CHAPTER -5
ANALYSIS OF ALTERNATIVES FOR TECHNOLOGY AND SITE

5.1 Analysis of Alternatives for Technology and Site for Bailadila Iron Ore Deposit-4 Mine

The proposal is for Environmental Clearance under EIA Notification 2006 and its subsequent amendment to produce ROM Iron ore of 7.0 MTPA and waste excavation of 6.41 MTPA (Total Excavation 13.41 MTPA) in ML Area 646.596 Ha along with 2000 TPH Crushing plant inside lease area interlinked with Screening cum Beneficiation Plant (750 TPH of 4 lines each) along with 2200 TPH Downhill Conveyor and Loading Facilities (over an area of 122.5428 Ha.).

The mine will be developed by Fully Mechanized open cast method of working which involves drilling, blasting, excavation by shovel-dumper combination and transportation of ore up to primary crushing plant by dumpers. Controlled blasting technique will be adopted for better fragmentation and control of fly rock and vibration. The ore will be crushed in primary crushing plant having capacity of 2000 TPH, Secondary crusher capacity of 1200 TPH. After crushing, (-)150 mm ore size transported to screening plant by downhill conveyor system.

Mining is a site-specific project and the operation will be carried out within Mining Lease. With the commissioning of the mining activities of the proposed project, it is expected that there shall be certain changes in the overall environmental matrix of the area. The environmental attributes, which are likely to be affected in the region, are land use, topography, water resources, soil, air quality, socio-economic status, ecology, and public health. The environmental parameters which are most commonly affected by the proposed mining activities are discussed in the subsequent sections.

Since Iron ore mining is site specific with fixed line of operations hence no other alternatives for site & technology are considered.

Justification for locating infrastructure facilities in mainly in forest land and partially at revenue land outside the Mining Lease area.

The various alternatives were considered and examined taking into consideration of topography, existing broad gauge electrified railway line (situated towards North Eastern side of Dep-4 ML) connecting Kirandul and Visakhapatnam for transportation of Iron Ore from Bailadila sector, doubling of KK railway line from Kirandul to Jagdalpur and Engineering design factors etc. The following factors have taken care during the layout design.

- Deposit-4 is situated in hilly terrain at an elevation between 680 m RL to 1210 m RL. The mining activities includes drilling, blasting, excavation and

transportation of ROM Iron Ore to crushing plant. The Crushing plant is located inside ML area at 1105 m RL.

- The crushed ROM Iron ore is to be transported to foot hills through downhill conveyor system and feed to Screening cum beneficiation Plant for processing of iron ore into various production such as Calibrated Lump Ore and Fine Ore. The products shall be transported through downhill conveyor system to Loading plant for further transportation to customers by Railway wagons.
- The Ore Screening and Loading plants shall be deigned suiting to terrain i.e. ground profile and without much interfering with natural course of nallahs.
- Basic utility & auxiliary units and other aspects like constructability, maintainability, safety etc. shall be ensured.
- Considering the natural ground profile with variation in elevations, conveyors with minimum lengths can be easily to reach bunker levels for subsequent crushing or screening operations.
- Stockpile require generally plain area (which shall be levelled ensuring minimum earth work) for accommodating sufficient product stockpile for continuous loading.

5.2 Analysis of Alternative Sites for Screening cum Beneficiation Plant

It may be noted that few alternative alignments for downhill conveyor system were explored -

1. **North-Western side (Alternative-1) –**
   This option has been studied for infrastructure but it was totally forest land and no railway connectivity was available. Moreover, the waste dumps have been proposed on the western side of the lease. This alignment was also passing through the Ore body and hence would have been a hinderance to the Approved Ultimate Pit. For the reason discussed above, this option had not been found feasible, hence not selected.

2. **South-Eastern Side (Alternative-2)** –
   In this option the proposed Plant Infrastructure had to cross deposit no-10, which is totally mineralized zone and this ML area belongs to NMDC. It was also crossing the Tree Fern area, proposed for non-diversion. One more constraint was that space available for loading plant at Bacheli for this option was limited as theexisting area was already occupied by NMDC is loading plant.
   For the reason discussed above, this option had not been found feasible, hence not selected.

3. **North- Eastern side (Alternative-3) –**
   Design in this direction has been found most suitable as the proposed plant infrastructure is designed with minimum disturbance to other existing infrastructure. More over the conveyor alignment in this direction is also supporting the concept of NMDC-CMDC Ltd., to develop Deposit-4 as a stand-

alone project. The proposed loading plant has been also conceptualized near to the existing Railway line. Keeping the proposed crushing plant and loading plant fixed, three options had been further made for the conveyor gallery which are discussed below: -

Alternative-3a: This is the most feasible option as the conveyor gallery is not crossing the Ore body of Deposit-3, Deposit-6, Deposit-7 Deposit-8, & Deposit-9 and hence no ore body is blocked. Moreover, this path is giving the desired gradient for conveyor and the existing old road is utilized as approach road and thus minimum forest area of 100.077 Ha. (inside Bailadila reserve forest) outside the lease have been proposed for diversion. **Thus, this option is selected.**

Alternative-3b: This was the not a feasible option as the conveyor gallery was crossing over the Ore body of Deposit-1 and hence ore body was likely to be blocked. Moreover, the length of the conveyor gallery was also increasing to 8602 meter and new approach road was required to be made. With this option the total area required for diversion outside the mining lease was 102.391 Ha (inside Bailadila reserve forest). Thus, this option was not selected.

Alternative-3c: This was also not a feasible option as the conveyor gallery was crossing the Ore body of Deposit-8, Deposit-7 and hence ore body was likely to be blocked. Moreover, the length of the conveyor gallery was also increasing to 8652 meter and new approach road was required to be made. With this option the total area required for diversion outside the mining lease was 101.241 Ha (inside Bailadila reserve forest). Thus, this option was not selected.

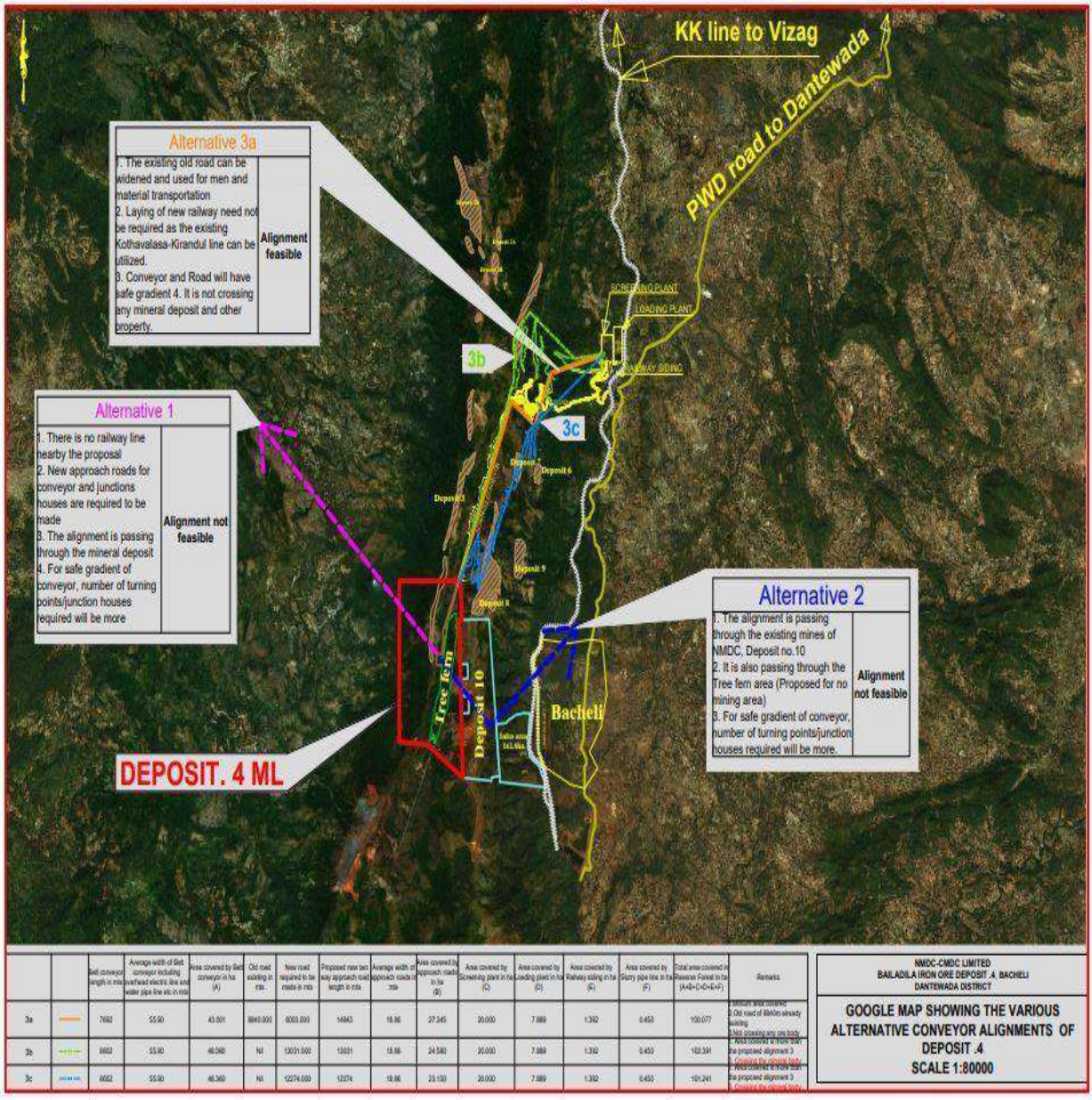
Considering the Alternative-3a for conveyor gallery, the Screening Cum Beneficiation Plant is also identified at 580 m RL near the Loading Plant. Considering the above alternatives, the infrastructure facilities have been considered towards NE direction (Alternative-3a) outside ML in Forest as well as Revenue land for development of Bailadila Deposit-4 Mine as standalone project.

The total area required for setting up of above infrastructure facilities outside the Mining Lease area is 122.5428 Ha. The facilities coming up in the reserve forest land extends over an area of 100.077 Ha and in revenue land, it is 22.4658 Ha (Revenue Forest – 12.0952 Ha, Private Revenue Land – 6.9585 Ha, Government Revenue Land – 1.0101 Ha, Railway Land – 2.402 Ha).

5.3 Analysis of Alternative for Technology

Instead of constructing traditional tailing dam with slurry pipe line system, dry tailing disposal system having horizontal belt filter / hydraulic pressure filter technology has been introduced. This will ensure zero solid discharge outside the plant boundary with 100% water recirculation. Tailings after drying in the post monsoon seasons will be blended with the high-grade fines and same will be sold. Same is discussed in **Chapter 2.**

Figure No.: 5.1: Details of various alternative sites for Screening cum Beneficiation Plant



CHAPTER 6
ENVIRONMENTAL MONITORING PROGRAMME

6.0 Implementation Schedule of Mitigation Measures

Environmental monitoring will be undertaken during the course of the mining, screening, and beneficiation operations after getting Environmental Clearance for Bailadila Iron Ore Deposit-4 Mine and Screening cum Beneficiation Plant.

After the generation of baseline data, all the possible impacts shall be identified due to mining, screening, beneficiation etc., and predict the impacts during post-project status. All those predicted impacts shall be evaluated. Attempts shall be made to minimize the negative impacts and maximize the positive impacts by adopting proper mitigation measures. Post-project monitoring will be carried out to understand whether the system is working as per the requirement, if not immediate steps will be taken to control it before conditions deteriorate. The priority of the implementation schedule is given in the following **Table 6.1**.

TABLE - 6.1
IMPLEMENTATION OF SCHEDULE

No	Recommended control measures	Time Requirement	Implementation schedule	
			Immediate	Progressive
1	Air pollution	During the operation of the mine and screening cum beneficiation plant	*	-
2	Water pollution	During the operation of the mine and screening cum beneficiation plant	*	-
3	Noise pollution	During the operation of the mine and screening cum beneficiation plant	*	-
4	Ecosystem-Greenbelt development	Stage wise implementation	-	*

The baseline data generated indicates the pollutant level during the operation of the existing units are under permissible limits. The present ambient air quality indicates cumulative concentrations from all the mines, industries, plants etc. working in the area.

6.1 Environmental Monitoring

The selected environmental components for the post-project monitoring are listed below:

- **Air Quality**
  - Micro-Meteorological data
  - Seasonal Ambient Air Quality
  - Continuous Ambient Air Quality
  - Fugitive Dust Monitoring
- **Water and wastewater Quality**
  - Water and Wastewater Quality
  - Depth of water level in wells and also water quality
- **Noise Quality**
  - Ambient and work zone Noise levels
- **Soil Quality**
  - Physico-chemical & bio-logical parameters

A centralized environmental monitoring cell shall be established in mining project. The environmental monitoring programme of above parameters such as micro meteorology, ambient air, fugitive dust, water and wastewater quality, soil quality, Noise and work zone noise levels at above said mine and screening cum beneficiation plant shall be carried out by the third party recognized /accredited by MoEF&CC /NABL laboratory.

Monitoring of important and crucial environmental parameters is of immense importance to assess the status of environment during operation phase. With the knowledge of baseline conditions, the monitoring program can serve as an indicator for any deterioration in environmental conditions due to mining operations and suitable mitigatory steps could be taken in time to safeguard the environment. Monitoring is as important as that of control of pollution since the efficiency of control measures can only be determined by monitoring. The proposed monitoring program for implementation is given below -

6.1.1 Micro-Meteorological data

Meteorological parameters like wind speed, wind direction, temperature, relative humidity and rainfall will be recorded continuously at mine lease area by installing Automatic weather station.

6.1.2 Seasonal Ambient Air Quality

The ambient air quality shall be monitored frequently at adequate locations for Bailadila Iron Ore Deposit-4 Mine and for Screening cum Beneficiation Plant in line with the guidelines of MoEF&CC issued vide circular no: J-20012/1/2006-IA.II (M) dated 27/5/2009. The number of seasons will be covered are the pre-monsoon, post-monsoon and winter season.

Parameters such as PM_{10}, $PM_{2.5,}$ $SO_{2,}$ NO_2 and CO shall be measured by using calibrated Dust Samplers.

6.1.3 Fugitive Dust Monitoring

As per the MoEF&CC notification GSR 809(E) dated 4/10/2010, Fugitive Dust Monitoring shall be carried out at work zone in Bailadila Iron Ore Deposit-4 and Screening cum Beneficiation Plant. The significant parameters such as SPM, RPM and TPM monitoring shall be carried out by using RDS.

Source monitoring studies for respirable dust and personal monitoring studies for respirable dust and free silica analysis shall be carried out as per Regulation number 124 of MMR, 1961 under The Occupational Safety, Health and Working Conditions Code, 2020 and other statutory regulations.

6.1.4 Water and Wastewater Quality

In order to study the quality of water as well as wastewater, the samples shall be collected from mine pit, screening cum beneficiation processes, seasonal nala and also ground water from hand pump and tube well. Samples shall be collected as per IS: 3025 (Part 1) Methodology. Necessary precautions shall be taken while collecting, preserving and transporting.

Further, regular monitoring of ground water levels and quality shall be done four times a year pre-monsoon (April - May), Monsoon (August) Post Monsoon (November) and Winter (January) once in each season.

6.1.5 Noise Levels

Ambient Noise levels and work zone noise levels shall be monitored regularly by using the calibrated integrated sound level meter. The Leq day and Leq night levels shall be calculated and compared with the respective EPA Standard for Ambient Noise Level. The frequency of noise monitoring is once in a season except during monsoon season.

6.1.6 Work Zone Noise Level Monitoring Locations

Work Zone Noise Levels shall be recorded as per IS: 4758-1968 entitled "Method of Measurement of Noise Emitted by Machines". To assess the impact due to the various Mining & allied operations, the work zone noise levels monitoring shall be carried out.

6.1.7 Soil Sampling

Soil samples shall be collected and analyzed for various relevant parameters for assessing soil fertility of the proposed plantation areas and also during post plantation.

6.2 Post-project monitoring for Environmental Parameters

The environmental monitoring cell will coordinate all monitoring programs at site and data thus generated shall be regularly submitted to the regulatory agencies. The environmental monitoring program shall be carried out in accordance with Environmental Clearance permission.

