	0.18
	Jan-25		56.23	28.27	6.20	11.77	0.27
	Feb-25		61.89	31.06	7.65	13.80	0.37
	Mar-25		59.54	29.85	7.28	13.05	0.39

TABLE-7 SHOWING AAQ MONITORING REPORT FOR THE REPORTING PERIOD.

TABLE-8

Surface Water Flow Rate in CUM/SEC				
SL. No	Monitoring Station	April-24	Aug-24	Sep-24
1	Baitarani river	25.10	26.120	30.140
2	Dalko Nallah	12.8	19.40	22.48
3	Jalpa Nallah	13.2	17.30	20.32
4	Kashi Nallah	11.6	14.38	18.42
5	Unchabali Nallah	10.8	18.42	24.28
6	Dalki Nallah	9.6	12.32	13.42
7	Ghairajal Nallah	10.7	13.28	12.20

TABLE-8 SHOWS THE SURFACE WATER FLOW RATE FOR THE MONSOON PERIOD

**Combined Six Monthly Compliance Status of Environmental Clearance
Conditions – “Unchabali Iron and Manganese Ore Mines & Iron ore
Beneficiation Plant of M/s Indrani Patnaik” located in village(s) Unchabali
& Balda, Sub-division Champua, District Keonjhar, Orissa.**

Table-09

Monitoring Station	ALL	Description	GWL (BGL in M)			
			Nov-24	Jan-25	Feb-25	March-25
Inside ML area	510	Bore Well	3.0	4.8	5.0	5.2
Unchabali	504	Open Well	3.4	4.2	4.4	4.6
Kalimatti	550	Open Well	2.8	4.2	8.3	7.0
Balda	568	Open Well	3.2	4.9	5.4	5.2
Malda	507	Bore Well	3.9	5.0	5.5	4.9
Nayagarh	504	Open Well	2.9	6.0	8.4	7.1

#TABLE NO. 09 SHOWING GROUND WATER LEVEL MONITORING DATA

TABLE - 10

SL. NO	DESCRIPTION	Unit	Norms	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25
1	pH	-	6.5-9.0	7.17	7.11	7.18	7.11	7.18	6.84
2	Total Suspended Solids (TSS)	Mg/l	100	14	10	16	10	16	19
3	(BOD)	Mg/l	30	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
4	Fecal Coliform	MPN/100 ml	<1000	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8

Note – The monitoring and testing are carried by M/s GreenForce Associates Pvt. Ltd. Laboratory which is a NABL accredited Laboratory.

**#TABLE NO.10 SHOWING SEWAGE WATER TREATMENT PLANT WATER
DISCHARGE REPORT**

**Combined Six Monthly Compliance Status of Environmental Clearance
Conditions – “Unchabali Iron and Manganese Ore Mines & Iron ore
Beneficiation Plant of M/s Indrani Patnaik” located in village(s) Unchabali
& Balda, Sub-division Champua, District Keonjhar, Orissa.**

TABLE – 11

SL .NO	DESCRIPTION	Unit	Norms	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25
1	pH	-	6.5-8.5	7.08	7.08	7.14	7.08	7.22	7.48
2	Total Suspended Solids (TSS)	Mg/l	50	12	14	18	14	20	18
3	Oil & Grease	Mg/l	10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
4	COD	Mg/l	150	16	18	22	18	24	18
Note – The monitoring and testing are carried by M/s GreenForce Associates Pvt. Ltd. Laboratory which is a NABL accredited Laboratory.									

#TABLE NO.11 SHOWING EFFLUENT WATER TREATMENT PLANT WATER DISCHARGE REPORT

TABLE – 12

FUGITIVE EMISSION DUST MONITORING REPORT

Periods		MONITORING LOCATIONS					
		CRUSHER PLANT	Ore Storage and loading	HAUL ROAD	SCREEN PLANT	MINES FACE	DUMP AREA
		Results, micro.gm/CUM					
Oct-24	AVG	462.92	433.85	452.25	486.70	436.05	476.00
Nov-24	AVG	533.30	469.90	492.55	508.55	469.90	514.20
Dec-24	AVG	362.90	341.20	349.65	372.30	310.05	375.40
Jan-25	AVG	519.44	496.43	433.34	533.33	525.37	463.70
Feb-25	AVG	562.30	552.49	513.44	593.76	567.17	517.54
Mar-25	AVG	530.28	475.14	514.86	551.11	583.95	483.78
Note – The monitoring and testing are carried by Green Force Associates Pvt. Ltd. which is a NABL accredited laboratory.							

TABLE NO.-12 SHOWING FUGITIVE EMISSION MONITORING REPORT

REPORTING PERIOD: OCTOBER 2024 TO MARCH 2025

**Combined Six Monthly Compliance Status of Environmental Clearance
Conditions – “Unchabali Iron and Manganese Ore Mines & Iron ore
Beneficiation Plant of M/s Indrani Patnaik” located in village(s) Unchabali
& Balda, Sub-division Champua, District Keonjhar, Orissa.**

TABLE – 13

Sl. No	Locations	NOISE LEVEL, Leq. In dB (A) from the data log of the monitor.					
		Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25
Work Zone Noise Report							
1	MINES PIT	60.8	61.8	62.6	64.2	63.7	65.4
2	LOADING POINT	63.5	65.2	64.6	66.4	66.3	66.1
3	OPERATOR CABIN	52.8	44.4	52.5	53.4	51.7	43.5
4	WORK SHOP	68.2	68.8	56.8	58.6	59.7	68.4
5	SCREEN PLANT	65.3	65.2	64.8	66.6	66.9	67.3
Ambient Noise Report							
1	BALDA	48.6	48.2	47.8	48.2	47.9	48.5
2	MALDA	49.1	48.6	47.9	48.4	48.4	48.1
3	NAYAGARH	49.6	49.1	48.2	48.7	48.9	49.1
4	UNCHABALI	49.20	49.20	48.20	48.80	49.20	49.7
5	OFFICE AREA	38.6	37.6	37.1	47.9	48.4	48.2
6	CAMP AREA	39.8	40.2	39.8	40.1	40.5	40.4
Norms		Residential. Leq: Day Time : 55 dB (A), Night Time : 45 dB (A)					
		Industrial, Leq: Day Time : 75 dB (A), Night Time : 70 dB (A)					
		Work-zone during 8 Hr exposure: 85 dB (A) – Leq.					

TABLE NO.-13 SHOWING NOISE MONITORING REPORT

REPORTING PERIOD: OCTOBER 2024 TO MARCH 2025

**Combined Six Monthly Compliance Status of Environmental Clearance
Conditions – “Unchabali Iron and Manganese Ore Mines & Iron ore
Beneficiation Plant of M/s Indrani Patnaik” located in village(s) Unchabali
& Balda, Sub-division Champua, District Keonjhar, Orissa.**

TABLE – 14

Sl. No	DESCRIPTION	2022-2023	2023-2024	2024-25
Environmental Monitoring Parameter Testing charges				
1	AAQ, Ground Water & Surface Water analysis, STP, ETP, Soil Test, Fugitive Test, etc.	41.20	42.5	25.00
Dump Stabilization & Plantation				
1	Retaining wall, garland drain & its maintenance	10.50	5.0	2.00
2	Plantation , dump stabilization by coir matting	8.00	7.80	2.83
Dust Suppression				
1	Mobile Sprinkler tanker	36.00	45.0	30.0
2	Fixed Sprinkler	1.50	2.0	1.75
3	Dry fog	1.0	1.5	1.50
Environmental Instruments and its maintenance & calibration				
1	CAAQMS ,RDS, Noise Meter, PPV Instruments, etc calibration and Digital display board .	1.50	1.75	7.68
2	ETP and its maintenance	1.50	1.55	1.50
3	STP and its maintenance	1.20	1.35	1.80
Miscellaneous Expenses				
1	Rainwater harvesting and its maintenance	0.70	1.2	1.50
2	Occupational Health & Hygiene monitoring	4.20	5.3	3.5
3	Others (Including Taxes, Statutory payments & clearance process Expenses, website upgradation)	1.90	2.50	25.22
Total		109.20	117.45	104.28

REPORTING PERIOD: OCTOBER 2024 TO MARCH 2025

**Combined Six Monthly Compliance Status of Environmental Clearance
Conditions – “Unchabali Iron and Manganese Ore Mines & Iron ore
Beneficiation Plant of M/s Indrani Patnaik” located in village(s) Unchabali
& Balda, Sub-division Champua, District Keonjhar, Orissa.**

TABLE - 15

Sl. No.	PERIOD	DATE OF SUBMISSION
1.	April -2024 to September-2024	04.12.2024
2.	October -2023 to March-2024	06.06.2024
3.	April -2023 to September-2023	30.11.2023
4.	October -2022 to March-2023	01.06.2023
5.	April-2022 to September-2022	30.11.2022
6.	October -2021 to March-2022	31.05.2022
7.	April-2021 to September-2021	25.11.2021
8.	October -2020 to March-2021	29.05.2021
9.	April-2020 to September-2020	18.11.2020
10.	October -2019 to March-2020	29.05.2020
11.	April-2019 to September-2019	28.11.2019
12.	October – 2019 to March – 2019	27.05.2019
13.	April – 2018 to Sept – 2018	01.12.2018
14.	October -2017 to March-2018	28.06.2018
15.	April-2017 to September-2017	04.12.2017
16.	October -2016 to March-2017	09.06.2017

#TABLE NO.-15 SHOWING EC COMPLIANCE SUBMISSION DETAILS

INDRANI PATNAIK

(Mines Owner)

A/6, COMMERCIAL ESTATE, CIVIL TOWNSHIP, ROURKELA-769 004

Phone : 0661-2400139, 2400014, FAX : 0661-2402226

REF: IP/MM/APR -2025/008

DATE: 17.04.2025

To,

The Member Secretary,
State Pollution Control Board, Odisha,
A/118, Nilakantha Nagar,
Unit-VIII, Bhubaneswar - 751012,
Mail id: paribesh1@ospcboard.org.

Subject : Submission of compliance Report to the conditions stipulated under Consent to operate order for Unchabali Iron & Mn. Mines of Smt. Indrani Patnaik.

Reference : Approved Consent order No. 2645 vide letter no 4999 / IND-I-CON-6035 dated on 29.03.2022.

Dear Sir,

With reference to the above mentioned subject, we are here with submitting the compliances report to the conditions stipulated under the above consent order for the period of **April 2024 to March 2025** by E-mail and also in hard copy to your good office by post in respect of Unchabali Iron & Mn. Mines of Smt. Indrani Patnaik.

This is for your kind information, please.

Yours Faithfully,

Mines Manager.

For Unchabali Iron Ore & Mn Mines of Smt. Indrani Patnaik.

Unchabali Iron Ore & Mn. Mines
Indrani Patnaik
Mahaservat

17/4/25

Copy to: The Regional Officer, SPCB, Odisha, Regional Office, College Road, Dist.-Keonjhar, Odisha.

Email: rospcb.keonjhar@ospcboard.org

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

E. Special Conditions

Special Condition – 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.

Compliance Status:

We abide by the said court orders.

Special Condition – 2:

This consent order is subject to permission from Steel and Mines Department, Government of Odisha for continuing mining operations.

Compliance Status:

The project is operating one and has obtained the permission from Steel & Mines Dept. Apart from that, the project is operating with approved review of Modification of mining plan vide Letter no.MCDR-MiFLOFE/20/2023-BBS-IBM-_RO_BBS Dated 30.03.2023 which is duly approved by Indian Bureau of Mines, GoI.

Special Condition –3:

The validity of Consent order is subject to possession of a valid mining scheme.

Compliance Status:

The project is operating with approved review of Modification of mining plan vide Letter no.MCDR-MiFLOFE/20/2023-BBS-IBM-_RO_BBS Dated 30.03.2023 which is duly approved by Indian Bureau of Mines, GoI.

Special Condition – 4:

Mining operation is subject to availability of all other statutory clearances required under relevant Acts/Rules.

Compliance Status:

As per requirement, the project has been obtained all the clearances like mining plan, Environmental clearance, Forest Clearance etc. The copy of clearances are attached here as ANNEXURE-1, 2, 3.

Special Condition – 5:

Drills shall either be operated with dust extractors or equipped with water injection system to minimize dust generation in the work environment.

Compliance Status:

Latest technology Excavator mounted drilling machine is being used for drilling operation, which is equipped with both water injection system and dust extractors system to minimize the dust generation in the work environment.

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**



Photo Showing Excavate mounted Drilling Machine equipped with dust extractor & wet drilling mechanism

Special Condition – 6:

Control blasting shall be practiced to minimize generation of dust and fly rocks.

Compliance Status:

The project has conducted a technical study by engaging “Central Institute of Mining and Fuel Research, Dhanbad” and based on the findings, we are following the control blasting procedures towards minimization of dust generation and fly rocks. The Control blasting is being practiced by use of proper blast design, optimum charge factor, proper burden and spacing and maintaining other relevant parameters as recommended by “CMFRI, Dhanbad”. Each blasting is monitored by use of “Mini-mate” instrument assesses the generated vibration and all the control blast parameters within in the limit.

Special Condition – 7:

Regular water sprinkling shall be carried out in critical areas prone to air pollution such as around crushing and screening plant. Water sprinkling shall be carried out on haul roads at desired interval. Adequate sprinkling arrangement shall be made for control of fugitive dust emission. The haulage roads shall be devoid of ruts and potholes and shall be maintained properly to avoid the generation of dust during movement of vehicles.

Compliance status:

The project has implemented different type of dust suppression system to arrest the air pollution from the source level in and around the mines premises.

The detailed implementations are follows.

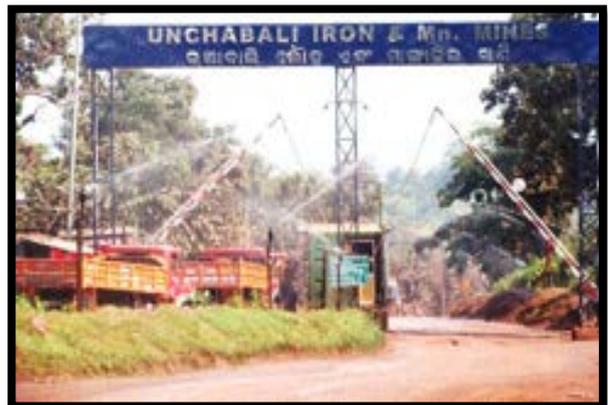
- ✓ 2500 M length of Fixed type water sprinklers are implemented in mines permanent haul roads and dispatch roads.
- ✓ Mines benches, temporary haul roads and other processing areas dust generation is suppressed by use of mobile water tankers. In this regard project has engaged three no. of 16 KL mobile water tanker, which is having inbuilt with high pressure hydraulic sprinkling system.
- ✓ Three (03) numbers of 8 KL capacity mobile water tankers is being used for dust suppression in the Public roads, railway sidings approaching roads & railway yards.

Compliance Status on stipulated conditions in approved Consent to operate of “Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali & Balda, Sub-division Champua, District Keonjhar, Odisha

- ✓ **Portable type trolley mounted sprinkler has been placed in loading & unloading points to avoid the dust generations.**
- ✓ **Haulage roads are being maintained with grader and water sprinkling to avoid any sort of ruts and potholes.**



Photos showing mobile water tankers engaged for dust suppression



Photos showing automatic fixed sprinkler installed at mines permanent Haul road



Photo showing motor grader under use for road maintenance

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

Special Condition – 8:

Dust suppression measures preferably dry fog system shall be provided at the potential dust generation sources of mineral handling plants (Crusher, Screening plants). Loading and unloading areas including transfer points shall also have efficient dust suppression arrangements (Dry fog system). These shall be maintained and operated.

Compliance status:

The project has installed dry fog system in all mineral handling/processing plants (Crusher, Screening plants) to suppress the dust from source level.

In addition to dry fog system, the entire conveyor belt is hooded with GI sheets to avoid the dust generation or suppress the fly of dust from the plant process.



A photo showing dry fog implementations at various plants.

Special Condition – 9:

Fixed auto sprinklers shall be provided on both sides of major haul road and Approach road of the mine.

Compliance status:

Project has installed 2.5 Km length of Fixed type water sprinklers in mines permanent haul roads and approach roads of mines towards dust suppression purposes.

Special Condition – 10:

Fixed water sprinkler shall be provided in the ore stockyard.

Compliance status:

Portable type trolley mounted sprinkler has been placed in stock yards to avoid the dust generations.

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

Special Condition – 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.

Compliance status:

The project has already installed the Mechanical wheel washing facility for the ore transport vehicle at the exit point of mines and it is integrated with complete recirculation system. The photo evidences of the same are given below.



Photo showing the Mechanical wheel washing system at mines exit gate

Special Condition – 12:

The vehicles carrying ore for transportation from the mine shall be covered with tarpaulin (Both bottom & top)

Compliance status:

The transporting vehicles are covered with tarpaulin to avoid the spillage of materials on mineral transporting road.

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**



Photo showing transporting vehicles covered with tarpaulin

Special Condition – 13:

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.

Compliance status:

Project has engaged two numbers of 8 KL water tankers for sprinkling on mineral transportation roads & other strategic point on the state express highway and KIDCO roads.

In addition to that, the project has developed proper bitumen road along with both side of NH with paved shoulder to minimize the dust generation on mineral transporting road & national highway.



Photo showing proper bitumen road constructed on mineral carrying Road

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**



Photo showing 16 Kl water tanker engaged in Village road dust suppression

Special Condition – 14:

One continuous real time Ambient Air Quality Monitoring Stations shall be established in core zone with data transfer facility to SPCB server and location of these stations shall be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets in consultation with the Regional Officer, State Pollution Control Board.

Compliance status:

The project has already established One Continuous real time ambient air quality monitoring system (CAAQMS) in core zone with data transfer facility to SPCB RTDAS server by consulting the Regional Office, SPCB. The photograph of same is given below.



Photo showing the CAAQMS machine installed at mines

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

Special Condition – 15:

The CAAQMS shall be properly maintained and calibrated from time to time to ensure that spurious data are not transformed to the SPCB server.

Compliance status:

The CAAQMS is being maintained properly from time to time and calibration is also done.

Special Condition – 16:

Four Ambient Air Quality Monitoring stations shall be established in core zone and buffer zone for monitoring of Ambient Air Quality and location of the stations shall be decided in consultation with regional officer, state pollution control board bases on the meteorological data, topographical features and environmentally and ecologically sensitive targets.

Compliance status:

Based on metrological data & SPCB Regional Office guidelines, 8 nos. of AAQ monitoring stations have been placed in which 4 are in Core zone includes one CAAQMS and 4 are in Buffer Zones. The monitoring parameters are PM10, PM2.5, SO₂, NO_x & CO. A map of the monitoring station is enclosed as Annexure –4.

Special Condition – 17:

Monitoring of Ambient Air quality shall be carried out twice in a week (24 hourly) at particular site and data shall be submitted to the state pollution control board, once in a year.

Compliance status:

As per recommendation, AAQ monitoring is being carried out on regular basis. The monitoring reports are being submitted the State pollution control board on yearly bases; the latest submission report is enclosed as Annexure – 5.

Special Condition – 18:

The Ambient Air Quality Parameters conform to the norms prescribed national ambient air quality standards.

Compliance status:

Ambient air quality parameters are very well within the prescribed norms as per prescribed national ambient air quality standards. The reporting period AAQ quality observation results are given in table- 01 and it's also confirmed that, all the test results are very well within the prescribed norms.

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

Special Condition –19:

Fugitive Dust Emission Monitoring shall be carried out at the places as stated in Part-B of this order. The monitoring of fugitive dust shall be carried out twice in a week (24 hourly) at a particular site and consolidated data shall be submitted to the State Pollution Control Board, once in a year.

Compliance status:

As per recommendation, Fugitive emission monitoring is being carried out on regular basis. The monitoring reports are being submitted to the State pollution control board on yearly basis; the latest submission is enclosed as Annexure – 5. The reporting period fugitive quality observation results are given in table- 02. It's also confirmed that, all the test results are very well within the prescribed norms.

Special Condition –20:

The top soil generated shall be stored at earmarked site (s) only and stabilized or shall be used for land reclamation and plantation.

Compliance status:

The present mining operation is restricted to already broken up area. So, there is no top soil generation during financial year 2024- 2025. However, earlier generation of top soil were consumed properly for plantation and gardening purposes.

Special Condition – 21:

The over burden generated during the course of mining shall be stacked at earmarked dump site (s) and should not be kept active for long period. Backfilling of OB shall be done in a phased manner. In critical areas, use of geotextile coverings shall be done followed by plantation for stabilization of the dump.

Compliance status:

As per approved mining plan and scheme, the generated of OB is being dumped in earmarked area within ML. As per the mining OB back filling is done in this year 2022-23 in line to approved Scheme of Mining and reclamation will be carried out accordingly.

Special Condition – 22:

The project proponent shall ensure that no natural water course and/or water resources are obstructed due to any mining operations. In case of diversion of natural watercourse, this shall be done with prior permission of the competent authority.

Compliance status:

The mine operation is not obstructing any water course and /or water resources. In this regard project was engaged a technical consultant i.e. KRG Rainwater

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

Harvesting Foundation for technical guidance and recommendation, to suggest for the same.

As per recommendation, the project has carried out / implemented various mitigative measures to ensure that the natural water courses and water bodies in and around the ML area. The project has implemented mitigative measures such as check dams, check weir, settling ponds and retaining wall and garland drainage etc. Hence, the project is practicing zero discharge runoff management during rainy season. The mines runoff water is being collected to the bottom pit of the mine by proper drainage patterns.

The collected water is being allowed for sedimentation into the bottom pit and after sedimentation process the final water is allowed for discharge through existing check dam and check weirs, if any, as there is natural percolation within the collection pit due to high pretending of water.

The detailed implementation of the check dam and check weirs are given in table - 3.

Special Condition – 23:

Check dams and check weirs shall be constructed at appropriate places of the mining lease area to prevent direct flow of runoff to nearby water bodies. The surface runoff water from the existing runoff management system shall meet the prescribed standards.

Compliance status:

The project has constructed 10 number of check dams, check weirs in appropriate places to avoid the direct flow of runoff to the nearby water bodies. The location of the check dams and check weirs are made at the strategic locations i.e. in the valley and mines drainage area.

Hence, the final discharge water from the runoff management is regularly monitored during monsoon period and results are well within the prescribed Norms. The details of check dams and check weirs are given as Table No -3 and runoff water quality is given as Table – 4.

Special Condition – 24:

Retention wall shall be constructed at the Toe of topsoil dump and OB dump. Garland shall be constructed around the topsoil dump, over burden dumps and mineral stock yards terminating at settling pits to prevent direct disposal of runoff to nearby water bodies.

Compliance status:

Bottom of the OB dump, sub grade dump & other required area are provided with adequate size of retention wall along with garland drainage. The runoff water from the OB dump and mineral stock yards are being collected at mines bottom pit and no water is allowed to direct discharge from the active mine operation.

Special Condition – 25:

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

Garland and sedimentation pit shall be de-silted after monsoon or as and when required. The runoff discharge quality from runoff management system shall be meet the standards prescribed.

Compliance status:

Entire mine water is collected to the bottom pit & given adequate retention period for silt sedimentation and same is being de-silted after each monsoon. The discharge quality from runoff water is being monitored regularly and the reports are well within the norms. The analysis report is given in table-4.

Special Condition – 26:

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, BOD – 30 mg/l, Fecal Coliform - <1000 MPN/100 ml

Compliance status:

Sewage treatment plant has been installed at employee base camp as per BIS specification for the treatment of domestic waste water. The existing sewage treatment plant is an anaerobic treatment plant with capacity of 120 KLD. The treated water is used for sprinkling and other secondary purposes.

The final discharge water from the sewage treatment plant is monitored regularly on fortnightly basis and report is recorded. The quality report for the same is given in table - 5.



Photo Showing Sewage Treatment Plant installed at Employees base camp

Special Condition – 27:

ETP shall be operated all the time for workshop and wastewater generated during mining operation. The quality of the treated wastewater shall remain within the following standards and shall be re-used for washing of vehicles:

PH: 6.5-9.0, TSS -<100, BOD – 30 mg/l, Fecal Coliform - <1000 MPN/100 ml

Compliance Status on stipulated conditions in approved Consent to operate of “Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali & Balda, Sub-division Champua, District Keonjhar, Odisha

Compliance status:

There is no wastewater generation except work shop service waste water from the present mining operation. The work shop service center is conferred with ETP treatment plant (Oil & grease trapping system) to treat the service center waste water.

The final discharge water quality from ETP is being monitored regularly on fortnightly basis and results are well within the prescribed standard. The final ETP discharge water quality report is given in table-6.



Photo showing Effluent treatment plant installed at work shop

Special Condition – 28:

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.

Compliance status:

Regular monitoring of water quality of up streams and down streams of the nearby water bodies is being carried & submitted to the Board. The latest reports of same are attached here with as Annexure - 6.

Special Condition – 29:

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. Consolidated data thus collected should be submitted to the board annually.

Compliance status:

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

As per requirement, the project is carrying out regular ground water level & ground water quality monitoring on seasonal basis for core zone and buffer zone of the mines lease area (Pre-monsoon, monsoon, post-monsoon and winter). The ground water level monitoring results given in table-7 and third quarter (Post Mon soon season) ground water quality reports are given as Annexure -7.

Special Condition – 30:

The mine shall take necessary action for the compliance of the following air and water quality standards stipulated in part –A and Part- B of this order:

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 standards				
				PH	TSS (mg/l)	BOD (mg/l)	Fecal coliform (MPN/100 ml)	Oil & grease (mg/l)
01	Outlet of STP (Domestic effluent)	Used for plantation	10	6.5-9.0	100	30	<1000	----
02	Mine drainage water/ surface runoff	On land / Inland surface water body	1400 (Max.)	5.5-9.0	100 (Rainy day)/ 50 (non-rainy day)	-	--	10

B. Emission permitted through the following stack subject to the prescribed standard		
<i>Note: Fugitive emission shall be monitored in the predominant downwind direction at a distance 25.0 :t. 2.0 meters from the source of fugitive emission as per following:</i>		
Particulate Matter	1200 µg/m³	
Area	Monitoring location	
Mine face / Benches	Drilling, excavation and loading applicable for operation 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, screen 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 areas, wagon / truck loading areas.	
Waste Dump	Active / reject dumps	

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

Compliance status:

All the precaution measures are being under taken to comply the above condition. The said parameters are also being monitored on regular basis. Based on the test results, it's also found that, all the monitored parameters are very well within the prescribed norms.

Special Condition – 31:

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

Compliance status:

Regular maintenance of HEMM & Processing plants is being carried out to minimize the noise level from sources. Apart from that, proper PPEs like ear plug, muffles are also provided to employees. Further, to ensure the noise limit, regular noise monitoring is carried out on fortnightly basis for work zones like crusher plant premises, screen plant premises, ROM loading point, beneficiation plant premises, drilling area & work shop. The noise levels are found to be very well within the prescribed norms, the monitoring reports are given in Table -8.

Special Condition – 32:

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

Compliance status:

The project has provided the adequate noise barriers surrounding the crushing and screening plants to control noise pollution and avoid impact on wildlife due to operation of crushing and screening plants during night hours.

Special Condition – 33:

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

Compliance status:

The project is already doing the noise monitoring night time offline mode. However, the project has initiated the procurement process for the online noise monitoring system. Once it was installed, we will intimate the same to your good office.

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

Special Condition – 34:

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

Compliance status:

Project was planted a number of trees inside the safety zone to prevent the illumination towards the forest area and project was ensure that the no light passes into the forest area during the night hours.

Special Condition – 35:

IP cameras shall be installed at major dust prone areas of the mine such as mine quarry, mineral/fines stockyards, haul roads, transportation roads, mineral handling plants etc. and they shall be connected SPCB server.

Compliance status:

The project Is under process of procurement of the IP camera. After completion of same, it will be connected to SPCB Server.

Special Condition – 36:

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

Compliance status:

As per requirement, an electronic display board is installed and data are being displayed in the mines entrance gate with relevant monitoring data like AAQ, Water and noise data etc.



Photo Showing Electronic Display board placed in the mines entrance gate to display the Environmental parameters

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

Special Condition – 37:

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 in nearby village areas in consultation with DFO / Horticulture department. The plantation details shall be submitted to the board by 30th April every Year.

Compliance status:

Plantation has been raised in mines safety zone, OB dumps, and Nallah Gap plantation. In addition to that project has supplied the plants to the locals.

All the planted area is taken almost care like providing water, manure etc. up to saplings self-sustainability. Detailed plantation is given table-9. The plantation details for the FY-2024-25 have already been submitted to the board by 30th April. The supporting document is attached as Annexure-08.