TABLE - 6.2
MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS

Sr. No.	Particulars		Monitoring Frequency	Duration of Sampling	Important Monitoring Parameters
1	**Air Pollution and Meteorology**				
	A	Ambient Air Quality Monitoring			
	i)	AAQM at 8 locations in & around ML area and 8 locations in & around screening cum beneficiation plant	Once in a Month during each season except monsoon season.	24 hrs	$PM_{2.5}$, PM_{10}, SO_2, NO_2 and CO
	ii)	Two Continuous AAQ monitoring Stations	One at Mining lease area and one at screening cum beneficiation plant area	Continuous and display of real time AAQ levels	$PM_{2.5}$, PM_{10}, SO_2, NO_2 and CO
	B	Fugitive dust sampling at 5 locations in & around ML area and 5 locations in & around screening cum beneficiation plant.	Once in a month during each season except monsoon season.	24 hrs	Particulate Matter
	C	Personal Dust monitoring at 5 locations in & around ML area and 5 locations in & around screening cum beneficiation plant including Free Silica Monitoring.	Once in six months	8 hrs	Respirable Dust
	D	Area dust monitoring at 5 locations in & around ML area and 5 locations in & around screening cum beneficiation plant including Free Silica Monitoring.	Once in six months	8 hrs	Respirable Dust
	Meteorology				

	a	Meteorological data	Daily	Continuous Monitoring	Wind speed, wind direction, temperature, relative humidity and rainfall.
2	**Water and Wastewater Quality**				
	A	Industrial/Domestic			
	1	Sewage treatment plant samples	Once in a month	24 hr composite	As per the parameters specified under GSR: 422E
	2	Effluent discharge sample at 1 location	Once in a month	24 hr composite	As per the parameters specified under GSR: 422E
	B	Water quality in the study area			
	1	Surface Water at within and outside lease area & within and outside screening cum beneficiation plant. At 8 locations	Once in season	Grab	Parameters specified under IS: 2296 / IS: 10500.
	2	Drinking water samples within & outside of mining lease and screening cum beneficiation plant at 8 locations	Once in season	Grab	Parameters specified under IS: 10500.
	3	Ground water level Monitoring	Twice in a Year	--	--
3	**Noise Levels and Vibrations**				
	1	Work zone Noise levels within & outside of mining lease and screening cum beneficiation plant at 10 locations.	Once in season	Spot noise levels	Noise level in dB(A)
	2	Ambient Noise levels within & outside of mining lease and screening cum beneficiation plant at 10 locations	Once in season	Spot noise levels	Noise level in dB(A)
	3	Blast induced ground vibrations at 5 locations	Once in year	Spot vibration recording	Peak Particle Velocity (PPV)

					measured in mm/s
4	**Soil Characteristics**				
	1	At 10 locations in core and buffer zone in nearby villages of within & outside of mining lease and screening cum beneficiation plant	Seasonal	Mixtures of samples 0-30, 30-60 and 60-90 cm at each location	Colour, textural class, grain size, distribution, pH, Electrical Conductivity, Bulk Density, Porosity, Infiltration rate, Moisture retention capacity, Wilting Co-efficient, OC, Na, N, K, PO_4, SO_4, SAR, Base Exchange Capacity, Pb, Cu, Zn, Cd, Fe.
5	**Ecology Monitoring**				
	1	Ecological Monitoring Activities in buffer area of both mining lease and screening cum beneficiation plant	Once in five years	One month	Survey for wildlife and vegetation

6.3 Cost towards Environment Monitoring Programme

The EMP cost includes, purchase of monitoring equipment such as Micro-meteorology station, personal noise dosimeter, mini mate instrument, high speed video camera for recording of blasting and blasting software. A provision is also kept in the EMP for generation of environmental awareness among employees and public by way of celebrating mines environment & mineral conservation week, world environment day, ozone and earth day. The Standard EC conditions for non-coal mining and mineral beneficiation projects have been studied and necessary budget provisions have been made in the EMP cost for implementation.

Total Capital Investment proposed for the project is Rs. 4091.33 Crores. Total cost towards environment monitoring programme per annum will be approx. Rs. 60.64 lakhs (Rs.33.71 lakhs for mining lease and Rs. 26.93 lakhs for screening cum beneficiation plant).

Table 6.3 shows the expenditure proposed towards environment monitoring programme

TABLE - 6.3
BUDGETARY ALLOCATION FOR ENVIRONMENTAL MONITORING

Sr. No.	Particulars		Cost/Year (Rs in Lakhs)
1	**Air Pollution and Meteorology**		
	A	Ambient Air Quality Monitoring	
	i)	AAQM at 8 locations in & around ML area	7.872
		AAQM 8 locations in & around screening cum beneficiation plant	7.872
	ii)	Continuous AAQ monitoring at ML area	2.5
		Continuous AAQ monitoring at screening cum beneficiation plant	2.5
	B	Fugitive dust sampling at 5 locations in & around ML area	1.60
		Fugitive dust sampling at 5 locations in & around screening cum beneficiation plant.	1.60
	C	Personal Dust monitoring including Free Silica Monitoring at 5 locations in & around ML area	0.40
		Personal Dust monitoring including Free Silica Monitoring at 5 locations in & around screening cum beneficiation plant.	0.40
	D	Area dust monitoring including Free Silica Monitoring at 5 locations in & around ML area	1.00
		Area dust monitoring including Free Silica Monitoring at 5 locations in & around screening cum beneficiation plant.	1.00
	Meteorology		
	a	One meteorological station at ML area	3.614
2	**Water and Wastewater Quality**		
	A	Industrial/Domestic Samples	
	1	Sewage treatment plant samples at screening cum beneficiation plant	1.20
	2	Effluent discharge samples at mining lease	1.20
	3	Effluent discharge samples at screening cum beneficiation plant	1.20
	B	Water quality in the study area	
	1	Surface Water within and outside of mining lease area at 4 locations.	1.60
		Surface Water within and outside of screening cum beneficiation plant at 4 locations.	1.60
	2	Drinking water samples within & outside of mining lease at 4 locations	1.92
		Drinking water samples within & outside at screening cum beneficiation plant at 4 locations	1.92
	3	Ground water level Monitoring at 8 locations within & outside at screening cum beneficiation plant	
3	**Noise Levels and Vibrations**		

	1	Work zone Noise levels within & outside of mining lease area at 5 locations.	0.30
		Work zone Noise levels within & outside of screening cum beneficiation plant at 5 locations.	0.30
	2	Ambient Noise levels within & outside of mining lease at 5 locations	0.30
		Ambient Noise levels within & outside of screening cum beneficiation plant at 5 locations.	0.30
	3	Blast induced ground vibrations at 5 locations in ML area	5.00
4	**Soil Characteristics**		
	1	At 5 locations in core and buffer zone in nearby villages of within & outside of mining lease area.	1.40
		At 5 locations in core and buffer zone in nearby villages of within & outside of screening cum beneficiation plant.	1.40
5	**Ecology Monitoring**		
	1	Ecological Monitoring Activities in buffer area of mining lease area.	5.00
		Ecological Monitoring Activities in buffer area of screening cum beneficiation plant.	5.00
Sub Total (for Mining Lease)-A			**33.71**
Sub Total (for Screening cum Beneficiation Plant)-B			**26.93**
Grand Total Bailadila Iron Ore Deposit-4 Project (A+B)			**60.64**

CHAPTER -7
ADDITIONAL STUDIES

7.0 Additional Studies

This chapter describes the details of public consultation, various risks associated during operational stage of the project, a disaster management plan to minimize the risks, onsite and offsite management plans and occupational health and safety.

7.1 Public Hearing:

MoEF&CC vide its office memorandum J-11013/41/2006-IA.II(I) dated 24th December 2010 has issued procedure to be adopted henceforth for consideration of integrated and interlinked projects. As per office memorandum J-11013/41/2006-IA.II(I) dated 24th December 2010, Single Public consultation will be held based on the single EIA/EMP report prepared for both components as per the provision of EIA notification 2006.

The two interlinked projects are as under:

"Bailadila Iron Ore Deposit-4 Mine (M.L. Area = 646.596 Ha) with a production capacity of 7.0 MTPA ROM Iron ore and 6.41 MTPA Waste Excavation (Total Excavation 13.41 MTPA) along with 2000 TPH Crushing plant inside mining lease area located in Bailadila reserve forest, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh of M/s. NMDC – CMDC Limited (NCL)."

is interlinked with

"Screening Cum Beneficiation Plant (750 TPH of 4 lines each) along with 2200 TPH Downhill Conveyor and Loading Facilities in 122.5428 Ha (100.077 Ha. Forest area and 22.4658 ha. Revenue land (Govt., Private and Bade Jhad Ke Jungle) area located at outside the Mining Lease area of Bailadila Iron Ore Deposit-4 at Village; Bhansi, Tehsil: Bade Bacheli, District South Bastar Dantewada, Chhattisgarh of M/s. NMDC-CMDC Limited (NCL)."

Public Hearing was held on 12.09.2023 at N.M.D,C. I.T.I. Complex, Bhansi, District-South Bastar Dantewada (C.G) for the above said two interlinked projects as per the provisions of Notification No. SO -1533 dated 14.09.2006 issued by MoEF&CC, New Delhi under Environment Protection Act, 1986.

The advertisement of the Public Hearing was given by Chhattisgarh Environment Conservation Board in National and local Newspapers "Hindustan Times" (English) & "Haribhoomi" (Hindi) on 12.08.2023 (refer **Annexure 7.1**) prior to the one month of the meeting.

The meeting was presided by Upper Collector and assisted by Regional Officer Jagdalpur of Chhattisgarh Environment Conservation Board (CECB). The Management of NMDC-CMDC Ltd along with Consultant (Ecomen Laboratories Pvt Ltd) representatives shared the dais.

After permission from the Chairman, RO welcomed everyone & informed the purpose of the meeting followed by Presentation. No written

suggestions/complaints were received by Chhattisgarh Environment Conservation Board. Though there were approx. 350 villagers present at the main entrance of the venue, however they did not agree to enter the meeting place. Request was made to the villagers many times to give their thoughts/suggestions/objections about the project at the meeting place but they did not agree to enter the meeting place. Thereafter, Upper Collector had requested the villagers to give their written suggestions/objections about the project at the main entrance of venue. A written representation was submitted to the Upper Collector by Sarpanchs of the nearby villages. Detailed public hearing proceedings is attached as **Annexure 7.1**. Some of the public hearing photographs are shown in **Figure-7.1**. Summary of points raised in written complaints and project proponents' response are given in **Table 7.1**.

<table>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>PH Venue at N.M.D,C. I.T.I. Complex, Bhansi</td><td>Starting of Public Hearing</td><td>Consultants Presentation</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Photograph of Venue</td><td>Discussion of Chairman of Public Hearing with Villagers</td><td>Chairman receiving Memorandum form the Villagers</td></tr>
<tr><td colspan="3">Figure 7.1 : A View of Environmental Public Hearing (Pubic Consultation)</td></tr>
</table>

TABLE 7.1
Summary Remarks / Concern Raised by Stakeholders: Written Representation During Public Consultation Process

SN.	Issue-wise Summary of written Responses/issues received	Reply of M/s NMDC-CMDC Ltd/Proposed Action
1.	**Environmental Issue**	
	• Water Pollution • Land Pollution • Environmental Pollution	• Measures suggested in EIA report to protect water, forest, land and the entire environment from pollution will be taken care of. • However, if any local or villager has any problem related to water, land, forest and environment protection under the project, it can be brought to the notice of M/s NMDC-CMDC Limited through Regional Office CECB, Chhattisgarh for appropriate solution. NMDC CMDC Limited is always committed to resolve every issue related to the project.

7.1.1 Proposed CER Action Plan

MoEF&CC vide OM F.No. 22-65/2017-IA.III dated 30th Sept. 2020 on "**Commitments made by Project Proponent to address concerns raised during public consultation**", directed that EAC on the basis of commitments made by PP during public consultation to address concerns raised by public will be prescribed as specific condition(s) in physical terms while recommending the proposal for grant of EC. The OM further directs that all the activities proposed by PP or by EAC shall be part of EMP.

Table 7.2 gives the proposed action plan / schemes, time frame and cost involved in implementing the Corporate Environmental Responsibility (CER) by the project proponent.

Different Schemes / activities as given in **Table 7.2** have been envisaged based on the MoEFCC OM F.No. 22-65/2017-IA.III dated OM dated 30th Sept. 2020 on "Commitments made by PP to address concerns raised during public consultation". The **total capital cost of the project is Rs. 4091.33 Crores** and the total cost of activities / schemes planned in response to public demand during public hearing is **Rs. 4000 lakhs**, which will be spent over three Financial Years (FY).

Table 7.2: Action Plan under CER - Based on Concern Raised During Environmental Public Haring					
Proposed Budget Allocation for Corporate Environment Responsibility (1% of the project cost) [Rs in Lakhs)					
S. No.	**CER Activities**	**Year - 1**	**Year - 2**	**Year - 3**	**Total**
1	Development of Drainage lines in Bhansi, Porokameli, Nerli, Bade Kameli, Molasnar, Dugeli, Dhurli, Gamawada, Basanpur, Jhirka, Kamalur villages	320	320	160	**800**
2	Infrastructure development for Drinking Water Supply, Sanitation, Health, Skill Development in the nearby villages namely Bhansi, Porokameli, Nerli, Bade Kameli, Molasnar, Dugeli, Dhurli, Gamawada, Basanpur, Jhirka, Kamalur	1080	1080	540	**2700**
3	School infrastructure, facilities and support for furniture, etc nearby Primary Schools and Middle Schools in Bhansi, Porokameli, Nerli, Bade Kameli, Molasnar, Dugeli, Dhurli, Gamawada, Basanpur, Jhirka, Kamalur villages	200	200	100	**500**
	Total	**1600**	**1600**	**800**	**4000**

7.2 Risk Assessment

Hazard analysis involves identification and quantification of the various hazards (unsafe conditions) that exist in the mine and screening cum beneficiation plant. On the other hand, risk analysis deals with the identification and quantification of risks; the equipment and personnel are exposed to, due to accidents expected to arise from the hazards present in the mine and screening cum beneficiation plant.

Risk analysis follows an extensive hazard analysis. It involves the identification and assessment of risks, the working group & neighboring population will be exposed to, as a result of hazards present. This requires a thorough knowledge of failure probability, credible accident scenario, vulnerability of populations, etc. Much of

this information is difficult to get or generate. Consequently, the risk analysis is often confined to maximum credible accident studies.

"Risk" is defined as a likelihood of Occurrence of an undesired event (accident, injury or death) within a specified period or under specified circumstances. This may be either a frequency or a probability depending on the circumstances.

The term "Hazard" is defined as a physical source or situation, which may cause human injury, damage to property or the environment or some combination of these criteria.

"Disaster" is defined as a catastrophic situation that causes damage, economic disruptions, loss of human life and deterioration of health and health services on a scale sufficient to warrant an extraordinary response from outside the affected area or community. Disasters occasioned by man will be factory fire explosions and the release of toxic gases or chemical substances, etc.

"Accident" is an unplanned event, which has a probability of causing personal injury or property damage or both.

"Emergency" is defined as a situation where the resources out pass the demand. This highlights the typical nature of the emergency, "it will be after experience that enough is not enough", in emergency situations. Situations of this kind are avoidable but it is not possible to always avoid them.

"Emergency preparedness" is one of the key activities in the overall management. Preparedness, though largely dependent upon the response capability of the persons engaged in direct action, will require support from others in the organization before, during and after an emergency.

In the sections below, the identification of various hazards, probable risks in the mine and beneficiation plant, maximum credible accident analysis, consequence analysis are addressed which gives a broad identification of risks involved in the project.

7.3 Scope of Study:

- Identification of various scenarios
- Advance planning to overcome the problem
- Actions in case of disaster phase, which includes warning, evacuation of personnel, rescue relief operations to people affected in mishappening & containment of disaster.

Bailadila iron ore Deposit-4 project will observe all the rules as described by the Director General of Mine Safety & shall address all the associated risks and emergency situations (both off site & on site).

7.3.1 Risk Assessment:

- Fire
- Failure of waste dump
- Failure of pit slope

- Lubricant & HSD storage chambers/ tankers
- Storage of explosives in the magazine

7.3.1.1 Disaster due to fire:

Sufficient fire extinguishers to be installed at selected locations on the places like HEMMs, Offices & Canteen cum Rest Shelter Area, Workshop, Garage, Diesel depot, Stores, Major Plant Locations etc. Besides, sufficient water hydrants with sufficient hosepipes will be made available at designated locations for fire protection. Project will also be equipped with a fire station & fire team. Action will be taken as per on-site and off-site emergency planning.

However following steps will be taken to deal with the disaster due to surface fire:

- Cordoning off the area;
- Shifting injured personnel, if any, to hospital;
- Arranging a water tanker/fire brigade to deal with the fire;
- Roll call to search for the missing person;
- Assessing the impact and restoring the normal situation;
- Investigating reasons for failure and taking necessary corrective action to prevent reoccurrence.

7.3.1.2 Disaster due to failure of the waste dump:

Sliding of waste dump causes more hazards as compared with pit slope failure. Hence, it is imperative that the degree of hazard against the potential failure of the waste dump slope shall be identified and precautionary measures will be adopted.

All measures for scientific mining will be taken for the stabilization of dumps. Use of geo-textiles, tree plantations and grass patching on the dump will be implemented to stabilize the waste dump as discussed in **Chapter-4.** A few details are given below:

1. Gullies will be cut for the flow of water from the waste dump to prevent erosion of the waste dump here and there due to erratic flow of rainwater.
2. On the slope of the terrace, small pits of 0.5 x 0.5 x 0.5 M will be cut and seedlings will be planted and also over the 1.5 M width of terrace from edge of the bench similar plantation shall be done so that the bench slope and consequently the waste dump slope gets stabilized.
3. A stone barrier/toe wall will be made all around the waste dumps on the downside to prevent waste dump wash-off material being carried out of the dump area and mixing with the general drainage system. The toe wall will act as a wedge and prevent its slipping/failure.
4. A garland drain along with a settling tank will be constructed all around the waste dump area for smooth flow and settling of suspended solids and water for the safety of the dump.

7.3.1.3 Disaster due to failure of Pit slope:

In the iron ore, benches will be strong in nature, no failure of pit slope is anticipated. More so, there are no weak strata at top or in subsequent layers. The ultimate pit slope is designed at 45^0 angles.

Hence, no pit slope failure is envisaged.

7.3.1.4 Damage due to lubricant and HSD storage chambers/tankers:

The following will be required to deal with the emergency:

- Shifting of injured personnel, if any, to the hospital
- Cordoning off the area
- Plugging the leakages, as far as possible
- Preventing spillages to spread to larger areas
- To collect the spilled material, as far as possible
- Scrapping the contaminated ground, if possible and dispose-off the same as oily waste
- Assessing the impact and cause of the incident.
- Taking necessary corrective action to prevent such type of incidents in future.

7.3.1.5 Possible dangers due to storage of explosives in the magazine:

The main hazard associated with the storage, transportation, and handling of explosives will be fire and explosion. The safety provisions as per the Indian Explosive Act-1883, Explosives Rules 2008 and circulars issued by statutory bodies from time to time shall be followed strictly for the handling of explosives.

The storage, transportation, and use of explosives will be carried out with complete safety, in accordance with rules and regulations and safe operating procedures (SOP) framed for the handling and use of explosives. The magazine will be kept under guard round the clock by security personnel. The entire magazine area will be fenced by high chain link with barbed wire at the top. A security watchtower and morchas will be provided for surveillance of the area around magazines. The storage and maintaining of stock records for a magazine will be done by an authorised magazine in-charge under the guidance of a blasting engineer. The magazines will be kept under lock and key and will be guarded by security personnel.

Suitable explosive vans duly licenced by the controller of explosives will be utilised for daily transportation of explosives between the magazine and the blasting site, both for bringing and returning the explosives. The necessary fool proof arrangements will be made for the transportation and transport of detonators to the blasting site in separate vehicles. It will be ensured that explosives and detonators will not be transported in the same explosive van in order to avoid any possible accidents.