Photo Showing Plantation mines safety zone, OB dumps, and Nallah Gap

Special Condition – 38:

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

Compliance Status:

As per condition, the said Annual IBM Returns is being submitted to the board on regular basis along with consent to operate compliance report. The latest IBM annual return submitted copy for the year 2023 – 24 is enclosed as Annexure – 09.

Special Condition – 39:

The Environmental statement report shall be submitted to the board in proper format every year.

Compliance Status:

The environmental statement report is being submitted to the board for every financial year in stipulated form that is “Form –V”. The last submission was on

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

24.08.2024 vide letter No. IP/MM/AUG24/011 for the year 2023-24 a copy of the same is enclosed here as Annexure – 10.

Special Condition – 40:

The validity of Consent order is subject to possession of a valid mining scheme.

Compliance Status:

The project has review of mining plan along with progressive mining plan through letter no. MCDR-MiFLOFE/20/2023-BBS-IBM_RO_BBS on dated. 30.03.2023.

TABLE-1

SUMMARIZED AMBIENT AIR QUALITY MONITORING REPORT: UNCHABALI IRON & MN ORE MINING PROJECT OF SMT. INDRANI PATNAIK, DISTRICT; KEONJHAR, ORISSA.							
Period: October 2024 To March 2025							
	Month	Quality Parameter, Results, micro.gm/CUM					
		Range	PM10	PM2.5	SO₂	NO_x	CO
AAQ1-C1 – Employee Camp (Core zone)	Oct-24	AVG	53.10	24.73	5.60	10.98	0.25
	Nov-24		58.01	28.23	6.65	12.65	0.32
	Dec-24		53.10	24.73	5.60	10.98	0.25
	Jan-25		54.69	27.40	6.18	11.69	0.29
	Feb-25		59.00	29.51	7.43	13.93	0.38
	Mar-25		60.14	30.08	7.22	13.22	0.37
AAQ2-C2 – New Stores Area (Core Zone)	Oct-24	AVG	55.33	25.61	6.00	11.67	0.28
	Nov-24		62.23	30.40	7.46	13.43	0.34
	Dec-24		55.33	25.61	6.00	11.67	0.28
	Jan-25		60.37	30.64	7.69	13.47	0.34
	Feb-25		63.59	31.96	9.00	16.10	0.42
	Mar-25		62.17	31.26	8.76	15.60	0.43
AAQ3-C3-Mines Main gate (Core Zone)	Oct-24	AVG	54.84	25.96	5.89	11.42	0.28
	Nov-24		58.98	29.00	6.39	12.20	0.32
	Dec-24		54.84	25.96	5.89	11.42	0.28
	Jan-25		65.96	33.30	8.82	14.18	0.37
	Feb-25		72.95	36.63	11.90	17.90	0.49
	Mar-25		69.33	34.93	11.82	17.36	0.48
AAQ4-B1 Village Balda (Buffer Zone)	Oct-24	AVG	42.86	18.63	<4.0	<9.0	0.16
	Nov-24		47.55	22.81	<4.0	<9.0	0.18
	Dec-24		42.86	18.63	<4.0	<9.0	0.16
	Jan-25		51.32	25.61	5.17	10.50	0.22
	Feb-25		55.41	27.51	5.50	11.03	0.28
	Mar-25		55.61	27.78	5.78	11.03	0.30
AAQ5-B2 Village Nayagarh (Buffer Zone)	Oct-24	AVG	42.82	19.40	<4.0	<9.0	0.17
	Nov-24		46.48	22.01	<4.0	<9.0	0.17
	Dec-24		42.82	19.40	<4.0	<9.0	0.17
	Jan-25		52.42	26.17	5.64	10.99	0.25
	Feb-25		59.98	30.11	6.70	13.08	0.34
	Mar-25		56.01	28.30	6.13	11.85	0.33

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

AAQ6-B3 Village Unchabali (Buffer Zone)	Oct-24	AVG	43.32	20.06	<4.0	<9.0	0.16
	Nov-24		48.28	23.49	<4.0	<9.0	0.18
	Dec-24		43.32	20.06	<4.0	<9.0	0.16
	Jan-25		52.38	26.22	5.83	11.29	0.26
	Feb-25		58.35	29.28	6.85	13.20	0.35
	Mar-25		55.58	27.71	5.73	12.10	0.34
AAQ7-B4 Village Kalimati (Buffer Zone)	Oct-24	AVG	43.34	19.89	<4.0	<9.0	0.18
	Nov-24		47.56	22.95	4.50	9.60	0.18
	Dec-24		43.34	19.89	4.50	9.60	0.18
	Jan-25		56.23	28.27	6.20	11.77	0.27
	Feb-25		61.89	31.06	7.65	13.80	0.37
	Mar-25		59.54	29.85	7.28	13.05	0.39

TABLE – 2

FUGITIVE EMISSION DUST MONITORING REPORT

Periods	MONITORING LOCATIONS						
	CRUSHER PLANT	Ore Storage and loading	HAUL ROAD	SCREEN PLANT	MINES FACE	DUMP AREA	
	Results, micro.gm/CUM						
April-24	AVG	485	432	431	383	395	376
May-24		457	407	416	361	372	354
June-24		325.6	289.8	296.2	257.2	265.3	252.1
July-24		290.32	270.75	281.40	300.85	278.21	289.57
Aug-24		288.35	268.95	282.9	302.3	279.15	291.15
Sept-24		412.70	373.90	397.99	435.50	373.40	399.85
Oct-24		462.92	433.85	452.25	486.70	436.05	476.00
Nov-24		533.30	469.90	492.55	508.55	469.90	514.20
Dec-24		362.90	341.20	349.65	372.30	310.05	375.40
Jan-25		519.44	496.43	433.34	533.33	525.37	463.70
Feb-25		562.30	552.49	513.44	593.76	567.17	517.54
March-25		530.28	475.14	514.86	551.11	583.95	483.78

Note – The monitoring and testing are carried by M/s Green Force Associates Pvt. Ltd. which is a NABL accredited laboratory.

TABLE NO.-2 SHOWING FUGITIVE EMISSION MONITORING REPORT

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

TABLE-3

SL.NO	Description	Dimensions/Capacity
1	Check Dam cum Settling pond -1	9800 CUM
2	Check Dam - 4	689 CUM
3	Check Dam - 5	2000 CUM

SL.NO	Description	Location	Dimensions/Capacity
1	Check Dam - 13	21° 52' 41.96" N 85° 25' 41.97" E	15 M X 2 M X 1.5 M
2	Check Dam - 14	21° 52' 42.88" N 85° 25' 50.81" E	15 M X 1.5 M X 1.5 M
3	Check Dam - 15	21° 52' 36.75" N 85° 25' 58.75" E	10 M X 1.5 M X 1.5 M
4	Check Dam - 16	21° 52' 35.55" N 85° 25' 59.51" E	12 M X 1.5M X 1.5 M
5	Guard Wall	21°52'41.14"N 85°25'54.05"E	300 M
6	Nallah Slope pitching	21°52'45.66"N 85°25'2.67"E	300 M
7	Plantation	21°52'41.59"N 85°25'53.87"E	150

Table -4

Mines surface run off discharge water Quality report during Monsoon

Sl. No	Description	Unit	Results	Standards
1	pH	--	7.02	5.5-9.00
2	TSS	Mg/L	44	100
3	Iron	Mg/L	0.28	10

Compliance Status on stipulated conditions in approved Consent to operate of “Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali & Balda, Sub-division Champua, District Keonjhar, Odisha

TABLE - 5

SL. NO	DESCRIPTION	Unit	Norms	Apr-24	May -24	June-24	July-24	Aug-24	Sept-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25
1	pH	-	6.5-9.0	6.13	6.24	5.92	6.58	6.78	7.08	7.17	7.11	7.18	7.11	7.18	6.84
2	Total Suspended Solids (TSS)	Mg/l	100	37	27	24	18	20	10	14	10	16	10	16	19
3	(BOD)	Mg/l	30	8.8	9.6	8.8	20.	2.4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
4	Feacal Caliform	MPN/100 ml	1000	118	98	105	182	164	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Note – The monitoring and testing are carried by M/s Green Force Associates Pvt. Ltd. which is a NABL accredited laboratory.															

SHOWING SEWAGE WATER TREATMENT PLANT WATER DISCHARGE REPORT

TABLE - 6

SL .NO	DESCRIPTION	Unit	Norm s	Apr-24	May -24	June-24	July-24	Aug-24	Sept-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25
1	pH	-	6.5-8.5	6.03	6.28	6.05	6.56	6.68	7.24	7.08	7.08	7.14	7.08	7.22	7.48
2	Total Suspended Solids (TSS)	Mg/l	100	74	88	87	12	16	8	12	14	18	14	20	18
3	Oil & Grease	Mg/l	10	0.10	1.1	1.62	2.0	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
4	COD	Mg/l	150	54	36	42	60	48	12	16	18	22	18	24	18
Note – The monitoring and testing are carried by M/s Green Force Associates Pvt. Ltd. which is a NABL accredited laboratory.															

SHOWING EFFLUENT WATER TREATMENT PLANT WATER DISCHARGE REPORT

Compliance Status on stipulated conditions in approved Consent to operate of “Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali & Balda, Sub-division Champua, District Keonjhar, Odisha

Table -7

GROUND WATER LEVEL																
Monitoring Station	Latitude	Longitude	RL	Description	GWL (BGL in M)											
					April -24	May-24	June -24	July -24	Aug -24	Sep -24	Oct -24	Nov -24	Dec -24	Jan -25	Feb -25	Mar -25
Inside ML area	21°57'37.1 "	85°25'56.6 "	51 0	Bore Well	5.9	4.2	2.6	2.0	4.0	3.7	1.0	3.0	4.0	4.8	5.0	5.2
Unchabali	21°52'38.4 "	85°26'11.8 "	50 4	Open Well	5.4	4.8	2.1	2.5	1.2	3.5	1.1	3.4	3.8	4.2	4.4	4.6
Kalimati	21°51'56.1 "	84°25'05.9 "	55 0	Open Well	4.8	6.0	2.9	2.6	0.9	4.2	1.8	2.8	3.9	4.2	8.3	7.0
Balda	21°53'35.5 "	85°24'18.3 "	56 8	Open Well	6.2	5.8	2.3	2.8	1.0	3.9	2.1	3.2	4.2	4.9	5.4	5.2
Malda	21°49'16.9 "	85°27'27" "	50 7	Bore Well	5.2	6.8	1.8	4.9	4.0	4.1	2.0	3.9	4.6	5.0	5.5	4.9
Nayagarh	21°50'40.8 "	85°26'20.8 "	50 4	Open Well	4.6	4.4	1.9	3.3	0.9	3.9	1.8	2.9	3.9	6.0	8.4	7.1

Compliance Status on stipulated conditions in approved Consent to operate of “Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali & Balda, Sub-division Champua, District Keonjhar, Odisha

TABLE – 8

Sl. No.	Locations	NOISE LEVEL, Leq. In dB (A) from the data log of the monitor.											
		Apr-24	May-24	June-24	July-24	Aug-24	Sept-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25
Work Zone Noise Report													
1	MINES PIT	61.4	54.0	52.2	56.2	57.2	59.2	60.8	61.8	62.6	64.2	63.7	65.4
2	LOADING POINT	75.8	64.0	58.2	48.8	62.4	60.8	63.5	65.2	64.6	66.4	66.3	66.1
3	OPERATOR CABIN	64.6	56.9	59.0	43.2	51.2	54.2	52.8	44.4	52.5	53.4	51.7	43.5
4	WORK SHOP	62.5	56.7	53.7	51.6	63.8	65.8	68.2	68.8	56.8	58.6	59.7	68.4
5	SCREEN PLANT	77.8	60.9	59.0	49.6	61.6	64.2	65.3	65.2	64.8	66.6	66.9	67.3
Ambient Noise Report													
1	BALDA	52.1	45.6	41.9	48.4	47.8	48.3	48.6	48.2	47.8	48.2	47.9	48.5
2	MALDA	47.2	43.0	39.9	48.8	48.1	48.6	49.1	48.6	47.9	48.4	48.4	48.1
3	NAYAGARH	54.8	53.4	50.7	49.5	48.8	48.9	49.6	49.1	48.2	48.7	48.9	49.1
4	UNCHABALI	52.1	45.6	45.1	48.6	48.1	48.30	49.20	49.20	48.20	48.80	49.20	49.7
5	OFFICE AREA	47.3	41.0	42.4	50.2	50.5	42.2	38.6	37.6	37.1	47.9	48.4	48.2
6	CAMP AREA	55.2	51.9	47.4	50.4	51.2	52.1	39.8	40.2	39.8	40.1	40.5	40.4
Norms		Residential, Leq: Day Time : 55 dB (A), Night Time : 45 dB (A)											
		Industrial, Leq: Day Time : 75 dB (A), Night Time : 70 dB (A)											
		Work-zone during 8 Hr exposure: 85 dB (A) – Leq.											

TABLE NO.-8 SHOWING NOISE MONITORING REPORT

**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

TABLE-9

Plantation Details				
Sl. No	Year	Number of Saplings	Survival Rate	Remarks
1	2024-2025	8100	90%	OB dumps (Top, No-04) and worked out benches no. 02, 03, and 04,560,561,562.
2	2023-2024	26508	85%	Dump plantation
3	2022-2023	6500	90%	Dump and Nallah Gap plantation and safety zone gap plantation
4	2021-2022	4200	90%	Nallah Gap Plantation
5	2020-2021	1250	70%	Dump and Safety zone

By e-mail

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

No. MCDR-MiFL0FE/20/2023-BBS-IBM_RO_BBS

Dt : 30/03/2023

Shri/M/s. Indrani Patnaik,
A/6, Commercial Estate Civil Township Rourkela

Sub: Approval of the Review of Mining Plan alongwith Progressive Mine Closure Plan (PMCP) in respect of UNCHABALI Mining Lease Area for Iron and Manganese over an area of 106.1127ha of Smt. Indrani Patnaik, situated in Unchabali and Balda Village, Barbil Taluka, Keonjhar District of Odisha State

Sirs,

In exercise of the powers conferred by clause (b) of sub-section (2) of section 5 of the Mines & Minerals (Development & Regulation) Act, 1957 read with Government of India Order No.S.O.445(E) dated 28.04.1987 and S.O. 1857(E) dated 18th May, 2016, I hereby **approve** the Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) in respect of UNCHABALI Mining Lease Area for Iron and Manganese over an area of 106.1127 ha of Smt. Indrani Patnaik, situated in Unchabali and Balda Village, Barbil Taluka, Keonjhar District of Odisha State. This approval is subject to the following conditions:-

A--General Conditions:

- (1). The 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 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 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 2023-24 to 2027-28 and are 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 1/4/2028.
- (16). Analysis and Beneficiation study of BHQ for recovery of Iron ore is to be carried out in Modern Mineral Processing Laboratory, Indian Bureau of Mines, Nagpur before production of the same.

Yours Faithfully

(B.L.GURJAR)

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 by mail. zo.kol@ibm.gov.in
- (2). The Director of Mines, Directorate of Mines, Government of Odisha, Heads of the Department Building, Bhubaneswar-- 751001, Email- directorofmines@orissaminerals.gov.in.
- (3). The Director of Mines Safety , Chaibasa, Email-altafhussainaksa@gmail.com
- (4). Qualified Person by mail.
- (5). Concerned MCDR file.

Approved

No.J-11015/214/2008-IA.II (M)
 Government of India
 Ministry of Environment & Forests

Paryavaran Bhawan,
 C.G.O. Complex, Lodi Road,
 New Delhi - 110 003

Dated the 23rd July, 2009

To

M/s Indrani Patnaik,
 A/6, Commercial Estate,
 Civil Township,
 Rourkela -769 004,
 Orissa

Subject: Expansion of Unchaballi Iron Ore and Manganese Ore Mining Project of M/s Indrani Patnaik located in Village(s) Unchaballi & Balda, Tehsil Champua, District Keonjhar, Orissa -environmental clearance regarding.

Sir,

This has reference to your letter No. UBIOM/MoEF/EC/2009/01 dated 23.05.2009 and subsequent letters dated 29.05.2009 and 15.06.2009 on the subject mentioned above. The Ministry of Environment and Forests had earlier prescribed Terms of Reference (TORs) to the project on 25.11.2008 for undertaking detailed EIA study. The proposal is for enhancement of production of iron ore from 0.21million tonnes per annum (million TPA) to 4million TPA. The project was earlier accorded environmental clearance by the Ministry for 0.21million TPA production of iron ore on 05.06.2006. The total mine lease area of the project is 106.1127ha, out of which 2.6607ha is an agriculture land, 103.432ha is forestland and 0.02ha is others. Area proposed for mining is 84.6177ha, an area of 6.965ha is kept for temporary storage of over burden, 1.2ha for storage of sub-grade ore, 1.9ha for infrastructure, 1.1ha for roads, 6.05ha for proposed railways siding and 4.28ha for safety zone. The Baitarni River is flowing in the buffer zone of the mine at a distance of 2.5km from the mine lease boundary. In addition, eight water bodies namely the Jalpa Nadi(1.5km), the Kasi Nallah(3.5km), the Dolko Nallah(7km), the Dalki Nallah(7.5km), the Ghagra Nallah and the Jagdhara Nadi(8km), the Gahirajala Nallah(8.5km) and the Mithida Spring(9km) are located in the buffer zone of the mine. No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. are reported to be located in the core and buffer zone of the mine and that the area does not report to form corridor for Schedule-I fauna. In support of this, a map duly authenticated by the Divisional Forest Officer cum Wildlife Warden, Keonjhar Division has been provided. The Karo Karampada Elephant Corridor is reported to be at a distance of about 25 km from the mine lease. Five Reserve Forests namely the Khajuridihi RF(6km), the Chamakpura (7.5KM), the Siddhamatha RF (8KM), the Baitarni RF (8.5KM) and the Nayagarh RF (9km) are located in the buffer zone of the mine. The mine working will be opencast by mechanized method.

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involving drilling and blasting. The targetted production capacity of the mine is 40,00,000TPA of iron ore and the life of mine is 8years. There will be no beneficiation plant as part of this project; however, crushing and screening will be carried out. The mineral will be transported through the road. The topography of the area is undulated and hilly at an elevation above mean sea level ranging from 530m to 720m AMSL. The ultimate working depth of mine will be 540m AMSL. The ground level is reported at 530m AMSL. The groundwater table in the core zone reported to vary from 476m AMSL(54m bgl) to 478m AMSL(52m bgl) during pre-monsoon and the post-monsoon. The mine working will not intersect the groundwater table. The peak water requirement of the project is estimated as 150m³ per day, which will be obtained from the groundwater. There is no population in the core zone, therefore, displacement of population and R&R has not been envisaged. It is estimated that 76800m³ per month of solid waste will be generated, which will be temporarily disposed of in the earmarked area for backfilling. A total of 0.03million m³ of OB has already been accumulated and another 6.01million m³ of OB is proposed to be generated during the entire life of the mine. Backfilling proposed from the year 2011-2012 onwards and the accumulated waste will be liquidated by the year 2016. Plantation will be raised in an area of 98.8627ha at the end of the mine life and there will be no void left during the post mining stage. The public hearing of the project was held on 05.03.2009 as per the EIA Notification, 2006 for expansion of production of iron ore from 0.21million TPA to 4 million TPA over an area of 106.1127ha. The Ministry of Environment and Forests had conveyed its approval under Forest (Conservation) Act, 1980 for diversion of 35.275 ha forestland (34.675ha for mining and 0.6ha for road) on 03.05.2007. The capital cost of the project is Rs.6121Lakhs and the capital cost for the environmental protection measures is proposed as Rs.61Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs.21.98Lakhs.

2. The Ministry of Environment and Forests has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Unchaballi Iron Ore and Manganese Ore Mining Project of M/s Indrani Patnaik for an annual production capacity of four (4.0) million tonnes of iron ore by opencast mechanised method involving total mining lease area of 106.1127ha, subject to implementation of the following conditions and environmental safeguards.

A. Specific Conditions

- (i) The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.
- (ii) Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 103.432ha forestland involved in the project shall be obtained before starting mining operation in that area. Till such time mining activities shall be restricted to an area of 35.275 ha forestland for which approval under Section-2 of the Forest (Conservation) Act, 1980

was granted by the Ministry of Environment and Forests on 03.05.2007. Environmental clearance is subject to grant of forestry clearance. No mining shall be undertaken in the forest area without obtaining requisite prior forestry clearance.

- (iii) The environmental clearance is subject to approval of the State Land Use Department, Government of Orissa for diversion of agricultural land for non-agricultural use.
- (iv) The mining operations shall be restricted to above ground water table and it should not intersect the groundwater table. In case of working below the ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.
- (v) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the seasonal streams, if any emanating from the mine lease area during the course of mining operation.
- (vi) The top soil, if any shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.
- (vii) The project proponent shall not undertake beneficiation of the mineral as part of this project. For undertaking beneficiation, necessary prior approval under the provisions of EIA Notification, 2006 shall be obtained.
- (viii) The over burden (OB) generated during the mining operation shall be temporarily stacked at earmarked dump site(s) only for back-filling. Backfilling shall commence from the year 2011-2012 onwards. The accumulated waste shall be liquidated by the year 2016 and there shall be no external dump thereafter. The backfilled area shall be reclaimed by plantation. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.
- (ix) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, soil, mineral and temporary OB dumps to prevent run off of water and flow of sediments directly into the Baitarni River, the Jalpa Nadi, the Kasi Nallah, the Dolko Nallah, the Dalki Nallah, the Ghagra Nallah, the Jagdhara Nadi, the Gahirajala Nallah, the Mithida Spring and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after the monsoon and maintained properly.

Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and the temporary over burden dumps to prevent run off of water and flow of sediments directly into the Baitarni River, the Jalpa Nadi, the Kasi Nallah, the Dolko Nallah, the Dalki Nallah, the Ghagra Nallah, the Jagdhara Nadi, the Gahirajala Nallah, the Mithida Spring and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.

- (x) Dimension of the retaining wall at the toe of the temporary over burden dump(s) and the OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- (xi) Plantation shall be raised in an area of 98.8627ha including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, mine benches, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per hectare.
- (xii) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as haul road, loading and unloading point and all transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xiii) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained.
- (xiv) Regular monitoring of water quality upstream and downstream of the Kasi Nallah, the Dolko Nallah, the Dalki Nallah, the Ghagra Nallah, the Gahirajala Nallah and the Mithida Spring shall be carried out and record of monitored data should be maintained and submitted to the Ministry of Environment and Forests, its Regional Office, Bhubneswar, the Central Groundwater Authority, Regional Director, the Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board.
- (xv) The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (xvi) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells

and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January)); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.

- (xvii) Appropriate mitigative measures shall be taken to prevent pollution of the Baitarni River, the Jalpa Nadi and the Jagdhara Nadi, in consultation with the State Pollution Control Board.
- (xviii) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) required for the project.
- (xix) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xx) Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded. No transportation of ore outside the mine lease area shall be carried out after the sunset.
- (xxi) No blasting shall be carried out after the sunset. Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.
- (xxii) Drills shall either be operated with the dust extractors or equipped with water injection system.
- (xxiii) 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.
- (xxiv) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.

- (xxv) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xxvi) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the Wildlife Conservation Plan prepared specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.
- (xxvii) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xxviii) The critical parameters such as SPM, RSPM, NOX in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.
- (xxix) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

B. General conditions

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.
- (ii) No change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.
- (iii) Atleast four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM, SPM, SO₂ & NOx monitoring. Location of the stations should be decided based

on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.

- (iv) Data on ambient air quality (RSPM, SPM, SO₂ & NO_x) should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (v) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
- (vi) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
- (vii) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (viii) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

- (ix) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (x) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.
- (xi) The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.

- (xiii) The project proponent shall submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of CPCB and the SPCB. The proponent shall upload the status of compliance of the EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of CPCB and the SPCB.
- (xiv) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xv) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.
- (xvi) The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, at Bhubaneswar by e-mail.
- (xvii) The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.

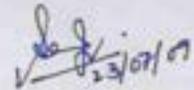
3. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

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

6. Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act, 1997.


(SATISH C. GARKOTI)
Additional Director (S)

Copy to:

- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Orissa, Secretariat, Bhubaneswar.
- (iii) The Secretary, Department of Mines and Geology, Government of Orissa, Secretariat, Bhubaneswar.
- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.
- (v) The Chief Wildlife Warden, Government of Orissa, Bhubaneswar.
- (vi) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vii) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharpur, Bhubaneswar-751023.
- (viii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (ix) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (x) The District Collector, Keonjhar District, Government of Orissa.
- (xi) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xii) Monitoring File.
- (xiii) Guard File.
- (xiv) Record File.

GOVERNMENT OF INDIA
 MINISTRY OF ENVIRONMENT & FORESTS
 EASTERN REGIONAL OFFICE
 A/3, CHANDRASEKHARPUR, BHUBANESWAR - 751 023
 TEL. : (Off.) 2301213, 2302432, 2302443, 2302452, 2302453
 FAX : 0674-2302432. GRAM : PARYAVARAN, BHUBANESWAR
 Email : mef@ori.nic.in

भारत सरकार
 पर्यावरण एवं वन मंत्रालय,
 पूर्वी क्षेत्रीय कार्यालय
 ए/3, चन्द्रसेखरपुर, भुवनेश्वर - 751 023
 तार - पर्यावरण, भुवनेश्वर

8(21)*0/2004-FCE

May 3, 2007

To

The Principal Secretary,
 Forest & Environment Department,
 Govt. of Orissa,
 Bhubaneswar.

Sub:-

Diversion of 35.275 ha of forest land in village Unchabali in Keonjhar district for Iron Ore Mining by Smt. Indrani Patnaik of Keonjhar.

I am directed to refer to your letter No. 10F(Cons)78/2004.5763/F&E dated 13.04.2007 on the above mentioned subject seeking prior approval of the Central Govt. in accordance with Section-2 of the Forest(Conservation) Act, 1980.

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 35.275 ha (34.675 ha for mining and 0.6 ha for road) of forest land in village Unchabali in Keonjhar district for Iron Ore Mining by Smt. Indrani Patnaik of Keonjhar, subject to the compliance of the following conditions:-

- i) Legal status of the forest land diverted shall remain unchanged.
- ii) Compensatory afforestation shall be raised and maintained over 35.275 ha of non-forest land made available in village Guptaganga under Telkoi Tahasil mutated in favour of State Forest Department and handed over to Forest Department at the project cost and the non-forest land shall be declared as PF/RF. The Nodal Officer will submit a report regarding the above issue within 6 months.
- iii) An undertaking from the user agency shall also be obtained to the effect that in case the rates of NPV are revised upwards, the additional/differential amount shall be paid by the User Agency.
- iv) The State Government shall deposit Net Present Value of Rs. 2,64,56,250.00, Compensatory Afforestation of Rs. 5,77,000.00, Safety Zone of Rs. 1,39,300.00, Afforestation of Safety Zone of Rs. 2,21,600.00, Wildlife Management Plan Scheme of Rs. 15,91,691.00, Site Specific Wildlife Management Scheme of Rs. 21,75,000.00 and cost of protection, conservation & enrichment of 64.332 ha of balance forest area not proposed for diversion with the Ad-hoc Body of Compensatory Afforestation Fund Management and Planning Authority(CAMPA), in Account No. CA 1585 of Corporation Bank (A Government of India Enterprises), Block-11, Ground Floor, CGO Complex, Phase-1, Lodhi Road, New Delhi - 110 003, as per the instruction communicated vide letter No. 5-2/2006-FC dated 20.05.2006.
- v) RCC pillars of 4 feet height shall be erected to demarcate the broken up area by the user agency at the project cost and will be marked with forward and back bearing and a site map be prepared showing the positions of all the boundary pillars with G.P.S. reading for periodic monitoring by the user agency.