During the monsoon season, in stormy weather and during heavy rain, no charging of explosives in the field will be carried out. Necessary precautions such as keeping the detonating fuse and shock tubes properly covered with drill cuttings/stemming material will be taken during the onset of rainy/stormy weather in order to prevent any possible premature firing due to lightning.

7.3.2 Appointment of personnel and definition of duties:

Following key personnel will be responsible for co-ordination in case emergency is anticipated in any section of the mining lease and screening cum beneficiation plant. However, the names will be finalized once the lease is being executed & the mine comes under operation.

Key personnel
Site Controller
Accident Controller / Communication Officer
Primary Controller
Liaison Officer

Key Personnel and their responsibilities:

Site Controller:

- The site controller shall have an overall responsibility for controlling the incident / accident and directing the personnel. He will be in the rank of Agent (Mines).
- To prepare a full proof plan for control of accident like, landsides, subsidence flood and other natural calamities.
- To inform statutory bodies of the State and Central Government.
- To inform communication officer about the emergency, control centre and assembly point.
- To provide all assistance and call for fire squad, security officer and other services required for removing / control of danger.
- To ensure that all necessary personnel assemble at assembly point.
- Make arrangement for medical treatment to the personnel injured seriously.

Accident Controller:

- Mines manager shall act as accident controller/ communication officer.
- Mock rehearsal and management plan for preparedness for any accident.
- To withdraw men / machine from the affected area with priority for safety of personnel, minimize damage to the machines, environment and loss of material.
- To make a report based on the facts and figure and submit to the site controller.
- To communicate to the site in charge and make arrangement for first aid and transportation of the injured personnel.

Primary Controller:

- To inform the Accident Controller from the nearest means of communication about the location and the nature of accident.
- To assist in clearing any obstruction in relief of accident.
- To carry out all instructions of accident controller.
- To provide first aid treatment and communicate to the shift in-charge.

Capability of Mining Lease and screening cum beneficiation plant

Following facilities will be made available at the mining site and screening cum beneficiation plant, once the project comes under operation:

- Public addressal system
- Telephone / Mobile handsets
- Messenger
- Firefighting equipment and accessories with trained manpower
- Hospital close to the mine.
- Training centre
- Ambulance van
- Jeeps

List of following contact person in case of emergency will be given at prominent places in the Mine and Plant area once Mine & Plant become operational -

Name	**Designation & Department**	**Address**	**Contact No.**
Head of the Project	GM (Mines)	--	--
Police Station	Police Station	--	--
Hospital	Hospital	--	--
Fire Station	Fire Station	--	--

7.3.3 Emergency Control Centers:

The emergency control center will be in place from where the operations to handle the emergency will be directed and coordinated. It will be attended by the site main controller, key personnel and the senior officers of the fire and police services.

The center is to be equipped to receive and transmit information and directions from and to the incident controller and other areas of the works.

Emergency control centers should contain the following:

a) An adequate number of external telephones
b) An adequate number of internal telephones
c) A work plan to show
  i) Areas where there are inventories of LPG, HSD, etc.
  ii) Sources of safety equipment
  iii) The fire-fighting system and additional sources of water
  iv) Site entrances and roadways, including up-to-date information on roadwork's
  v) Assembly points
  vi) The work location in relation to the surrounding community
  vii) Lorry parks
  d) A nominal roll of an employee
  e) A list of key personnel, with addresses, telephone numbers, etc.

The emergency control center shall be located at Central place, to the extent possible.

7.3.4 Action on site:

The primary purpose of the on-site emergency plan is to control and contain the incident and so as to prevent it from spreading to nearby areas. It is not possible to cover every eventuality in the plan and the successful handling of the emergency will depend on an appropriate action and decisions being taken on the spot. Other important aspects to be considered includes the following:

- Evacuation of non-essential personnel
- Accounting for personnel affected
- Access to record and communicate the information to the friends and relatives of the affected personnel.
- Public relations
- Rehabilitation of the affected persons

7.3.5 Post-disaster analysis and evaluation:

When the emergency is over, the team will carry out a detailed analysis of the causes of the accident, evaluate the influence of various factors and take necessary measures for the future. At the same time, the adequacy of the Disaster Preparedness Plan will be evaluated, and shortcomings if any will be rectified for subsequent improvement of the plan.

7.3.6 Emergency services:

The provision of the following emergency services are to be made available in the plant.

- Fire protection system
- First Aid facilities
- Rescue facilities
- Plant safety arrangements
- Emergency action within 15 minutes of the occurrence

7.3.7 Off-site emergency plan:

Introduction:

The off-site emergency plan is an integral part of any major hazard control system. They are the accidents identified by the management, which could affect people and the environment outside the workplace. Thus, the off-site plan forms the basis for the on-site plan and the two plans should therefore complement each other. The key feature of a good off-site emergency plan is its flexibility in its application to emergencies other than those specifically included in the formation of the plan. The roles of the various parties that may be involved in the implementation of an off-site plan are described below. The responsibility for the off-site plan is likely to rest on either the management of the works or with the local authority.

Aspects to be included in an off-site emergency plan:

Some of the aspects to be included in an off-site emergency plan are as follows:-

Organization:
Details of command structure, warning systems, implementation procedures, emergency control centers Names and appointments of incident controller, site main controller, their deputies and other key personnel.

Communications:
Identification of personnel involved, communication center, call signs, network, list of telephone numbers.

Special emergency equipment:
Details of availability and location of heavy lifting gear, bulldozers, specified fire-fighting equipment, fireboats.

Voluntary Organizations:
Details of organization, telephone numbers, resources, etc.

Meteorological information:
Arrangements for obtaining details of weather conditions prevailing at the time and weather forecasts.

Humanitarian arrangements:

Transport, evacuation centers, emergency feeding, treatment of injured, first aid, ambulances, temporary mortuaries.

Public information:
Arrangements for dealing with the media-press office & informing relatives etc.

Assessment:
Arrangements for (a) collecting information on the causes of the emergency (b) reviewing the efficiency and effectiveness of all aspects of the emergency plan.

Role of the emergency co-coordinating officer:
The various emergency services will be coordinated by an emergency coordinating officer (ECO) who is likely to be a senior police officer but, depending on the circumstances, could be a senior fire officer. The ECO will liaise closely with the site main controller. Again depending on local arrangements, for very severe incidents with major or prolonged off-site consequences, the external control may pass on to a senior authority/ administrator.

Role of major hazard works management:
The role of works management in off-site emergency planning will be to establish liaisons with those preparing the plans and to provide information appropriate to such plans.

Advice shall be provided by works management to all the outside organizations, which may involve in handling the emergency off-site and which may need to familiarize themselves with some of the technical aspects of the works activities e.g. emergency services, medical departments etc.

Role of the Fire authorities:
The control of a fire normally will be the responsibility of the senior fire brigade officer on arrival at the site. The senior fire brigade officer may also have a similar responsibility for other events, such as explosions and toxic releases. Fire authorities having major works in their area will have familiarized themselves with the location on site of all stores of flammable materials, water and foam supply point and fire-fighting equipments.

Role of the health authorities:
Health authorities, including doctors, surgeons, hospitals, ambulances and para medical staff, will have a vital part to play following a major accident and they will form an integral part of any emergency plan.

For major fires, injuries will be the result of the effects of thermal radiation to a varying degree and the knowledge and experience to handle this in all, but extreme, cases may be generally available in most hospitals.

7.4 Social Impact Assessment: Approx. 58.12 % of population is SC/ST in the study area.

Relevant information which emerged from primary survey:

- Based on primary survey, Avg. family income is approximately more than Rs 50000/annum
- There are schools, Anganwadi in almost all villages
- Source of drinking water is bore well. As per the respondent quality of water is good
- There is electricity in the villages
- Banking and medical facilities are sufficient but can be improved
- Houses are mainly RCC & main fuel is cooking gas and wood

Opinion about the project:
During discussions & primary survey certain points emerged which are enumerated below:

- People are positive & opined that there is scope of improvement in banking facilities and can be extended to all.
- Higher education especially technical is core issue which needs attention in the area & people are positive that the facilities will improve.
- People feel that company will invest more in peripheral development of the area & CSR activities.
- People feel that company will give more emphasis on skill development for the youth, resulting in employment generation.
- People opined that the Company helps them in their basic needs.

People are positive about the project, provided Environment is well taken care of. The project brings in more employment opportunities including supporting jobs resulting in economic & social development of the people & area.

7.5 R & R Action Plan

Screening cum Beneficiation Plant of the Bailadila Iron Ore Deposit-4 Project, outside the Mining Lease, comprising downhill conveyor belt, Screening Plant, Pressure Filter Plant, Loading Plant and Railway Siding falls in the Bailadila Reserve Forest (100.077 Ha). A smaller area of 22.4658 Ha for Loading Plant, Railway Siding, water pump house and water pipe line of the project falls in the revenue land of the villages of Bhansi, Porokameli and Bade Kameli of Tehsil – Bade Bacheli. Required revenue land for the project is spread over Government Revenue Land, Forest Revenue Land (Bade Jhad Ke Jungle) and Private Revenue Land. Details of the area required for Screening cum Beneficiation Plant of the Bailadila Iron Ore Deposit-4 Project, outside the Mining Lease is as given in the **Table 7.3.**

TABLE 7.3
DETAILS OF LAND REQUIRED FOR INFRASTRUCTURE OF BAILADILA IRON ORE DEPOSIT-4 PROJECT OUTSIDE THE ML AREA

Sl. No.	Description	Area (Ha)				
		Forest	Revenue Forest Land (Bade Jhad ke Jungle)	Pvt. Revenue Land	Govt. Revenue Land	Railway Land
1	Major part of Downhill conveyor system including overhead electrical line & water pipeline	43.0000	-	-	-	-
2	Screening Plant including all allied facilities	18.2810	-	-	-	-
3	Loading Plant including all allied facilities	10.2390	6.4106	3.2936	0.1107	-
4	Railway siding	1.0410	5.1193	3.6594	0.3055	2.4020
5	Existing roads widening / strengthening for two-way traffic and new approach roads to all the plants & transfer houses	27.5160	-	-	-	
6	Pump House	-	0.4000	-	-	-

Sl. No.	Description	Area (Ha)				
		Forest	Revenue Forest Land (Bade Jhad ke Jungle)	Pvt. Revenue Land	Govt. Revenue Land	Railway Land
7	Pipe line	-	0.1653	0.0055	0.5939	-
	Total	**100.0770**	**12.0952**	**6.9585**	**1.0101**	**2.4020**

Application for diversion of 12.0952 Ha of Revenue Forest Land (Bade Jhad ke Jungle) is included in the Forest Diversion Proposal for Forest Land falling in the Bailadila Reserve Forest. Application for allotment of Government Revenue Land has been filed with the District Collector – South Bastar, Dantewada. Application for acquisition of Private Revenue Land, as per provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act – 2013 (LARR Act 2013), is also under process with the revenue department of the District – South Bastar, Dantewada. Publication of preliminary notification as per Section-11 of the LARR Act 2013 has been made in the Gazette of the Chhattisgarh on 08.09.2023. It may be noted here that for water pipe line only right of the way is required for the Government Land. There is an overlapping area of 1.6949 Ha between Bailadila Reserve Forest and Revenue Villages of Bhansi and Porokameli as per Surveyed Government / Private Revenue Land as mentioned in the **Table 7.3** and areas as per revenue land records. Applications for allotment / acquisition of Government / Private Revenue Land have been filed based on revenue land records. For comparison purpose summary of the land required outside the reserve forest area as per Forest Boundary and as per revenue land records are given in the **Table 7.4** and **Table 7.5** respectively.

TABLE 7.4
DETAILS OF LAND REQUIRED FOR INFRASTRUCTURE OF BAILADILA IRON ORE DEPOSIT-4 PROJECT OUTSIDE THE BAILADILA RESERVE FOREST AS PER RESERVE FOREST BOUNDARY

	Bade jhad ke jungle (Revenue Forest)	Private Revenue land	Govt Revenue land	Railway Land	Total
Loading plant & Railway Siding	11.5299	6.953	0.4162	2.402	21.3011
Pump	0.4	0	0	0	0.4000

House					
Water Pipe Line	0.1653	0.0055	0.5939	0	0.7647
	12.0952	**6.9585**	**1.0101**	**2.402**	**22.4658**

TABLE 7.5
DETAILS OF LAND REQUIRED FOR INFRASTRUCTURE OF BAILADILA IRON ORE DEPOSIT-4 PROJECT OUTSIDE THE BAILADILA RESERVE FOREST AS PER REVENUE LAND RECORDS

	Bade jhad ke jungle (Revenue Forest)	**Private Revenue land**	**Govt Revenue land**	**Railway Land**	**Total**
Loading plant & Railway Siding	12.577	7.381	0.636	2.402	22.9960
Pump House	0.4	0	0	0	0.4000
Water Pipe Line	0.1653	0.0055	0.5939	0	0.7647
	13.1423	**7.3865**	**1.2299**	**2.402**	**24.1607**

Apart from the above, Forest Pattas have also been given in the required Revenue Forest Land (Bade Jhad ke Jungle) areas and also in the Reserve Forest aeras of the Bailadila Iron Ore Deposit-4 Project. These Forest Pattas have also been included in the land acquisition proposal of the project.

Village-wise summary of the Private Revenue land and Forest Pattas (in Revenue Forest and Reserve Forest) proposed for land acquisition are as given below –

Sl.No.	**Name of the Village / Reserve Forest**	**Khasra No. / Forest Compartment No. / FRA Certificate No.**	**Area proposed for acquisition (Ha)**
1	Bhansi	68/1	0.905
2		71/1/Gya	3.087
3		71/4	0.304
4		60/1/Ka	0.535
5	Porokameli	2	0.150
6		4	0.400
7		6/3	0.060
8		5	1.210
9		6/1	0.060
10		6/2	0.080
11		12/1	0.590
12		3 / 0217126	0.560

13		9 / 0217128	0.690
14		13/2 / 0217132	0.600
15	Bailadila Reserve Forest	RF 1824 / 0221390	0.270
16		RF 1824 / 0221391	1.900
17		RF 1824 / 0221392	0.090
18		RF 1824 / 0221395	0.400
19		RF 1824 / 0189405	1.437
20		RF 1824 / 0189385	1.469
21		RF 1824 / 0189411	0.538
22		RF 1811 / 0189410	0.330

About 21 Nos. of families will be affected in the revenue land / Forest revenue land / Forest Pattas in the reserve forest area of the project. These families will be compensated, resettled and rehabilitated socially, culturally and economically as per extant provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act – 2013 and rules thereof. Guidelines given in the Ideal Rehabilitation Policy 2007 of State of Chhattisgarh will also be followed.

7.5.1 Important findings of the SIA / SMP Committee constituted as per Section-4 of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act – 2013 (LARR Act 2013) and Rule-15 of the Chhattisgarh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment, Consent and Public Hearing) Rules, 2016

The project will enhance the lives and status of the people, but the negative impacts must be dealt with carefully and in a planned manner. The social environment will be affected due to the project and related activities. This project area has forest land, revenue land, agricultural land, built up area etc. Certainly, the people of the project area will face difficulty in meeting their day-to-day needs. There will be loss in agricultural production, loss of agriculture related business, loss of forest, loss of topsoil and moisture, loss of traditional employment, displacement, pollution of water, air and soil, noise and vibration, business displacement, resettlement and relocation problems and will put additional pressure on infrastructure. All these impacts will need to be properly considered to avoid any future problems during the operational phase of the Project. Considering all scenarios, it is recommended that-

- Unemployment is one of the major issues prevailing in the area. To deal with the situation a training institute in the form of ITI is nearby. Apart from this, some vocational training centers can also be established.
- The recruitment policy used to appoint people to the project should be fair, transparent and clearly addressed to the local population.

- Local community structures should be involved to communicate the proponent's intention to give preference to local labor and to help identify the local labor pool.
- NMDC-CMDC Limited should ensure that the intention to provide preferential employment to local people is clearly communicated, so as to discourage influx of job seekers from other areas and lay the foundation for positive relations with local residents.
- If such a register does not exist at the local area labor desk, the proponent should consider developing a register capturing local SMMEs and the types of goods and services they provide. Where suitable SMMEs do not exist, the proponent should investigate the possibility of aligning training/skills development in the local area.
- While appointing subcontractors, preference should be given first to suitable subcontractors located in the local area and only then to outside contractors.
- The literacy rate among the female population is low and they do not have any training. Women belonging to Scheduled Tribes and other backward communities are engaged in collecting minor forest produce, which is an important part of their economic source. Forest loss will affect their employment and income; hence, they should be given advanced skill development training by identifying their interest, capacity, and local resources.
- By-pass roads are essential for the movement of heavy vehicles carrying iron ore, to avoid iron ore dust, vehicular and noise pollution, congestion and accidents.
- Hydrogeological studies should be conducted because people are concerned about the depletion of water level and its pollution.
- Any training provided by the proponent or its subcontractors must be recognized by the relevant authority. This will enhance the benefits derived from the training in terms of enhancing the future career prospects of the trainees.
- The project proponent shall provide adequate notice to the affected persons, so that they are able to shift their property without any difficulty before the commencement of civil works.
- R&R implementation includes the following major activities:
    - Deploying essential staff,
    - Verification of PAP, Listing and measurement of affected property and assets and their estimation,
    - Release of R&R assistance,
    - Preparation of list of PAPs eligible for port rehabilitation, if any, and

- Resettlement and rehabilitation of PAPs.