- vi) The 35.275ha forest land proposed for diversion shall be used for mining (34.675 ha) and road(0.600 ha) only. No overburden dumping or any other ancillary activity will be undertaken thereat.
- vii) Mining shall be done strictly as per the mining plan approved by the IBM and copy of revised Mining Plan(s) for subsequent five year periods shall be furnished to the Regional Office without fail.
- viii) The period of permission granted Under the Forest(Conservation) Act, 1980 shall be co-terminus with the period of current mining lease granted under MMRD Act or 20 years whichever is earlier.
- ix) Reclamation of mined out area as well as Over Burden dumps will be done as per a reclamation plan prepared in this regard. Progress of reclamation will be periodically monitored by the State Forest Department. Serious lapse in achieving reclamation targets shall invite severe action leading to even closure of mine.
- x) The Forest Department shall carry out regeneration, maintenance of safety zone area at the funds provided by the User agency.
- xi) The Forest Department shall carry out afforestation over degraded forest land equivalent one and half times of the safety zone with the funds provided by the User Agency.
- xii) The Regional Wildlife Management Plan prepared for Bonai-Keonjhar belt shall be implemented with the funds provided by the User Agency. The specific Wildlife Management Plan, if any, approved by the Chief Wildlife Warden, shall also be implemented at project cost with the additional funds realized from the User Agency.
- xiii) Blasting, if required to be undertaken, shall be done in a manner causing least disturbance to wild animals particularly elephants. The timing of blasting should be kept flexible during seasonal movement of elephants or during period of their migration or if they happen to be around otherwise in consultation with the D.F.O.
- xiv) The Scheme prepared by the Forest Department for protection, conservation and enrichment of the vegetative cover over balance 64.332 ha forest land not proposed for diversion shall be implemented at project cost under supervision of the Forest Department.
- xv) Standing trees over forest land proposed for diversion shall be felled in phases only on forest land needed to be broken strictly as per the Mining Plan with prior permission of the D.F.O.
- xvi) The user agency shall ensure that no damage to the available wildlife or to the forest flora in the neighbouring forest is caused by labourers/workmen engaged by the project authorities or contractor working under them.
- xvii) No labour camp shall be allowed in the forest area and Sufficient alternate fuel from the approved source shall be provided by the user agency or the contractors working under them to the labourers engaged in the project at project cost to ensure reduction of pressure on nearby forests.
- xviii) The forest land shall not be used for any purpose other than that specified in the proposal.
- xix) Adequate soil and water conservation measures, as and when required, shall be taken by the User Agency in consultation with Forest Officials to check any soil erosion in the lease hold area.

- j) All necessary measures should be taken by the user agency to protect environment.
- xi) Any other conditions that the Central Government may impose from time to time in the interest of afforestation, conservation and management of flora and fauna in the area shall be complied by the user agency.
- xxii) In case of non-compliance of any of the above conditions, the concerned Divisional Forest officer shall report through the State Govt. to this office as per procedure laid down in the clause 1.9 of guidelines issued under Forest(Conservation) Act, 1980 on 25.10.1992.

The State Government shall ensure compliance of all the above conditions.

Yours faithfully,

(S. MOHAPATRA)
DY. CONSERVATOR OF FORESTS(CENTRAL)

y to:-

1. The Inspector General of Forests(FC), Ministry of Environment & Forests, Paryavaran Bhawan, CGO Complex, Lodi Road, New Delhi - 110 003.
2. The Principal Chief Conservator of Forests, Govt. of Orissa, Aranya Bhawan, C.S.Pur, Bhubaneswar - 16.
3. The Nodal Officer, O/o the Principal Chief Conservator of Forests, Govt. of Orissa, Aranya Bhawan, C.S.Pur, Bhubaneswar - 16.
4. The Divisonal Forest Officer, Keonjhar Forest Divison, Keonjhar.
5. Smt. Indrani Patnaik, Mines Owner, Rourkela.
6. Guard File.

S. Mohapatra
21/1/2007
DY. CONSERVATOR OF FORESTS(CENTRAL)

F. No. 8-67/2014-FC
Government of India
Ministry of Environment, Forests and Climate Change
(Forest Conservation Division)

Indira Paryavaran Bhawan
Aliganj, Jorbagh Road
New Delhi -110003.
Dated: 11th September, 2015

To,
The Principal Secretary (Forests),
Government of Odisha,
Bhubaneswar.

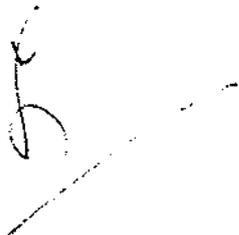
Sub: Diversion of additional 68.157 hectares of forest land including 3.825 hectares of forest land inside safety zone, in addition to 35.275 hectares of D.L.C forest land already diverted, within total Mining lease area of 106.1127 hectares in Unchabali Iron & Manganese ore mines of Smt Indrani Patnaik, in Keonjhar district, Odisha.

Sir,

I am directed to refer to the Government of Odisha's letter No 10 F (Cons.) 155/ 2014-14856/ F & E dated 11th August 2014 on the above mentioned subject, seeking prior approval of the Central Government under Section- 2 of the Forest (Conservation) Act, 1980. After careful examination of the proposal by the Forest Advisory Committee constituted by the Central Government under Section-3 of the said Act, 'in-principle' approval to the proposal was granted by the Ministry vide its letter of even number dated 30th December, 2014 subject to fulfillment of certain conditions prescribed therein. The State Government has furnished compliance report in respect of the conditions stipulated in the 'in-principle' approval and has requested the Central Government to grant final approval.

In this connection, I am directed to say that on the basis of the compliance report furnished by the State Government of Orissa vide their letter No. 10F (Cons)-37/2015/ 8276/ F & E, Bhubaneswar dated 18th May, 2015, final approval of the Central Government is hereby granted under Section-2 of the Forest (Conservation) Act, 1980 for additional 68.157 hectares of forest land including 3.825 hectares of forest land inside safety zone, in addition to 35.275 hectares of D.L.C forest land already diverted, within total Mining lease area of 106.1127 hectares in Unchabali Iron & Manganese ore mines of Smt. Indrani Patnaik, in Keonjhar district, Odisha, subject to the following conditions:

- (i) Legal status of the diverted forest land shall remain unchanged;
- (ii) Compensatory afforestation over the non-forest land, equal in extent to the forest land being diverted, shall be raised and maintained by the State Forest Department from funds already provided by the user agency;
- (iii) The non-forest land transferred and mutated in favour of the State Forest Department shall be notified by the State Government as RF under Section-4 or PF under Section-29 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act latest within a period of six months from the date of issue of Stage-II approval. The Nodal Officer shall report compliance in this regard along with a copy of the original



notification declaring the non-forest land under Section 4 or Section 29 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act, as PF or RF, as the case may be, within the stipulated period to the Central Government for information and record;

- (iv) Following activities, as per approved plan/schemes, shall be undertaken by the user agency under the supervision of the State Forest Department:
- (a) Mitigative measures to minimize soil erosion and choking of streams shall be implemented in accordance with the approved Plan in consultation with the State Forest Department.
 - (b) Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme;
 - (c) Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme;
 - (d) Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that that angles of repose at any given place is less than 28° ; and
 - (e) No damage shall be caused to the top-soil and the user agency will follow the top soil management plan.
- (v) The User Agency shall pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;
- (vi) The User agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;
- (vii) The State Government shall seek approval of Central Government under the P.C. Act for diversion 0.469 ha of forest land reported to be forest *kissam* as on 25.10.1980 by the Tahasildar . Barbil out of the total non-forest land over 2.6827 ha treated as non-forest as per Hal RoR.
- (viii) The User agency shall implement the provisions, as contained in the Regional Wildlife Management Plan in consultation with the Chief Wildlife Warden, Odisha from the funds already provided by the user agency for this purpose;
- (ix) The User agency shall implement the provisions, as contained in the approved site specific Wildlife Conservation Plan in consultation with the Chief Wildlife Warden, Odisha from the funds already provided by the user agency for this purpose;
- (x) User agency shall take appropriate measures such as construction of ponds, water conservation / harvesting structure *etc.* to ensure conservation of water in and around the project site;
- (xi) The State Forest Department shall organize environmental awareness programme to generate awareness among the employees as well as local residents on issues pertaining to conservation and protection of environment from the funds already provided by the User agency;



- (xii) The user agency shall abide by the provision shall take appropriate measures which will be suggested by the State Government based on the outcome of study, being conducted by the National Institute of Technology, Rourkela to assess impact of this project on floral and faunal biodiversity;
- (xiii) Tree felling should be taken up in phases strictly as per requirement under the supervision of the Divisional Forest Officer, Keonjhar Forest Division;
- (xiv) User agency shall execute the Phased Reclamation Plan at their cost; and
- (xv) The user agency shall surrender mined out and biologically reclaimed forest area to the State Forest Department as per the schedule for surrendering of such land submitted by the State Government;
- (xvi) Following activities shall be undertaken by the user agency for the management of safety zone:
 - (a) User agency shall ensure demarcation of boundary of safety zone (7.5 meter strip all along the outer boundary of the mining lease area), and its protection by erecting adequate number of 4 feet high RCC boundary pillars inscribed with DGPS coordinates and deploying adequate number of watchers under the supervision of the State Forest Department.
 - (b) In case of the mining leases adjoining the habitation stretch of the boundary of the safety zone of the lease adjacent to the habitation/roads should be properly fenced by the user agency at the project cost to protect the vegetation /regeneration activities in the safety zone.
 - (c) Safety zone shall be maintained as green belt around the mining lease and to ensure dense canopy cover in the area, regeneration shall be taken in this area by the user agency at the project cost under the supervision of the State Forest Department.
 - (d) Afforestation on degraded forest land, to be selected elsewhere, measuring one and a half times the area under safety zone shall also be done by the user agency at the project cost under the supervision of the State Forest Department.
- (xvii) Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease to be granted under the Mines and Minerals (Development and Regulation) Act, 1957, as amended or Rules framed there under;
- (xviii) User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.4), if any, located in the area within 100 m. from outer perimeter of the mining lease;
- (xix) User agency shall undertake de-silting of the village tanks and other water bodies located within five km from the mine lease boundary so as to mitigate the impact of siltation of such tanks/water bodies, whenever required;
- (xx) User agency shall undertake mining in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, Government of



Odisha and the Addl. Principal Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (Eastern Zone), Bhubaneswar. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed;

- (xxi) No labour camp shall be established on the forest land;
- (xxii) User agency shall provide firewood preferably alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas;
- (xxiii) The boundary of the mining lease and safety zone shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing and distance from pillar to pillar;
- (xxiv) Forest land shall not be used for any purpose other than that specified in the proposal;
- (xxv) The user agency shall submit the annual self-compliance report in respect of the above conditions to the State Government and to the concerned Regional Office of the Ministry regularly;
- (xxvi) Any other condition that the Regional Office (Eastern Zone), Bhubaneswar of this Ministry and the Government of Odisha may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife; and
- (xxvii) The User Agency and the State Government shall ensure strict compliance of conditions of Stage-I approval for which undertakings has been obtained from the User Agency and also provisions of the all Acts, Rules, Regulations and Guidelines, for the time being in force, as applicable to the project.

Yours faithfully,

(Nisheeth Saxena)

Assistant Inspector General of Forests

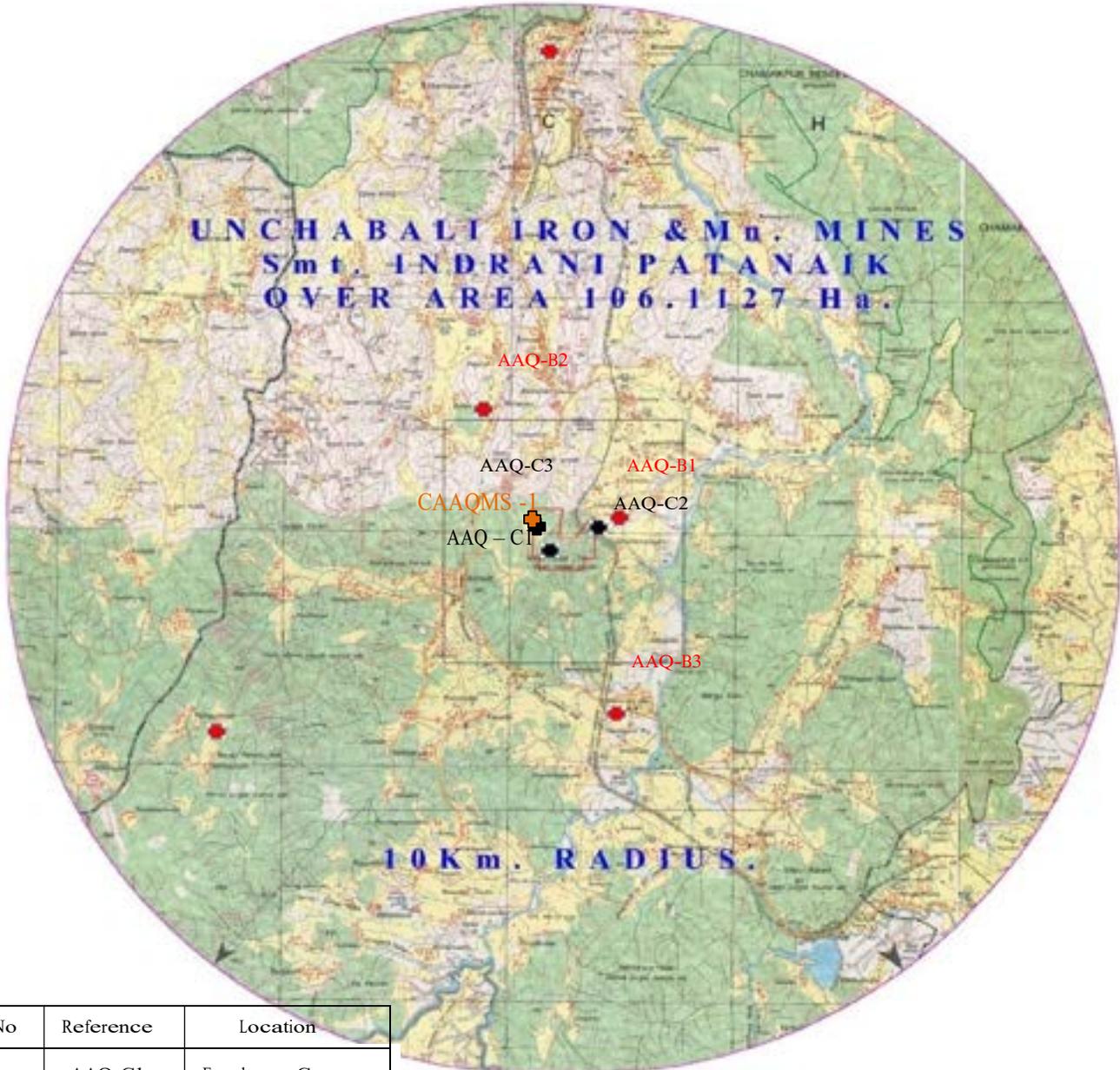
Copy to:

- 1. The Principal Chief Conservator of Forests, Government of Odisha, Bhubaneswar.
- 2. The Nodal Officer, the Forest (Conservation) Act, 1980 Forest Department, Government of Odisha, Bhubaneswar.
- 3. The Addl. Principal Chief Conservator of Forests (Central), Regional Office (Eastern Zone), Bhubaneswar.
- ✓ 4. User Agency.
- 5. Monitoring Cell, FC Division, MoEF & CC, New Delhi.
- 6. Guard File.

(Nisheeth Saxena)

Assistant Inspector General of Forests

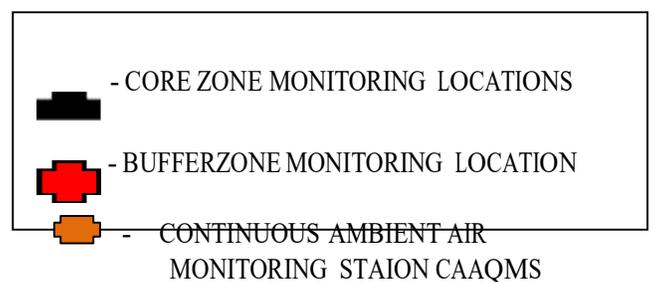
AAQ MONITORING STATION



SL. No	Reference	Location
1	AAQ-C1	Employee Camp
2	AAQ-C2	Mines Entry And Exit Gate
3	CAAQMS	Near magazine area

SL.No	Reference	Location
1	AAQ-B1	Village Unchabali
2	AAQ-B2	Village Balda
3	AAQ-B3	Village Nayagarth

AAQ MONITORING LOCATION



**Compliance Status on stipulated conditions in approved Consent to operate of
“Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
Balda, Sub-division Champua, District Keonjhar, Odisha**

Annexure-5

SUMMARIZED AMBIENT AIR QUALITY MONITORING REPORT: UNCHABALI IRON & MN ORE MINING PROJECT OF SMT. INDRANI PATNAIK, DISTRICT; KEONJHAR, ORISSA.							
Period: October 2024 To March 2025							
	Month	Quality Parameter, Results, micro.gm/CUM					
		Range	PM10	PM2.5	SO₂	NO_x	CO
AAQ1-C1 – Employee Camp (Core zone)	Oct-24	AVG	53.10	24.73	5.60	10.98	0.25
	Nov-24		58.01	28.23	6.65	12.65	0.32
	Dec-24		53.10	24.73	5.60	10.98	0.25
	Jan-25		54.69	27.40	6.18	11.69	0.29
	Feb-25		59.00	29.51	7.43	13.93	0.38
	Mar-25		60.14	30.08	7.22	13.22	0.37
AAQ2-C2 – New Stores Area (Core Zone)	Oct-24	AVG	55.33	25.61	6.00	11.67	0.28
	Nov-24		62.23	30.40	7.46	13.43	0.34
	Dec-24		55.33	25.61	6.00	11.67	0.28
	Jan-25		60.37	30.64	7.69	13.47	0.34
	Feb-25		63.59	31.96	9.00	16.10	0.42
	Mar-25		62.17	31.26	8.76	15.60	0.43
AAQ3-C3-Mines Main gate (Core Zone)	Oct-24	AVG	54.84	25.96	5.89	11.42	0.28
	Nov-24		58.98	29.00	6.39	12.20	0.32
	Dec-24		54.84	25.96	5.89	11.42	0.28
	Jan-25		65.96	33.30	8.82	14.18	0.37
	Feb-25		72.95	36.63	11.90	17.90	0.49
	Mar-25		69.33	34.93	11.82	17.36	0.48
AAQ4-B1 Village Balda (Buffer Zone)	Oct-24	AVG	42.86	18.63	<4.0	<9.0	0.16
	Nov-24		47.55	22.81	<4.0	<9.0	0.18
	Dec-24		42.86	18.63	<4.0	<9.0	0.16
	Jan-25		51.32	25.61	5.17	10.50	0.22
	Feb-25		55.41	27.51	5.50	11.03	0.28
	Mar-25		55.61	27.78	5.78	11.03	0.30
AAQ5-B2 Village Nayagarh (Buffer Zone)	Oct-24	AVG	42.82	19.40	<4.0	<9.0	0.17
	Nov-24		46.48	22.01	<4.0	<9.0	0.17
	Dec-24		42.82	19.40	<4.0	<9.0	0.17
	Jan-25		52.42	26.17	5.64	10.99	0.25
	Feb-25		59.98	30.11	6.70	13.08	0.34
	Mar-25		56.01	28.30	6.13	11.85	0.33
AAQ6-B3 Village Unchabali (Buffer Zone)	Oct-24	AVG	43.32	20.06	<4.0	<9.0	0.16
	Nov-24		48.28	23.49	<4.0	<9.0	0.18
	Dec-24		43.32	20.06	<4.0	<9.0	0.16
	Jan-25		52.38	26.22	5.83	11.29	0.26
	Feb-25		58.35	29.28	6.85	13.20	0.35
	Mar-25		55.58	27.71	5.73	12.10	0.34

**Compliance Status on stipulated conditions in approved Consent to operate of
 “Unchabali Iron and Mn. of Smt. Indrani Patnaik” located in village(s) Unchabali &
 Balda, Sub-division Champua, District Keonjhar, Odisha**

AAQ7-B4 Village Kalimati (Buffer Zone)	Oct-24	AVG	43.34	19.89	<4.0	<9.0	0.18
	Nov-24		47.56	22.95	4.50	9.60	0.18
	Dec-24		43.34	19.89	4.50	9.60	0.18
	Jan-25		56.23	28.27	6.20	11.77	0.27
	Feb-25		61.89	31.06	7.65	13.80	0.37
	Mar-25		59.54	29.85	7.28	13.05	0.39

**ENVIRONMENT MONITORING REPORT
FOR THE MONTH OF
FEBRUARY- 2025**

**Client- UNCHABALI IRON & MANGANESE
MINES**

**ADDRESS- A/6, Commercial Estate, Civil Township,
Rourkela, Odisha**



Monitored By - Green Force Associates Pvt. Ltd.

Address- Plot No-1363-3892 ,

Bhaibhab Realcon, Fulnakhara, Cuttack,

Odisha- 754001

NABL Certificate No:- TC-12258



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/UIMM/0275

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	18.02.2025	Date of Receiving	19.02.2025
Date of Analysis	19.02.2025	Date of Complete	22.02.2025
Sampling Location & Coordinates	SW1 - Baitarani River Up Stream; Lat: 21°84'25.82"N, Long: 85°44'48.37"E; SW2 - Baitarani River Down Stream; Lat: 21°89'18.79"N, Long: 85°45'80.25"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW1	SW2
1.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	<1.0	<1.0
3.	pH	APHA 24th ED 4500- H+B:2023	---	6.0-9.0	7.22	7.25
4.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	145.3	150.4
5.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	90	93
6.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	600	11	12
7.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
8.	Hexavalent Chromium(asCr+6)	APHA 24 th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
9.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.3	0.32
10.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	6.9	7.2
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	--	<2.0	<2.0
13.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	6.1	5.9
14.	BOD (3)days at 27°C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	<2.0
15.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	11	13

Reviewed By
CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Mr. S.K. Parhi

Note:

- The results listed refer only to tested samples and applicable parameters Endorsement of products is neither inferred nor implied.
- Total liability of our lab is limited to the invoiced amount.
- Samples will be destroyed after 30 days from the date of test report unless otherwise specified.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Report refers to the sample submitted to us and not drawn by unless mentioned otherwise.

END OF REPORT



GREEN FORCE ASSOCIATES PRIVATE LIMITED

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

Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/UIMM/0275

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township. Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	18.02.2025	Date of Receiving	19.02.2025
Date of Analysis	19.02.2025	Date of Complete	22.02.2025
Sampling Location & Coordinates	SW1 - Baitarani River Up Stream; Lat: 21°84'25.82"N, Long: 85°44'48.37"E; SW2 - Baitarani River Down Stream; Lat: 21°89'18.79"N, Long: 85°45'80.25"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW1	SW2
1.	Nitrate (as NO ₃)	APHA 24th ED 4500-NO ₃ -E: 2023	mg/l	50	0.85	0.92
2.	Phenolic Compounds as C ₆ H ₅ OH	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	---	510	510

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

Note:

- > The results listed refer only to tested samples and applicable parameters Endorsement of products is neither inferred nor implied.
- > Total liability of our lab is limited to the invoiced amount.
- > Samples will be destroyed after 30 days from the date of test report unless otherwise specified.
- > This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- > Report refers to the sample submitted to us and not drawn by unless mentioned otherwise.

END OF REPORT



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/UIMM/0276

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	18.02.2025	Date of Receiving	19.02.2025
Date of Analysis	19.02.2025	Date of Complete	22.02.2025
Sampling Location & Coordinates	SW3 - Unchabali Nallah Up Stream; Lat: 21°88'16.06"N, Long: 85°41'61.50"E; SW4 - Unchabali Nallah Down Stream; Lat: 21° 87'87.44"N, Long: 85°43'11.61"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW3	SW4
1.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	<1.0	<1.0
3.	pH	APHA 24th ED 4500- H+B:2023	---	6.0-9.0	7.28	7.32
4.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	182.4	190.6
5.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	109	117
6.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	600	14	15
7.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
8.	Hexavalent Chromium(asCr+6)	APHA 24 th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
9.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.34	0.35
10.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	7.8	8.1
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	--	<2.0	<2.0
13.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	6	5.8
14.	BOD (3) days at 27°C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	<2.0
15.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	12	14

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, ODISHA

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, ODISHA

Mr. S.K./Parhi

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END OF REPORT

--1 of 2--

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 - Khurda

Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/UIMM/0276

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	18.02.2025	Date of Receiving	19.02.2025
Date of Analysis	19.02.2025	Date of Complete	22.02.2025
Sampling Location & Coordinates	SW3 - Unchabali Nallah Up Stream; Lat: 21°88'16.06"N, Long: 85°41'61.50"E; SW4 - Unchabali Nallah Down Stream; Lat: 21° 87'87.44"N, Long: 85°43'11.61"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW3	SW4
1.	Nitrate (as NO ₃)	APHA 24th ED 4500-NO ₃ -E: 2023	mg/l	50	1.24	1.33
2.	Phenolic Compounds as C ₆ H ₅ OH	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	0.1	0.12
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	---	510	570

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha
Miss. Arati Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha
Mr. S.K. Parhi

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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

Report No- GFAPL/24-25/UIMM/0277

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	18.02.2025	Date of Receiving	19.02.2025
Date of Analysis	19.02.2025	Date of Complete	22.02.2025
Sampling Location & Coordinates	SW5 - Jalpa Nallah; Lat: 21°84'75.05" N, Long: 85°43'82.45"E; SW6 - Kashi Nallah; Lat: 21°89'47.55"N, Long: 85°45'44.8"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW5	SW6
1.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	<1.0	<1.0
3.	pH	APHA 24th ED 4500- H+B:2023	---	6.0-9.0	7.33	7.32
4.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	201.3	212.5
5.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	124	131
6.	Chloride (as Cl)	APHA 24th ED 4500- Cl-B:2023	mg/l	600	15	17
7.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
8.	Hexavalent Chromium(asCr+6)	APHA 24 th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
9.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.4	0.41
10.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	8.6	7.7
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	--	<2.0	<2.0
13.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	5.8	5.7
14.	BOD (3) days at 27°C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	2.6
15.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	16	20

Reviewed By

Authorized Signatory

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha
Miss. Arti Sahoo

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha

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Baramunda, Bhubaneswar, Dist - Khurda

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

Report No- GFAPL/24-25/UIMM/0277

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	18.02.2025	Date of Receiving	19.02.2025
Date of Analysis	19.02.2025	Date of Complete	22.02.2025
Sampling Location & Coordinates	SW5 - Jalpa Nallah; Lat: 21°84'75.05" N, Long: 85°43'82.45"E; SW6 - Kashi Nallah; Lat: 21°89'47.55"N, Long: 85°45'44.8"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW5	SW6
1.	Nitrate (as NO ₃)	APHA 24th ED 4500-NO ₃ -E: 2023	mg/l	50	1.28	1.54
2.	Phenolic Compounds as C ₆ H ₅ OH	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	0.11	0.14
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	570

Reviewed By

Authorized Signatory

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
Chief Analyst
Miss. **GANESHWAR. ODISHA**

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Technical Manager
Miss. **SIKHA. ODISHA**

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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



Report No- GFAPL/24-25/UIMM/0283

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ground Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	16.02.2025	Date of Receiving	17.02.2025
Date of Analysis	17.02.2025	Date of Complete	21.02.2025
Sampling Location & Coordinates	GW1- Mines Lease Area; Lat: 21°87'46.83"N, Long: 85°42'38.51"E; GW2- Unchabali Village; Lat: 21.87°73.48"N, Long: 85° 43'66.07"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW1	GW2
				AL	PL		
1.	Colour	IS 3025: (Part 4)- 1983	Hazen	5	15	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B -2023	NTU	1	5	<1	<1
3.	pH Value @250C	APHA 24th ED 4500- H+B:2023	--	6.5-8.5	NR	6.89	7.02
4.	Total Dissolved Solids(TDS)	APHA 24th ED 2540-C: 2023	mg/l	500	2000	139	146
5.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	250	1000	11	12
6.	Total Hardness	APHA 24th ED 2340-C: 2023	mg/l	200	600	88	92
7.	Calcium	APHA 24th Ed 3500- Ca-B:2023	mg/l	75	200	22.4	23.3
8.	Magnesium	APHA 24th ED 3500-Mg-B: 2023	mg/l	30	100	7.8	8.3
9.	Total Alkalinity	APHA 24th ED 2320-B: 2023	mg/l	200	600	80	86
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	0.5	NR	<0.05	<0.05
13.	Iron	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.3	NR	0.23	0.24
14.	Sulfate	APHA 24th ED 4500-SO4 D: 2023	mg/l	200	400	2.5	2.2

--1 of 4--



GREEN FORCE ASSOCIATES PRIVATE LIMITED

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

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Sl. No.	Parameter	Testing Methods	Unit	Standard as per		GW1	GW2
				IS: 10500, 2012			
				AL	PL		
15.	Fluoride	APHA 24th ED 4500-F-C: 2023	mg/l	1.0	1.5	<0.05	<0.05
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	mg/l	--	--	6.7	7.4
19.	Potassium as K	APHA 24th ED 3500- K-B	mg/l	--	--	0.7	0.7

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

Reviewed By

Authorized Signatory

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

Chief Analyst

Miss. Arti Sahoo

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

Bhubaneswar, Odisha

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Baramunda, Bhubaneswar, Dist - Khurda

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Report No- GFAPL/24-25/UIMM/0283

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ground Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	16.02.2025	Date of Receiving	17.02.2025
Date of Analysis	17.02.2025	Date of Complete	21.02.2025
Sampling Location & Coordinates	GW1- Mines Lease Area; Lat: 21°87'46.83"N, Long: 85°42'38.51"E; GW2- Unchabali Village; Lat: 21.87'73.48"N, Long: 85° 43'66.07"E;		

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.	Nitrate	APHA 24th ED 4500-NO3-B: 2023	mg/l	0.2	1.0	1.38	1.44
3.	Cadmium (as Cd)	IS: 3025(Part 41)	mg/l	0.003	NR	<0.001	<0.001
4.	Copper (as Cu)	IS: 3025(Part 42)	mg/l	0.05	1.5	<0.03	<0.03
5.	Zinc (as Zn)	APHA 24th ED 3500 Zn: 2023	mg/l	5	15	0.16	0.17
6.	Lead (as Pb)	APHA 24th ED 3500 Pb: 2023	mg/l	0.01	NR	<0.01	<0.01
7.	Selenium (as Se)	APHA 24th ED 3500 B: 2023	mg/l	0.001	NR	<0.001	<0.001
8.	Mercury (as Hg)	APHA 24th ED3500Hg: 2023	mg/l	0.001	NR	<0.001	<0.001
9.	Arsenic (as As)	APHA24th ED 3500As: 2023	mg/l	0.01	0.05	<0.001	<0.001
10.	Aluminum (as Al)	APHA24th ED 3500Al: 2023	mg/l	0.03	0.2	<0.01	<0.01
11.	Mineral Oil	APHA 24th ED5220B: 2023	mg/l	0.5	NR	ND	ND
12.	Anionic Detergents (as MBAS)	APHA24th ED 5540 C: 2023	mg/l	0.2	1.0	ND	ND



GREEN FORCE ASSOCIATES PRIVATE LIMITED

Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
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Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW1	GW2
				AL	PL		
13.	Phenolic Compound (as C ₆ H ₅ OH)	APHA 24th ED 5530 B,D: 2023	mg/l	–	–	<0.001	<0.001
14.	Total Coliforms	APHA 24th ED 9222-H: 2023	MPN/100ml	0.2	NR	<1.8	<1.8

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

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha

Authorized Signatory
TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha
Technical Manager
Mr. S.K. Parhi

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GREEN FORCE ASSOCIATES PRIVATE LIMITED

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



Report No- GFAPL/24-25/UIMM/0284

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ground Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	16.02.2025	Date of Receiving	17.02.2025
Date of Analysis	17.02.2025	Date of Complete	21.02.2025
Sampling Location & Coordinates	GW3- Balda Village; Lat: 21° 52' 0.86" N, Long: 85° 24' 13.30" E; GW4- Nayagarh Village; Lat: 21°84'25.82"N, Long: 85°44'48.37"E;		

Sl. No	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW3	GW4
				AL	PL		
1.	Colour	IS 3025: (Part 4)- 1983	Hazen	5	15	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B -2023	NTU	1	5	<1	<1
3.	pH Value @250C	APHA 24th ED 4500- H+B:2023	--	6.5-8.5	NR	6.84	6.94
4.	Total Dissolved Solids(TDS)	APHA 24th ED 2540-C: 2023	mg/l	500	2000	150	165
5.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	250	1000	13	15
6.	Total Hardness	APHA 24th ED 2340-C: 2023	mg/l	200	600	92	101
7.	Calcium	APHA 24th Ed 3500- Ca-B:2023	mg/l	75	200	22.9	25.3
8.	Magnesium	APIIA 24th ED 3500-Mg-B: 2023	mg/l	30	100	8.5	9.2
9.	Total Alkalinity	APHA 24th ED 2320-B: 2023	mg/l	200	600	86	92
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	0.5	NR	<0.05	<0.05
13.	Iron	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.3	NR	0.24	0.25
14.	Sulfate	APHA 24th ED 4500-SO4 D: 2023	mg/l	200	400	2.3	4.6

--1 of 4--



GREEN FORCE ASSOCIATES PRIVATE LIMITED

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

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Sl. No.	Parameter	Testing Methods	Unit	Standard as per		GW3	GW4
				IS: 10500, 2012			
				AL	PL		
15.	Fluoride	APHA 24th ED 4500-F-C: 2023	mg/l	1.0	1.5	<0.05	<0.05
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	mg/l	--	--	8.1	9.2
19.	Potassium as K	APHA 24th ED 3500- K-B	mg/l	--	--	0.8	0.9

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

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

Bhubaneswar, ODISHA

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

Bhubaneswar, ODISHA

Mr. S.K. Parida

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END OF REPORT



GREEN FORCE ASSOCIATES PRIVATE LIMITED

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

Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/UIMM/0284

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ground Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	16.02.2025	Date of Receiving	17.02.2025
Date of Analysis	17.02.2025	Date of Complete	21.02.2025
Sampling Location & Coordinates	GW3- Balda Village; Lat: 21° 52' 0.86" N, Long: 85° 24' 13.30" E; GW4- Nayagarh Village; Lat: 21° 84' 25.82" N, Long: 85° 44' 48.37" E;		

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.	Nitrate	APHA 24th ED 4500-NO3-B: 2023	mg/l	0.2	1.0	1.36	1.78
3.	Cadmium (as Cd)	IS: 3025(Part 41)	mg/l	0.003	NR	<0.001	<0.001
4.	Copper (as Cu)	IS: 3025(Part 42)	mg/l	0.05	1.5	<0.03	<0.03
5.	Zinc (as Zn)	APHA 24th ED 3500 Zn: 2023	mg/l	5	15	0.16	0.21
6.	Lead (as Pb)	APHA 24th ED 3500 Pb: 2023	mg/l	0.01	NR	<0.01	<0.01
7.	Selenium (as Se)	APHA 24th ED 3500 B: 2023	mg/l	0.001	NR-	<0.001	<0.001
8.	Mercury (as Hg)	APHA 24th ED3500Hg: 2023	mg/l	0.001	NR	<0.001	<0.001
9.	Arsenic (as As)	APHA24th ED 3500As: 2023	mg/l	0.01	0.05	<0.001	<0.001
10.	Aluminum (as Al)	APHA24th ED 3500Al: 2023	mg/l	0.03	0.2	<0.01	<0.01
11.	Mineral Oil	APHA 24th ED5220B: 2023	mg/l	0.5	NR	ND	ND
12.	Anionic Detergents (as MBAS)	APHA24th ED 5540 C: 2023	mg/l	0.2	1.0	ND	ND



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Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW3	GW4
				AL	PL		
13.	Phenolic Compound (as C ₆ H ₅ OH)	APHA 24th ED 5530 B,D: 2023	mg/l	-	-	<0.001	<0.001
14.	Total Coliforms	APHA 24th ED 9222-H: 2023	MPN/100ml	0.2	NR	<1.8	<1.8

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

Reviewed By

Arati Sahoo
CHIEF ANALYST

Chief Analyst

Miss. Arati Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESWAR, ODISHA

Technical Manager

Mr. S.K./Parhi

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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

Report No- GFAPL/24-25/UIMM/0285

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ground Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	16.02.2025	Date of Receiving	17.02.2025
Date of Analysis	17.02.2025	Date of Complete	21.02.2025
Sampling Location & Coordinates	GW5- Kalimatti Village; Lat: 21° 51' 52.08" N, Long: 85° 24' 27.73" E; GW6- Employee Camp; Lat: 21° 87' 62.83" N, Long: 85° 43' 18.98" E;		

Sl. No	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW5	GW6
				AL	PL		
1.	Colour	IS 3025: (Part 4)- 1983	Hazen	5	15	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B -2023	NTU	1	5	<1	<1
3.	pH Value @250C	APHA 24th ED 4500- H+B:2023	--	6.5-8.5	NR	7.03	7.01
4.	Total Dissolved Solids (TDS)	APHA 24th ED 2540-C: 2023	mg/l	500	2000	168	153
5.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	250	1000	18	12
6.	Total Hardness	APHA 24th ED 2340-C: 2023	mg/l	200	600	99	97
7.	Calcium	APHA 24th Ed 3500- Ca-B:2023	mg/l	75	200	24.5	24.1
8.	Magnesium	APHA 24th ED 3500-Mg-B: 2023	mg/l	30	100	9	9
9.	Total Alkalinity	APHA 24th ED 2320-B: 2023	mg/l	200	600	90	89
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	0.5	NR	<0.05	<0.05
13.	Iron	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.3	NR	0.21	0.23
14.	Sulfate	APHA 24th ED 4500-SO4 D: 2023	mg/l	200	400	3.5	4.5

--1 of 4--



GREEN FORCE ASSOCIATES PRIVATE LIMITED



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

✉ Mail Id: greenforceassociates@gmail.com

Sl. No.	Parameter	Testing Methods	Unit	Standard as per		GW5	GW6
				IS: 10500, 2012			
				AL	PL		
20.	Fluoride	APHA 24th ED 4500-F-C: 2023	mg/l	1.0	1.5	<0.05	<0.05
21.	Boron	APHA 24th ED 4500 B-B:2023	mg/l	0.5	1.0	<0.01	<0.01
22.	Manganese	IS 3025 PART-59 :2006 RA 2012	mg/l	0.1	0.3	<0.05	<0.05
23.	Sodium as Na	APHA 24th ED 3500- Na-B	mg/l	--	--	11.2	7.3
24.	Potassium as K	APHA 24th ED 3500- K-B	mg/l	--	--	1	0.7

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

Reviewed By

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

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Technical Manager
BHUBANESWAR, ODISHA
Mr. S.K. Parhi

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Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/UIMM/0285

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate. Civil Township, Rourkela. Odisha		
Nature of Sampling	Ground Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	16.02.2025	Date of Receiving	17.02.2025
Date of Analysis	17.02.2025	Date of Complete	21.02.2025
Sampling Location & Coordinates	GW5- Kalimatti Village; Lat: 21° 51' 52.08" N, Long: 85° 24' 27.73" E; GW6- Employee Camp; Lat: 21°87'62.83" N, Long: 85°43'18.98"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW5	GW6
				AL	PL		
1.	Odour	APHA 24th ED: 2150-B - 2023	---	Agreeable	Agreeable	U/O	U/O
2.	Nitrate	APHA 24th ED 4500-NO3-B: 2023	mg/l	0.2	1.0	2.56	2.4
3.	Cadmium (as Cd)	IS: 3025(Part 41)	mg/l	0.003	NR	<0.001	<0.001
4.	Copper (as Cu)	IS: 3025(Part 42)	mg/l	0.05	1.5	<0.03	<0.03
5.	Zinc (as Zn)	APHA 24th ED 3500 Zn: 2023	mg/l	5	15	0.24	0.24
6.	Lead (as Pb)	APHA 24th ED 3500 Pb: 2023	mg/l	0.01	NR	<0.01	<0.01
7.	Selenium (as Se)	APHA 24th ED 3500 B: 2023	mg/l	0.001	NR-	<0.001	<0.001
8.	Mercury (as Hg)	APHA 24th ED3500Hg: 2023	mg/l	0.001	NR	<0.001	<0.001
9.	Arsenic (as As)	APHA24th ED 3500As: 2023	mg/l	0.01	0.05	<0.001	<0.001
10.	Aluminum (as Al)	APHA24th ED 3500Al: 2023	mg/l	0.03	0.2	<0.01	<0.01
11.	Mineral Oil	APHA 24th ED5220B: 2023	mg/l	0.5	NR	ND	ND
12.	Anionic Detergents (as MBAS)	APHA24th ED 5540 C: 2023	mg/l	0.2	1.0	ND	ND



GREEN FORCE ASSOCIATES PRIVATE LIMITED

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Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS: 10500, 2012		GW5	GW6
				AL	PL		
13.	Phenolic Compound (as C ₆ H ₅ OH)	APHA 24th ED 5530 B,D: 2023	mg/l	-	-	<0.001	<0.001
14.	Total Coliforms	APHA 24th ED 9222-H: 2023	MPN/100ml	0.2	NR	<1.8	<1.8

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

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
Chief Analyst
Bhubaneswar, Odisha
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Technical Manager
Bhubaneswar, Odisha
Mr. S.K. Parhi

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

Mail Id: greenforceassociates@gmail.com



Report No- GFAPL/24-25/UIMM/0286

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, 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	18.02.2025		

Sl. No.	Sampling Location	Result
1	SWFR1 - Baitarani River Up Stream; Lat: 21°84'25.82"N, Long: 85°44'48.37"E;	5.7 m/sec
2	SWFR2 - Baitarani River Down Stream; Lat: 21°89'18.79"N, Long: 85°45'80.25"E;	6.1 m/sec
3	SWFR3 - Unchabali Nallah Up Stream; Lat: 21°88'16.06"N, Long: 85°41'61.50"E;	5.0 m/sec
4	SWFR4 - Unchabali Nallah DownStream; Lat: 21° 87'87.44"N, Long: 85°43'11.61"E;	5.2 m/sec
5	SWFR5 - Jalpa Nallah; Lat: 21°84'75.05" N, Long: 85°43'82.45"E;	4.8 m/sec
6	SWFR6 - Kashi Nallah; Lat: 21°89'47.55"N, Long: 85°45'44.8"E;	5.1 m/sec

Reviewed By

Authorized Signatory

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
Chief Analyst
Miss. Arti Sahoo

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA
Mr. S.K. Darhi

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Baramunda, Bhubaneswar, Dist - Khurdha

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/UTMM/0287

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ground Water Level Monitoring		
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	16.02.2025		

Sl. No.	Sampling Location	Result
1	GWL1- Mines Lease Area; Lat: 21°87'46.83"N, Long: 85°42'38.51"E;	4.2 m
2	GWL2- Unchabali Village; Lat: 21.87'73.48"N, Long: 85° 43'66.07"E;	4.1 m
3	GWL3- Balda Village; Lat: 21° 52' 0.86" N, Long: 85° 24' 13.30" E;	4.8 m
4	GWL4- Nayagarh Village; Lat: 21°84'25.82"N, Long: 85°44'48.37"E;	4.6 m
5	GWL5- Kalimatti Village; Lat: 21° 51' 52.08" N, Long: 85° 24' 27.73" E;	4.4 m
6	GWL6- Employee Camp; Lat: 21°87'62.83" N, Long: 85°43'18.98"E;	4.8 m

Reviewed By

Authorized Signatory

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
CHANDANESWAR, ODISHA
Miss. Arti Sahoo

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Mr. S.K. Parhi

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GREEN FORCE ASSOCIATES PRIVATE LIMITED



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

Report No- GFAPL/24-25/UIMM/0288

Issued Date-05.03.2025

TEST REPORT

Client Name & Address	<i>UNCHABALI IRON & MANGANESE MINES</i> AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Soil		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per TNAU Agritech Portal
Location of performance of Laboratory activities	Laboratory Permanent Facility	Deviation from the method (if any)	NO
Discipline	Chemical	Group	Soil and Rock
Date of Sampling	16.02.2025	Date of Receiving	17.02.2025
Date of Analysis	17.02.2025	Date of Complete	21.02.2025
Sampling Location & Coordinates	S1: Inside ML Area South; Lat: 21°87' 36.22"N, Long: 85°42' 24.88"E; S2: Inside ML Area North; Lat: 21°87' 69.70"N, Long: 85°42'28.89"E;		

Sl. No.	Parameters	Standard	Unit	S1	S2
1	pH	IS: 2720(Part-26)-1987	%	6.21	6.22
2	Organic Carbon Content	IS: 2720(Part-22)-1972	%	1.28	1.36
3	Water Content (Moisture)	IS: 2720(Part-2)-1973	%	6.3	6.3
4	Specific gravity	IS: 2720(Part-3/Sec1)-1980	Gs	2.69	2.67
5	Sulfate	IS: 2720(Part-27)-1977	mg/Kg	98	112

Reviewed By

Authorized Signatory

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

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Technical Manager
BHUBANESWAR, ODISHA
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END OF REPORT

INDRANI PATNAIK

(MINES OWNER)

A/6, COMMERCIAL ESTATE, CIVIL TOWNSHIP, ROURKELA - 769 004

Phone : 0661-2400139, 2400014, FAX : 0661-2402226

REF: IP/MM/APRIL-2025-007

DATE: 14.04.2025

To,
The Member Secretary,
State Pollution Control Board, Odisha,
A/118, Nilakantha Nagar,
Unit-VIII, Bhubaneswar - 751012,
Mail id: paribesh1@ospcboard.org.

Subject: Submission of Annual Statement for plantation in respect of Unchabali Iron & Mn. Mine of Smt. Indrani Patnaik under E. Special condition no-37 of approved consent order.

Reference: E. Special condition no-37 in approved Consent order No. 2645 vide letter no 4999/ IND-I-CON-6035 dated on 29.03.2022.

Dear Sir,

With reference to the above cited subject and reference to the above special condition no-37 we are hereby submitting "The annual statements pertaining to the number of trees planted areas where plantation has been done, survival percentage and area in Hecter covered under plantation" in prescribed format as **Appendix -1** in respect of Unchabali iron & Mn. Mine of Smt. Indrani Patnaik for period of 2024-2025.

This is for your kind information, please.

Thanking you,

For, Unchabali Iron & Mn. Mines of Smt. Indrani Patnaik


14/4/25

(Authorized Signatory) 
Unchabali Iron & Mn. Mines
Indrani Patnaik
Maharastra

Encl.: Appendix-1

Copy to: The Regional Officer, SPCB, Odisha, Regional Office, College Road, Dist.- Keonjhar, and Odisha.

Email: rospcb.keonjhar@ospcboard.org.

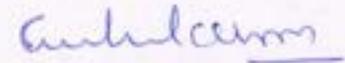
Appendix - I

UNCHABALI IRON & MN. MINES OF SMT. INDRANI PATNAIK														
PLANTATION ANNUAL STATEMENT FOR THE YEAR 2024-2025														
Sl. No	Mines Name	ML Area in Ha.	Period	Within ML			Out Side ML			Avenue Plantation			Total	
				No of Trees Planted	Area in Ha	Survival rate	No of Trees Planted	Area in Ha	Survival rate	No of Trees Planted	Area in RKM	Survival rate	No of Trees Planted	Survival rate
1	Unchabali Iron & Mn Mines, Smt. Indrani Patnaik	106.1127 Ha.	2024-25	8100	1.6	90%	8100	90%

Note : Within ML area plantation was carried out in OB dump (Top, No-04) and worked out benches no. 02, 03, and 04,560,561,562.

Special Condition - 37

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 in nearby village areas in consultation with DFO / Horticulture department. The plantation detail shall be submitted to the Board, by 30h April every year.



Mines Manager
Unchabali Iron & Mn. Mines
Indrani Patnaik
Maharajmari

FORM G-1

[See rule 45(5)(c)(i)]

For the financial Year 1st April, 2023 to 31st March, 2024**ANNUAL RETURN**

[To be used for minerals other than Copper, Gold, Lead, Pyrites, Tin, Tungsten, Zinc and precious and semi-precious stones]

To

- (i) The Regional Controller of Mines
Indian Bureau of Mines
Bhubaneswar Region,
PIN:
(Please address to Regional Controller of Mines in whose territorial jurisdiction the mines falls as notified from time to time by the Controller General, Indian Bureau of Mines under rule 66 of the Mineral Conservation and Development Rules, 2017)
- (ii) The State Government of Odisha

PART - I (General)

1. Details of Mine:	
(a) Registration number allotted by Indian Bureau of Mines <i>(to give registration number of the Lessee-Owner)</i>	IBM/5175/2011
(b) Mine Code (allotted by Indian Bureau of Mines)	30ORI08100
(c) Name of the Mineral	IRON ORE
(d) Name of Mine	UNCHABALI (106.1127)
(e) Name(s) of other mineral(s), if any, produced from the same mine	
2. Location of the Mine :	
Village	UNCHABALI
Post Office	BAMEIBARI
Tahsil-Taluk	BARBIL
District	KENDUJHAR
State	ODISHA
PIN Code	758038
Fax No. :	676727230
Phone No. :	9437062184
E-mail:	uimm.ip@gmail.com
Mobile:	9437062184

3. Name and address of Lessee-Owner (along with fax no. and e-mail):	
Name of Lessee-Owner	M/s. Indrani Patnaik
Address	A/6, Commercial Estate Civil Township, Rourkela
District	SUNDARGARH
State	ODISHA
PIN Code	769004
Fax No. :	6767272304
Phone No. :	9437062184
E-mail:	uimm.ip@gmail.com
Mobile:	9437062184
4. Registered Office of the Lessee:	A/6, Commercial Estate Civil Township, Rourkela-769004
5. Director in charge :	NA
6. Agent :	Banshidhar Sahoo
7. Manager :	A.Gurubalasubramaniam
8. Mining Engineer in charge:	Utpal Jana
9. Geologist in charge :	Padmalochan Behera
10. Transferor (previous owner), if any, and date of transfer:	

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Upload PMCP Table in Excel: [PMCP - 2023-24 Format \(UIMMIP\).xlsx](#)

Upload UAV Survey (KML/KMZ File) : [UIOM_KML_FILES_\(1\).kmz](#)

11. Particulars of area operated-Lease

(Furnish information on items (i) to (vi) lease-wise in case mine workings cover more than one lease)

Lease - 1	
(i) Lease number allotted by the State Government	44
(ii) Area under lease (hectares):	
Under Forest	103.432 hectares
Outside Forest	2.681 hectares
Total	106.113 hectares
(iii) Date of execution of mining lease deed	05/02/1999
(iv) Period of lease	30
(v) Area for which surface rights are held (hectares)	
Under Forest	99.608 hectares
Outside Forest	2.668 hectares
Total	102.276 hectares
(vi) Date and period of renewal (if applicable)	0

(vii) In case there is more than one mine in the same lease area, indicate name of mine and mineral produced	Mine Name	Mine Code	Mineral Name
	--	--	--

12. Lease area (surface area) utilisation as at the end of year (hectares):	Under forest	Outside forest	Total
(i) Already exploited and abandoned by opencast (O-C) mining	0.000	0.000	0.000
(ii) Covered under current (O-C) Workings	34.974	0.000	34.974
(iii) Reclaimed-rehabilitated	14.419	0.000	14.419
(iv) Used for waste disposal	13.023	0.000	13.023
(v) Occupied by plant, buildings, residential, welfare buildings and roads	2.337	0.000	2.337
(vi) Used for any other purpose (specify) Sub Grade Dump (Mineral Stacking)	3.100	0.000	3.100
(vii) Work done under progressive mine closure plan during the year	3.749	0.000	3.749
13. Ownership-exploiting Agency of the mine: (Public Sector-Private Sector-Joint Sector)	Private Sector		

PART-II (Employment and Wages)

1.Number of supervisory staff employed at the mine		
Description	Wholly employed	Partly employed
(i) Graduate Mining Engineer	7	0
(ii) Diploma Mining Engineer	3	0
(iii) Geologist	1	0
(iv) Surveyor	1	0
(v) Other administrative and technical supervisory staff	22	0
Total:	34	0
2. (i) Number of days the mine worked: 357		
(ii) No. of shifts per day: 3		
(iii) Indicate reasons for work stoppage in the mine during the year (due to strike, lockout, heavy rain, non-availability of labour, transport bottleneck, lack of demand, uneconomic operations, etc.) and the number of days of work stoppage for each of the factors separately .	Reasons	No. of days
	Holidays	8

3. Employment and salary-wages paid #:

Maximum number of persons employed on any one day during the year:								
(i) In workings below ground on (date) (a) (number) 0								
(ii) In all in the mine on (date) 05/06/2023 (a) (number) 293								
Classification	Total number of man days worked during the year			No. of days worked during the year	Average daily number of persons employed			Total Wages - Salary for the year (₹)
	Direct	Contract	Total		Male	Female	Total	
(1)	2(A)	2(B)	2(C)	(3)	4(A)	4(B)	4(C)	(5)
Below Ground	0	0	0	0	0	0	0	0.00
Opencast	13342	61142	74484	357	209	0	209	74552829.00
Above Ground	392	6916	7308	357	21	0	21	6183530.00
Total:	13734.0	68058.0	81792.0	357.000	230.0	0.0	230.0	80736359.00

To include all employees exclusive to the mine and attached factory, workshop or mineral dressing plant at the mine site

PART-II A (Capital Structure)

1. Value of Fixed Assets* (₹ 217233218)

(in respect of the mine, beneficiation plant, mine work-shop, power and water installation)

In case this information is furnished as combined information in another mine's return please specify Mine Code-Mine Name:

Mine Name	Mine Code	Mineral Name
--	--	--

Description	At the beginning of the year (₹)	Additions during the Year (₹)	Sold or discarded during the year (₹)	Depreciation during the year (₹)	Net closing Balance (₹) (2+3)-(4+5)	Estimated market value** (₹)
1	2	3	4	5	6	7
(i) Land***	0	0	0	0		0
(ii) Building:						
Industrial	0	0	0	0	0	0
Residential	0	0	0	0	0	0
(iii) Plant and Machinery including transport equipment	262268493	0	6700000	38335275	217233218	0
(iv) Capitalised Expenditure such as pre-production exploration, development, major overhaul and repair to machinery etc. (As prescribed under Income Tax Act)	0	0	0	0	0	0
Total:	262268493	0	6700000	38335275	217233218	0

* In case the fixed assets are common to more than one mine, furnish combined information for all such mines together in any one of the mine's return. In the returns for other mines, give only a cross reference to the particular mine's return where-in the information is included.

** Optional and may be furnished in respect of items (i), (ii) and (iii) if the mine owner desires.

*** Including any non-recurring expenditure incurred on the acquisition of land.

2. Source of Finance (at the end of the year) :

(i) Paid up Share Capital (₹)	0	
(ii) Own Capital (₹)	25829052567	
(iii) Reserve and Surplus (All Types)(₹)	0	
(iv) Long Term loans outstanding (#)(₹)	0	
Name of the Institution-Source	Amount of Loan (₹)	Rate of Interest
	0	0

(#) Indicate the names of the lending institutions such as State Finance Corporation, Industrial Development and other Public Corporations, Co-operative Banks, Nationalised Banks and other sources along with the amount of loan from each source and the rate of interest at which loan has been taken.

3. Interest and Rent (₹)

(i) Interest paid during the year	0
(ii) Rents (excluding surface rent) paid during the year	0

PART-III (Consumption of Materials)

1. Quantity and cost of material consumed during the year			
Description	Unit	Quantity	Value (₹)
(i) Fuel			
(a) Coal	Tonnes	0	0
(b) Diesel Oil	Ltrs.	0	0
(c) Petrol	Ltrs.	0	0
(d) Kerosene	Ltrs.	0	0
(e) Gas	Cu.M	0	0
(ii) Lubricant			
(a) Lubricant oil	Ltrs.	0	0
(b) Grease	Kgs.	0	0
(iii) Electricity			
(a) Consumed	Kwh	642500	6400169
(b) Generated	Kwh	0	0
(c) Sold	Kwh	0	0
(iv) Explosives (furnish full details in Part IV)			6346042
(v) Tyres	Nos.	0	0
(vi) Timber and Supports			0
(vii) Drill rods and kits	Nos.	0	0
(viii) Other spares and stores			0

2. Royalty, Rents and Payments made to DMF and NMET (₹):		
	Paid for current year	Paid towards past arrears
(a) Royalty	353164942	124360279
(b) Dead rent	0	0
(c) Surface rent	211260	0
(d) Payment made to DMF	105949483	37308083
(e) Payment made to NMET	7063300	2487206
3. Compensation paid for felling trees during the year (₹)		0
4. Depreciation on fixed assets (₹)		38335275

5. Taxes and cesses		
	Amount in Rupees paid during the year to:	
	Central Govt.	State Govt.
(i) Sales Tax	276178456	146718840
(ii) Welfare cess	0	0
(iii) Other taxes and cesses:-		
(a) Mineral cess	0	0
(b) Cess on dead rent	0	0
(c) Others (please specify) Professional Tax	0	2500
6. Other expenses (₹):		
(i) Overheads		41501103
(ii) Maintenance		0
(iii) Money value of other benefits paid to workmen		0
(iv) Payment made to professional agencies		52823529

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PART-IV (Consumption of Explosives)

Licensed capacity of magazine: (specify unit separately in kg-tonne, numbers, metres)		Item		Unit	Capacity
		Explosives		Kg.	1850
		Detonators		No.s	15000
		Fuses		Mts	6000
Classification of Explosives	Unit	Quantity consumed during the year		Estimated requirement during the next year	
		Small dia. (upto 32 mm)	Large dia. (above 32 mm)	Small dia. (upto 32 mm)	Large dia. (above 32 mm)
1. Gun Powder	Kg.	0		0	
2. Nitrate Mixture					
a. Loose ammonium nitrate	Kg.	0	0	0	0
b. Ammonium nitrate in cartridged form	Kg.	0	19675	0	153000
3. Nitro compound	Kg.	297	0	2500	0
4. Liquid Oxygen soaked cartridges	Kg.	0	0	0	0
5. Slurry explosives (Mention different trade names) SME Emulking 200 Solar BE 201	Kg.	0	67701	0	400000
6. Detonators					
i) Ordinary	No.s	40		500	
ii) Electrical					
(a) Ordinary	No.s	0		0	
(b) Delay	No.s	26		300	
7. Fuse					
(a) Safety Fuse	Mts	230		2500	
(b) Detonating Fuse	Mts	85		10000	
8. Plastic ignition cord	Mts	0		0	
9. Others (specify) Nonel	Meters	24607		275000	

Different sizes of soaked liquid oxygen cartridges to be reported in equivalent kg. as per manufacturer's instruction.