- The displaced PAPs will be gradually prepared for rehabilitation by conducting village level counseling involving individual counselling, group / Panchayat counseling. Consultation with the PAP will also include explaining eligibility, methodology for calculating assistance, and mechanisms for contacting the Grievance Redressal Committee, etc. A Resettlement and Rehabilitation Action Plan (R&RAP) should be developed in consultation with the affected families.
- There should be no gap between commitments made to the community and its implementation. Planning should be done on the basis of proper requirement and consultation should be done from time to time during implementation to avoid differences.
- Construction workers should be clearly identified by wearing proper construction uniforms that reflect those of subcontractors. Construction workers may also be issued with identification tags.
- NMDC-CMDC Limited should establish clear rules and regulations for access to the project site to control movement. NMDC-CMDC Limited should consult the local police service to establish standard operating procedures for control and/or removal of loiterers.
- The development of informal settlements should not be there within the local area.
- Regular environmental monitoring of ambient air, meteorology, water quality, ambient noise, soil quality etc. should be carried out by laboratories recognized by the Ministry of Environment, Forest and Climate Change/Central Pollution Control Board in different seasons of the year. Ground water level and quality should also be monitored in the four seasons of the year.
- NMDC-CMDC Limited will undertake peripheral development activities by implementing environment management plan measures for the development of the area and welfare measures in the surrounding area.

The following conclusions emerge from a thorough evaluation of all aspects –

- With the advent of the project, there will be positive development in educational, health and economic aspects,
- Along with adequate employment generation, there will be a golden opportunity for development of other small industries/businesses etc., which will increase the per capita income.
- Due to being far from the district headquarters, health facilities are currently limited. After the establishment of the project, a successful solution is expected from the establishment of health centers with full facilities.

High level rehabilitation colony, parks, roads, street lights, drinking water facilities, schools, training centres, playgrounds, shopping complexes etc. will bring optimum changes in the lifestyle and social life of the people.

If we look at this project in a broader sense, the iron produced from here will be used in various industries of the country, which will lead to industrial development of the country. Certainly, this project will serve a public purpose.

As a result, the impact of the positive aspects of the establishment of the project seems to be more effective than the negative aspects and suitable for the all-round development of the area. After considering all the aspects of the study, meaningful initiatives are recommended for their implementation and control.

CHAPTER -8

PROJECT BENEFITS

8.1 Employment Potential

The direct employment will be 700, out of which 315 will be for mining lease area and 385 will be for screening cum beneficiation plant. Indirect employment including contractual employment will be about 1400. Total population expected to be benefited from the proposed mining lease and screening cum beneficiation plant will be around 10500. Indirect employment will be generated through handling of material, transport, banks, schools, restaurant, shops, petty trade etc., which will improve social & economic standing of the people in the locality. Further people will also get opportunity to engage themselves and earn by rendering various services to the community which will help, in improving social & economic condition of the local people.

The details of the proposed employment at the project site are as follows:

Position	**Mining Lease**	**Screening cum Beneficiation Plant**	**Total**
Highly Skilled	127	155	282
Skilled	57	70	127
Semi-Skilled	55	68	123
Unskilled	76	92	168
Total	**315**	**385**	**700**

8.1.1 Welfare Facilities to Workers

- **Canteen & Rest room:**

  Company will provide a Canteen to cater to the needs of the workers. The canteen will supply subsidized food items (breakfast & Lunch, tea and snacks) during the three shifts.

  Company will also provide rest room for the workmen to take rest during their Tiffin/Lunch time.

- **Safety Appliances:**

  As per DGMS guidelines/circulars, Company will provide safety shoes, helmets and other personal protective equipments to all its workers besides Rain coats and Gumboots as and when required.

- **Occupational Health:**

  1. For providing medical facilities to its workers, company will provide well equipped Occupational Health Center. One doctor having MBBS qualification along with paramedical staff will be available. Medicines will be supplied to the workers as per the prescription. In case of any emergency, company will provide ambulance to shift the patient to an ESI/major hospital.

2. First-Aid training will be provided to employees to handle emergency situation.
3. Yoga training will be carried out at regular intervals.
4. IME and PME will be carried out at regular intervals.
5. Ear plug/muff will be provided to the workers, engaged in noise prone zone
6. High quality nose masks will be provided to the workers engaged in dusty areas.
7. An ambulance will be available to the workers for carrying the patients to nearby health centre or hospitals.

◈ **Sports club & Library:**

The company will provide funds to the sports committee, conducting games and sports among the workers and their children every year. The company will provide sports material in the club and reading material in the library.

8.2. Rural Employment

Mainly local workers will be employed in the mine. It will also generate indirect employment to local people.

Local people of surrounding areas will be encouraged to give their services through contractors engaged for various activities & development work.

8.2.1 Environment Sustainability

Company will undertake extensive & gap sapling work in mining lease area and screening-cum-beneficiation plant in abundant area, dumps, green belt, in and around plant premises, office premises etc. Company will undertake plantation in nearby areas to create good environment. Company will also undertake plantation in district level in identified locations.

8.2.2 Literacy Campaign

Company will provide special thrust on the education in the area. The Company will regularly organize Total Literacy Campaign in the area**.** The company will utilize its officers for spreading literacy in the area.

8.2.3 Educational Facilities

The company will extend financial assistance in construction of school buildings and also provides facilities to schools, anganwadi centers like benches, study material, books, stationeries etc.

Company will provide financial assistance for repairs and maintenance of school buildings/institutions. Company will also distribute school uniforms to the children.

8.2.4 Medical Assistance

a) Eye Camp:

Eye camp(s) shall be arranged regularly for the local people.

b) Blood Donation Camp:

The Company will participate generously for organizing blood donation camp(s) at the locality.

c) Health camps:

- The company will organise free health camp(s) in nearby localities and distribute medicines.
- The Company will contribute generously for the health camps conducted by other voluntary organization(s).

8.2.5 Eradication of Child Labour

The company will conduct awareness programmes for elimination of child labour. People's representatives and local body representatives will be involved in the programmes.

8.2.6 Library, Sports and Cultural Facilities

- The Company will encourage Art and Cultural talent in the nearby villages of the mine.
- Company will regularly organize tournaments and also sponsor the players for promotion of sports in the area.

8.3 Corporate Social Responsibility (CSR)/Peripheral Development

1. Plantation & distribution of fruit bearing species in surrounding villages
2. Provision of drinking water in surrounding villages (hand pumps, tube wells with overhead tanks at common public places)
3. Medical facility to villagers which includes regular health check-up by doctor, regular health camps, distribution of mosquito nets among surrounding villagers, spraying for eradication of malaria and other allied activities.
4. Promotion of educational facilities (construction of school buildings, financial assistance to school teachers, distribution of school uniform and study material, provision of essential items for night schools)
5. Promotion of sports activities (organizing tournaments for various sports activities and distribution of sports material, jersey etc. among local youth)
6. Distribution of traditional instruments for promoting the cultural heritage of the area.
7. Vocational training to youths for self employment
8. Creation of woman employment through Self Help Groups (SHG)
9. Company will adopt some nearby villages to maintain cleanliness through improved sanitation, waste disposal and providing community toilets.

The proposed project is a green field project. Company will undertake peripheral developmental activities by implementing welfare measures in surrounding area. For this purpose, Company will spend around minimum 2 % of the average net profits of the company during the three immediately preceding financial years for CSR activities. Company will also provide employment to local population matching skill matrix.

Details of approximate Expenditure on Peripheral development & CSR work in and around project areas during first 5 financial years are summarized below:

Year	Approx. Expenditure (Rs. in lakhs)
1st	--
2nd	--
3rd	555
4th	744
5th	735

Activities covered under CSR are Education, Swachh Bharath, Swachh Vidyalaya Abhiyan, Sanitation, Health, Child care, Animal welfare, Drinking water, Community/Infrastructure development/green initiatives, Environment, Environment sustainability etc.

CHAPTER – 9

ENVIRONMENTAL COST BENEFIT ANALYSIS

9.1 Gross Block

The total Gross Block for Deposit-4 mine lease and screening cum beneficiation is about Rs.4091.33 Crores (approx.) out of which approx. Rs.1156.163 crores for inside ML area and approx. Rs.2935.167 crores for outside ML area. [It includes the cost of interlinked project.] **Table 9.1** shows summary of the estimated capital cost of Bailadila Iron Ore Deposit-4 project.

TABLE 9.1

SUMMARY OF THE ESTIMATED CAPITAL COSTS

PROJECT CAPITAL COST ESTIMATES (INCLUDING MINING LEASE & SCREENING CUM BENEFICIATION PLANT)		
Sl. No.	**Description of The Item**	**Total Investment**
1	Geological Investigation, Ore dressing/ metallurgical studies, Preparation of feasibility studies & DPR etc., Railway Consultancy works for Railway alignment & private siding And Soil Investigation Work.	858.61
2	Mine Development	1179.75
3	Cost of Mining Lease Grant	8844.06
4	Land Cost and Rehabilitation Cost	3070.54
5	Mining Machinery	38280
6	Misc. Mining Equipment & Utilities	1027.27
7	Mechanical Equipment & Works	97242.85
8	Electrical & Controls	14553.59
9	Civil & Structural works	126400
10	Design, Engineering, Consultancy services (EPCM) incl. GST @18% (@3% on Project supply cost)	7145.89
11	Administrative charges & pre-operative expenses incl. GST @18% (@ 1% on Project supply cost)	2381.96
12	Cost towards Packaging, forwarding, freight and insurance incl. GST @5.22 % on Sl. No.7 & 8 total supply cost.	5835.77
13	Storage, handling, E&C, PG test, supervision charges & training for Sl. No. 7 &8 incl. GST.	19651.31
14	Cost towards NPV, CA, Biodiversity/Wild life Management & Misc.	14472.57
16	Contingency (@5% on Project Cost).	17047.21
17	Towards Turnkey package concept, overheads including local conditions prevailing at Bailadila (@ 15% of Project Cost)	51141.63
	Total (Rs. In Lakhs)	**4091.33**

9.2 Production Cost

The production capacity of Bailadila iron ore Deposit-4 mining lease will be 7 MTPA and Screening cum Beneficiation Plant shall be 750 TPH of 4 lines each, along with 2200 TPH Downhill Conveyor and Loading Facilities. The annual production cost at 100% capacity will be 2037.47 Crores (@ Rs.2910.67/ton).It has been assumed that the plant would operate at 2 MTPA capacity during the first 5 years of operation and 7 MTPA (100%) capacity from 6th year of operation and onwards. The production cost per ton is given **Table 9.2**.

TABLE 9.2
PRODUCTION COST PER TON

Sl. No.	Particulars	Cost per Ton (In Rs.)
1	**Direct Costs**	
a)	Mining	77.42
b)	Ore Dressing (Crushing, Downhill & Screening)	87.03
c)	Water Supply & QC	6.86
d)	Repairs & Maintenance	68.28
e)	Production Over-Heads	165.94
	Total Direct Costs (A)	**405.53**
2	**In-Direct Costs**	
a)	Royalty	837.79
b)	Additional Premium	1256.69
c)	DMF+NMET+CESS	290.59
d)	Loading & Dispatch Expenditure	60.8
e)	Selling Expenditure	59.27
	Total In-Direct Costs (B)	**2505.14**
3	**Grand Total (A+B)**	**2910.67**

Note: Above figures are based on similar expenditure in nearby mines of NMDC Ltd. and average sale prices published by Indian Bureau of Mines, Nagpur for the FY-2022-23 (Till Dec-22).

Sale value:

Sale value of Iron ore (lumps) is Rs 6495/ton (Avg. sale price of FY-2022-23, till the Month of Dec-22).

Sale value of Iron ore (fines) is Rs 5051/ton (Avg. sale price of FY-2022-23, till the Month of Dec-22).

9.3 Benefits to State Exchequer

The mining and screening cum beneficiation operation at Deposit-4 will provide economic benefits to employees & local population through indirect employment and implementation of peripheral village community development works under CSR and through petty trade. Total production cost including royalty, additional premium and Cess for 7.00 MTPA of Iron ore produced is Rs. 2037.47 Crores (@ Rs. 2910.67/ton). Total Iron Ore sale cost for 7 MTPA is Rs.3909.70 Crores (@6495 for lumps + @5051

for fines). The total amount to be paid to State exchequer per year shall be approximately Rs.1982.46 Crores in the form of royalty, DMF, NMET and taxes, and the details are given below:

TABLE 9.3

APPROXIMATE PAYMENTS TO BE MADE TO STATE EXCHEQUER PER ANNUM @ 7MTPA CAPACITY

Sl. No	Description	Amount (Rs in Crores)
1	Royalty (@15% of avg. sale price)	586.45
2	DMF (@30% of royalty)	175.94
3	NMET (@ 2% of royalty)	11.73
4	Additional Premium (@150% of royalty)	879.68
5	Cess and Forest Permit	26.25
6	GST (@18% of total sale cost)	302.41
	Total	**1982.46**

Based on production costs and selling prices, the Project is profitable and sustainable.

CHAPTER-10

ENVIRONMENTAL MANAGEMENT PLAN

10.1 Environmental Policy

NMDC-CMDC Limited (NCL) has approved environmental policy with commitment to protect the environment while operating its projects. NCL will put its sincere efforts to control the pollution and comply all the statutory standards. The corporate environmental policy of NCL is formulated in English and Hindi language and attached as **Annexure 10.1 & 10.2** respectively.

10.2 Administrative Aspects and Environmental Monitoring Program

Regular monitoring of environmental parameters is of immense importance to assess the status of environment during project operation. With the knowledge of baseline conditions, the monitoring program will serve as an indicator for any deterioration in environmental conditions due to operation of the project. Accordingly, suitable mitigative measures will be taken in time to safeguard the environment. Monitoring is important to determine the efficiency of control measures implemented.

10.3 Institutional Arrangements for Environment Protection and Conservation

10.3.1 Corporate Office

The board of the company is headed by a Chairman cum Managing Director (CMD), assisted by functional directors from NMDC, CMDC and officials nominated by Government of Chhattisgarh.

The structure of the board of directors is structured in such a way that it comprises of a Chairman cum Managing Director (CMD) who is the chairman of the NMDC, three functional directors nominated from NMDC, and four directors nominated by Government of Chhattisgarh.

Currently the officials on the board of NMDC-CMDC Ltd. are as given below:

Directors of NMDC-CMDC Ltd.
(A JV Company between NMDC and CMDC), Raipur

Sl.No.	Name of the Directors (S/Shri)	Designation	Remarks
1	Amitava Mukherjee	Chairman	CMD & Director Finance (NMDC)
2	Jay Prakash Maurya	Director	Special Secretary – MRD, GoCG
3	Ankit Anand	Director	Secretary – Energy, GoCG
4	Dilip Kumar Mohanty	Director	Director (Prod.) – NMDC
5	Vishwanath Suresh	Director	Director (Commercial) – NMDC

6	Vinay Kumar	Director	Director (Tech.) – NMDC
7	P.S. Yadav	Director	CGM – CMDC

Corporate office will comprise of Planning and Engineering Department, Resource Planning, Personnel Management and Industrial Relations Department, Industrial Engineering and Management Services, Human Resource Department, Investigation (Exploration) and Environment Department. At corporate level, C.G.M (RP & Environment) will co-ordinate the activities required for new projects and production projects for all Environmental matters. He will be assisted by G.M (Env), DGM (Env), AGM (Env) and Dy. Manager (Env) at corporate office. In addition to above, the team of HOD–Mine Planning Department and Geology Department will also assist CGM (RP & Env). The functions of Environment department at Corporate Office are given below:

- Pursue environmental policy of the company and to implement various measures for its achievements;
- Planning and organizing environmental studies for preparation of EIA/EMP reports as required for new/expansion projects;
- Ensuring implementation of EC conditions;
- Interaction with Govt. Departments for presentation and obtaining approvals/clearance;
- Set environmental performance parameters in line with NCL policy and statutory requirement and monitor their achievements;
- To guide the project environmental section in the implementation of pollution control processes and to report to respective Pollution Control Board and other agencies;
- Prepare the annual environmental audit report for overall NCL operations;
- Prepare environmental statements for any activity or decision taken by NCL that may have environmental implications;
- Review the applications for consent orders made by projects and monitoring the implementation of the conditions;
- In association with legal Department, keep up to date information on the overall environmental and associated legislation; and prepare for dissemination within NCL.
- Processing of files received from Project for approval of competent authority for Environmental works (more than powers of HOP).
- Arranging Audit studies periodically.
- Arrange for in-house training for environmental core group as well as executives in charge of operations involving pollution abatement processes and improvement scheme.
- To set environmental quality standards for the materials and equipment ordered from suppliers for mining activity.
- To include necessary conditions in the work orders for safe guarding environmental conditions and the interest of local community.

- The non-compliances will be raised during environmental audit. Environment management programs will be prepared with time limit and attended on priority. The compliance closer report will be submitted to the Management.

10.3.2 Roles and responsibility of Environment Department at Project Level

Bailadila Iron ore Deposit-4 project will be headed by Head of Project and assisted by number of different Heads of the Departments. The Head of Environment Department (Training, Safety & Environment) will report to Production Manager who in turn will report directly to HOP. The Environmental Cell will be headed by a senior official and will be assisted by Assistant Engineer(s)/executive (Env), Junior Engineer(s)/executive (Survey), and support staff (clerical). The Head (T,S&E) shall also be supported by Training Officer and Safety Officer. In addition to above, HOD-Mining and his Mine Planning team who reports to Production Manager shall also be responsible for implementation of EMP. The organization structure for Environment Management cell is shown in **Figure 10.1**. The functions and the responsibilities of the Environment Management Cell at the project shall be as follows:

- Shall provide overall co-ordination of Environmental activities at project sites.
- Shall undertake medium term environmental planning in accordance with long-term program made at corporate level.
- Shall Prepare time bound action plan for compliance of specific and standard conditions prescribed in Environmental Clearance, CTO & Approved Mine Plan granted by MOEF&CC, CECB, IBM etc.
- Shall Make necessary budget provisions (capital & recurring) in AMR & BE under Environmental Head for implementation of Environmental control measures.
- Shall hire reputed agencies to carry out the Scientific studies.
- Shall submit periodical reports as may be prescribed in compliance with conditions stipulated by them.
- Shall supervise the environmental monitoring studies being undertaken by recognized laboratories of MOEF&CC viz. Ambient air quality monitoring, Fugitive dust monitoring, source monitoring and personal sampling studies for respirable dust, Ambient noise levels, Work zone noise levels, water and effluent quality, ground vibration studies etc. and scrutiny of the reports submitted by agencies.
- Shall undertake environmental awareness and other training programs at the Training Institute.
- Shall celebrate World Environment Day, Mines Environment & Mineral Conservation Week celebrations, Ozone Day, Earth Day, Van Mahostav etc.
- Shall plan, manage, and introduce community participation process and develop and maintain credibility of the organization and reducing the level of misconception and misinformation about the project on environmental issues.