PART-V (General Geology & Mining)

(Items 2 and 3 to be submitted separately for each mineral)

1. Exploration

1(i) Exploration activities during the year:

		At the beginning of the year	During the year	Cumulative	Grid spacing-Dimension
Drilling	No of holes	185	0	185	100X100
	Metrage	7739	0	7739	100X100
Pitting	No of pits	0	0	0	0
	Excavation (in m ³)	0	0	0	0
Trenching	No of trenches	0	0	0	0
	Excavation (in m ³)	0	0	0	0
	Length covered (in metre)	0	0	0	0
Expenditure on exploration (₹)		0	0	0	0

1(ii). Any other exploration activity during the year: NA

2. Reserves and Resources estimated (in tonnes) (IRON ORE).

Classification	Code	At the beginning of the year 1.4.2023 as per latest approved mining plan- scheme	Assessed during the year	Depletion of reserves during the year	Balance resources as on 31.3.2024
(1)	(2)	(3)	(4)	(5)	(6)= (3+4-5)
A. Mineral Reserve					
1. Proved Mineral Reserve	111	5140396.80	0	532080	4608316.8
2. Probable mineral Reserve	121	51064640	0	0	51064640
	122	0	0	0	0
3. Total Reserves		56,205,036.80	0.00	532,080.00	55,672,956.80
B. Remaining Resources					
1. Feasibility mineral Resource	211	104932.80	0	0	104932.80
2. Prefeasibility mineral resource	221	14685440	0	0	14685440
	222	0	0	0	0
3. Measured mineral resource	331	0	0	0	0
4. Indicated mineral resource	332	0	0	0	0
5. Inferred mineral resource	333	0	0	0	0
6. Reconnaissance mineral resource	334	0	0	0	0
7. Total remaining Resources		14,790,372.80	0.00	0.00	14,790,372.80
Total (A+B)		70,995,409.60	0.00	532,080.00	70,463,329.60

3. Subgrade-Mineral Reject (in tonnes) (IRON ORE)

(Information to be given in respect of mineral fractions generated and stacked- dumped below cut-off grade and above threshold value, if prescribed, having no immediate sale value)

Generation of subgrade-mineral reject (in tones)	At the beginning of the year	Generated during the year	Disposed during the year	Total stacked at the end of the year	Average grade of the mineral reject generated
from unprocessed ore	0	0	0	0	0
from processed ore	42692	14700	26933.90	30458.10	55

4. Overburden and Waste (in m³)

(Information to be given in respect of overburden- waste and mineral fractions generated below threshold value, if prescribed)

At the beginning of the year	Generated during the year	Disposed in dumps during the year	Backfilled during the year	Total at the end of the year
5952992	231238	0	231238	5952992

5. Trees planted- survival rate

Description	Within lease area	Outside lease area
i) Number of trees planted during the year	26746	0
ii) Survival rate in percentage	90	0
iii) Total no. of trees at the end of the year	87314	50185

6. Type of Machinery: Give the following information for the types of machinery in use such as hoist, fans, drills, loaders, excavators, dumpers, haulages, conveyors, pumps, etc.

Type of machinery	Capacity of each type of machinery	Unit (in which capacity is reported)	No. of machinery	Electrical Non-electrical (specify)	Used in opencast underground (specify)
CRUSHER	200.000	T/H	1	Electrical	Opencast
BACK HOE	3.500	CUM	1	Non Electrical	Opencast
BACK HOE	0.930	CUM	1	Non Electrical	Opencast
WHEEL LOADER	3.000	CUM	1	Non Electrical	Opencast
TRUCK	30.000	TONNE	5	Non Electrical	Opencast
DOZER	302.000	HP	1	Non Electrical	Opencast
BLAST HOST DRILL	102.000	MM	1	Non Electrical	Opencast
EXPLOSIVE VAN	3.510	TONNE	1	Non Electrical	Opencast
OTHERS (ELEC.)	400.000		2	Electrical	Opencast
OTHERS (ELEC.)	60.000		1	Electrical	Opencast

7(i) Details of mineral Treatment Plant, if any: Give a brief description of the process capacity of the machinery deployed and its availability. (Submit Flow Sheet and Material Balance of the Plant separately).

N/A

(ii) Furnish following information:

Item		Tonnage	Average Grade
Feed:		0.000	0.000
Concentrates-processed products :	(mention name)	0.000	0.000
By-products-Co-products:	(mention name)	0.000	0.000
Tailings:		0.000	0.000

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PART-VI (PRODUCTION, DESPATCHES AND STOCKS) (IRON ORE (HEMATITE))

(To be submitted separately for each mineral)

(Unit of Quantity in Tonnes)

1. Type of ore produced:

(Applicable for Iron ore only; tick mark whichever is applicable)

(a) Hematite

2. Production and Stocks of ROM ore at Mine-head

Category	Opening stock	Production	Closing stock
(a) Open Cast workings	0.000	532080.000	0.000
(b) Underground Workings	0.000	0.000	0.000
(c) Dump workings	15810.000	0.000	0.000

3(i) Grade-wise ROM ore despatches from mine head (\$):

Grade of ROM	Despatches from mine-head	Ex-mine Price (₹)
(a) 45% to below 51% Fe ROM	0.000	0.00
(b) 51% to below 55% Fe ROM	0.000	0.00
(c) 55% to below 58% Fe ROM	0.000	0.00
(d) 58% to below 60% Fe ROM	0.000	0.00
(e) 60% to below 62% Fe ROM	0.000	0.00
(f) 62% to below 65% Fe ROM	0.000	0.00
(g) 65% and above Fe ROM	0.000	0.00

(\$): Applicable for iron ore and chromite only. For other minerals data of despatches to be reported in 3(ii)

3(ii) Grade-wise Production, Despatches, Stocks and Ex-mine prices:

Grades**	Opening stock at mine-head	Production	Despatches from mine-head	Closing stock at mine-head	Ex-mine price (₹-Tonne)
(i) Lumps					
(a) 45% to below 51% Fe	0.000	0.000	0.000	0.000	0.00
(b) 51% to below 55% Fe	0.000	0.000	0.000	0.000	0.00
(c) 55% to below 58% Fe	0.000	0.000	0.000	0.000	0.00
(d) 58% to below 60% Fe	0.000	0.000	0.000	0.000	0.00
(e) 60% to below 62% Fe	0.000	0.000	0.000	0.000	0.00
(f) 62% to below 65% Fe	0.000	0.000	0.000	0.000	0.00
(g) 65% and above Fe	0.000	0.000	0.000	0.000	0.00
(ii) Fines					
(a) 45% to below 51% Fe	0.000	0.000	0.000	0.000	0.00
(b) 51% to below 55% Fe	12873.331	14700.000	26933.900	639.431	3171.00
(c) 55% to below 58% Fe	44935.951	171510.000	215177.304	1268.647	2938.00
(d) 58% to below 60% Fe	27463.270	71010.000	82760.370	15712.900	3084.00
(e) 60% to below 62% Fe	25508.091	116160.000	99913.940	41754.151	5007.00
(f) 62% to below 65% Fe	3.408	30810.000	17724.880	13088.528	4974.00
(g) 65% and above Fe	0.000	0.000	0.000	0.000	0.00
(a) CONCENTRATES	0.000	0.000	0.000	0.000	0.00
(iii) Calibrated Lump Ore (CLO)					
(a) Below 62% Fe (CLO any size)	57385.568	143700.000	152122.210	48963.358	4741.00
(b) 62% to below 65% Fe (5-18 mm size CLO)	0.003	0.000	0.000	0.003	0.00
(c) 62% to below 65% Fe (10-40 mm size CLO)	0.989	0.000	0.000	0.989	0.00
(d) 62% to below 65% Fe (CLO others)	0.000	0.000	0.000	0.000	0.00
(e) 65% and above Fe (5-18 mm size CLO)	0.000	0.000	0.000	0.000	0.00
(f) 65% and above Fe (10-40 mm size CLO)	0.000	0.000	0.000	0.000	0.00
(g) 65% and above Fe (CLO others)	0.000	0.000	0.000	0.000	0.00

Note.--- Any kind of Hematite Iron Ore below 45% Fe but above threshold value shall be included in the grade slab of '45% to below 51% Fe'.

3(iii) In case the mineral is being pulverized in own factory, please give the following particulars (*):

Grade**	Total quantity of mineral Pulverized (in tonnes)	Total quantity of pulverized mineral produced (for each mesh size)		Total Quantity of pulverized mineral sold during the month		
		Mesh size	Quantity (tonne)	Mesh size	Quantity (tonne)	Ex-factory Sale value (₹)

3(iv) Average cost of pulverization (*) : ₹ per tonne

(*): Not applicable for Iron ore, Manganese ore, Bauxite and Chromite

4. Details of deductions made from sale value for computation of Ex-mine price (₹- Tonne)

Deduction claimed #	Amount (in ₹- Tonne)	Remarks
(a) Cost of transportation (indicate loading station and distance from mine in remarks)	120.00	Average Transportation Cost for CLO is Rs. 0, Sc. Fines (<55% Fe),(55-58% Fe) , (58-60% Fe),(60-62% Fe) is Rs. 350,& Sc Fines (62-65% Fe) is Rs. 0.
(b) Loading and unloading charges	0.00	NA
(c) Railway freight, if applicable (indicate destination and distance)	0.00	NA
(d) Port Handling charges- export duty (indicate name of port)	0.00	NA
(e) Charges for sampling and analysis	0.00	NA
(f) Rent for the plot at Stocking yard	0.00	NA
(g) Other charges (specify clearly)	0.00	NA
Total (a) to (g)	120.00	

Not applicable for captive dispatches and ex-mine sales

5. Sales- Despatches effected for Domestic Purposes and for Exports:

Grade	Nature of Despatch (indicate whether Domestic Sale or Domestic Transfer or Captive consumption or Export)	For Domestic Purposes				For export		
		Registration number as allotted by the Indian Bureau of Mines to the buyer ##	Consignee name ##	Quantity	Sale value (₹)	Country	Quantity	F.O.B Value (₹)
51% to below 55% Fe,Fines	DOMESTIC SALE	IBM/21299/2017	GLOBAL MARKETING	3858.890	9261336.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/45123/2022	APEX NATURAL RESOURCES PVT LTD OPC	208.490	698442.00			
51% to below 55% Fe,Fines	DOMESTIC SALE	IBM/16298/2013	PRAFUL ENTERPRISES PRIVATE LIMITED	19225.970	74011302.00			
51% to below 55% Fe,Fines	DOMESTIC SALE	IBM/21197/2017	TRANSTEK COAL & MINERALS PRIVATE LIMITED	3849.040	8852792.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/1192/2011	KALINGA ENTERPRISES PRIVATE LIMITED	7696.150	23667875.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/12291/2012	BAGADIYA BROTHERS PRIVATE LIMITED	111694.280	373894687.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/16298/2013	PRAFUL ENTERPRISES PRIVATE LIMITED	11552.760	42551479.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/21197/2017	TRANSTEK COAL & MINERALS PRIVATE LIMITED	24461.684	63065593.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/21299/2017	GLOBAL MARKETING	3860.140	9264336.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/22940/2020	SEVEN HILLS MINERALS PRIVATE LIMITED	648.510	1945530.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/23239/2021	Neelima Associates Pvt.Ltd	3851.560	9628900.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/4405/2011	Orissa Exim Pvt. Ltd.	7712.980	22753291.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/45059/2022	Manisha Keshri Trade Name AARAV ENTERPRISES	7697.300	21937305.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/45123/2022	APEX NATURAL RESOURCES PVT LTD OPC	6640.690	23015948.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/45154/2022	ROBOTECH	8856.620	22141550.00			

55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/45303/2023	BS MINERALS AND ORES LLP	10643.210	39471132.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/6156/2011	APEX EXPORTS	3805.770	9514425.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/743/2011	JAI BALAJI JYOTI STEELS LIMITED	2000.490	6001470.00			
55% to below 58% Fe,Fines	DOMESTIC SALE	IBM/7815/2011	Kashvi Power & Steel Pvt. Ltd.	3846.670	15002013.00			
58% to below 60% Fe,Fines	DOMESTIC SALE	IBM/1192/2011	KALINGA ENTERPRISES PRIVATE LIMITED	7706.020	19265050.00			
58% to below 60% Fe,Fines	DOMESTIC SALE	IBM/21197/2017	TRANSTEK COAL & MINERALS PRIVATE LIMITED	30809.100	80873716.00			
58% to below 60% Fe,Fines	DOMESTIC SALE	IBM/4227/2011	ORISSA METALIKS PRIVATE LIMITED	2910.130	13386598.00			
58% to below 60% Fe,Fines	DOMESTIC SALE	IBM/4360/2011	SHARK MINES & MINERALS PVT. LTD.	11561.680	31795780.00			
58% to below 60% Fe,Fines	DOMESTIC SALE	IBM/43917/2021	ORISSA ALLOY STEEL PRIVATE LIMITED	19217.050	65123225.00			
58% to below 60% Fe,Fines	DOMESTIC SALE	IBM/4405/2011	Orissa Exim Pvt. Ltd.	540.000	1242000.00			
58% to below 60% Fe,Fines	DOMESTIC SALE	IBM/4494/2011	BRAHMANI RIVER PELLETS LIMITED	10016.390	51584409.00			
60% to below 62% Fe,Fines	DOMESTIC SALE	IBM/11541/2012	Bravo Sponge Iron (Pvt) Ltd	3895.710	19088979.00			
60% to below 62% Fe,Fines	DOMESTIC SALE	IBM/4156/2011	Shyam Sel & Power Limited	11542.270	56170528.00			
60% to below 62% Fe,Fines	DOMESTIC SALE	IBM/4227/2011	ORISSA METALIKS PRIVATE LIMITED	3854.680	18695198.00			
60% to below 62% Fe,Fines	DOMESTIC SALE	IBM/4494/2011	BRAHMANI RIVER PELLETS LIMITED	75621.280	391528582.00			
60% to below 62% Fe,Fines	DOMESTIC SALE	IBM/6156/2011	APEX EXPORTS	5000.000	21500000.00			
62% to below 65% Fe,Fines	DOMESTIC SALE	IBM/4227/2011	ORISSA METALIKS PRIVATE LIMITED	10015.940	48076512.00			
62% to below 65% Fe,Fines	DOMESTIC SALE	IBM/4494/2011	BRAHMANI RIVER PELLETS LIMITED	7708.940	40086488.00			
Below 62% Fe (CLO any size),Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/10538/2012	JAI BALAJI INDUSTRIES LIMITED	3481.670	17408350.00			
Below 62% Fe (CLO any size),Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/1253/2011	KHEDARIA ISPAT LIMITED	2004.130	10020650.00			
Below 62% Fe (CLO any size),Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/1282/2011	ADHUNIK METALIKS LTD.	20017.900	113284416.00			

Below 62% Fe (CLO any size), Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/12826/2012	ADHUNIK METALIKS LTD.	3847.330	22314514.00			
Below 62% Fe (CLO any size), Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/21011/2016	MIN-TRADE COMPANY	9705.770	43675965.00			
Below 62% Fe (CLO any size), Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/21197/2017	TRANSTEK COAL & MINERALS PRIVATE LIMITED	7608.250	36136690.00			
Below 62% Fe (CLO any size), Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/23066/2020	PH ENTERPRISE	52833.690	237222272.00			
Below 62% Fe (CLO any size), Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/4144/2011	PAWANJAY SPONGE IRON LIMITED	6014.050	34074820.00			
Below 62% Fe (CLO any size), Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/4156/2011	Shyam Sel & Power Limited	3898.100	24752935.00			
Below 62% Fe (CLO any size), Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/4264/2011	SRI GANESH SPONGE IRON PVT. LTD.	2010.260	10252326.00			
Below 62% Fe (CLO any size), Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/4360/2011	SHARK MINES & MINERALS PVT. LTD.	4156.230	18802627.00			
Below 62% Fe (CLO any size), Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/538/2011	JAI BALAJI INDUSTRIES LIMITED	21110.510	92668778.00			
Below 62% Fe (CLO any size), Calibrated Lump Ore (CLO)	DOMESTIC SALE	IBM/743/2011	JAI BALAJI JYOTI STEELS LIMITED	15434.320	68680524.00			

To indicate separately if more than one buyer.

NOTE:- Mine owners are required to substantiate domestic sale value- FOB value for each grade of ore quoted above with copy of invoices (not to be submitted with the return; to be produced whenever required)

6. Give reasons for increase-decrease in production-nil production, if any, during the year compared to the previous year.

- a) Production based on demand.

7. Give reasons for increase-decrease in grade wise ex-mine price, if any, during the year compared to the previous year.

- a) Price varies according to market demand and supply ratio.

PART-VII: COST OF PRODUCTION

Cost of production per tonne of ore-mineral produced

Sl. No.	Item	Cost per tonne (₹)
(i)	Direct Cost	428.00
	(a) Exploration	0.00
	(b) Mining	428.00
	(c) Beneficiation(Mechanical Only)	0.00
(ii)	Over-head cost	78.00
(iii)	Depreciation	72.00
(iv)	Interest	0.00
(v)	Royalty	664.00
(vi)	Payments made to DMF	199.00
(vii)	Payments made to NMET	13.00
(viii)	Taxes	312.00
(ix)	Dead Rent	0.00
(x)	Others (specify) Other expenses	22.00
	Total	1788.00

Note: Information given under Part VII will be kept confidential. The Government, however, will be free to utilize the information for general studies without revealing the identity of the firm.

Mineral Name	Production proposal for financial year 2023 - 2024	Production reported during the financial year 2023 - 2024	Difference
IRON ORE - HEMATITE	0	532080	-532080

I Certify that the information furnished above is correct and complete in all respects.

Place:
Dist: KENDUJHAR, ODISHA
Pin: 758038
Date: 29-06-2024

Signature

Name in full:
Designation:
Owner-Agent-Mining Engineer-Manager

From: 103.153.142.178 at 2025-03-21 16:27:09

Esigned by: Guest
Date: 21/03/2025 04:27:10 PM

INDRANI PATNAIK

(Mines Owner)

A/6, COMMERCIAL ESTATE, CIVIL TOWNSHIP, ROURKELA-769 004

Phone : 0661-2400139, 2400014, FAX : 0661-2402226

REF: *IPA/mm/Aug24/011*

DATE: 24.08.2024

To,
The Member Secretary,
State Pollution Control Board, Orissa
Paribesh Bhawan, A/118
Nilakantha Nagar, Unit - VIII,
Bhubaneshwar - 751012

Subject: Environmental Statement of "Unchabali Iron & Mn. Mines of Smt. Indrani Patnaik located in villages(s) Unchabali & Balda, Tehsil-Barbil, Dist: Keonjhar for the year 2023-2024.

Dear Sir,

With reference to the above subject, we are herewith submitting the Environmental Statement for the financial year 2023-2024 in the Form - V as per rule - 14 under Environment (Protection) Rules, 1986 in respect of Unchabali Iron & Mn. Mines of Smt. Indrani Patnaik.

This is for your kind information, please.

Thanking You,

For **Unchabali Iron & Mn. Ore Mines of Smt. Indrani Patnaik**

Indrani Patnaik
Authorized Signatory *24/8/24* **Manager**
Unchabali Iron & Mn. Mines
Indrani Patnaik
Mahaparvat

Encl.: As Above

Copy to: The Regional Officer, SPCB, Regional Office, College Road, Dist: Keonjhar, Odisha.

[FORM-V]
(See Rule 14)

Environment Statement for the financial year ending the 31st March 2024

PART-A

(1) Name and address of the owner / Occupier of the industry, Operation or process	-	Unchabali Iron & Mn. Ore Mines Smt. Indrani Patnaik At- Unchabali, P.O: Bamebari Dist. Keonjhar, Orissa -758034. Email:ags@altradegroup.com Contact no: 9437062184
(2) Industry category Primary	-	(STC CODE) Secondary-(SIC Code)
(3) Production capacity Units	-	4.0 MTPA
(4) Year of establishment	-	20 May 2008 (year of commencement)
(5) Date of the last Environmental Statement Submitted	-	05.09.2023.

PART-B

Water and Raw material Consumption:

(1) Water Consumption m ³ /day	-	1175 m ³ / Day
Process	-	972 m ³ / Day
Cooling (Water sprinkling on Haul roads)	-	190 m ³ / Day
Domestic (Drinking purpose)	-	13 m ³ / Day

Name of Product	Process water consumption per unit of output
-----------------	--

Sized Iron Ore	NA
----------------	----

During the previous
Financial year

during the current
financial year

(1)

(2)

(1)

(2)

(3)

1. Substituted by rule 2 (b) of the environment (Protection) amendment rules, 1993 notified vide G.S.R vide G.S.R 3'6 (E) dated 22.04.1993.

(ii) Raw material consumption	-	Not applicable
-------------------------------	---	----------------

Name of raw Material	Name of Products material	Consumption of raw per unit of out put
	During the previous Financial Year	during the current Financial year

*Industry may use codes if disclosing details or raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

PART-C

Pollution discharged to environment /unit of output - Not Applicable
(Parameter as specified in the consent issued)

A) Water:

(Parameter as specified in the consent issued)			
Pollutants	Quantity of Pollutants Discharged (Mass / day)	Conc. of Pollutants Discharged (Mass / Volume)	% of variation from prescribed standard with reasons
Water (ETP Discharge) 1 M³/Day			
pH	NA	6.90	Within the Range
TSS	0.0455 kg /day	45.46 mg/ lit	9.08% below the norm
Oil & Grease	0.0086 kg /day	8.57 mg/ lit	14.33 % below the norm
Water (S.T.P Discharge) 10 M³ / D			
pH	NA	6.88	Within the Range
T.S.S	0.3175 kg/day	31.75 mg/ lit	68.25 % below the norm
B.O.D	0.0931 kg/day	9.31 mg/ lit	68.97 % below the norm
Mines Surface runoff water Quality Report			
pH	NA	6.83	Within the Range
T.S.S	304.68 kg /day	63.00 mg/ lit	37 % below the norm
Oil & Grease	31.43 kg / day	6.50 mg/ lit	35 % below the norm

Air: Not Applicable

Note: Present there is no such trade effluent and source of emissions from current mines operation methodology.

PART – D
Hazardous Wastes

(As specified under Hazardous Waste/ Management and Handling Rules, 1986)

Hazardous waste [Waste Oil]	Total Quantity [KL]	
	During the previous Financial year	During the Current financial year
1) From process	NA	NA
2) From Pollution Control FACILITY	NA	NA
3) Used Oil	6.50 KL	16.510 KL
4) Oil contaminate waste	0.220 TON	0.110 TON

PART-E
Solid Waste

	Total Quantity	
	During the previous Financial year	during the current financial year
(a) From process:		
(Overburden and Intercalated Waste)	: 2991774(T)	462476 (T)
(b) From pollution control facility	: NIL	Nil
(c) (1) Quantity recycled or re-utilized		
Within the unit	: Nil	Nil
(2) Sold	: Nil	Nil
(3) Disposed	: Kept in within ML area	

PART-F

Please specify the characteristics (in terms of composition and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

- ✚ The used oil generation is stored at an earmarked area and the same is disposed to authorized recycler in a proper manner.
- ✚ The used led batteries are kept at an earmarked area in a proper manner, which is later disposed to an authorized recycler through buy-back system.
- ✚ The generation of OB & Intercalated waste is dumped in earmarked area as per approved mining plan & scheme with following mitigate measures such as proper sloping, terracing, and toe retention wall & garland drainage. Further, to avoid the dump erosion surface area of the dump was muted with Plantation & Geo textile applications along with local grass seeds.

PART-G

Impact of the pollution abatement measures taken on conservation of natural re-sources and on the cost of the production

- ✚ The roof top rain water harvesting has been implemented at site employee's camp & Unchabali Village School in the direction of natural conservation of water resources.
- ✚ The massive plantation has been done at mines dump, safety zone and local villages.
- ✚ The top soil is stored in a proper manner and the same has been utilized for plantation and camp garden.
- ✚ Coir matting, retaining wall, garland drainage and check dam are provided to mines dump and soil erosion areas.
- ✚ Check dams & check wears are provided at the toe of the miens.

PART-H

Additional measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution

- ✚ 2.5 KM automatic fixed sprinkler has been implemented for mines dispatch road dust suppression.
- ✚ Three no. of 25 KL capacity mobile water tanker has engaged for mines haul road dust suppression.
- ✚ Three numbers of 8 KL mobile water tanker have been engaged for village road dust suppression
- ✚ Effective dry fog system has been implemented in all the crusher and screen plant
- ✚ Rain water harvesting plant has been implemented at employees camp to increase the water table
- ✚ Rain water harvesting has been implemented at village Unchabali school to increase the water table
- ✚ Dust extraction and wetting process are being used for drilling process
- ✚ STP plant implemented at camp to treat the sewage water and the treated water is utilized for plantation & garden watering.
- ✚ ETP plant has been implemented at mines service center and the treated water is utilized for plantation and & garden watering.
- ✚ Plantation in safety zone, school area, camp areas and dump areas
- ✚ Coir matting and mixed grass application over dumps for better stabilization
- ✚ Check-dam for silt control in surface run-off from mines area.

PART-I

Any other particulars for improving the quality of the environment

- 1) Regular awareness program is given to the company employees, local villagers and school children towards environment and pollution.
- 2) The world environmental day, forest day, earth day, safety day & wild life week has being celebrated regularly along with school children's & company employee's , the celebration was followed through environmental awareness program.

SUPPORTING PHOTOS:





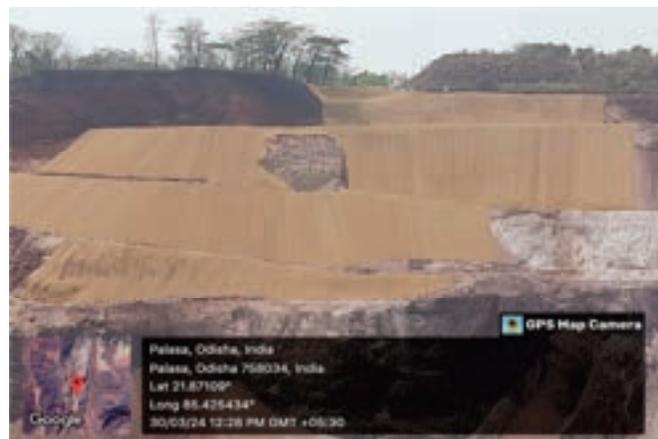


UNCHABALI IRON & MN. MINES, KEONJHAR, ODISHA
SMT. INDRANI PATNAIK

AMBIENT AIR QUALITY - CORE ZONE

PARAMETER	PM 10	PM 2.5	SO2	NO2
RESULT IN HQ	08.23	43.33	0.0	13.30
NORMS	100	60	08	20

INES OF M/S INDRANI PATNAIK - WELCOME TO UMSA





GOVERNMENT OF INDIA
 MINISTRY OF ENVIRONMENT & FORESTS
 EASTERN REGIONAL OFFICE
 A/3, CHANDRASEKHARPUR, BHUBANESWAR - 751 023
 TEL. : (Off.) 2301213, 2302432, 2302443, 2302452, 2302453
 FAX : 0674-2302432. GRAM : PARYAVARAN, BHUBANESWAR
 Email : mef@ori.nic.in

भारत सरकार
 पर्यावरण एवं वन मंत्रालय,
 पूर्वी क्षेत्रीय कार्यालय
 ए/3, चन्द्रसेखरपुर, भुवनेश्वर - 751 023
 तार - पर्यावरण, भुवनेश्वर

8(21)40/2004-FCE

May 3, 2007

To

The Principal Secretary,
 Forest & Environment Department,
 Govt. of Orissa,
 Bhubaneswar.

Sub:- Diversion of 35.275 ha of forest land in village Unchabali in Keonjhar district for Iron Ore Mining by Smt. Indrani Patnaik of Keonjhar.

I am directed to refer to your letter No. 10F(Cons)78/2004.5763/F&E dated 13.04.2007 on the above mentioned subject seeking prior approval of the Central Govt. in accordance with Section-2 of the Forest(Conservation) Act, 1980.

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 35.275 ha (34.675 ha for mining and 0.6 ha for road) of forest land in village Unchabali in Keonjhar district for Iron Ore Mining by Smt. Indrani Patnaik of Keonjhar, subject to the compliance of the following conditions:-

- i) Legal status of the forest land diverted shall remain unchanged.
- ii) Compensatory afforestation shall be raised and maintained over 35.275 ha of non-forest land made available in village Guptaganga under Telkoi Tahasil mutated in favour of State Forest Department and handed over to Forest Department at the project cost and the non-forest land shall be declared as PF/RF. The Nodal Officer will submit a report regarding the above issue within 6 months.
- iii) An undertaking from the user agency shall also be obtained to the effect that in case the rates of NPV are revised upwards, the additional/differential amount shall be paid by the User Agency.
- iv) The State Government shall deposit Net Present Value of Rs. 2,64,56,250.00, Compensatory Afforestation of Rs. 5,77,000.00, Safety Zone of Rs. 1,39,300.00, Afforestation of Safety Zone of Rs. 2,21,600.00, Wildlife Management Plan Scheme of Rs. 15,91,691.00, Site Specific Wildlife Management Scheme of Rs. 21,75,000.00 and cost of protection, conservation & enrichment of 64.332 ha of balance forest area not proposed for diversion with the Ad-hoc Body of Compensatory Afforestation Fund Management and Planning Authority(CAMPA), in Account No. CA 1585 of Corporation Bank (A Government of India Enterprises), Block-11, Ground Floor, CGO Complex, Phase-1, Lodhi Road, New Delhi - 110 003, as per the instruction communicated vide letter No. 5-2/2006-FC dated 20.05.2006.
- v) RCC pillars of 4 feet height shall be erected to demarcate the broken up area by the user agency at the project cost and will be marked with forward and back bearing and a site map be prepared showing the positions of all the boundary pillars with G.P.S. reading for periodic monitoring by the user agency.

- vi) The 35.275ha forest land proposed for diversion shall be used for mining (34.675 ha) and road(0.600 ha) only. No overburden dumping or any other ancillary activity will be undertaken thereat.
- vii) Mining shall be done strictly as per the mining plan approved by the IBM and copy of revised Mining Plan(s) for subsequent five year periods shall be furnished to the Regional Office without fail.
- viii) The period of permission granted Under the Forest(Conservation) Act, 1980 shall be co-terminus with the period of current mining lease granted under MMRD Act or 20 years whichever is earlier.
- ix) Reclamation of mined out area as well as Over Burden dumps will be done as per a reclamation plan prepared in this regard. Progress of reclamation will be periodically monitored by the State Forest Department. Serious lapse in achieving reclamation targets shall invite severe action leading to even closure of mine.
- x) The Forest Department shall carry out regeneration, maintenance of safety zone area at the funds provided by the User agency.
- xi) The Forest Department shall carry out afforestation over degraded forest land equivalent one and half times of the safety zone with the funds provided by the User Agency.
- xii) The Regional Wildlife Management Plan prepared for Bonai-Keonjhar belt shall be implemented with the funds provided by the User Agency. The specific Wildlife Management Plan, if any, approved by the Chief Wildlife Warden, shall also be implemented at project cost with the additional funds realized from the User Agency.
- xiii) Blasting, if required to be undertaken, shall be done in a manner causing least disturbance to wild animals particularly elephants. The timing of blasting should be kept flexible during seasonal movement of elephants or during period of their migration or if they happen to be around otherwise in consultation with the D.F.O.
- xiv) The Scheme prepared by the Forest Department for protection, conservation and enrichment of the vegetative cover over balance 64.332 ha forest land not proposed for diversion shall be implemented at project cost under supervision of the Forest Department.
- xv) Standing trees over forest land proposed for diversion shall be felled in phases only on forest land needed to be broken strictly as per the Mining Plan with prior permission of the D.F.O.
- xvi) The user agency shall ensure that no damage to the available wildlife or to the forest flora in the neighbouring forest is caused by labourers/workmen engaged by the project authorities or contractor working under them.
- xvii) No labour camp shall be allowed in the forest area and Sufficient alternate fuel from the approved source shall be provided by the user agency or the contractors working under them to the labourers engaged in the project at project cost to ensure reduction of pressure on nearby forests.
- xviii) The forest land shall not be used for any purpose other than that specified in the proposal.
- xix) Adequate soil and water conservation measures, as and when required, shall be taken by the User Agency in consultation with Forest Officials to check any soil erosion in the lease hold area.

- j) All necessary measures should be taken by the user agency to protect environment.
- xi) Any other conditions that the Central Government may impose from time to time in the interest of afforestation, conservation and management of flora and fauna in the area shall be complied by the user agency.
- xxii) In case of non-compliance of any of the above conditions, the concerned Divisional Forest officer shall report through the State Govt. to this office as per procedure laid down in the clause 1.9 of guidelines issued under Forest(Conservation) Act, 1980 on 25.10.1992.

The State Government shall ensure compliance of all the above conditions.

Yours faithfully,

(S. MOHAPATRA)
DY. CONSERVATOR OF FORESTS(CENTRAL)

y to:-

1. The Inspector General of Forests(FC), Ministry of Environment & Forests, Paryavaran Bhawan, CGO Complex, Lodi Road, New Delhi - 110 003.
2. The Principal Chief Conservator of Forests, Govt. of Orissa, Aranya Bhawan, C.S.Pur, Bhubaneswar - 16.
3. The Nodal Officer, O/o the Principal Chief Conservator of Forests, Govt. of Orissa, Aranya Bhawan, C.S.Pur, Bhubaneswar - 16.
4. The Divisonal Forest Officer, Keonjhar Forest Divison, Keonjhar.
5. Smt. Indrani Patnaik, Mines Owner, Rourkela.
6. Guard File.

S. Mohapatra
21/1/2007
DY. CONSERVATOR OF FORESTS(CENTRAL)

F. No. 8-67/2014-FC
 Government of India
 Ministry of Environment, Forests and Climate Change
 (Forest Conservation Division)

Indira Paryavaran Bhawan
 Aliganj, Jorbagh Road
 New Delhi -110003.
 Dated: 11th September, 2015

To,
The Principal Secretary (Forests),
 Government of Odisha,
 Bhubaneswar.

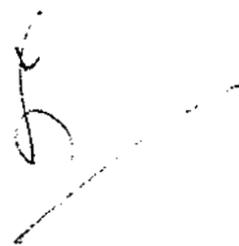
Sub: Diversion of additional 68.157 hectares of forest land including 3.825 hectares of forest land inside safety zone, in addition to 35.275 hectares of D.I.C forest land already diverted, within total Mining lease area of 106.1127 hectares in Unchabali Iron & Manganese ore mines of Smt Indrani Patnaik, in Keonjhar district, Odisha.

Sir,

I am directed to refer to the Government of Odisha's letter No 10 F (Cons.) 155/ 2014-14856/ F & E dated 11th August 2014 on the above mentioned subject, seeking prior approval of the Central Government under Section- 2 of the Forest (Conservation) Act, 1980. After careful examination of the proposal by the Forest Advisory Committee constituted by the Central Government under Section-3 of the said Act, 'in-principle' approval to the proposal was granted by the Ministry vide its letter of even number dated 30th December, 2014 subject to fulfillment of certain conditions prescribed therein. The State Government has furnished compliance report in respect of the conditions stipulated in the 'in-principle' approval and has requested the Central Government to grant final approval.

In this connection, I am directed to say that on the basis of the compliance report furnished by the State Government of Orissa vide their letter No. 10F (Cons)-37/2015/ 8276/ F & E, Bhubaneswar dated 18th May, 2015, final approval of the Central Government is hereby granted under Section-2 of the Forest (Conservation) Act, 1980 for additional 68.157 hectares of forest land including 3.825 hectares of forest land inside safety zone, in addition to 35.275 hectares of D.I.C forest land already diverted, within total Mining lease area of 106.1127 hectares in Unchabali Iron & Manganese ore mines of Smt. Indrani Patnaik, in Keonjhar district, Odisha, subject to the following conditions:

- (i) Legal status of the diverted forest land shall remain unchanged;
- (ii) Compensatory afforestation over the non-forest land, equal in extent to the forest land being diverted, shall be raised and maintained by the State Forest Department from funds already provided by the user agency;
- (iii) The non-forest land transferred and mutated in favour of the State Forest Department shall be notified by the State Government as RF under Section-4 or PF under Section-29 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act latest within a period of six months from the date of issue of Stage-II approval. The Nodal Officer shall report compliance in this regard along with a copy of the original



notification declaring the non-forest land under Section 4 or Section 29 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act, as PF or RF, as the case may be, within the stipulated period to the Central Government for information and record;

- (iv) Following activities, as per approved plan/schemes, shall be undertaken by the user agency under the supervision of the State Forest Department:
- (a) Mitigative measures to minimize soil erosion and choking of streams shall be implemented in accordance with the approved Plan in consultation with the State Forest Department.
 - (b) Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme;
 - (c) Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme;
 - (d) Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that that angles of repose at any given place is less than 28° ; and
 - (e) No damage shall be caused to the top-soil and the user agency will follow the top soil management plan.
- (v) The User Agency shall pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;
- (vi) The User agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;
- (vii) The State Government shall seek approval of Central Government under the FC Act for diversion 0.469 ha of forest land reported to be forest *kissam* as on 25.10.1980 by the Tahasildar, Barbil out of the total non-forest land over 2.6827 ha treated as non-forest as per Hal RoR.
- (viii) The User agency shall implement the provisions, as contained in the Regional Wildlife Management Plan in consultation with the Chief Wildlife Warden, Odisha from the funds already provided by the user agency for this purpose;
- (ix) The User agency shall implement the provisions, as contained in the approved site specific Wildlife Conservation Plan in consultation with the Chief Wildlife Warden, Odisha from the funds already provided by the user agency for this purpose;
- (x) User agency shall take appropriate measures such as construction of ponds, water conservation / harvesting structure *etc.* to ensure conservation of water in and around the project site;
- (xi) The State Forest Department shall organize environmental awareness programme to generate awareness among the employees as well as local residents on issues pertaining to conservation and protection of environment from the funds already provided by the User agency;



- (xii) The user agency shall abide by the provision shall take appropriate measures which will be suggested by the State Government based on the outcome of study, being conducted by the National Institute of Technology, Rourkela to assess impact of this project on floral and faunal biodiversity;
- (xiii) Tree felling should be taken up in phases strictly as per requirement under the supervision of the Divisional Forest Officer, Keonjhar Forest Division;
- (xiv) User agency shall execute the Phased Reclamation Plan at their cost; and
- (xv) The user agency shall surrender mined out and biologically reclaimed forest area to the State Forest Department as per the schedule for surrendering of such land submitted by the State Government;
- (xvi) Following activities shall be undertaken by the user agency for the management of safety zone:
 - (a) User agency shall ensure demarcation of boundary of safety zone (7.5 meter strip all along the outer boundary of the mining lease area), and its protection by erecting adequate number of 4 feet high RCC boundary pillars inscribed with DGPS coordinates and deploying adequate number of watchers under the supervision of the State Forest Department.
 - (b) In case of the mining leases adjoining the habitation stretch of the boundary of the safety zone of the lease adjacent to the habitation/roads should be properly fenced by the user agency at the project cost to protect the vegetation /regeneration activities in the safety zone.
 - (c) Safety zone shall be maintained as green belt around the mining lease and to ensure dense canopy cover in the area, regeneration shall be taken in this area by the user agency at the project cost under the supervision of the State Forest Department.
 - (d) Afforestation on degraded forest land, to be selected elsewhere, measuring one and a half times the area under safety zone shall also be done by the user agency at the project cost under the supervision of the State Forest Department.
- (xvii) Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease to be granted under the Mines and Minerals (Development and Regulation) Act, 1957, as amended or Rules framed there under;
- (xviii) User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.4), if any, located in the area within 100 m. from outer perimeter of the mining lease;
- (xix) User agency shall undertake de-silting of the village tanks and other water bodies located within five km from the mine lease boundary so as to mitigate the impact of siltation of such tanks/water bodies, whenever required;
- (xx) User agency shall undertake mining in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, Government of



Odisha and the Addl. Principal Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (Eastern Zone), Bhubaneswar. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed;

- (xxi) No labour camp shall be established on the forest land;
- (xxii) User agency shall provide firewood preferably alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas;
- (xxiii) The boundary of the mining lease and safety zone shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing and distance from pillar to pillar;
- (xxiv) Forest land shall not be used for any purpose other than that specified in the proposal;
- (xxv) The user agency shall submit the annual self-compliance report in respect of the above conditions to the State Government and to the concerned Regional Office of the Ministry regularly;
- (xxvi) Any other condition that the Regional Office (Eastern Zone), Bhubaneswar of this Ministry and the Government of Odisha may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife; and
- (xxvii) The User Agency and the State Government shall ensure strict compliance of conditions of Stage-I approval for which undertakings has been obtained from the User Agency and also provisions of the all Acts, Rules, Regulations and Guidelines, for the time being in force, as applicable to the project.

Yours faithfully,

(Nisheeth Saxena)

Assistant Inspector General of Forests

Copy to:

1. The Principal Chief Conservator of Forests, Government of Odisha, Bhubaneswar.
2. The Nodal Officer, the Forest (Conservation) Act, 1980 Forest Department, Government of Odisha, Bhubaneswar.
3. The Addl. Principal Chief Conservator of Forests (Central), Regional Office (Eastern Zone), Bhubaneswar.
- ✓ 4. User Agency.
5. Monitoring Cell, FC Division, MoEF & CC, New Delhi.
6. Guard File.

(Nisheeth Saxena)

Assistant Inspector General of Forests

No. J-11015/273/2009-IA.II(M)

Government of India

Ministry of Environment & Forests

Paryavaran Bhawan,
C.G.O. Complex, Lodi Road,
New Delhi - 110 003

Dated the 31st May, 2011

To

M/s Indrani Patnaik
A/6 Commercial Estate,
Civil Township,
Rourkela-769 004

Subject: Unchabali Iron Ore Beneficiation Plant of Smt. Indrani Patnaik, located in Village Unchabali, Tehsil Barbil, District Keonjhar, Orissa -environmental clearance regarding.

Sir,

This has reference to your letter No. UIMM/BF/MOEF/EC/2010/10 dated 30.10.2010 and subsequent letters dated 31.12.2010 and 21.01.2011 on the subject mentioned above. The project was earlier prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 16.11.2009 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal is for setting up of a iron ore beneficiation plant with a capacity of 2.0million tonnes per annum (million TPA) throughput within the existing mining lease area. The Unchaballi Iron Ore and Manganese Ore Mining Project of M/s Indrani Patnaik located in Village(s) Unchaballi & Balda, Tehsil Champua, District Keonjhar, Orissa was accorded environmental clearance by the Ministry vide letter No. J-11015/214/2008-IA.II(M) dated 23rd July, 2009 for production capacity of 4million TPA of iron ore involving mining lease area 106.1127ha.

2. The proposed beneficiation plant will be located within the existing mine lease area for which environment clearance has already been obtained for a rated capacity of 4million TPA. Out of the total mine lease area of 106.1127ha (including 103.432ha of forestland); the land requirement for the beneficiation plant will be 2.35ha. Out of 2.35ha land requirement for beneficiation plant, an area of 1.05ha is kept for plant facilities, 1.1ha for water storage and 0.2ha for approach roads. The Baitarni River is flowing in the buffer zone of the project at a distance of 2.5km from the mine lease boundary. In addition, eight water bodies namely the Jalpa Nadi(1.5km), the Kasi Nallah(3.5km), the Dolko Nallah(7km), the Dalki Nallah(7.5km), the Ghagra Nallah and the Jagdhara Nadi(8km), the Gahirajala Nallah(8.5km) and the Mithida Spring(9km) are located in the buffer zone of the project.

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3. No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. are reported to be located in the core and buffer zone of the project. The Conservator of Forests(Wildlife) approved site specific wildlife conservation plan for the mine on 15.02.2010.

4. The beneficiation plant will adopt wet process with the latest State of Art Technology comprising of drum scrubbers, double deck wet screens, jigs, dewatering and rinsing screens, thickening cyclones, high frequency screens, filter press etc. The throughput capacity of the beneficiation plant will be two million TPA. The life of the beneficiation plant is reported to be 10years only based on the mineral available from this mine and accordingly proponent have sought for clearance only for 10years. Selection of filter press eliminates the necessity of tailing pond and the final sludge comes in the form of cake. The project is based on zero discharge. The effluent generated will be recycled and reused and there will be no effluent discharge outside the plant area. The cake generated from the filter press will be dumped initially for two years along with the overburden as inter mixed layers and thereafter it will be filled back into the mined out area. The peak water requirement of the project is estimated as 1025m³ per day, which will be obtained from the groundwater.

5. The public hearing of the project was held on 05.10.2010 for establishment of 2million TPA iron ore beneficiation plant within the mining lease hold area of Unchaballi Iron Ore and Manganese Ore Mining Project of M/s Indrani Patnaik located in Village(s) Unchaballi & Balda, Tehsil Champua, District Keonjhar, Orissa. The Ministry of Environment and Forests conveyed its approval under Section-2 of the Forest (Conservation) Act, 1980 for diversion of 35.275 ha forestland (34.675ha for mining and 0.6ha for road) on 03.05.2007. The capital cost of the project is Rs.3000Lakhs and the capital cost for the environmental protection measures is proposed as Rs.320Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs.25Lakhs. It has been stated that there is no court case to the project or related activity.

6. The Ministry of Environment and Forests has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Unchabali Iron Ore Beneficiation Plant of Smt. Indrani Patnaik for an annual production capacity of Two(2)million tonnes throughput involving project area of 2.35ha, within the existing mining lease area of 106.1127ha of the applicant for a period of ten years only, subject to implementation of the following conditions and environmental safeguards.

A. Specific Conditions

- (i) No activity relating to the project shall be undertaken in the forestland for which forestry clearance under the Forest (Conservation) Act, 1980 has not been obtained. The environmental clearance is subject to grant of forestry clearance.

3/-

- (ii) The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.
- (iii) The water recovery and spill way system shall be so designed that the natural water resources are not affected and that no spill water goes into the nearby rivers.
- (iv) The project proponent shall carry out conditioning of the ore with water to mitigate fugitive dust emission.
- (v) The cake generated from the filter press shall be dumped initially for two years along with the overburden as inter mixed layers and thereafter it shall be filled back into the mined out area. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.
- (vi) Necessary safeguard measures shall be taken for effective control of particulate levels (PM₁₀) in the area. The safeguard measures shall be implemented within first three months and their effectiveness shown with supporting data of actual air quality monitoring.
- (vii) A green belt of adequate width shall be developed all around the plant by planting the native species in consultation with the local DFO/Agriculture Department within first five years.
- (viii) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (ix) The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (x) Regular monitoring of ground water level and quality shall be carried out in and around the project area by establishing a network of existing wells and installing new piezometers during the operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State

24/-

Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.

- (xi) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and groundwater) required for the project.
- (xii) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xiii) Appropriate mitigative measures shall be taken to prevent pollution of the Baitarni River in consultation with the State Pollution Control Board.
- (xiv) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xv) Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. Health records of the workers shall be maintained.
- (xvi) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xvii) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. All the safeguard measures brought out in the approved site specific wildlife conservation plan shall be effectively implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of approved conservation plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.

B. General conditions

- (i) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.
- (ii) Atleast four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron i.e., PM₁₀) and NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
- (iii) Data on ambient air quality [(RSPM(Particulate matter with size less than 10micron i.e., PM₁₀) and NO_x] should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (iv) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
- (v) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
- (vi) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (vii) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

- (viii) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.

26/-

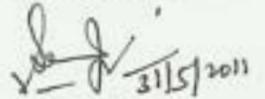
- (ix) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.
- (x) The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xi) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- (xii) The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.
- (xiii) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xiv) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.
- (xv) The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubneswar by e-mail.

(xvi) The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.

7. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

8. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

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

 31/5/2011

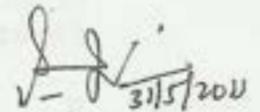
(SATISH C. GARKOTI)
Scientist 'F'

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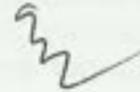
- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Orissa, Secretariat, Bhubaneswar.
- (iii) The Secretary, Department of Mines and Geology, Government of Orissa, Secretariat, Bhubaneswar.
- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.
- (v) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.

..8/-

- (vi) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharpur, Bhubaneswar-751023.
- (vii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (viii) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (ix) The District Collector, District Keonjhar, Government of Orissa.
- (x) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xi) Monitoring File.
- (xii) Guard File.
- (xiii) Record File.


31/5/2011

(SATISH C. GARKOTI)
Scientist 'F'



INDRANI PATNAIK

(MINES OWNER)

A/6, COMMERCIAL ESTATE, CIVIL TOWNSHIP, ROURKELA - 769 004

Phone : 0661-2400139, 2400014, FAX : 0661-2402226

Ref.No. IP/mm/October 19/004

Date: 03.10.2019

The Member Secretary,
State Pollution Control Board,
 Parivesh Bhawan, A/118,
 Nilakantha Nagar, Unit - VIII,
 Bhubaneswar - 751012.

Sub: Dismantling of 2.0 MTPA (2 x 185 TPH) Unchabali Iron Ore Beneficiation Plant of Smt. Indrani Patnaik, located in village in Unchabali, Tehsil Barbil, District Keonjhar, Orissa - Reg.

Ref: 1. Environment Clearance vide no. J-11015/273/2009-IA.II(M) dt. 31.05.2011
 2. Consent to establish Order 12653/IND-II-NOC-5291 dt. 30.07.2011.
 3. Consent Order no. 2645, vide no. 11731/IND-I-CON-6035 dt. 26.06.2013 & 2476/IND_I-CON-6035 dt. 06.02.2016

Dear Sir,

With reference to the cited subject and reference letter no., we would like to inform you that, we have established 2.0 Million TPA (2 x 185 TPH) Iron Ore Beneficiation Plant after obtaining the requisite statutory clearances say *Consent to Establish from your good office vide no. 12653/IND-II-NOC-5291 dt. 30.07.2011, Environment Clearance from MoEF&CC vid no. J-11015/273/2009-IA.II(M) dt. 31.05.2011 and Consent to Operate from your good office vide no. 11731/IND-I-CON-6035 dt. 26.06.2013. SPCB.* After due approvals, the iron ore beneficiation plant was in operation since 2013.

In due course of time and as per the approved review of mining plan duly approved by Indian Bureau of Mines, Govt. of India vide no. MS/FM/25-ORI/BHU/2017-18 dt. 16.11.2017; the total ROM will be handled by dry method of size separation with the help of Crusher and Screen Plants, so there will no requirement of wet beneficiation plant due to the following reasons;

"After detailed exploration, the resource has been estimated under G1 category. No additional resource has been established by drilling. The average grade of iron ore is coming around 62% Fe. Based on the estimation of the resource, it can be observed that, only 10% of total quantity is coming under sub-grade ore. Those sub-grade ore can easily be blendable with high grade ore. Hence, it is not worth to use the wet beneficiation plant as far as cost benefit analysis is concerned."

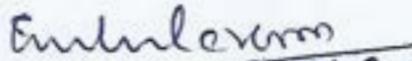
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In view of the above, we would like to inform you that; since there is no such requirement of the Beneficiation Plant, so we are in the process of dismantling of the 2.0 Million TPA (2 x 185 TPH) iron ore beneficiation plant located within our mines premises of Unchabali Iron & Mn Ore Mines.

This is for your kind information, please.

Yours faithfully,

**Unchabali Iron Ore Beneficiation Plant
of Smt. Indrani Patnaik**



Mines Manager
Mines Manager
Unchabali Iron & Mn. Mines
Indrani Patnaik
Mahaparvat

Enclosed: Approved review of Mining Plan copy is attached.

CC to: The Director (S), Ministry of Environment, Forest & Climate Change, Eastern Regional Office, A/3, Chandrasekharapur, Bhubaneswar, Odisha - 751023



भारत सरकार GOVERNMENT OF INDIA
खान मंत्रालय MINISTRY OF MINES
भारतीय खान ब्यूरो INDIAN BUREAU OF MINES
क्षेत्रीय खान नियंत्रक के कार्यालय
OFFICE OF THE REGIONAL CONTROLLER OF MINES



No. MS/FM/25-ORI/BHU/2017-18

Date: 16.11.2017

To

✓ Smt. Indrani Patnaik, Mine Owner,
Village- Unchabali, PO-Bamebari,
Barbil, Dist- Keonjhar,
Odisha-758034

Sub: Approval of Review of Mining Plan of Unchabali Iron & Mn Mine along with Progressive Mine Closure Plan (PMCP), over an area of 106.1127 ha in Keonjhar district of Odisha State, submitted by Smt. Indrani Patnaik under Rule 17 of Mineral Concession Rules, 2016.

- Ref: -
- i) Your letter No. Nil dated 04.10.2017.
 - ii) This office letter of even no. dated 04.10.2017.
 - iii) This office letter of even no. dated 04.10.2017 addressed to Director of Mines, Government of Odisha copy endorsed to you.
 - iv) This office letter of even no. dated 23.10.2017.
 - v) Your Qualified Person letter No. PMP/IBM/05/2017-18 dated 08.11.2017.

Sir,

In exercise of the power delegated to me vide Gazette Notification No. S.O. 1857(E) dated 18.05.2016, I hereby **Approve** the Review of Mining Plan including Progressive Mine Closure Plan of Unchabali Iron & Mn Mine over an area of 106.1127 ha of Smt. Indrani Patnaik in Keonjhar district of Odisha State submitted under Rule 17 of Mineral Concession Rules, 2016. This approval is subject to the following conditions:

- I. The 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.
- II. The proposals shown on the plates and/or given in the document is based on the lease map /sketch submitted by the applicant/ lessee and is applicable from the date of approval.
- III. It is clarified that the approval of aforesaid 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, Mines Act, 1952 and Rule & Regulations made there under.
- IV. Indian Bureau of Mines has not undertaken verification of the mining lease boundary on the ground and does not undertake any responsibility regarding correctness of the boundaries of the leasehold shown on the ground with reference to lease map & other plans furnished by the applicant / lessee.

- V. At any stage, if it is observed that the information furnished, data incorporated in the document are incorrect or misrepresent facts, the approval of the document shall be revoked with immediate effect.
- VI. If this approval conflicts with any other law or court order/ Direction under any statute, it shall be revoked immediately.
- VII. Validity of this document shall expire on 31.03.2023.
- VIII. Next Financial Assurance shall be due for submission on 31.03.2023.

भवदीय / yours faithfully,

Encl: - One copy of approved
Review of Mining Plan


16/11/22
(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

Copy for kind information to:-

1. The Director of Mines, Directorate of Mines, Government of Odisha, Heads of the Department Building, Bhubaneswar- 751001, Odisha along with one copy of Review of Mining Plan by **REGISTERED PARCEL**.
2. Shri Pradeept Mohapatra, Post Box No. 1, P.o- Joda, At – Unchabali, Bamebari, Dist – Keonjhar, Odisha – 758034.

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

**SMT INDRANI PATNAIK
(MINING LESSEE)
(EXTENT-106.1127HA)**

**REVIEW OF THE MINING PLAN
IN RESPECT OF UNCHABALI IRON & MN MINES
UNDER RULE 17(1) OF MCR 2016**



Existing Dumps

Name of the Dump	Location	Length (Max)	Breadth (Max)	Area occupied		Grade
		(m)	(m)	(m ²)	(ha)	
1	E 336850 – 337115 N 2419290 – 2419725	440	140	61600	6.16	-45% Fe.
2	E 336920 – 337110 N 2419930 - 2420050	170	90	15300	1.53	-45% Fe.

Existing Sub-grade Ore Stacks

Sl. No	Name of the Stack	Location	Area in Ha.	Quantity (t)
1	Sub Grade No. - 1	Near ML Pillar C1 337495 – 2419155 337295 - 2419000	3.09	540018.67

Existing stock as on 01.09.2017

Sl no	Size	Grade	Quantity (MT)
1	Lumps (10-30mm)	62-65%Fe	33077.909
2	Lump (5-18mm)	62-65%Fe	40171.673
3	Fines (0-10mm)	62-65%Fe	419528.65
4	Fines (0-10mm)	60-62%Fe	4374.669

(a - 2) Proposed Method of Mining:

Fully Mechanized method shall be adopted for production of iron ore. The existing benches shall be extended outside the broken up area as the forest clearance over total area has been granted. After getting tree felling order, the forest growth shall be cleared for advancement of benches and access of road to the benches. Advancement of the upper bench shall be done to permit development of adequate working width at lower bench. Based on the exploration result, the ore body has been earmarked in the geological plan. Considering the ore body configuration it has been planned to extend the existing benches laterally as well as depth ward. The benches shall be developed in a systematic manner with 10m height and 15m width. It has been planned to produce 4.00mt of ROM per annum. The ROM constitutes saleable ore and sub-grade ore. Production planning has been made for 5 years from 2018-19 to 2022-23.