10.4 Procedure for Handling Non-Conformities

The procedure for checking compliance of environmental clearance conditions of NCL will be as per following.

The periodic audits will be conducted to identify non-compliances. The responsibilities of auditors will be as given below:

- Conducting the audit in the assigned auditee area/function as per schedule
- Preparation of audit report on observations made during audits and entering mutually agreed target date in Audit report for closure of Non-conformity (NC) – Major / Minor. Those findings which indicate neither any deviation nor any non- conformance will be classified as "Compliance".
- Recommending the closure of NCs after verification of the effectiveness of corrective action taken and preventive action taken or planned by the auditee and entering the follow-up remarks in the audit report.

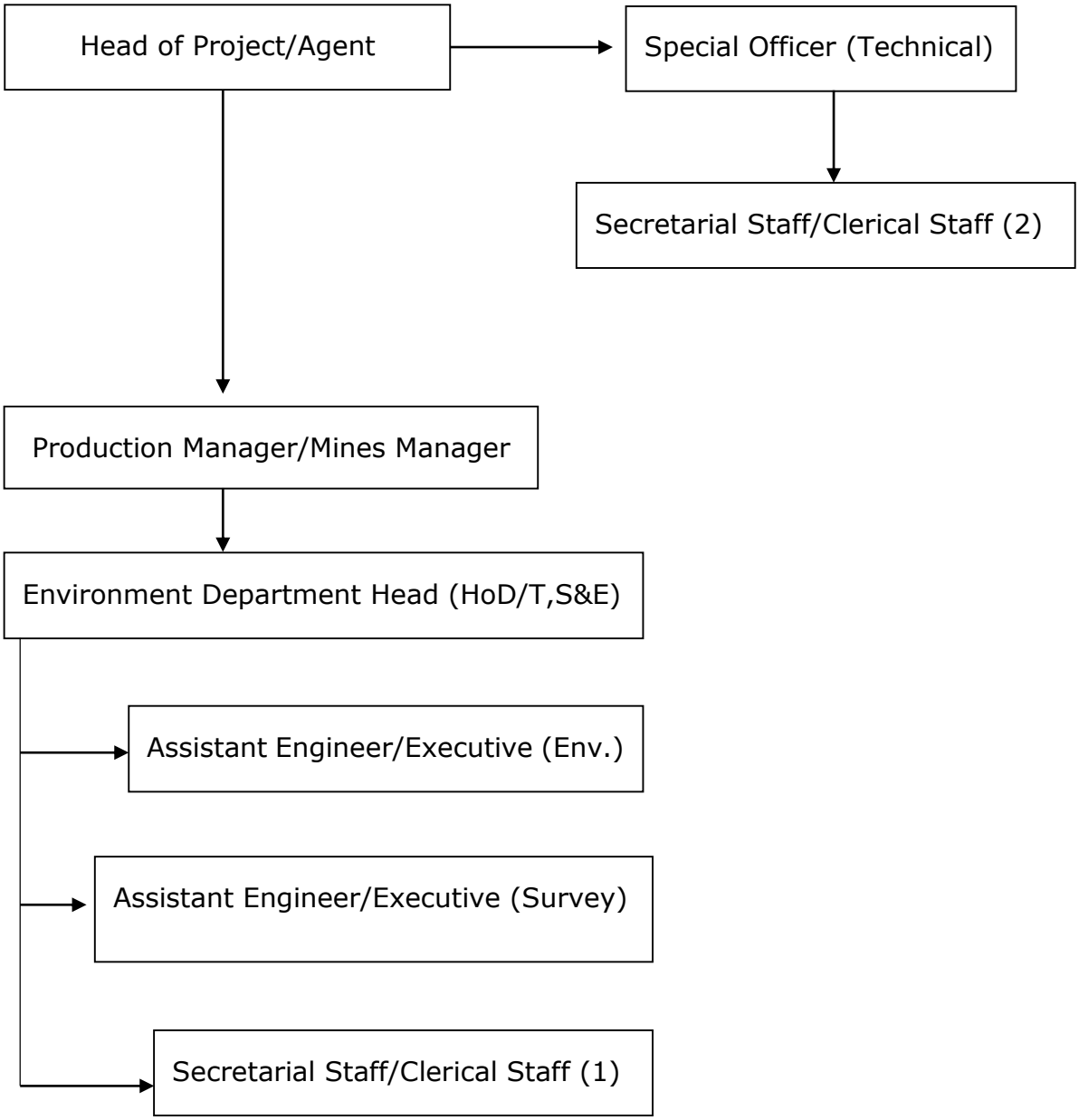
The auditee will implement the corrective and preventive actions against the non-conformities and closes the NCs. Non-conformities observed (if any) w.r.t non-compliance of environmental clearance conditions will be addressed by the Environment Department at project level in consultation with the Head of Project, who in turn reports to the Nominated Owner and also a member of the Board of Directors.

10.5 Training and Awareness

NCL will provide various types of training programmes to its employees in order to raise awareness about various environmental issues and to improve their knowledge. There will be a full-fledged training institute at project site for providing initial and refresher training (once every 5 years) to all the employees as per MVT rules on different trades such as fitters, welders, machinists, electricians, auto electricians, and HEMM operators. Further LOP training will also be imparted for acquiring multi skills. External faculty from reputable training organizations/institutes will also be hired to provide in-house training institute.

The awareness campaign will also be conducted on various environmental issues; various environmental acts and rules; sustainable mining operations; etc**.**

Figure 10.1
Organizational Structure of Environment Department



10.6 Environmental Management Plan

The mitigative measures for anticipated environmental impacts for various environmental components have been duly addressed in **Chapter-4**. The various measures proposed for mitigating environmental impacts due to proposed Bailadila Iron Ore Deposit-4 project are summarized and given in **Table 10.1.**

TABLE 10.1
ENVIRONMENTAL MANAGEMENT MEASURES

Environmental Component	Environmental Management Measures
Air pollution Control Measures	The following air pollution control measures will be adopted. **Drilling:** • During drilling operation sharp bits will be used. • These drill machines will be provided with an in-built mechanism for wet drilling operations for the suppression of dust emitted at source. • Secondary drilling will be done by 100 mm dia. crawler drills and subsequently blasting will be done by controlled charging.
	Blasting: • In the mine the number of holes blasted during any blast event will not exceed a maximum of 30/40 holes per blast and on an average about 20 per blast, the gasses generated during explosion will not likely to contribute much to the air pollution such will be effects where due to chemical gases produced during the explosion and dust generated during the blast on vegetation nor on the residents of the nearby township or residential houses. • Optimal use of explosives, controlled blasting techniques with the use of NONEL (Non-Electric Detonators), optimization of initiation systems will be adopted. • Regular water sprinkling before and after the blasting in the surrounding area of the blasting face will be adopted.
	Excavation and loading: • The excavators will have inbuilt mechanism of air-conditioned cabin to protect the operator from fugitive dust. • Water will be sprayed on the blasted muck pile. Also, main mine haul roads where dumper will ply, will also be sprayed with water through 28 KL capacity water sprinklers (four nos.) during dry seasons.

Environmental Component	Environmental Management Measures
	Transportation of ROM Iron ore and waste rock. • Regular water sprinkling will be done on the mine haul roads from working benches to dumper platforms, as well as waste rock dumps and other service roads. • The dumpers will have an inbuilt mechanism of an air-conditioned cabin to protect the operator from fugitive dust. • Haul roads and service roads will be maintained by the use of motor graders to remove the accumulated loose material.
	Crushing Operation • Water will be sprayed in the form of a mist in the crusher. • Since crushing will be done by the equipment which will be housed in an enclosure, there will be no threat of air pollution to the surrounding areas due to the crushing plant as the GI sheet enclosure premises. • The atomized water sprinklers aided with compressed air will be installed at the point of ore dumping platform at crushing plant for effective dust suppression.
	Downhill conveyor for ore transportation • Dry fog dust suppression system (DSS) will be installed at Primary Crusher and Secondary Crusher area and in Downhill conveyor system. • The locations where DSS will be installed along with nozzles are dumper platform, all screen levels, conveyor transfer chutes, intermediate stockpiles, screening plant, loading plant etc. **Stockpiles** • Stockpile will be covered with tarpaulin to mitigate the dust emission. • Primary Surge Pile (PSP) will be located on hill slope and most of the time it assumes the shape of a funnel with its truncated concave face facing the open area of hilltop. The wind, which generally blows towards the PSP, will make the dust particle

Environmental Component	Environmental Management Measures
	to fall back into the PSP itself, thereby contributing less to the ambient air pollution.
	Screening Plant: • The dry fog dust suppression system will be continued at different transfer points during the non-monsoon season. • The screening plant will be housed in a huge GI sheet enclosure, which will act as a good shield for the prevention of dust particles escaping out of the plant building.
	Loading Plant: • Fixed water sprinklers in the loading plant area will be used.
	Maintenance of machinery and vehicles • All the HEMMs and other vehicles will be maintained in good condition so as to keep the exhaust emissions well within the limits. • All project vehicles will be undergone Pollution Under Control tests to assess their emissions. • Maintenance of vehicles will be carried out to keep emission levels under control.
	Use of Personal Protective Equipment: • Personal Protective Equipment (PPE) such as eye glasses, nose masks, hand gloves, helmets, safety shoes, ear mufflers etc will be provided to all personnel working on mine and ore crushing, screening, and loading plant premises.
	Greenbelt Development: • Development of green belt barrier along the lease boundary and screening cum beneficiation plant. Greenbelt barriers will also be developed in service centre, canteen, administrative offices etc.

Environmental Component	Environmental Management Measures
Pollution Control Measures and Ground vibration measures	The following measures shall be adopted to control noise pollution: • Deep hole blasting will be restricted to day time hours only; • Proper and timely maintenance of mining and beneficiation machineries; • Noise levels will be controlled by using optimum explosive charge per delay and milli second delay detonators and proper stemming to prevent blow out of holes; • Provision of user-friendly soft type ear muffs/ear plugs to workers in noise prone area in the mine; • The operator's cabin will be safely guarded from the noise pollution by preventing it from the noise arising because of the machineries; • The noise level generated by blasting will be only momentary; • The Crushers in the mine area will be completely enclosed in a covered building to minimize the sound propagation; • Use of rubber coated screens in Screening Plant; • Rubber lining at transfer points of conveyors. **Ground vibration control measures:** • Proper blast design; • Avoiding excess confinement of charges; • Number of blast holes per delay will be kept one; • Proper stemming of holes will be carried out; • Blasting will be avoided during foggy conditions and when wind velocity will be more than 25 km/hour; • The burden distance will not be exceeded 50% of bench height; • Blasting operations will be carried out only during day time as per mine safety guidelines; • A safe distance of about 500 m from centre of blasting will be maintained; and • During blasting, other activities in the immediate vicinity will be temporarily stopped.

Environmental Component	Environmental Management Measures
Water Pollution Control Measures **Surface Water**	The following water pollution control measures will be adopted. • Galli nalla is passing through the Deposit-4 Mining Lease area. This nalla will be undisturbed due to mining activities and it will be protected. • Number of check dams and check bunds will be constructed on water course.Every year before onset of the monsoon de-silting of Check dam & Check bunds will be done to arrest the overflow of the silt. Regular water sampling is proposed to be carried out every year during winter period, pre-monsoon period, monsoon period and post monsoon period. Separately there is an approved soil & water conservation plan:
Ground Water	No ground water will be tapped for mining and screening cum beneficiation. There will be no ground water intersection because the ultimate pit bottom in Deposit-4 will be at 996 mRL, and the ground water level is at 730 mRL.
Waste water generation and treatment	• No waste water generation for water used in dust suppression measures. • Waste water generated from industrial canteens and toilets will be treated in septic tanks followed by soak pits in the mining lease and in STP at screening cum beneficiation plant. • Waste water generated from the service centre/auto work shop due to vehicle washing will be treated in the two ETP. Treated water is used for green belt development. • In the case of wet screening/beneficiation operations during the monsoon season, the slime generated shall be treated in classifiers, hydro-cyclones, thickeners etc.
Top Soil management	• The quantity of topsoil and its recovery will be negligible. • In the process of mining, if top soil will be encountered, the same will be utilized for plantation purposes.

Environmental Component	Environmental Management Measures
Waste dump management	• Loose Boulder Check Dam (LBCD), Garland drains etc will be constructed for the waste. • Geo-textile (coir matting) will be used for the stabilization of waste dumps. • A total of 74.07 Ha of area under waste dump shall be reclaimed by using engineering & biological measures.
Reclamation and Rehabilitation of mined out areas, etc.	• Out of total lease area of 646.596 ha, an area of 619.697 ha shall be reclaimed and rehabilitated at the end of life of mine, showing 619.697 ha (95.84%) of land shall be rehabilitated under plantation and water body.
Afforestation	• In the mining lease, green belt zone will be established in Safety Zone inside the mining lease area. The green belt will act as a barrier to trap the suspended dust particles and also suppress air pollutants. Out of 8.488 Ha. of Safety zone area, it is proposed for 3.058 Ha. all along the mine lease boundary will be planted with native species at a rate of 2500 plants per hectare. It is proposed for plantation of 62000 saplings in the 1st five years for a total area of 58.48 Ha. • Green area at the infrastructural facilities outside mining lease will be 400575 m^2 (33% of the total area of outside mining lease) and afforestation/gap plantation will be done as 2500 trees per hectare i.e. a total of 100144 trees for afforestation/gap plantation.
Conservation Plan	• A Wildlife conservation & management plan has been prepared and approved by Chief Wildlife Warden **(Ref. Annexure 4.3).** • Amount of Rs. 1931.732 lakhs provided under Wildlife Conservation & Management Plan. • Biodiversity conservation plan and Soil, Water & moisture Conservation Plan approved by Biodiversity Board of Chhattisgarh (**Ref. Annexure 4.4)** • Amount of Rs.3107.733 lakhs Provided under Biodiversity conservation plan and Soil, Water & moisture Conservation Plan.

Environmental Component	Environmental Management Measures
Rehabilitation & Resettlement	• Application for diversion of 12.0952 Ha of Revenue Forest Land (Bade Jhad ke Jungle) is included in the Forest Diversion Proposal for Forest Land falling in the Bailadila Reserve Forest. Application for allotment of Government Revenue Land has been filed with the District Collector – South Bastar, Dantewada. Application for acquisition of Private Revenue Land, as per provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act – 2013 (LARR Act 2013), is also under process with the revenue department of the District-South Bastar, Dantewada. Publication of preliminary Notification under Section 11 of the LARR Act 2013 has been made in Gazette of Chhattisgarh on 08.09.2023 **(Ref. Annexure 1.11)**
Occupational Health Measures	The facilities at the occupational health centre will be adopted. • The persons working in the mine will be required to undergo initial medical examination (IME) & periodic medical examination (PME). Every year 20% of the total work force will be covered under periodic medical examination. • The first aid box will be made available for immediate treatment at work areas. First aid training will be imparted to the selected employees regularly. • Medical records will be maintained in SAP / ERP. • Notified diseases such as Siderosis and Noise Induced Hearing Loss will be conducted.
Corporate Social Responsibility	• NMDC-CMDC Ltd is commitment towards completion of CSR works with funds of 2% of the average net profit of the 3 immediately preceding financial years. • The CSR funds will be used for the development of surrounding villages in the areas of education, sports, infrastructure development, health, sanitation, drinking water, skill development etc.

10.7 Budget for Environmental Management Plan

Keeping in view the existing and proposed pollution control measures for various environmental parameters, an environmental management plan will be prepared for the life of the mine and screening cum beneficiation plant with cost implications. The EMP cost will include the construction of toe walls, garland drains, geo-coir mating & seed broad casting and plantation on waste dumps, loose bounder check dams, stone masonry check dams, gabion wire check dams, gabion toe walls, rain water harvesting, plantation/greenbelt development till the life of the mine, two effluent treatment plant (10KLD), sewage treatment plant (200 KLD), de-silting, monitoring of various environmental attributes of air, water, noise, soil, ground water, free silica, fugitive dust, respirable dust, ground vibration, personal whole body vibration etc.

The EMP cost will also include the purchase of monitoring equipment such as a micro-meteorology station, personal noise dosimeter, mini mate instrument, high speed video camera for recording of blasting and blasting software. The EMP will also include a provision for raising environmental awareness among employees and the general public by commemorating mine environment and mineral conservation week, world environment day, ozone and earth day. The standard EC conditions for non-coal mining and beneficiation projects have been studied, and necessary budget provisions will be made in the EMP cost for implementation.