Dismantling of Beneficiation plant

Only dry method of size separation will be adopted for processing of ROM. The existing wet beneficiation plant will not be utilized because of the following reasons:

- After detail exploration the resource has been estimated under G1 category. No additional resource has been established by the drilling. The average grade of iron ore is coming

A.GURUBALASUBRAMANIAM
Qualified person

PRADEEPT MOHAPATRA
Qualified person

around 62% Fe. Based on the estimation of resource, it can be observed that only 30% of total quantity is coming under sub-grade ore. This sub-grade ore can easily be blended with high grade ore. Hence, it is not worth to use the beneficiation plant as far as cost benefit analysis is concerned.

- The bench movement towards east cannot be possible during next scheme period due to the existence of beneficiation plant. To make the benches systematic towards depth lateral development is required.

Hence, it is proposed to dismantle the beneficiation plant from 2016-17 onwards

Haul Road:

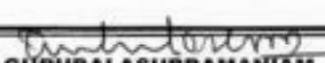
The layout of roads for haulage of ore/ waste and access to different installation in the mine will be developed complying with the statutory regulations stipulated in the Metalliferous Mines Regulations, 1961. Overburden and sub-grade ore will be dispatched to the dumping and sub-grade stacking sites located in the lease area. It is proposed to maintain two 30m wide haul road in the eastern part of the quarry to keep the overall slope of the quarry below 45°. Besides these two 30m benches, it is proposed to maintain fifteen meter wide haul road in the lease area as per need at a gradient up to 1:14. Regular maintenance of haul road will be done throughout the mine life to protect the road from damage and vehicles from wear & tear.

Site Services:

As far as day to day mine operation is concerned, the infrastructure such as site office, weigh bridge, rest shed, First-aid centre, blasting shed security house, magazine, guard house etc are already made available in the lease area.

Machineries to be deployed.

The mine will be operated in a three shift basis as per the existing practice. Process of excavation and loading of overburden/waste will be done by deploying hydraulic excavators and dumpers. Excavators of 2.1m³ to 4.3m³ capacities will be deployed for excavation & loading of ROM ore and dumpers of 30t to 85t capacity shall be deployed for transportation of ore and OB. Hard iron ore will be loosened through drilling & blasting. For the purpose, DTH drill like DP1100 of 115mm dia, etc. will be used during ensuing scheme


A.GURUBALASUBRAMANIAM
Qualified person


PRADEPT MOHAPATRA
Qualified person



GREEN FORCE ASSOCIATES PRIVATE LIMITED



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

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/UIMM/0307

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	SW1 - Baitarani River Up Stream; Lat: 21°84'25.82"N, Long: 85°44'48.37"E; SW2 - Baitarani River Down Stream; Lat: 21°89'18.79"N, Long: 85°45'80.25"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW1	SW2
1.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	<1.0	<1.0
3.	pH	APHA 24th ED 4500- H+B:2023	---	6.0-9.0	7.28	7.32
4.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	154.99	163.34
5.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	96	101
6.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	600	12	13
7.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
8.	Hexavalent Chromium(asCr+6)	APHA 24 th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
9.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.31	0.32
10.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	7.2	7.5
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	--	<2.0	<2.0
13.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	6	5.9
14.	BOD (3)days at 27°C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	<2.0
15.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	12	14

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

Chief Analyst

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

Chief Analyst

Mr. S.K. Parhi

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END OF REPORT

-1 of 2-

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 - Khurda

Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/UIMM/0307

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	SW1 - Baitarani River Up Stream; Lat: 21°84'25.82"N, Long: 85°44'48.37"E; SW2 - Baitarani River Down Stream; Lat: 21°89'18.79"N, Long: 85°45'80.25"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW1	SW2
1.	Nitrate (as NO ₃)	APHA 24th ED 4500-NO ₃ -E: 2023	mg/l	50	0.88	0.96
2.	Phenolic Compounds as C ₆ H ₅ OH	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	0.09	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	---	410	450

Reviewed By

Authorized Signatory

CHIEF ANALYST

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

GREENFORCE ASSOCIATES PRIVATE LIMITED

Chief Analyst
Miss. Arti Sahoo

Technical Manager
BHUBANESWAR, ODISHA

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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

Report No- GFAPL/24-25/UIMM/0308

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	SW3 - Unchabali Nallah Up Stream; Lat: 21°88'16.06"N, Long: 85°41'61.50"E; SW4 - Unchabali Nallah Down Stream; Lat: 21° 87'87.44"N, Long: 85°43'11.61"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW3	SW4
1.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	<1.0	<1.0
3.	pH	APHA 24th ED 4500- H+B:2023	---	6.0-9.0	7.33	7.38
4.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	190.77	197.12
5.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	114	121
6.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	600	16	18
7.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
8.	Hexavalent Chromium(asCr+6)	APHA 24 th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
9.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.35	0.37
10.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	8.1	8.5
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	--	<2.0	<2.0
13.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	5.9	5.8
14.	BOD (3) days at 27°C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	<2.0
15.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	15	18

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESWAR, ODISHA

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESWAR, ODISHA

Mr. S.K. Parhi

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END OF REPORT

--1 of 2--

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 - Khurda

Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/UIMM/0308

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	SW3 - Unchabali Nallah Up Stream; Lat: 21°88'16.06"N, Long: 85°41'61.50"E; SW4 - Unchabali Nallah Down Stream; Lat: 21° 87'87.44"N, Long: 85°43'11.61"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW3	SW4
1.	Nitrate (as NO ₃)	APHA 24th ED 4500-NO ₃ -E: 2023	mg/l	50	1.36	1.42
2.	Phenolic Compounds as C ₆ H ₅ OH	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	0.12	0.14
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	--	470	510

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESHWAR, ODISHA

Miss. Arti Sahoo

Authorized Signatory


Technical Manager
Mr. S.K. Parhi

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END OF REPORT



GREEN FORCE ASSOCIATES PRIVATE LIMITED



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

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/UIMM/0309

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	18.02.2025	Date of Receiving	19.02.2025
Date of Analysis	19.02.2025	Date of Complete	22.02.2025
Sampling Location & Coordinates	SW5 - Jalpa Nallah; Lat: 21°84'75.05" N, Long: 85°43'82.45"E; SW6 - Kashi Nallah; Lat: 21°89'47.55"N, Long: 85°45'44.8"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW5	SW6
1.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	<1.0	<1.0
3.	pH	APHA 24th ED 4500- H-B:2023	---	6.0-9.0	7.39	7.37
4.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	211.04	223.85
5.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	130	138
6.	Chloride (as Cl)	APHA 24th ED 4500- Cl-B:2023	mg/l	600	17	18
7.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
8.	Hexavalent Chromium(asCr+6)	APHA 24 th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
9.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.42	0.42
10.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	8.8	7.9
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	--	<2.0	<2.0
13.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	5.8	5.7
14.	BOD (3) days at 27°C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	3.2
15.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	18	24

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

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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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 - Khurda

Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/UIMM/0309

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	SW5 - Jalpa Nallah; Lat: 21°84'75.05" N, Long: 85°43'82.45"E; SW6 - Kashi Nallah; Lat: 21°89'47.55"N, Long: 85°45'44.8"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW5	SW6
1.	Nitrate (as NO ₃)	APHA 24th ED 4500-NO ₃ -E: 2023	mg/l	50	1.38	1.68
2.	Phenolic Compounds as C ₆ H ₅ OH	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	0.14	0.18
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	--	510	570

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhobha Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha
Mr. S.K. Parhi

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END OF REPORT

**ENVIRONMENT MONITORING REPORT
FOR THE MONTH OF
MARCH- 2025**

**Client- UNCHABALI IRON & MANGANESE
MINES**

**ADDRESS- A/6, Commercial Estate, Civil Township,
Rourkela, Odisha**



Monitored By - Green Force Associates Pvt. Ltd.

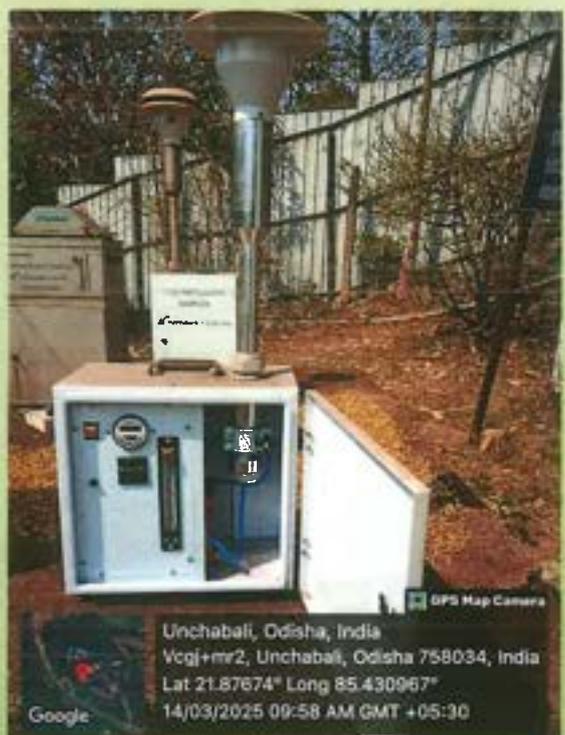
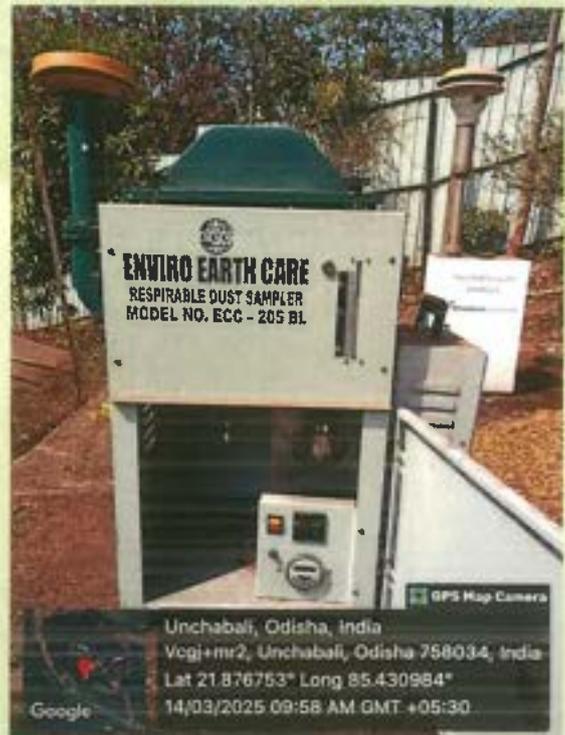
Address- Plot No-1363-3892 ,

Bhaibhab Realcon, Fulnakhara, Cuttack,

Odisha- 754001

NABL Certificate No:- TC-12258

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

Report No- GFAPL/24-25/ UIMM/0291

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ambient Air Quality Monitoring		
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 - Employees Camp; Lat: 21°87'65.65"N, Long: 85°43'15.05"E;		
Instrument Used	Respirable Dust Sampler, Fine Particulate Dust Sampler		

Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
03.03.2025	63.4	31.7	7.6	13.8
06.03.2025	61.8	30.9	7.4	13.8
10.03.2025	64.7	32.4	7.8	14.4
13.03.2025	66.2	33.3	8.4	15.4
17.03.2025	63.5	31.7	8.4	14.8
20.03.2025	57.2	28.5	6.8	12.8
24.03.2025	52.4	26.2	5.8	10.8
27.03.2025	54.5	27.2	6.2	11.4
31.03.2025	57.6	28.8	6.6	11.8
Max	66.20	33.30	8.40	15.40
Min	52.40	26.20	5.80	10.80
Average	60.14	30.08	7.22	13.22
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

Authorized Signatory

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA
Miss. Arti Sahoo

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA
Mr. S.K. Parhi

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END OF REPORT

--1--



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/ UIMM/0292

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6. Commercial Estate. Civil Township, Rourkela, Odisha		
Nature of Sampling	Ambient Air Quality Monitoring		
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 - New Store Lat: 21°87'65.26"N, Long: 85°42'26.18"E:		
Instrument Used	Respirable Dust Sampler, Fine Particulate Dust Sampler		

Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
03.03.2025	62.8	31.5	8.8	15.8
06.03.2025	64.7	32.4	9.4	16.4
10.03.2025	63.2	31.6	9.4	16.8
13.03.2025	66.4	33.3	9.8	17.4
17.03.2025	69.5	35.1	10.4	17.8
20.03.2025	64.2	32.5	9.2	15.8
24.03.2025	54.4	27.5	6.8	12.8
27.03.2025	55.7	28.1	7.2	13.4
31.03.2025	58.6	29.3	7.8	14.2
Max	69.50	35.10	10.40	17.80
Min	54.40	27.50	6.80	12.80
Average	62.17	31.26	8.76	15.60
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

Authorized Signatory

CHIEF ANALYST

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESWAR, ODISHA

BHUBANESWAR, ODISHA

Miss. Arti Sahoo

Mr. S.K. Parhi

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

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/ UIMM/0293

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ambient Air Quality Monitoring		
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 - Mines Main gate Lat: 21°87'58.57"N. Long: 85°42'09.12"E;		
Instrument Used	Respirable Dust Sampler, Fine Particulate Dust Sampler		

Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
03.03.2025	68.8	34.5	11.8	17.4
06.03.2025	72.4	36.4	12.4	18.4
10.03.2025	70.8	35.8	12.4	17.8
13.03.2025	76.4	38.6	13.4	18.8
17.03.2025	78.2	39.5	13.8	19.4
20.03.2025	68.8	34.8	11.8	17.8
24.03.2025	60.2	30.2	9.8	14.8
27.03.2025	62.8	31.5	10.2	15.4
31.03.2025	65.6	33.1	10.8	16.4
Max	78.20	39.50	13.80	19.40
Min	60.20	30.20	9.80	14.80
Average	69.33	34.93	11.82	17.36
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

Chief Analyst

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESWAR, ODISHA

Mr. S.K. Parhi

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GREEN FORCE ASSOCIATES PRIVATE LIMITED

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

Mail Id: greenforceassociates@gmail.com

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

Report No- GFAPL/24-25/ UIMM/0294

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ambient Air Quality Monitoring		
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 - Employees Camp; Lat: 21°87'65.65"N, Long: 85°43'15.05"E; AAQ2 - New Store; Lat: 21°87'65.26"N, Long: 85°42'26.18"E; AAQ3 - Mines Main gate; Lat: 21°87'58.57"N, Long: 85°42'09.12"E;		
Instrument Used	CO Analyser		

Date of Sampling	Result (mg/m3)		
	AAQ1	AAQ2	AAQ3
03.03.2025	0.37	0.42	0.48
06.03.2025	0.38	0.44	0.5
10.03.2025	0.4	0.45	0.49
13.03.2025	0.42	0.47	0.52
17.03.2025	0.41	0.49	0.53
20.03.2025	0.37	0.45	0.48
24.03.2025	0.32	0.36	0.41
27.03.2025	0.33	0.37	0.43
31.03.2025	0.35	0.39	0.45
Max	0.42	0.49	0.53
Min	0.32	0.36	0.41
Average	0.37	0.43	0.48
NAAQ* Standard of CO	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
Technical Manager
Mr. S.K. Parhi

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

✉ Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/ UIMM/0295

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ambient Air Quality Monitoring		
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 - Balda Village; Lat: 21° 52' 0.86" N, Long: 85° 24' 13.30" E;		
Instrument Used	Respirable Dust Sampler, Fine Particulate Dust Sampler		

Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
04.03.2025	55.6	27.8	5.6	10.8
07.03.2025	57.2	28.4	5.8	11.2
11.03.2025	59.4	29.8	6.2	11.4
14.03.2025	60.7	30.5	6.4	11.8
18.03.2025	62.8	31.6	6.8	12.4
21.03.2025	47.6	23.5	4.8	9.8
25.03.2025	49.4	24.5	5.2	10.2
28.03.2025	52.2	26.1	5.4	10.6
Max	62.80	31.60	6.80	12.40
Min	47.60	23.50	4.80	9.80
Average	55.61	27.78	5.78	11.03
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
Mr. S.K. Parhi

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Plot No.-1666, Phase-II, Delta Colony, Nilakantheswar Marg,
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Report No- GFAPL/24-25/ UIMM/0296

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ambient Air Quality Monitoring		
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	AAQS - Nayagarh Village; Lat: 21°84'25.82"N, Long: 85°44'48.37"E;		
Instrument Used	Respirable Dust Sampler, Fine Particulate Dust Sampler		

Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
04.03.2025	59.2	29.5	6.8	12.8
07.03.2025	58.6	29.4	6.6	12.4
11.03.2025	60.4	30.2	6.8	12.8
14.03.2025	62.4	31.2	7.2	13.4
18.03.2025	60.9	30.5	7	13
21.03.2025	47.2	26.2	4.6	9.8
25.03.2025	48.8	24.3	4.8	10.2
28.03.2025	50.6	25.1	5.2	10.4
Max	62.40	31.20	7.20	13.40
Min	47.20	24.30	4.60	9.80
Average	56.01	28.30	6.13	11.85
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

BHUBANESHWAR

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESHWAR, ODISHA

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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

Report No- GFAPL/24-25/ UIMM/0297

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6. Commercial Estate. Civil Township. Rourkela. Odisha		
Nature of Sampling	Ambient Air Quality Monitoring		
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 - Unchabali Village; Lat: 21°51'26.32"N, Long: 85°26'35.28"E;		
Instrument Used	Respirable Dust Sampler, Fine Particulate Dust Sampler		

Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
04.03.2025	55.9	28.1	5.6	12.6
07.03.2025	57.2	28.6	5.8	12.8
11.03.2025	59.1	29.4	6.2	13.2
14.03.2025	61.4	30.7	6.4	13.4
18.03.2025	60.5	30.4	6.4	13.6
21.03.2025	48.5	24.1	4.8	10
25.03.2025	49.8	24.6	5.2	10.4
28.03.2025	52.2	25.8	5.4	10.8
Max	61.40	30.70	6.40	13.60
Min	48.50	24.10	4.80	10.00
Average	55.58	27.71	5.73	12.10
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

Authorized Signatory

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
BARAMUNDA, R. ODISHA
Miss. Arti Sahoo

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha
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 - Khurda

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/ UIMM/0298

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ambient Air Quality Monitoring		
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	AAQ7 - Kalimati Village; Lat: 21° 51' 52.08" N, Long: 85° 24' 27.73" E;		
Instrument Used	Respirable Dust Sampler, Fine Particulate Dust Sampler		

Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
04.03.2025	60.2	30.3	7.4	13.4
07.03.2025	62.4	31.4	7.8	13.8
11.03.2025	64.1	32.3	8.4	14.8
14.03.2025	63.7	32.1	8.4	14.4
18.03.2025	65.4	32.8	8.8	15.4
21.03.2025	51.4	25.5	5.4	10.4
25.03.2025	53.5	26.6	5.8	10.8
28.03.2025	55.6	27.8	6.2	11.4
Max	65.40	32.80	8.80	15.40
Min	51.40	25.50	5.40	10.40
Average	59.54	29.85	7.28	13.05
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

BHUBANESHWAR, ODISHA

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESHWAR, ODISHA

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 - Khurda

Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/ UIMM/0299

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Ambient Air Quality Monitoring		
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 - Balda Village; Lat: 21° 52' 0.86" N, Long: 85° 24' 13.30" E; AAQ5 - Nayagarh Village; Lat: 21° 84' 25.82" N, Long: 85° 44' 48.37" E; AAQ6 - Unchabali Village; Lat: 21° 51' 26.32" N, Long: 85° 26' 35.28" E; AAQ7 - Kalimati Village; Lat: 21° 51' 52.08" N, Long: 85° 24' 27.73" E;		
Instrument Used	CO Analyser		

Date of Sampling	Result (mg/m ³)			
	AAQ4	AAQ5	AAQ6	AAQ7
04.03.2025	0.28	0.34	0.34	0.37
07.03.2025	0.29	0.34	0.36	0.39
11.03.2025	0.3	0.36	0.37	0.42
14.03.2025	0.32	0.37	0.37	0.41
18.03.2025	0.34	0.36	0.38	0.43
21.03.2025	0.28	0.27	0.29	0.34
25.03.2025	0.29	0.29	0.3	0.35
28.03.2025	0.31	0.3	0.32	0.37
Max	0.34	0.37	0.38	0.43
Min	0.28	0.27	0.29	0.34
Average	0.30	0.33	0.34	0.39
NAAQ* Standard of CO	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

Technical Manager
Mr. S.K. Parhi

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GREEN FORCE ASSOCIATES PRIVATE LIMITED



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

Report No- GFAPL/24-25/ UIMM/0300

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6. Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Fugitive Dust Emission		
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 By	GFAPL's Representative		
Sampling Location & Coordinates	F1- Crusher Plant; Lat: 21°87'45.58" N, Long: 85°42'29.64"E; F2- Ore Storage & Loading Point; Lat: 21°87'55.18" N, Long: 85°42'27.06"E; F3- Haul Road; Lat: 21°87'57.07" N, Long: 85°42'24.08" E;		
Instrument Used	Respirable Dust Sampler (RDS)		

Sl. No.	Date of Sampling	Result ($\mu\text{g}/\text{m}^3$)		
		F1	F2	F3
1	05.03.2025	563.7	533.6	532.1
2	08.03.2025	581.3	563.7	514.6
3	12.03.2025	556.8	541.3	501.8
4	15.03.2025	542.5	529.6	494.2
5	19.03.2025	528.4	517.8	475.1
6	22.03.2025	509.7	499.2	441.7
7	26.03.2025	488.2	471.6	426.4
8	29.03.2025	471.6	462.1	415.2
	Max	581.3	563.7	532.1
	Min	471.6	462.1	415.2
	Average	530.28	514.86	475.14
	Fugitive Standard	1200 - 2000		
	Methods of Analysis	IS:5182 (Part-4)		

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESHWAR, ODISHA
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESHWAR, ODISHA

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 - Khurda

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/ UTMM/0301

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6. Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Fugitive Dust Emission		
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 By	GFAPL's Representative		
Sampling Location & Coordinates	F4- Screening Plant; Lat: 21°87'23.41" N, Long: 85°42'36.65" E; F5- Mines Face Area; Lat: 21°87'11.55" N, Long: 85°42'62.39" E; F6- Dump Area; Lat: 21°87'53.46" N, Long: 85°42'39.10" E;		
Instrument Used	Respirable Dust Sampler (RDS)		

Sl. No.	Date of Sampling	Result ($\mu\text{g}/\text{m}^3$)		
		F4	F5	F6
1	05.03.2025	598.3	623.7	512.4
2	08.03.2025	580.7	637.1	532.5
3	12.03.2025	575.4	618.5	521.1
4	15.03.2025	568.3	604.2	509.4
5	19.03.2025	547.3	578.3	493.2
6	22.03.2025	521.9	549.8	451.3
7	26.03.2025	512.7	535.7	435.6
8	29.03.2025	504.3	524.3	414.7
	Max	598.3	637.1	532.5
	Min	504.3	524.3	414.7
	Average	551.11	583.95	483.78
	Fugitive Standard	1200 - 2000		
	Methods of Analysis	IS:5182 (Part-4)		

Reviewed By

CHIEF ANALYST

Miss. Arti Sahoo

GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha

Authorized Signatory
TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha
Technical Manager

Mr. S.K. Parhi

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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

Report No- GFAPL/24-25/ UIMM/0302

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	<i>UNCHABALI IRON & MANGANESE MINES</i> AT- A/6. Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Stack Emission Monitoring		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per IS: 11255
Location of performance of Laboratory activities	Laboratory Permanent Facility	Deviation from the method (if any)	NO
Discipline	Chemical	Group	Atmospheric Pollution
Date of Sampling	14.03.2025	Date of Receiving	15.03.2025
Date of Analysis	15.03.2025	Date of Complete	19.03.2025
Sampling Location & Coordinates	ST1- DG Stack at Crusher Area; Lat: 21°87'45.88" N; Long: 85°42'29.06" E ST2- Office Area; Lat:- 21°87'62.74" N; Long:- 85°42'13.29" E		
Instrument Used	Stack monitoring Kit; Vacuum Pump; Pyrometer		

Sl. No	Items	Testing Method	Unit	As per CPCB Standard	ST1	ST2
1.	Temperature	IS-11255 (PART-3) 1985	K	---	382	384
2.	Velocity	IS-11255 (PART-3) 1985	m/sec	---	14.46	15.19
3.	Particulate Matter (as PM)	IS-11255(PART-1) 1985 Gravimetric Method	mg/Nm ³	100	63.5	67.2
4.	Sulphur dioxide (as SO ₂)	IS-11255(PART-2) 1985	mg/Nm ³	600	80.4	78.5
5.	Carbon Monoxide (as CO)	IS-13270:1992	%	1%	<0.2	<0.2
6.	Oxygen (as O ₂)	IS-13270:1992	%	---	15.6	15.2

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, ODISHA

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, ODISHA

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

Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/ UIMM/0302

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6. Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Stack Emission Monitoring		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per IS: 11255
Location of performance of Laboratory activities	Laboratory Permanent Facility	Deviation from the method (if any)	NO
Discipline	Chemical	Group	Atmospheric Pollution
Date of Sampling	14.03.2025	Date of Receiving	15.03.2025
Date of Analysis	15.03.2025	Date of Complete	19.03.2025
Sampling Location & Coordinates	ST1- DG Stack at Crusher Area; Lat: 21°87'45.88" N; Long: 85°42'29.06" E ST2- Office Area; Lat:- 21°87'62.74" N; Long:- 85°42'13.29" E		
Instrument Used	Stack monitoring Kit; Vacuum Pump; Pyrometer		

Sl. No	Items	Testing Method	Unit	As per CPCB Standard	ST1	ST2
1	Oxides of Nitrogen (NOX)	IS-11255(PART-7) 1985	mg/Nm ³	300	122.4	124.2

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

Chief Analyst

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

Technical Manager

Mr. S.K. Parhi

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Baramunda, Bhubaneswar, Dist - Khurdha

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/ UIMM/0303

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, 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
Instrument Used	Noise meter	Sampling Method	As per IS: 9989

Sl. No.	Location	Date of Monitoring	Result in dB(A) Leq	
			Day	Night
1	Mines Pit; Lat: 21°87'29.31"N, Long: 85°42'55.88"E;	14.03.2025	65.4	47.3
2	Loading Point; Lat: 21°87'45.57" N, Long: 85°42'27.62"E;	14.03.2025	66.1	53.2
3	Operator Cabin; Lat: 21°87'46.35"N, Long: 85°42'37.52"E;	14.03.2025	51.7	43.5
4	Work shop; Lat: 21°87'66.82" N, Long: 85°42'31.09"E;	14.03.2025	68.4	62.3
5	Screen Plant; Lat: 21°87'23.41"N, Long: 85°42'36.65"E;	14.03.2025	67.3	57.1
6	Near Mines Office; Lat: 21°87'62.74"N, Long: 85°42'13.29"E;	14.03.2025	53.7	43.3

Noise permissible limits as per CPCB Norms

Category of Area	Noise Standard in dB(A) Leq	
	Day Time	Night Time
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Sensitive Area	50	40

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
Chief Analyst
Miss. Arti Sahoo
Bhubaneswar, Odisha

Authorized Signatory
TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA
Technical Manager
Mr. S.K. Parhi

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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

Report No- GFAPL/24-25/ UIMM/0304

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, 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
Instrument Used	Noise meter	Sampling Method	As per IS: 9989

Sl. No.	Location	Date of Monitoring	Result in dB(A) Leq	
			Day	Night
1	Mines Pit; Lat: 21°87'29.31"N, Long: 85°42'55.88"E;	28.03.2025	66.5	48.2
2	Loading Point; Lat: 21°87'45.57" N, Long: 85°42'27.62"E;	28.03.2025	67.5	54.8
3	Operator Cabin; Lat: 21°87'46.35"N, Long: 85°42'37.52"E;	28.03.2025	52.5	44.8
4	Work shop; Lat: 21°87'66.82" N, Long: 85°42'31.09"E;	28.03.2025	69.5	63.4
5	Screen Plant; Lat: 21°87'23.41"N, Long: 85°42'36.65"E;	28.03.2025	68.1	58.2
6	Near Mines Office; Lat: 21°87'62.74"N, Long: 85°42'13.29"E;	28.03.2025	54.8	44.4

Noise permissible limits as per CPCB Norms

Category of Area	Noise Standard in dB(A) Leq	
	Day Time	Night Time
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Sensitive Area	50	40