NCL has budgeted an amount of Rs. 91.21 crores under capital cost for the implementation of the Environmental Management Plan and the recurring cost per annum is about Rs. 5.21 crores. The details are given below in **Table 10.2.**

TABLE - 10.2

BUDGET FOR ENVIRONMENTAL MANAGEMENT PLAN

S. No.		Capital Cost (Rs. Lakhs)	Recurring cost/annum (Rs. Lakhs)
1.0	**Air Environment**		
	4 Nos. of 28 KL Water sprinklers	1040	100
	Dry fog system (mist canon)	30	3
	Dust Suppression system for OCSL plant	500	50
	Road side Dust Suppression system in Mining Lease	250	25
	Road side Dust Suppression system in Screening cum Beneficiation plant, Loading Plant, Store and Auto workshop area	250	25
	Sub Total	**2070**	**203**

S. No.		Capital Cost (Rs. Lakhs)	Recurring cost/annum (Rs. Lakhs)
2.0	**Noise Environment**		
	Personal Protection Equipment for Workers	3.5	0.7
	Sub Total	**3.5**	**0.7**
3.0	**Water Environment**		
	Covering of Primary stockpile and Secondary stock pile with permanent shed	1850	18.5
	Construction of Check Dam and Check Bunds	101.84	10.18
	Horizontal belt filter and hydraulic pressure filter	2444	24.44
	Rain Water Harvesting Structures at Screening cum Beneficiation Plant	50	2.5
	STP (200 KLD capacity)	50	5
	ETP (2 nos.)	100	10
	Sub Total	**4595.84**	**70.62**
4.0	**Waste Dump Management**		
	Toe Walls	79.33	7.93
	Garland Drains	5.06	0.5
	Geotextile matting	33.8	3.4
	Sub Total	**118.19**	**11.83**
5.0	**Afforestation Plan**		
	Waste Dumps & Safety Zone Plantation within Mining Lease	326.93	32.6
	Afforestation on Reclaimed Mined out Area in the Mining Lease (for Life of Mine)	572.58	0
	Reclaimed Utility Services & Gap Plantation Area	1172.21	11.72

S. No.		Capital Cost (Rs. Lakhs)	Recurring cost/annum (Rs. Lakhs)
	Plantation & Greenbelt Development in the Screening cum Beneficiation Plant	158.63	15.86
	Sub Total	**2230.35**	**60.18**
6.0	**Occupational Health**	**0.0**	**56.27**
7.0	**Environmental Monitoring**		
	Continuous Ambient Air Monitoring Stations (2 nos.)	100	10
	Automatic Weather Monitoring Station (1 no.)	3	0.6
	Post project monitoring studies	0	60.64
	Monitoring as per DGMS norms	0	12.5
	Aerial image – Remote Sensing/Drone Survey	0	6.52
	Land use / Land cover studies	0	17.96 (Once in 3 years)
	Flora and Fauna studies	0	10 (Once in 5 years)
	Sub Total	**103**	**118.22**
	Grand Total	**9120.88**	**520.82**

***Recurring cost will be 10% escalated year after year.**

Apart from above cost on implementation of wild life conservation and management plan will be Rs.1931.732 lakhs and cost on implementation of Biodiversity conservation plan and Soil, Water & moisture Conservation Plan will be Rs.3107.733 lakhs.

CHAPTER-11

SUMMARY & CONCLUSIONS

11.1 Introduction

NMDC-CMDC Ltd. (NCL) was incorporated on 1st July 2006 between NMDC and CMDC Ltd. as a Joint Venture Company. It is proposed to produce ROM Iron ore of 7.0 MTPA and waste excavation of 6.41 MTPA (Total Excavation 13.41 MTPA) in ML Area 646.596 Ha along with 2000 TPH Crushing plant inside mining lease area located in Bailadila reserve forest, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh along with Screening Cum Beneficiation Plant (750 TPH of 4 lines each), 2200 TPH Downhill Conveyor and Loading Facilities in 122.5428 Ha (100.077 Ha. Forest area and 22.4658 Ha. Revenue land (Govt., Private and Bade Jhad Ke Jungle)) area located at outside the Mining Lease area of Bailadila Iron Ore Deposit-4 at Village: Bhansi, Tehsil: Bade Bacheli, District South Bastar Dantewada, Chhattisgarh by M/s NMDC-CMDC Limited (NCL). The Bade Bacheli is very well connected by SH/NH road and rail.

MoEF&CC vide its office memorandum J-11013/41/2006-IA.II(I) dated 24th December 2010 has issued procedure to be adopted henceforth for consideration of integrated and interlinked projects.

The two interlinked projects are as under:

"Bailadila Iron Ore Deposit-4 Mine (M.L. Area 646.596 Ha) with a production capacity of 7.0 MTPA ROM Iron ore and 6.41 MTPA Waste Excavation (Total Excavation 13.41 MTPA) along with 2000 TPH Crushing plant inside mining lease area located in Bailadila reserve forest, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh of M/s. NMDC – CMDC Limited (NCL)" falls under the Schedule "Mining of Minerals Open Cast Mining -1 (a)" of Category-'A' as per Environmental Impact Assessment (EIA) Notification SO 1533, of 14-09-2006 and its subsequent amendment.

is interlinked with

"Screening Cum Beneficiation Plant (750 TPH of 4 lines each) along with 2200 TPH Downhill Conveyor and Loading Facilities in 122.5428 Ha (100.077 Ha. Forest area and 22.4658 Ha. Revenue land (Govt., Private and Bade Jhad Ke Jungle)) area located at outside the Mining Lease area of Bailadila Iron Ore Deposit-4 at Village; Bhansi, Tehsil: Bade Bacheli, District South Bastar Dantewada, Chhattisgarh of M/s. NMDC-CMDC Limited (NCL)" falls under the Schedule "Mineral Beneficiation -(2b)" of Category-'A' as per Environmental Impact Assessment (EIA) Notification SO 1533, of 14-09-2006 and its subsequent amendment.

After obtaining TOR from respective Expert Appraisal Committee, NCL has been prepare a common EIA report with baseline environmental data for one full season and also covering the both the TOR conditions comprehensively and entire project as a whole.

ToR for Bailadila Iron Ore Deposit-4 Mine and Screening cum Beneficiation Plant outside the mining lease of Deposit-4 were issued vide No. IA-J-11015/104/2021-IA-II(NCM) dated 11.03.2022 and vide F. No. IA-J-11011/23/2022-IA-II(IND-I) dated 21.02.2022 respectively.

Single Public consultation will be held based on the EIA report thus prepared for both components as per the provision of EIA notification 2006.

Ministry of Mines, GoI on 30.09.2019 has granted its prior approval for reservation of Bailadila Iron Ore Deposit-4 (Total Area 646.596 Ha), in favour of NMDC-CMDC Ltd. (NCL) for the purpose of Prospecting and Mining of Iron Ore. Further, Ministry of Mines, GoI on 18.02.2021 has issued amendment for the revised coordinates in the earlier issued Gazette Notification for reservation of Bailadila Iron Ore Deposit-4.

Mineral Resource Department (MRD), Government of Chhattisgarh (GoCG) on 26.06.2021 has issued a Letter of Intent (LOI) for grant of Mining Lease for the said area of Bailadila Iron Ore Deposit-4 for a period of five years.

Subsequently, MRD, GoCG on 07.08.2021 has issued an amendment in the Letter of Intent (LOI) prescribing the requirement of approved Mining Plan.

Further, MRD, GoCG on 05.05.2022 has issued an amendment in the Letter of Intent (LOI) mentioning period of the mining lease as 50 years.

The total mining lease area earmarked for Bailadila Iron Ore Deposit-4 is 646.596 Ha. Total mining lease area is forest land. To develop Screening Cum Beneficiation Plant along with 2200 TPH Downhill Conveyor and Loading facilities an area of 122.5428 Ha (100.077 Ha. Forest area and 22.4658 Ha. Revenue land (Govt., Private and Bade Jhad Ke Jungle)) has been identified. Application for diversion of the Forest Land has been submitted vide proposal no. FP/CG/MIN/146694/2021 dated 04.10.2021 for total area of 682.2722 Ha. (570.10 Ha inside mining lease, 100.077 Ha outside mining lease in the reserve forest and 12.0952 Ha Bade Jhad ke Jungle). An area of 76.496 Ha demarcated as Tree Fern Area inside the mining lease is not included in the forest diversion proposal.

The Mining Plan was approved from IBM vide letter no. Dantewa/Lawh/Khayo-1292/2021 Raipur dated 24-09-2021.

The environmental setting of Bailadila Iron Ore Deposit-4 project is given in **Table-11.1.**

TABLE -11.1
ENVIRONMENTAL SETTING OF BAILADILA IRON ORE DEPOSIT-4 PROJECT

Particular		Distance & Direction from Mining Lease (km)	Distance & Direction from Screening cum Beneficiation Plant (km)
VILLAGE			
1	Nerli	4.7, NE	3.4, S
2	Bhansi	7.5, NE	1.4, E
3	Hiroli	7.8, W	13.9, SW
4	Gyatpara	5.0, E	4.6, S
5	Padhapur	4.5, SE	10.3, S
6	Durli	10.1, NE	3.5, NE
TOWN			
7	Kirandul Township	8.0, SE	15.6, S
8	Bacheli Township	3.3, E	7.6, S
RAILWAY STATION			
9	Bacheli	2.7, E	7.4, SSW
10	Kirandul	7.7, SE	14.3, S
11	Bhansi	7.5, NE	0.3, E
12	Airport	119, ENE	108.3, ENE
ROAD			
13	SH-5	3.7, E	0.6, SE
14	NH-63-jagdalpur-nizamabad	44.3(by Road), N	33.6(by Road), N
WATER BODIES			
15	Gali nala	Adjacent, S	9.8, SW
16	Tumka nala	3.0, W	10.3, SW
17	Berudi nadi	6.0, W	14.2, SW
18	Mari nadi	3.2, NW	6.5, SW
19	Pali nadi	5.3, NW	6.5, W
20	Sankani nadi	5.4, E	4.4, E
21	Koyar nadi	8.2, SE	6.2, E
22	Kadampal dam	8.2, SE	12.4, SE

11.2 Project Description

The Bailadila Deposit-4 Mining Lease area is located near village Bacheli, Tehsil Bade Bacheli, District Dantewada, State Chhattisgarh. It is located at Bailadila range of hills trending N-S direction. The Deposit-4 isapproachable by kutcha road from Bhansi or from Deposit-5 of the NMDC Ltd. Bhansi is very well connected by

SH road from Kirandul to Geedam. Bacheli is nearest town. Dantewada is district headquarters. Bailadila Iron Ore Deposit-4 having lease area of 646. 596 Ha is located in the Topo Sheet No. E44J2 between longitude 81°12'02.90192"E to 81°13'07.02661"E and between latitude 18°41'26.17920"N to18°43'38.52758"N.
Based on ToR issued by MoEF&CC, GoI (EAC IND-I) vide Letter No. IA-J-11011/23/2022-IA-II(IND-I) dtd. 21/02/2022 NMDC-CMDC Ltd has incorporated Dry Disposal Tailing System (Hydraulic filter-based technology) in the beneficiation process of the Bailadila Iron Ore Deposit-4 Project.

The ML area extended over on area of 646.596 ha in the Forest Land with iron ore production capacity of 7.0 MTPA. However, out of the 646.596 Ha Forest Land, proposal for land diversion is moved only for an area of 570.1 Ha. Remaining Forest area, within the Mining Lease area will not be diverted for the Mining Purposes. Further, an area of 122.5428 Ha (100.077 Ha. Forest area and 22.4658 Ha. Revenue land(Govt., Private and Bade Jhad Ke Jungle)) outside the Mining Lease will also be required for the development of Screening cum beneficiation plant, Loading plant & railway siding, stockpiles, water settling/recirculation ponds and offices etc.

Deposit No.4 is situated in the North of Deposit No.5 and South of Deposit No.3 in the western ridge. The ore body occurs as northern continuation of north block of Deposit No.5, separated from Deposit No.5 by a narrow parting of about 150 mts of poor grade lateritic ore. On the northern side, Deposit No.4 is separated from Deposit No.3 by a parting of un-enriched banded hematite-quartzite.

Initially the mine will be developed for 1195600 Tonnes per annum in the first year and later on 2.0 MTPA of ROM production from second to fifth year. Thereafter the capacity of the mine will be gradually augmented to 7.0 MTPA of ROM.

Bailadila deposit-4 will be worked as a fully mechanized mine. Deposit-4 has been designed for operation as fully mechanized opencast mine using shovel-dumper combination and various processes are - drilling, blasting, excavation, quality control, ore processing (crushing with 2000 TPH) & transportation of ore through Downhill conveyor and waste disposal. However, during the 1st five years of Mining operation various processes like drilling, blasting, excavation, quality control, ore processing (crushing & screening with 400 TPH mobile crushing and screening units), loading of finished products and waste disposal etc. are planned with smaller mining machineries.

Waste (Shale and Banded Hematite Quartzite) will be dumped in the Waste Dump outside ultimate pit limit.

The deposit will be exploited by deploying shovel-dumper combination. The deep-hole drilling and blasting technique will be adopted for rock fragmentation.
In the initial five years of mining when the mine production capacity would be limited to 2 MTPA, it is proposed to deploy smaller equipment for mine working. During initial five years, drilling would be carried out using 150 mm diameter drill

machine whereas ore production and waste removal will be done by 3.2 cum bucket excavator with 25 T capacity dumpers. After five years, when mine capacity will be upgraded to 7 MTPA, it is proposed to replace smaller equipment with higher capacity equipment. From 6th year onwards, drilling would be carried out using 250 mm dia. drill machine whereas ore production and waste removal will be done by 8.0 cum bucket excavator (derated from 10 cum bucket excavator) with 100 T dumpers.

The capacity of the mine shall be augmented in the continuously increasing manner from the sixth year of the operation of the mine and the mine shall attain its full rated capacity of 7.0 MTPA of capacity in the 9th year of operation.

Screening cum Beneficiation Plant will be 750 TPH of 4 lines each along with 2200 TPH Downhill Conveyor System and Loading Facilities in 122.5428 Ha. area outside the Mining Lease area of Bailadila Iron Ore Deposit-4 at Village: Bhansi, Tehsil: Bade Bacheli, District South Bastar Dantewada, Chhattisgarh.

The screening plant at EL 580m corridor covers open stockpile, a four-line screening plant & tertiary crushing plant, wet circuit system, conveyor system, electrical sub-station, electrical building / control room, office & stores buildings, maintenance sheds, canteen & rest rooms, sprinkler water & dry fog system pump houses, raw water reservoirs, recirculation water tank & pumping systems, tailings disposal system etc.

Proposed new Screening Plant @EL 580m consists of 4 Nos. screening lines having 4 Nos. of double deck vibrating screens of design capacity of 750 TPH (primary screens) and 4 Nos. Secondary Vibrating Screens of 550 TPH capacity.

Deposit-4 will be developed for production of 7.0 MTPA Iron ore by producing 5.5 MTPA & 1.5 MTPA in dry mode and wet mode respectively. During the monsoon season, dry screening of ore in secondary screen will be difficult due to binding of screen deck by high moisture sticky iron ore. Also, jamming of the connecting chutes hamper the total production. Sometimes operation of screening plant even for 08 hours in a day with rated capacity is very difficult due to above mentioned problems. To overcome this problem, it is envisaged to incorporate Wet Screening facility in Secondary Screens during monsoon season.

In the process of wet classification, the adhered fine particles on coarse ore as well as natural & generated ultrafine particles of Iron, silica and alumina are being reported as slimes and Fe grade is generally below 60% Fe. These slimes will be dry stacked for blending with high grade fines.

The crushed iron ore (-150mm) will be feed to the screening cum beneficiation plant situated outside the mining lease and same will be transported to screening cum beneficiation plant through the downhill conveyor belt from the crushing plant situated inside the mining lease of Deposit-4. During initial five-year period, when plant and railway siding will be under construction, iron ore produced will be transported to the customers through road. Though, after initial five years period when loading plant/railway siding of Deposit-4 will be constructed and

commissioned, iron ore will be transported through rail, however, this will further depend on completion of the work of doubling of KK rail line and connection of Rawghat to Jagdalpur through rail. In view of this, 20% of total project capacity may be transported through road in foreseeable future beyond the initial five years period.

The salient features of Bailadila Iron Ore Deposit-4 is given in **Table – 11.2.**

TABLE- 11.2

SALIENT FEATURES OF BAILADILA IRON ORE PROJECT DEPOSIT-4

Salient Features of Bailadila Iron Ore Project Deposit-4		
Sl. No.	**Description**	**Particulars**
1	Mining Lease Area	646.596 Ha.
2	Infrastructure Area Outside the Mining Lease of Bailadila Deposit-4.	122.5428 Ha. (100.077 Ha. Forest area and 22.4658 Ha. Revenue land (Govt., Private and Bade Jhad Ke Jungle))
3	Type of mine	Open Cast Mine
4	Method of Mining	Fully Mechanized open cast method
5	Reserves	109.01 MT
6	Expected life of mine	21 Years
7	Ore to Waste ratio	1:0.625
8	Waste Excavation (Maximum)	6.41 MTPA (Estimated by mine scheduling software MineSched)
9	Rated Capacity	7.00 MTPA
10	Average no. of working days / Number of Shifts / Working Hours for Mine	268 / 3 Shifts / 8 Hrs.
11	Bench height & width	12 m height & Minimum bench width during operation phase: 30 m
12	Top and Bottom Bench	1200 mRL and 996 mRL
13	Present Working Benches	Mining Operation Not yet commenced
14	Waste (Till life of mine)	68.173 MT
15	Ultimate pit slope	Less than 45 degrees.
16	Downhill Conveyor System	2200 TPH of approx. length 8.7 KM
17	Screening Plant with Beneficiation Facilities	4 lines of 750 TPH
18	Tertiary Crushing	2 lines of 800 TPH
19	Loading and Stacking Facilities	3000 TPH Loading Facilities with Lump Stockpileof 3.2 LT and Fine Ore Stockpile 2.3 LT
20	Average no. of working days / Number of Shifts / Working Hours for Screening cum Beneficiation Plant	365/ 3 Shifts / 8 Hrs.

21	Power requirement & sources	Power requirement: 6 MVA, Sources: Chhattisgarh State Power Distribution Company Limited.
22	Water Requirement	Mining Lease Area-4250 KLD Beneficiation Plant-1250 KLD (Dry Screening for 8 months) and 8,630 KLD (Wet Screening for 4 months of monsoon period). Considering the future requirements including the proposed township, Water requirement is envisaged to be around 20,000 Cu.m per day at the peak rated capacity which will be met from the source of existing Sankani Nalla and Nerli Nalla (Sankani Nadi).
23	Total Project Cost (For entire Bailadila Iron Ore Deposit-4 including ancillary facilities located outside the Mining Lease Area)	Rs. 4091.33 Crores (approx.) (Approx. Rs. 1156.163 Crores inside ML area and approx. Rs. 2935.167 Crores outside ML area)
		(Source: Mine Planning-NMDC-CMDC Limited)

11.3 Description of the Environment

The study area is core zone (Mining lease area of 646.596 Ha and Screening cum Beneficiation Plant area of 122.5428 Ha) and buffer zone (a 10-km radius area around the ML and screening cum beneficiation plant). The baseline environmental data for preparation of EIA/EMP report for Bailadila Iron Ore Deposit-4 & Screening cum Beneficiation Plant was carried out for 3 months i.e. from 1st March-2022 to 31st May-2022 representing Pre-Monsoon season

11.3.1 Land Use

The land use pattern of the study area for Bailadila Iron ore mine Deposit-4 indicates that 31.64% of the area is under dense forest land and the remaining area is accounted for by Mining Area, Rocky/Barren Area, Waterbodies, Streams, Settlements etc. The land use pattern of the study area for screening cum beneficiation plant indicates that 44.15% of the area is under dense forest land and the remaining area is accounted for by Mining Area, Rocky/Barren Area, Waterbodies, Streams, and Settlements etc.

11.3.2 Soil Quality

Six soil samples were collected from mining lease area, screening cum beneficiation plant area, agriculture areas, forest areas, etc., and analysed for various physico-chemical and organic parameters. It is found that the the pH of soil is normal ranging 6.66-7.21, average nitrogen (N) values were in medium to high range (56.90-132.5 kg/ha), average potassium (K) value is also in the range of low to

high (80.50-130.4 kg/ha). The average phosphorus (P) values were found to be medium (11.10-17.10 kg/ha) range.

11.3.3 Climatology and Meteorology

Meteorological data was recorded hourly for three months. Calm condition prevailed over 12.40 % of the time of the study period. The first predominant wind direction was from South-West to North-East over approx. 5.5 % of the time in which speed of 0.30 to 3.0 m/s was recorded and second predominant wind direction was from North-West to South-East over approx. 5.0 % of the time in which speed of 0.3 to 3.0 m/s was recorded. Maximum & minimum temperature recorded were 39.19^{0}C & 18.44^{0}C respectively.

11.3.4 Ambient Air Quality

The ambient air quality monitoring was carried out during the study period at fourteen locations, covering twelve for mining & allied activities (core & buffer zone) and eleven for screening cum beneficiation plant core & buffer zone) at different locations representing upwind, cross wind, and downwind directions. Out of 12 locations considering core & buffer zone of mining lease area, the maximum Respirable Particulate Matter (PM_{10}) was found to be 71.50 µg/m^3 at Akashnagar and 71.40 µg/m^3 at Padapur followed by 67.53 µg/m^3 at ML area. The particulate and gaseous pollutants are found well within the National Ambient Air Quality standards 2009.

11.3.5 Water Quality

Total 8 ground water sampling locations were selected for Mining lease area and 7 sampling locations for Screening cum Beneficiation Plant area. In which 7 locations are common for each other in both 10 Km map. Total 8 surface water locations selected for surface water study in which 6 sampling locations selected for Mining lease area and 6 sampling locations for Screening cum Beneficiation Plant area (in which 4 locations are common for each other at 8 locations in both 10 Km map). All the samples were found well within the prescribed limits. The result of ground water shows that all the parameters are well within the acceptable limit of IS: 10500. The analysis result of surface water shows that all the parameters are well within the prescribed limit of IS: 2296 (Class C) i.e. for surface water quality.

11.3.6 Ambient Noise Levels

Total 8 sampling locations selected for Mining lease area (One in core zone, 7 in buffer zone) and 8 sampling locations for Screening cum Beneficiation Plant area (One in core zone, 7 in buffer zone). In which 3 locations are common for each other in both 10 Km map. The noise levels at all locations were found well within the limits of Ambient Air Quality Standards w.r.t. Noise.

11.3.7 Flora & Fauna

There is no biosphere reserve, national park, tiger reserve, elephant reserve, wildlife sanctuary, or bird sanctuary within the study area. Two reserve forests fall in study area. (i) Bijapur Reserve Forest (ii) Bailadila Researve Forest. Majority of the landscape in the Mining Lease area is characteristic of having dense forest with patches of degraded natural landscape. Mining lease area are dominated by Terminalia tomentosa, Syzygium cumini, Acacia catechu, Cassia fistula.

The forest vegetation provides habitation for faunal species such as birds, butterflies, moths, rodents, hares, reptiles, and lizards. The forests not only provide habitation but also provide nesting and grazing for herbivores.

There is a presence of seven Schedule–1 species reported in the Dantewada Forest Division namely Sloth Bear, Indian Pangolin, Panther, Python, Bengal Monitor Lizard, Bastar Hill Myna and Common Peafowl. Wildlife conservation & management plan has been approved by Chief Wildlife Warden vide Order No./V.PRA/Prabandha-637/253 Nava Raipur, dated 25.09.2023. The fund allocated for Wild Life conservation and management plan is Rs. 1931.732/- Lacs. Biodiversity Conservation Plan and Soil, Water & Moisture Conservation for tree fern area has been prepared and approved by Biodiversity Board of Chhattisgarh vide order no./Jai.V.Bo/17 Raipur dated 21.08.2023. The fund allocated for Biodiversity Conservation Plan and Soil, Water & Moisture Conservation for tree fern area is Rs. 31.08/- Crs.

11.3.8 Social Environment

As per census 2011 data, the study area consists of about 27 villages, with 14554 households and 59684 population. The sex ratio in the study area is 969. 10.74% of the population is from Scheduled Castes (SC) and 47.38% comes from Scheduled Tribes (ST). Overall, the data on social stratification reveals that the SC and ST population is more than 58.12%. The literacy rate is 56.56%. NMDC-CMDC Ltd. will support to education in the nearby villages under CSR funds.

11.4 Anticipated Environmental Impacts

Mining being a site-specific activity, excavation is bound to be done at a place where minerals actually exist. Opencast mining operations with crushing and screening activities result in air pollution in the form of particulate and gaseous pollutants. Adequate mitigation measures will be implemented to control air pollution. The impact due to proposed Bailadila Iron Ore Deposit-4 project has been predicted using AERMOD with digital elevation model option.

Emission sources considered include transportation activity. 3D terrain modelling has been done. The modelling results indicate that the maximum incremental Ground Level Concentrations (GLC) of PM_{10}, $PM_{2.5}$, NO_2 & SO_2 with controlled measures will be about 18$\mu g/m^3$, 8.46$\mu g/m^3$, 11.4$\mu g/m^3$ & 7.58$\mu g/m^3$ respectively.

The overall resultant concentrations (GLC's + baseline) were found well within the NAAQ 2009 standards.

The in-house blasting studies will be carried out using NOMIS seismographs (Mini-Supergraph II) at the time of blasting.

The water will be mainly required for dust suppression in mining areas and ore processing plants. Two Effluent Treatment Plant of 10 KL capacity each will put put into operation for treatment of suspended solids and oil & grease generated due to the washing of HEMM. A 200 KLD STP will be installed within screening plant to treated domestic waste water. The mining operations will be conducted at the hilltop which is at a higher level than the groundwater level. The groundwater level is at 730 MRL and will not be intersected during mining operations.

R&R issues are involved for proposed screening cum beneficiation plant. About 21 Nos. families will be affected in the revenue land / forest revenue land/Forest Pattas in reserve forest area of the project. These families will be compensated, resettled and rehabilitated socially, culturally and economically as per extant provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act – 2013 and rules thereof. Guidelines given in the Ideal Rehabilitation Policy 2007 of State of Chhattisgarh will also be followed.

11.5 Mitigative Measures

Drilling Operations

When the blast holes will be drilled, the cuttings from the holes ore will be flushed out of the holes by passing the compressed air through drill rods and the cuttings will be allowed to fall outside the collar of the blast hole by means of blowers. The dust thus generated during drilling will be suppressed and allowed to settle in the form of a cone near the collar of the blast hole itself by use of water during drilling so that the air will not be polluted by the blast hole drilling. During drilling operation sharp bits will be used and wet drilling system will be practiced.

Blasting

The air gets polluted during blasting operations will be in the form of chemical gasses produced during the explosion and dust generated during blasting. However, in the mine the number of holes blasted during any blast event will not exceed a maximum of 30/40 holes per blast and on an average about 20 per blast, the gasses generated during explosion will not likely to contribute much to the air pollution as no such ill effects due to chemical gases produced during the explosion and dust generated during the blast on vegetation nor on the residents of the nearby township or residential houses. Optimal use of explosives, controlled blasting techniques with the use of NONEL (Non-Electric Detonators), optimization of initiation systems will be adopted. Regular water sprinkling before and after the blasting in the surrounding area of the blasting face will be adopted.

Excavation in Ore and Waste

During ore or waste excavation, hauling of ore/waste, feeding of ROM in crusher and dumping of waste in waste dump yard during dry months, some dust will be generated. Blasted ore and waste will be reclaimed from blasted muck pile by shovels and same will be transported from mine face to the crushing plant/waste dump by 100 tonnes capacity dumpers. To lessen the generation of dust during excavation, the excavators will have inbuilt mechanism of air-conditioned cabin to protect the operator from fugitive dust and water will be sprayed on the blasted muck pile. Also, main mine haul roads where dumper will ply, will also be sprayed with water through 28 KL capacity water sprinklers (four nos.) during dry seasons. Thus, there will be negligible dust generation during excavation and haulage of ore and waste.

Crushing Operation

Fugitive dust will be generated in the crushing plant during dry months when the ROM ore will be crushed in the crushers and will be carried to the primary surge pile through conveyer. In order to ensure effective dust suppression, water will be sprayed in the form of a mist in the crusher. Since crushing will be done by the equipment which will be housed in an enclosure, there will be no threat of air pollution to the surrounding areas due to the crushing plant as the GI sheet enclosure premises. The atomized water sprinklers aided with compressed air will be installed at the point of ore dumping platform at Deposit-4 crushing plant for effective dust suppression.

Down Hill Conveyor Operation

Crushed ore from the crusher will be transported through a system of closed conveyor belts to screening cum beneficiation plant for further processing. This system will be developed in order to control the dust generation during transportation of ore from one place to another. The conveyor system will be stretched from crushing plant to screening plant covering a distance of around 8.7 km. It will be ensured that conveyor system will work efficiently and therefore able to control dust emission.

1. Dry fog dust suppression system (DSS) will be installed at Primary Crusher and Secondary Crusher area and in Downhill conveyor system.
2. The locations where DSS will be installed along with nozzles are dumper platform, all screen levels, conveyor transfer chutes, intermediate stockpiles, screening plant, loading plant etc.

Screening and Loading Operation

The screening plant will be housed in a huge GI sheet enclosure, which will act as a good shield for the prevention of dust particles escaping out of the plant building. Fixed water sprinklers in the loading plant area will be used. All the HEMMs and other vehicles will be maintained in good condition so as to keep the exhaust emissions well within the limits. All project vehicles will be undergone Pollution

Under Control tests to assess their emissions. Maintenance of vehicles will be carried out to keep emission levels under control.

Control Measures at Mineral Processing Plants

- Water will be sprinkled on the ore before crushing. The atomised water sprinkler aided with compressed air at the point of ore dumping platform will be installed at crushing plant;
- Water sprinklers along with compressed air forming mist will be installed at all transfer points in the mineral processing plant to suppress the dust at Deposit-4;
- All the conveyor belts will be covered and will be equipped with telescoping chutes at transfer points to reduce the vertical fall of ore material;
- The vehicles will be maintained properly and exhaust emission will be checked regularly;
- Speed restrictions will be imposed on the HEMMs and light vehicles to minimize the dust generation in mining and mineral processing plant areas;
- In the Loading plant area, lump ore & fine ore reclaimers will be provided with dust suppression arrangement. The mist water will be sprayed while reclaiming the ore from stockpile for loading into railway wagons through wagon loader.

Water Pollution & Control:

Garland drains will be constructed at the side & toe of waste dumps. Buttress walls will be constructed at the toe of the active waste dumps to arrest the silt material flowing with water during rainy season. Coir matting and afforestation will be carried out at the dump slope. Two Effluent Treatment Plant of 10 KL capacity each will put put into operation for treatment of suspended solids and oil & grease generated due to the washing of HEMM. A 200 KLD STP will be installed within screening plant to treated domestic waste water.

Noise & Vibration Control and Management

Deep hole blasting will be restricted to day time hours only; Proper and timely maintenance of mining machinery; Noise levels will be controlled by using optimum explosive charge per delay and milli second delay detonators and proper stemming to prevent blow out of holes; Speed of moving dumpers and other vehicles running in the mine will be limited to moderate Speed (25 km/hr) to prevent undue noise as per DGMS circulars enforcing safety standards; Provision of user-friendly soft type ear muffs/ear plugs to workers in noise prone area; Proper blast design; Avoiding excess confinement of charges; Proper stemming of holes will be carried out etc.

Waste Management:

There is negligible top soil. Lateritic material, shale and banded iron formations (BIF) analyzing less than 45 % Fe has been considered as waste. Waste (Shale and Banded Hematite Quartzite) will be dumped in the Waste Dump outside ultimate pit limit. Remaining amount of Waste will be backfilled in the North Block after extracting all the Ores and associated waste materials of the Deposit during the life

of the Mine. Total mineable waste in the Bailadila Deposit-4 is 68.17 MT. The overall stripping ratio of deposit is 1:0.63. The maximum waste excavation of 6414000 Tonnes will be done during the 16th Year of operations.

Overburden Dump Management:

Efforts will be made to stabilize active dumps. The overburdens will be dumped as per the specifications of IBM and MoEF&CC stipulated conditions and the slope of the dump will be maintained at not more than 28^0. For stabilizing the dumps, engineering structures will be made, followed by biological measures, to achieve faster restoration. The combinations of grasses, herbs, shrubs, creepers and tree species shall be used in restoration process. Depending upon stability and age, the plantation will be done either by seed broadcasting, hydro-seeding or planting of seedlings. in addition to seed broadcasting and planting of seedlings, planting of suitable herbs and shrubs shall be done on the slopes by making holes in geo-textile coir mat.

Benches and trenches will be made to make the slopes of OB dumps gentle, followed by seed broadcasting and planting of seedlings of shrubs, namely *Clerodendrum viscosum, Helicteres isora, Indigofera cassioides etc. trees species like Aegle marmelos, Alangium salvifolium, Albizia lebbeck, Albizia procera, Annona squamosa, Anogeissus latifolia, Cassia fistula, Dalbergia sissoo etc.* Root *stock/slips of grasses, namely, Bothriochloapertusa, Cymbopogonflexuosus, C. martini, C.nardus, Cynodondactylon, Dactylocteniumaegyptum, Dichanthiumannulatum, Eleusineindica, Heteropogoncontortus*, etc.

Green-belt development Programme

In order to minimise the impact of mining on Environmental component outside the mining lease area, green belt zone will be established in Safety Zone inside the mining lease area. The green belt will act as a barrier to trap the suspended dust particles and also suppress air pollutants. The area proposed for green belt development includes the area under safety zone all along the mine lease boundary. Out of 8.488 ha. of Safety zone area, it is proposed for 3.058 Ha all along the mine lease boundary will be planted with native species at a rate of 2500 plants per hectare in the 1st year (1.248 Ha.) and second year (1.81 Ha.). Rest 5.43 Ha of Safety zone area will be planted @ 1000 plants per ha. of 1.81 Ha. each year in the successive 3rd year, 4th year and 5th year. Plantation in the Dump No.-1 is proposed in the 3rd year of 1.672 Ha.@ 1500 plants per Ha. Gap plantation in the remaining area is proposed @ 1000 plants per ha. of a total area of 48.38 Ha. in the 2nd year (12.08 Ha.), 3rd Year (12.08 Ha.), 4th Year (12.08 Ha.), and 5th Year (12.08 Ha.). It is proposed for plantation of 62000 saplings in the 1st five years for a total area of 58.48 Ha.

Green area at the infrastructural facilities outside mining lease will be 400575 m^2 (33% of the total area of outside mining lease) and afforestation/gap plantation will be done as 2500 trees per hectare i.e. a total of 100144 trees for afforestation/gap plantation.

11.6 Environmental Monitoring Program

Regular environmental monitoring of ambient air, meteorology, water quality, ambient noise, soil quality, etc. will be carried out by MoEF& CC/CPCB recognised laboratories in different seasons of the year. Vibration monitoring studies will be conducted by reputed agency and in-house by using mini-mate instruments. Ground water levels and quality will also be monitored in four seasons of the year. The monitoring data will be submitted on the Parivesh Portal of MoEF&CC along with six monthly environmental progress reports. Two continuous ambient air quality monitoring stations will be installed for continuous recording of PM_{10}, $PM_{2.5}$, SO_2, NO_2 & CO on a continuous basis.

11.7 Additional Studies

A single Public Hearing held on 12.09.2023 at N.M.D,C. I.T.I. Complex, Bhansi, District-South Bastar Dantewada (C.G) for both the two interlinked projects. The advertisement of the Public Hearing was given by Chhattisgarh Environment Conservation Board in National and local Newspapers "Hindustan Times" (English) & "Haribhoomi" (Hindi) on 12.08.2023.

The total cost of activities / schemes planned in response to public demand during public hearing is Rs. 4000/- lakhs, which will be spent over three Financial Years (FY).

The complete mining and screening cum beneficiation operations will be carried out under the management, control, and directives of a qualified managers. Moreover, mining and screening cum beneficiation supervisory staff will be imparted refresher, first aid, and frontline supervisory statutory training from time to time. A Disaster Management Plan (DMP) will be in place which will ensure the safety of life, protection of the environment, protection of installation, restoration of production and salvage operations in this same order of priorities. For effective implementation of the DMP, it will be widely circulated and personnel training through rehearsals or mock drills will be conducted. Training exercises will also be held to ensure that all personnel will be familiar with their responsibilities and that communication links will functioning effectively.

The Occupational Health Centre will be established and the annual budget will be Rs. 56.27 lakhs. The initial and periodic medical examinations will be carried out as per the provisions laid out in the Occupational Safety and Health and Working Conditions Code, 2020.

11.8 Project Benefits

Bailadila Iron Ore Deposit-4 project will provide economic benefits to employees, the local population in the project's vicinity, and the government in the form of royalty (15% of IBM's average sale value), District Mineral Fund (30% of royalty), National Mineral Exploration Trust (2% of royalty), and additional premium (22.5% of IBM's average sale value).