Reviewed By

Authorized Signatory

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, ODISHA
Miss. Arti Sahoo

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, ODISHA
Mr. S.K. Parhi

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GREEN FORCE ASSOCIATES PRIVATE LIMITED



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

Report No- GFAPL/24-25/ UIMM/0305

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, 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
Instrument Used	Noise meter	Sampling Method	As per IS: 9989

Sl. No.	Location	Date of Monitoring	Result in dB(A) Leq	
			Day	Night
1	Balda Village; Lat: 21°52'0.86" N, Long: 85°24'13.30" E;	13.03.2025	48.5	38.4
2	Malda Village; Lat: 21°93'42.32" N, Long: 85°31'16.69"E;	13.03.2025	48.1	37.9
3	Nayagarh Village; Lat: 21°84'23.78"N, Long: 85°44'45.28"E;	13.03.2025	49.1	39.1
4	Unchabali Village; Lat: 21°51'26.32"N, Long: 85°26'35.28"E;	13.03.2025	49.7	38.8
5	Office Area Village; Lat: 21°87'62.74"N, Long: 85°42'13.29"E;	13.03.2025	48.2	38.2
6	Camp Area; Lat: 21°87'66.12"N, Long: 85°43'14.44"E;	13.03.2025	50.7	40.4

Noise permissible limits as per CPCB Norms

Category of Area	Noise Standard in dB(A) Leq	
	Day Time	Night Time
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Sensitive Area	50	40

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED
BHUBANESWAR, ODISHA

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Baramunda, Bhubaneswar, Dist - Khurda

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/ UIMM/0306

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, 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
Instrument Used	Noise meter	Sampling Method	As per IS: 9989

Sl. No.	Location	Date of Monitoring	Result in dB(A) Leq	
			Day	Night
1	Balda Village; Lat: 21°52'0.86" N, Long: 85°24'13.30" E;	27.03.2025	49.5	39.6
2	Malda Village; Lat: 21°93'42.32" N, Long: 85°31'16.69"E;	27.03.2025	49.4	39.8
3	Nayagarh Village; Lat: 21°84'23.78"N, Long: 85°44'45.28"E;	27.03.2025	49.9	40.2
4	Unchabali Village; Lat: 21°51'26.32"N, Long: 85°26'35.28"E;	27.03.2025	50.5	40.4
5	Office Area Village; Lat: 21°87'62.74"N, Long: 85°42'13.29"E;	27.03.2025	49.8	39.8
6	Camp Area; Lat: 21°87'66.12"N, Long: 85°43'14.44"E;	27.03.2025	52.6	41.8

Noise permissible limits as per CPCB Norms

Noise Standard 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	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

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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/UIMM/0307

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	SW1 - Baitarani River Up Stream; Lat: 21°84'25.82"N, Long: 85°44'48.37"E; SW2 - Baitarani River Down Stream; Lat: 21°89'18.79"N, Long: 85°45'80.25"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW1	SW2
1.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	<1.0	<1.0
3.	pH	APHA 24th ED 4500- H+B:2023	---	6.0-9.0	7.28	7.32
4.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	154.99	163.34
5.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	96	101
6.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	600	12	13
7.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
8.	Hexavalent Chromium(asCr+6)	APHA 24 th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
9.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.31	0.32
10.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	7.2	7.5
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	--	<2.0	<2.0
13.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	6	5.9
14.	BOD (3)days at 27°C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	<2.0
15.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	12	14

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

Chief Analyst

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

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-1 of 2-

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 - Khurda

Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/UIMM/0307

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	SW1 - Baitarani River Up Stream; Lat: 21°84'25.82"N, Long: 85°44'48.37"E; SW2 - Baitarani River Down Stream; Lat: 21°89'18.79"N, Long: 85°45'80.25"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW1	SW2
1.	Nitrate (as NO ₃)	APHA 24th ED 4500-NO ₃ -E: 2023	mg/l	50	0.88	0.96
2.	Phenolic Compounds as C ₆ H ₅ OH	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	0.09	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	---	410	450

Reviewed By

Authorized Signatory

CHIEF ANALYST

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

GREENFORCE ASSOCIATES PRIVATE LIMITED

Chief Analyst
Miss. Arti Sahoo

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BHUBANESWAR, ODISHA

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END OF REPORT



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/UIMM/0308

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela. Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	SW3 - Unchabali Nallah Up Stream; Lat: 21°88'16.06"N, Long: 85°41'61.50"E; SW4 - Unchabali Nallah Down Stream; Lat: 21° 87'87.44"N, Long: 85°43'11.61"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW3	SW4
1.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	<1.0	<1.0
3.	pH	APHA 24th ED 4500- H+B:2023	---	6.0-9.0	7.33	7.38
4.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	190.77	197.12
5.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	114	121
6.	Chloride (as Cl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	600	16	18
7.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
8.	Hexavalent Chromium(asCr+6)	APHA 24 th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
9.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.35	0.37
10.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	8.1	8.5
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	--	<2.0	<2.0
13.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	5.9	5.8
14.	BOD (3) days at 27°C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	<2.0
15.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	15	18

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESWAR, ODISHA

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESWAR, ODISHA

Mr. S.K. Parhi

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Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/UIMM/0308

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	SW3 - Unchabali Nallah Up Stream; Lat: 21°88'16.06"N, Long: 85°41'61.50"E; SW4 - Unchabali Nallah Down Stream; Lat: 21° 87'87.44"N, Long: 85°43'11.61"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW3	SW4
1.	Nitrate (as NO ₃)	APHA 24th ED 4500-NO ₃ -E: 2023	mg/l	50	1.36	1.42
2.	Phenolic Compounds as C ₆ H ₅ OH	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	0.12	0.14
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	—	470	510

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESHWAR, ODISHA

Miss. Arti Sahoo

Authorized Signatory


Technical Manager
Mr. S.K. Parhi

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GREEN FORCE ASSOCIATES PRIVATE LIMITED



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

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/UIMM/0309

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	18.02.2025	Date of Receiving	19.02.2025
Date of Analysis	19.02.2025	Date of Complete	22.02.2025
Sampling Location & Coordinates	SW5 - Jalpa Nallah; Lat: 21°84'75.05" N, Long: 85°43'82.45"E; SW6 - Kashi Nallah; Lat: 21°89'47.55"N, Long: 85°45'44.8"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW5	SW6
1.	Colour	IS 3025: (Part 4)- 2021	Hazen	300	<5.0	<5.0
2.	Turbidity	APHA 24th ED: 2130-B - 2023	NTU	--	<1.0	<1.0
3.	pH	APHA 24th ED 4500- H-B:2023	---	6.0-9.0	7.39	7.37
4.	Conductivity	APHA 24th ED 2510-B: 2023	µS/cm	--	211.04	223.85
5.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	1500	130	138
6.	Chloride (as Cl)	APHA 24th ED 4500- Cl-B:2023	mg/l	600	17	18
7.	Cyanide (as CN)	APHA 24th ED 4500-CN-F	mg/l	0.05	<0.02	<0.02
8.	Hexavalent Chromium(asCr+6)	APHA 24 th ED 3500-Cr-B: 2023	mg/l	0.05	<0.05	<0.05
9.	Iron (as Fe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	0.5	0.42	0.42
10.	Sulfate (as SO4)	APHA 24th ED 4500-SO4 D: 2023	mg/l	400	8.8	7.9
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	--	<2.0	<2.0
13.	Dissolved oxygen	APHA 24th ED 4500 O-C:2023	mg/l	4	5.8	5.7
14.	BOD (3) days at 27°C	IS 3025 (PART 44): 1993 REA-2009	mg/l	3.0	<2.0	3.2
15.	Chemical Oxygen Demand as COD	APHA 24th ED 5220 C:2023	mg/l	--	18	24

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

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

--1 of 2--

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 - Khurda

Mail Id: greenforceassociates@gmail.com
(An ISO 14001, 9001, 45001 certified Consulting Organization & NABL Accredited Laboratory)

Report No- GFAPL/24-25/UIMM/0309

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Surface Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th 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	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	SW5 - Jalpa Nallah; Lat: 21°84'75.05" N, Long: 85°43'82.45"E; SW6 - Kashi Nallah; Lat: 21°89'47.55"N, Long: 85°45'44.8"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-2296 Class-C	SW5	SW6
1.	Nitrate (as NO ₃)	APHA 24th ED 4500-NO ₃ -E: 2023	mg/l	50	1.38	1.68
2.	Phenolic Compounds as C ₆ H ₅ OH	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	0.14	0.18
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	--	510	570

Reviewed By

CHIEF ANALYST
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER
GREENFORCE ASSOCIATES PRIVATE LIMITED
Bhubaneswar, Odisha
Mr. S.K. Parhi

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

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/UIMM/0310

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6. Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	Effluent Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	Deviation from the method (if any)	NO
Discipline	Chemical	Group	Environment & Pollution
Date of Sampling	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	ETP- Inside the ML Area (ETP-Outlet); Lat: 21° 87'69.11" N, Long: 85°42'11.22"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per Schedule VI (3A) under EPR:1986	Result
1.	pH	APHA 24th ED 4500- H-B:2023	--	5.5-9.0	7.48
2.	Total Suspended Solids	APHA 24th ED 2540-D: 2023	mg/l	100	18
3.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	--	176
4.	Biological Oxygen Demand as BOD	IS 3025 (PART 44):1993	mg/l	30	<2.0
5.	Chemical Oxygen Demand as COD	APHA 24 th ED 5220 B:2023	mg/l	250	18
6.	Chloride(asCl)	APHA 24th Ed 4500- Cl-B:2023	mg/l		34
7.	Iron(asFe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	3	0.54
8.	Oil & Grease	IS 3025 PART 39-1991 RA-2003	mg/l	10	<2.0
9.	Manganese	IS 3025 PART-59 :2006 RA 2012	mg/l	2	<0.05

Remarks: The Standard as per Schedule VI (3A) under EPR:1986 is only applicable to the Discharge i.e., Outlet

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

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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Baramunda, Bhubaneswar, Dist - Khurdha

Mail Id: greenforceassociates@gmail.com

Report No- GFAPL/24-25/UIMM/0311

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6. Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	STP Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	Deviation from the method (if any)	NO
Discipline	Chemical	Group	Environment & Pollution
Date of Sampling	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	STP- Inside the ML Area (STP-Outlet); Lat: 21°87'68.36"N, Long: 85°43'21.66"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per MOEFcc 13 th Oct, 2017	Result
1.	pH	APHA 24th ED 4500- H+B:2023	--	6.5-9.0	6.84
2.	Total Suspended Solids	APHA 24th ED 2540-D: 2023	mg/l	<50	19
3.	Total Dissolved Solid	APHA 24th ED 2540-C: 2023	mg/l	--	168
4.	Biological Oxygen Demand as BOD	IS 3025 (PART 44):1993	mg/l	20	<2.0
5.	Chemical Oxygen Demand as COD	APHA 24 th ED 5220 B:2023	mg/l	--	14
6.	Chloride(asCl)	APHA 24th Ed 4500- Cl-B:2023	mg/l	--	28
7.	Iron(asFe)	APHA 24th ED 3500-Fe-B: 2023	mg/l	--	0.48
8.	Oil & Grease	IS 3025 PART 39-1991 RA-2003	mg/l	10	<2.0
9.	Manganese	IS 3025 PART-59 :2006 RA 2012	mg/l	--	<0.05

Remarks: The Standard as per MOEFcc 13th Oct, 2017 is only applicable to the Discharge ie., Outlet

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESWAR, ODISHA

Chief Analyst
Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

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BHUBANESWAR, ODISHA

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Report No- GFAPL/24-25/UIMM/0311

Issued Date-05.04.2025

TEST REPORT

Client Name & Address	UNCHABALI IRON & MANGANESE MINES AT- A/6, Commercial Estate, Civil Township, Rourkela, Odisha		
Nature of Sampling	STP Water		
Sampling By	GFAPL's Representative		
Environmental Condition	Good	Sampling Method	As per APHA 24 th ED 1060 B: 2023
Location of performance of Laboratory activities	Laboratory Permanent Facility	Deviation from the method (if any)	NO
Discipline	Chemical	Group	Environment & Pollution
Date of Sampling	17.03.2025	Date of Receiving	18.03.2025
Date of Analysis	18.03.2025	Date of Complete	22.03.2025
Sampling Location & Coordinates	STP- Inside the ML Area (STP-Outlet); Lat: 21°87'68.36"N, Long: 85°43'21.66"E;		

Sl. No.	Parameter	Testing Methods	Unit	Standard as per MOEFcc 13 th Oct, 2017	Result
1	Fecal Coliform	APHA 24th ED 9222-H: 2023	MPN/ 100ml	<1000	<1.8

Remarks: The Standard as per MOEFcc 13th Oct, 2017 is only applicable to the Discharge ie., Outlet

Reviewed By

CHIEF ANALYST

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESHWAR, ODISHA

Miss. Arti Sahoo

Authorized Signatory

TECHNICAL MANAGER

GREENFORCE ASSOCIATES PRIVATE LIMITED

BHUBANESHWAR, ODISHA

Mr. S.K. Parhi

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END OF REPORT



Data Logger Recorder Data :

User

User ID 5061

Name UNCHABALI IRON & Mn.MINES OF SMT. INDRANI PATNAIK

Mobile 9437062184

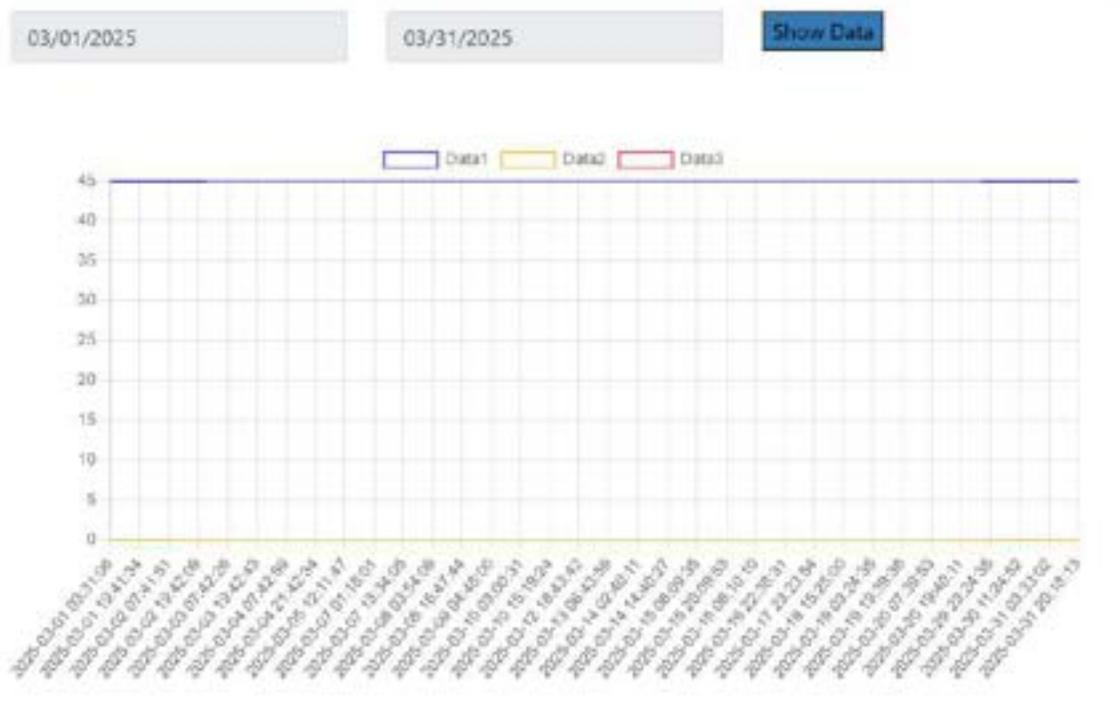
Email uim mip@gmail.com

Sea Level

longitude

latitude

Address UNCHABALINULL





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

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)

NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:	M/s Unchabali Iron And Manganese Ore Mines		
Project Address:	M/s Unchabali Iron And Manganese Ore Mines Of Smt. Indrani Patnaik, Mining Lease Area, 106.1127 Ha., Tehsil : Barbil		
Village:	Unchabali	Block:	Joda
District:	Kendujhar	State:	Odisha
Pin Code:			
Communication Address:	M/s Unchabali Iron And Manganese Ore Mines Of Smt. Indrani Patnaik, Boneikela, Joda, Kendujhar, Odisha - 758034		
Address of CGWB Regional Office :	Central Ground Water Board South Eastern Region, Bhujal Bhawan, Khandagiri Square, Nh-5, Bhubaneshwar, Khordha, Odisha - 751030		

1. NOC No.:	CGWA/NOC/MIN/REN/1/2025/10626	2. Date of Issuance	19/02/2025									
3. Application No.:	21-4/88/OR/MIN/2008	4. Category: (GWRE 2024)	Safe									
5. Project Status:	Existing Ground Water	6. NOC Type:	Renewal									
7. Valid from:	16/11/2024	8. Valid up to:	15/11/2026									
9. Ground Water Abstraction Permitted:												
Fresh Water		Saline Water		Dewatering		Total						
m ³ /day	m ³ /year	m ³ /day	m ³ /year	m ³ /day	m ³ /year	m ³ /day	m ³ /year					
379.00	138335.00					379.00	138335.00					
10. Details of ground water abstraction /Dewatering structures												
Total Existing No				Total Proposed No								
	DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPu
Abstraction Structure*	0	0	5	0	0	0	0	0	0	0	0	0
*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps												
11. Ground Water Abstraction/Restoration Charges paid (Rs.):								553340.00				
12. Environment Compensation (if applicable) paid (Rs.):								0.00				
13. Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers					Monitoring Mechanism						
						Manual	DWLR**	DWLR With Telemetry				
**DWLR - Digital Water Level Recorder	1					0	1	0				

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011

Phone: (011) 23383561 Fax: 23382051, 23386743

Website: cgwa-noc.gov.in

पानी बचाये - जीवन बचाये
SAVE WATER - SAVE LIFE

CENTRAL GROUND WATER AUTHORITY

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011

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(Compliance Conditions given overleaf)

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

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

Mandatory conditions:

- 1) Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate.
- 2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.
- 3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines.
- 4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.
- 5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.
- 6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.
- 7) The firm shall report compliance of the NOC conditions online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.
- 8) Industries abstracting ground water in excess of 100 m³/d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.
- 9) Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.
- 10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

General conditions:

- 11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).
- 12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).
- 13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.
- 14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.
- 15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.
- 16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.
- 17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.
- 18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.
- 19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.
- 20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.
- 21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.
- 22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.
- 23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.
- 24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.
- 25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.
- 26) In case of new infrastructure projects having ground water abstraction of more than 20 m³/day, the firm/entity shall ensure implementation of dual water supply system in the projects.
- 27) In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.
- 28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.
- 29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be.
- 30) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).
- 31) In the self-compliance report, the PP shall submit details of Drilling Agency/ Agencies, which has/ have constructed BW(s)/ TW(s) along with undertaking to the effect that all necessary measures have been taken as per directions of Hon'ble Supreme Court provided in Annexure-VII of guidelines dated 24.09.2020 in respect of abandoned/ failed BW(s)/ TW(s)/Piezometer(s), if any. The PP is advised to engage registered drilling agency/ agencies. In the event of any mishap/ unfortunate incident due to negligence in taking measures for prevention of accident due to falling in Bore Well, both PP and concerned drilling agency shall jointly be held responsible and penal action as per extant Government rules shall be taken.

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

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

Receipt

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

Application No.:	21-4/88/OR/MIN/2008	Date of Issuance:	19/02/2025
Name of Firm:	M/S UNCHABALI IRON AND MANGANESE ORE MINES		
AppType Category:	Iron ore		
Application Type:	Mining		
PAN/GSTIN No. of Firm/Individual:	ACCPP6164E /		

S N	Description	Amount (Rs.)
1.	Application Processing Fee	5000.00
2.	Ground Water Abstraction charges	553340.00
3.	Ground Water Restoration charges	0
4.	Environmental Compensation Charges (ECRGW) (Date From to) Days-	
5.	Penalty for non-Compliance of NOC conditions Condition to be mentioned	
6.	Adjustment Charges	
7.	Rebate	
8.	Charges for correction/modification in the existing issued No Objection Certificate	
S.No.	Description	Rate
(i)	Change in User ID	Rs. 1000
(ii)	Change in firm Name	Rs. 5000
(iii)	Extension of No Objection Certificate	Rs. 5000
(iv)	Issuance of duplicate No Objection Certificate	Rs. 5000
(v)	Issuance of corrigendum to No Objection Certificate	Rs. 5000
(vi)	Any other items/correction etc.	Rs. 500
Rs. Rupees Five Lakh Fifty Eight Thousand Three Hundred Forty Only		558340.00

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

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Term and conditions:

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

Member-Secretary
CGWA, New Delhi

CENTRAL GROUND WATER AUTHORITY

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :

Date : **23/10/2024**
Time : **16:14:04 PM**
Validity upto : **22/04/2025**



Certificate SL. No. : OR90100240002775
 Registration No. : JH06G6099
 Date of Registration : 02/Feb/2011
 Month & Year of Manufacturing : February-2011
 Valid Mobile Number : *****7985
 Emission Norms : BHARAT STAGE III
 Fuel : DIESEL
 PUC Code : OR9010024
 GSTIN : 21AABCT6759R1ZP
 Fees : Rs.177.0(Including GST)
 MIL observation : No

Vehicle Photo with Registration plate
 60 mm x 30 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	2.45	1.38

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://vahan.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
 60mm x 20 mm

OFFICE OF THE PRINCIPAL CCF (WILDLIFE) & CHIEF WILDLIFE
WARDEN, ORISSA 5TH FLOOR, B.D.A. APARTMENT, PRAKRUTI BHAWAN,
NILAKANTHA NAGAR, BHUBANESWAR- 751012.

Memo No. 1258 Dt. 15.2.2010
1WL-C-FC- 36/09

To

The Chief Conservator of Forests (Nodal),
O/o the Principal CCF, Orissa, Bhubaneswar.

Sub: Approval of Site Specific Wildlife Conservation Plan for Unchabali Iron & Manganese Mines of Smt. Indrani Patnaik in Keonjhar district

Sir,

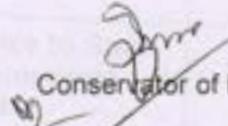
I am directed to inform you that the Site Specific Wildlife Conservation Plan for Unchabali Iron & Manganese Mines of Smt. Indrani Patnaik in Keonjhar district has been approved by PCCF(WL) & Chief Wildlife Warden, Orissa with revised financial forecast of Rs. 104.00 lakhs for the following activities...

3. For activities to be implemented by User agency---- Rs. 34.00 lakhs.
4. For activities to be implemented by
DFO, Keonjhar Division

----- Rs. 70.00 lakhs.
Total Rs. 104 lakhs

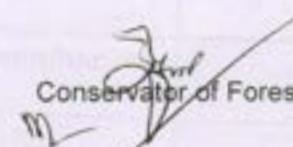
Various activities in the lease hold area will be executed by User Agency by themselves under the guidance of DFO, Keonjhar Division & Rs.70.00 lakhs may be deposited with DFO, Keonjhar division under CAMP for execution of various activities in Project Impact Area.

Memo No. 1259 dt. 15.2.2010


Conservator of Forests (WL)

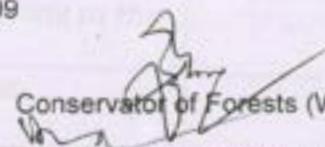
Copy forwarded to the DFO, Keonjhar Division for information & necessary action with reference to Memo No. 3185 dt. 27.8.09 of CF., Rourakela Circle.

Memo No. 1260 Dt. 15.2.2010


Conservator of Forests (WL)

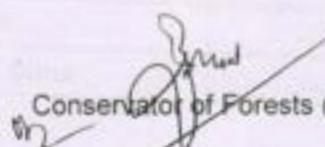
Copy forwarded to CF, Rourkela Circle for information & necessary action with reference to his office Memo No. 3184 dt.27.8.09

Memo No. 1261 dt. 15.2.2010

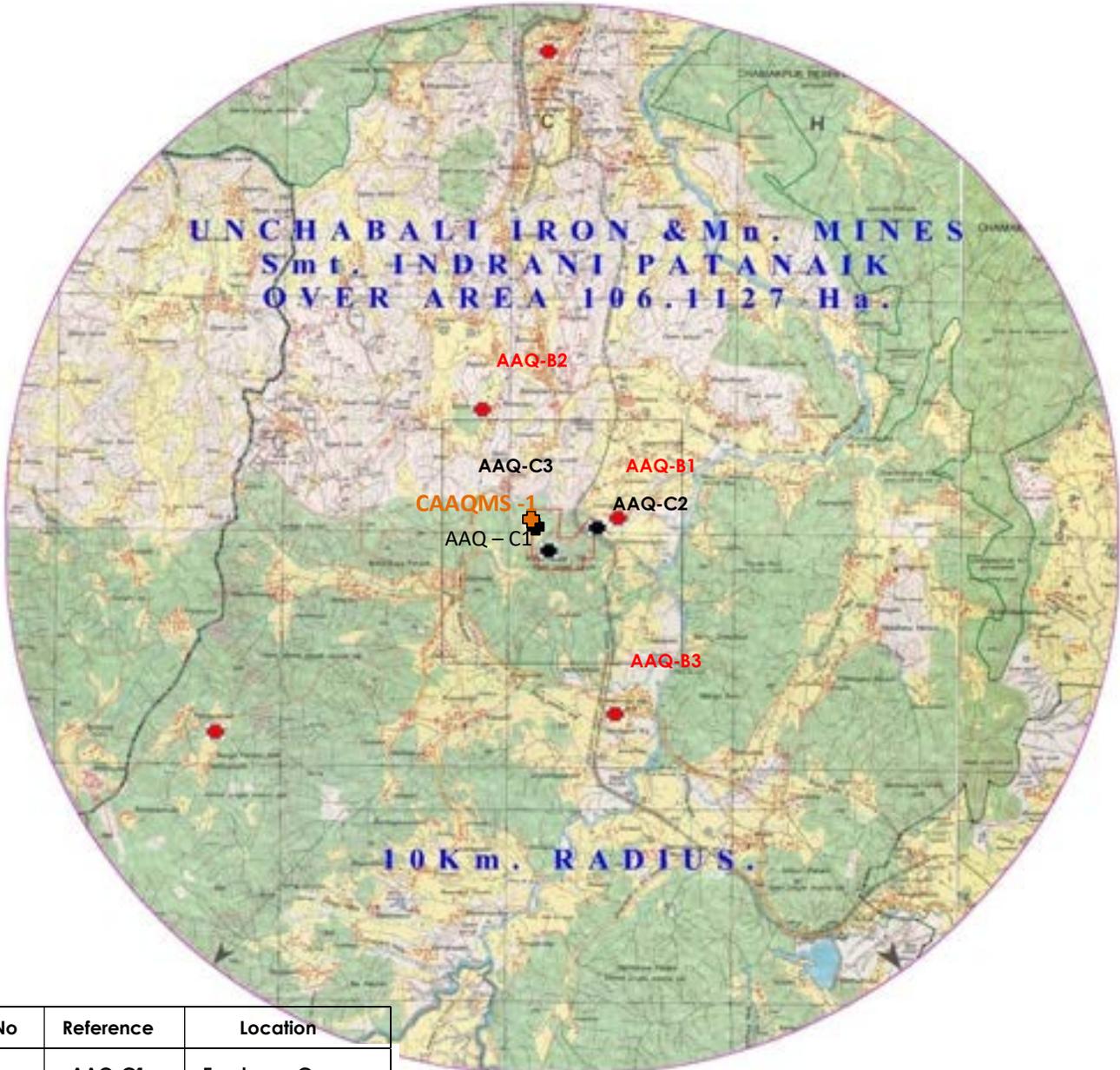

Conservator of Forests (WL)

Copy forwarded to the Smt. Indrani Patnaik, Mine Owner, A/6, Commercial Estate, Civil Township, Rourkela-769004 for information & necessary action with reference to his letter dated 22.9.09.

Enc! One No. approved S.S.
WL Conservator 15.2.2010


Conservator of Forests (WL)

AAQ MONITORING STATION



SL. No	Reference	Location
1	AAQ-C1	Employee Camp
2	AAQ-C2	Mines Entry And Exit Gate
3	AAQ - C3	Beneficiation Plant
4	CAAQMS	Near magazine area

SL.No	Reference	Location
1	AAQ-B1	Village Unchabali
2	AAQ-B2	Village Balda
3	AAQ-B3	Village Nayagardh

AAQ MONITORING LOCATION	
	- CORE ZONE MONITORING LOCATIONS
	- BUFFERZONE MONITORING LOCATION
	- CONTINUOUS AMBIENT AIR MONITORING STAION CAAQMS

Organization Structure – Environment Cell