The direct employment will be 700, out of which 315 for mining lease area and 385 for screening cum beneficiation plant. Indirect employment including contractual employment will be about 1400. Total population expected to be benefited from the proposed mining lease and screening cum beneficiation plant will be around 10500. Indirect employment will be generated through handling of material, transport, banks, schools, restaurant, shops, petty trade etc., which will improve social & economic standing of the people in the locality. Further people will also get opportunity to engage themselves and earn by rendering various services to the community which will help, in improving social & economic condition of the local people.

Company will undertake peripheral developmental activities by implementing welfare measures in surrounding area. For this purpose, Company will spend around minimum 2 % of the average net profits of the company during the three immediately preceding financial years for CSR activities. Apart from above during initial three years an amount of approx. 1% of the project Will be earmarked for implementation of CER.

11.9 Environment Management Plan

The monitoring programme will serve as an indicator for taking suitable mitigative measures in time to safeguard the environment. The EMP includes waste dump management; construction of engineering structures for surface water management; afforestation; dust suppression on haul roads; biological reclamation; etc.

NMDC-CMDC Ltd. has budgeted an amount of Rs. 91.21 crores under capital cost for the implementation of the Environmental Management Plan and the recurring cost per annum is about Rs. 5.21 crores.

11.10 Conclusions

The Bailadila Iron Ore Deposit-4 project will meet the increasing demand for iron ore for domestic steel plants, pellet plants, etc. and contribute to the national and state exchequer in the form of royalty, district mineral fund, national mineral exploration fund, additional premium, and statutory taxes. NMDC-CMDC Ltd. will implement EMP measures and social welfare measures for the development of the area.

CHAPTER - 12

DISCLOSURE OF CONSULTANTS ENGAGED

Ecomen Laboratories Pvt. Ltd, a multi-disciplinary professionally managed, environmental consultancy services organization with an environmental laboratory accredited by NABL and with over 30 years standing, operates in 18 States of India.

It has following accreditations to its credit:

1. National Accreditation Board for Education and Training, Quality Council of India (NABET- QCI).
2. National Accreditation Board for Testing and Calibration Laboratories (NABL) International Accreditation ISO17025
3. Recognized by CPCB/MOEF&CC as Environmental laboratory under the Environmental (Protection) Act-1986
4. Occupational Health and Safety Management System (OHSAS 18001:2007)
5. Uttar Pradesh Pollution Control Board (UPPCB) for Ambient Air Quality Monitoring and Testing
6. Empanelled Consultant with State Pollution Control Board (SPCB) -Odisha

- Participates in Proficiency test conducted by CPCB & scored 100% many times.
- CPCB had selected Ecomen's laboratory to analyze the samples of identified industries jointly along with them pursuant to Hon'ble NGT order.

Our Range of Services Include

1. Preparation of Environmental Impact Assessment (EIA) & Environmental Management Plan (EMP) and subsequent Environment Clearance from MoEF&CC, SEIAA, NOC /Consent from Pollution Control Board.
2. Generation of Baseline data as per Environment (Protection) Act, 1986 i.e. Environmental Monitoring [Air, Water (Ground Water & Surface water), Noise, Soil], Testing and Studies like Flora, Fauna, Socio Economic, Land Use, Ground Water.
3. Minerals testing [in line with IBM directives that only NABL accredited lab can do Mineral's Testing]
4. Coal testing / analysis
5. Forest proposal for dereservation & clearance; Wild Life Management Plan
6. Groundwater survey, Water balance assessment & Geo hydrological

study

7. Water management, recovery, recycling and reuse of waste water, Rain Water Harvesting; commissioning of Piezometers
8. Thematic mapping using Remote Sensing, GIS & GPS. Preparing Land use/Land cover maps. Digital Image processing
9. Environmental Audit, Risk Assessment, Disaster Management plan & Compliance monitoring & report.
10. Training programme : Environment and Forest Clearance Process

:To create awareness leading to skill development in the 12 Functional Areas of Environment Clearance as prescribed by NABET –QCI

11. ETP/STP operation & Maintenance

Achievements

- More than100 EIA/EMPs approval of major client, all over India
- More than 50 Major Monitoring assessments, all over India
- 50 specialized studies
- 10 World Bank funded projects
- Case studies awarded by MOEFCC
- Setting site Labs

Awards:

Ecomen is recipient of many prestigious awards as given below:

i) 'Silver Medal' from **Mining, Geological and Metallurgical Institute of India [MGMI]** for the paper 'Noamundi – Long Range, Programme and Mine Planning' [1969].

ii) 'National Consultant' of MOEF in 'Industrial Pollution Prevention Project'; Gap Analysis of some State Pollution Control Board's Laboratories; conducted a National Workshop [2001].

iii) 'Certificate of Excellence' for Implementation of World Bank funded Rural Drinking Water & Environment & Sanitation project (2002).

iv) '**LMA Creativity & Innovation Award 2014'** for very significant contribution in any walks of life in India or abroad by way of his / her innovation or creativity.

v) **'Udyog Ratan Award'** for the outstanding performance in the field of economic & industrial development of the industry in the country and **'Excellence Award'** for Ecomen for its class and quality services, from Institute of Economic Studies, New Delhi (2015).

vi) 'Life Time Achievement Award 2015' to a Mining Engineer by Mining Engineers Association of India.

vii) **'Eminent Engineer Award (2017)'** by **Institute of Engineer's India** on consideration of eminence and contribution in the discipline of Environmental Engineering.

viii) Many more

Our Clients/ Projects experience

Our clients include major Corporates,[apart from World Bank aided projects& MOEFCC assigned case studies] Tata Steel Mines, Rungtas, NMDC, CMPDI, Heidelberg, Reliance, Ambuja Cements, J P Group, Everest Industries, L&T, NTPC, KIOCL, Reliance Power, Lanco Power, Lafarge etc.

Our Resources

Ecomen distinguishes itself by outstanding experience, vision and exposure of its key functionaries, experts, &specialists, in Industrial, Mining and Environmental disciplines as also, Socio-Economic, Public Health & Sanitation, Forestry and Management areas.

QUALITY COUNCIL® OF INDIA
Creating an Ecosystem for Quality

National Accreditation Board for Education and Training

Certificate of Accreditation

Ecomen Laboratories Pvt. Ltd., Lucknow

Flat No. 5-8, 2nd Floor, Arif Chamber-V, Sector-H, Aliganj, Lucknow

The organization is accredited as Category-A under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA-EMP reports in the following Sectors –

Sl. No.	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast / underground mining	1	1 (a) (i)	A
2.	Thermal power plants	4	1 (d)	B
3.	Mineral beneficiation	7	2 (b)	A
4.	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	A
5.	Cement plants	9	3 (b)	A
6.	Asbestos milling and asbestos based products	12	4 (c)	A
7.	Synthetic organic chemicals industry	21	5 (f)	A
8.	Distilleries	22	5 (g)	A
9.	Sugar Industry	25	5 (j)	B
10.	Isolated storage & handling of hazardous chemicals	28	-	B
11.	Ports, harbours, break waters and dredging	33	7 (e)	A
12.	Highways	34	7 (f)	A
13.	Building and construction projects	38	8 (a)	B
14.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC MoM dated March 19, 2021 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/21/1711 dated April 20, 2021. The accreditation needs to be renewed before the expiry Ecomen Laboratories Pvt. Ltd., Lucknow, following due process of assessment.

Sr. Director, NABET	Certificate No.	Valid till
Dated: April 20, 2021	NABET/EIA/2023/RA 0203 (Rev 01)	March 22, 2025

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

ECOMEN LABORATORIES P LTD.

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

SECOND FLOOR HALL, HOUSE NO - B- 1/ 8, SECTOR - H, ALIGANJ, LUCKNOW, UTTAR PRADESH, INDIA

in the field of

TESTING

Certificate Number: TC-9539

Issue Date: 19/08/2021 **Valid Until:** 20/05/2023

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Identity : ECOMEN LABORATORIES PRIVATE LIMITED

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE GOVT. OF INDIA

F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/ Pvt-129 14144 Dated: 28th February 2022

Speed Post

To,

The Managing Director
M/s Ecomen Laboratories Pvt. Ltd.,
Second floor Hall, House No. B-1/8, Sector-H,
Aliganj-226024, Lucknow.

Subject: Recognition of M/s Ecomen Laboratories Pvt. Ltd. Second floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow-226024 as Environmental laboratory under the Environmental (Protection) Act-1986.

Sir,

I am directed to refer to your Application dated 18/09/2021 & 17/01/2022 for the recognition of your laboratory Environmental (Protection) Act, 1986. Based on the recommendations of the expert committee for recognition of Environmental laboratories in its 67th meeting held on 14th January & 20th January 2022 and your acceptance of the revised terms and conditions at Annexure-III & IV of the guidelines for recognition of environmental laboratories, CPCB approves the renewal of recognition of **M/s Ecomen Laboratories Pvt. Ltd. Second floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow-226024,** as shall be notified in the Gazette of India. **Considering the current validity of mandatory accreditation/ certifications of the laboratory, this recognition shall be valid up to 20/05/2023.**

2. As sought in your aforementioned **M/s Ecomen Laboratories Pvt. Ltd. Second floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow-226024,** may undertake the following tests.

i. **Physical Tests**-Conductivity, Colour, pH, Fixed & Volatile Ssolids, Total Solids, Total Dissolved Solids, Total Suspended Solids, Turbidity, Temperature, Velocity & Discharge Measurement of industrial effluent stream, Flocculation test (Jar test), Odour, Salinity, Settleable solids and Sludge Volume Index (SVI).
ii. **Inorganic (General and non-metallic):** Acidity, Alkalinity, Ammoniacal Nitrogen, Chloride, Chlorine residual, Dissolved Oxygen, Fluoride, Total hardness, Total Kjeldahl Nitrogen (TKN), Nitrite Nitrogen, Nitrate Nitrogen, Phosphate, Sulphate, Carbon Dioxide, Chlorine demand, Sulphite, Silica and Sulphides.
iii. **Inorganic (Trace metals):** Boron, Cadmium, Calcium, Chromium Total, Chromium Hexavalent, Copper, Iron, Lead, Magnesium, Mercury, Nickel, Potassium, Sodium, Sodium Absorption Ratio, Zinc, Arsenic, Aluminium, Manganese and Cobalt.
iv. **Organics (General) and trace organics:** Bio-chemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Oil and Grease, Phenol, Pesticide (each) (Organo-chlorine and Organo Nitrogen-Phosphorus), Total Organic carbon (TOC), Tannin & Lignin, Poly-chlorinated biphenyl (PCBs) each, Polynuclear aromatic hydrocarbons (PAHs) each, Organic Carbon (in solid) and Carbon/Nitrogen ratio.
v. **Microbiological test:** Total Coliform, Faecal Coliform, *Faecal Streptococci*, *E. coli* and Total Plate Count.
vi. **Toxicological Tests:** Bioassay method for evaluation of toxicity using fish, Bio-accumulation, Bio magnification and Bio transformation studies, and Measurement of toxicity factor using zebra fish (dimensionless toxicity test).
vii. **Biological Tests:** Benthic organism identification and count, Planktonic identification count, Measurement of various diversity index, Saprobity Index, Chlorophyll, Primary Productivity and P/R Ratio.
viii. **Characterization of Hazardous waste:** Corrosivity, Ignibility (Flash Point) and Measurement of heavy metals/ pesticides in the waste and leachate.

ix. **Soil/sludge/Sediment and solid waste:** Boron, Cation Exchange Capacity (CEC), Electrical Conductivity, Nitrogen (available), Organic Carbon/matter (Chemical method), pH, Phosphorous (available), Phosphate (ortho), Phosphate (total), Potassium, SAR in soil extract, Sodium, Soil moisture, TKN, Calorific Value, Ammonia, Bicarbonate, Calcium, Calcium Carbonate, Chloride, Colour, Exchangeable Sodium Percentage (ESP), Heavy Metal, Magnesium, Nitrate, Nitrite, PAH, Pesticide, Potash (Available), Sulphate, Sulphur, TOC, Total water soluble salt and Water holding capacity.

x. **Ambient Air/ fugitive emissions:** Nitrogen Dioxide (NO_2), Sulphur Dioxide (SO_2), Total Suspended Particulate Matter, Respirable Suspended Particulate Matter PM_{10}, Ammonia, Carbon Monoxide, Chlorine, Fluoride, Non Methane Hydrocarbon, Lead, Methane, Ozone, Benzene Toluene Xylene (BTX), Polycyclic Aromatic Hydrocarbon (PAH) Benzo-a-pyrene and others, $PM_{2.5}$ and Volatile Organic Carbon.

xi. **Stack gases/ source emission:** Particulate Matter, Sulphur Dioxide, Velocity & Flow, Carbon Dioxide, Carbon Monoxide, Temperature, Oxygen, Oxides of Nitrogen, Acid mist, Ammonia, Chlorine, Fluoride (Particulate), Fluoride (Gaseous), Hydro Chloric Acid, Total Hydrocarbon, Hydrogen sulphide and Carbon disulphide.

xii. **Noise level:** Noise level measurement (20-140 dba) and Ambient Noise and Source specific Noise.

xiii. **Meteorological:** Ambient temperature, Wind direction, Wind speed, Relative Humidity, Solar Radiation and Rainfall.

xiv. **Vehicular Emission Monitoring:** Carbon Monoxide, Smoke Density, Hydrocarbon and Oxides of Nitrogen.

3. Further, the following analysts have been approved for recognition as government Analysts.
   i. Sh. R. K. Tiwari
   ii. Smt. Reena Tripathi
   iii. Sh. Maneesh Shukla

4. The laboratory shall compulsorily participate in the Analytical Quality Exercise conducted by the Central Pollution Control Board (CPCB) to ascertain the capability of the laboratory and analysis carried out and shall submit quarterly progress report to CPCB.

5. The surprise inspection/periodic surveillance of the recognized environment laboratory will be undertaken by CPCB to assess its proper functioning systematic operation and reliability of data generated at the laboratory.

6. It is also mandatory for the laboratory to have requisite accreditations of the ISO: 17025 (NABL) and ISO:45001 (OH&SMS) and its renewal as per accreditation rules. This recognition is subject to such accreditations and renewals as applicable. The laboratory is required to apply online for further renewal of recognition through CPCB web portal after renewal of the mandatory accreditations / certifications concerned.

7. The laboratory should compulsorily follow the accepted terms and conditions. In case of serious non-compliance of any of the terms and conditions, the laboratory may be black listed for a minimum period of two years and civil/criminal proceedings, as applicable, may be initiated for performing functions on behalf of the Government in an unauthorized manner.

Yours faithfully,

28/2/2022

(Namita Mishra)
Scientist-D & Divisional Head
Instrumentation laboratory

संदर्भ सं0 / Ref. 1177/223/ केंद्रीय / प्रयो०मान्य० / मै इकोमेन लैब / 2022 / 265 दिनांक / Date 16-6-22

सेवा में,

मेसर्स इकोमेन लैब प्रा0 लिमिटेड,
सेकेन्ड फ्लोर हॉल, हाउस नं0–बी–1/8,
सेक्टर–एच, अलीगंज,
लखनऊ।

विषयः वायु प्रदूषण अनुश्रवण/जांच सम्बन्धी कार्यो हेतु वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1981 की धारा–7 (उपधारा–2) के अन्तर्गत प्रयोगशाला को बोर्ड से मान्यता प्रदान किये जाने के सम्बन्ध में।

महोदय,

कृपया उपरोक्त विषयक अपने आवेदन दिनांक 23.08.2021 का संदर्भ ग्रहण करने का कष्ट करें। उक्त के संबंध में अवगत कराना है कि बोर्ड के सक्षम अधिकारी की अनुमति से वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1981 की धारा–7 (उपधारा–2) के अन्तर्गत वायु प्रदूषण अनुश्रवण/जांच संबंधी कार्यो हेतु आपकी प्रयोगशाला को निम्न शर्तो के साथ पत्र निर्गमन की तिथि से **02 वर्ष की अवधि** हेतु मान्यता प्रदान की जाती है:–

1. केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा निर्धारित विधियों/प्रोटोकाल के अनुसार परिवेशीय वायुगुणता का अनुश्रवण एवं औद्योगिक उत्सर्जन की जांच आदि का कार्य किया जायेगा।
2. यदि किसी प्रयोगशाला द्वारा किसी उद्योग में वायु प्रदूषण नियंत्रण संयंत्र की स्थापना भी की गयी हो तो उसके स्वयं के प्रयोगशाला द्वारा ऐसे लगाए गए संयंत्र की प्रदूषण नियंत्रण क्षमता की जांच रिपोर्ट मान्य नहीं होगी। उनकी दूसरी मान्यता प्राप्त प्रयोगशाला में जांच करानी होगी।
3. प्रयोगशाला द्वारा जिस उद्योग के उत्सर्जन की जांच किया जाना प्रस्तावित हो उसकी तिथि एवं समय की पूर्व सूचना बोर्ड के सम्बन्धित क्षेत्रीय कार्यालय/केन्द्रीय प्रयोगशाला को कम से कम एक सप्ताह पूर्व उपलब्ध कराया जाना सुनिश्चित किया जाए।
4. उ0प्र0 प्रदूषण नियंत्रण बोर्ड की प्रयोगशाला द्वारा किसी भी समय जांच में यदि यह पाया जाता है कि प्रयोगशाला द्वारा विश्लेषण में अनियमितता की जा रही है तो ऐसी दशा में प्रयोगशाला की मान्यता को निरस्त करने की कार्यवाही की जा सकती है।
5. प्रयोगशाला द्वारा किए जाने वाले वायु अनुश्रवण/स्टैक अनुश्रवण एवं गैसीय नमूनों के विश्लेषण आदि की गुणवत्ता बनाए रखने के लिए बोर्ड द्वारा समय–समय पर एनालिटिकल क्वालिटी कन्ट्रोल टेस्ट कराया जाएगा।
6. प्रयोगशाला द्वारा नमूना एकत्रण विश्लेषण आदि का पूर्ण विवरण सुरक्षित रखा जाएगा एवं बोर्ड के सक्षम अधिकारी द्वारा किसी भी समय जांच हेतु मांगने पर उपलब्ध कराया जाना होगा।
7. लाल श्रेणी के (बृहद, मध्यम एवं लघु) एवं नारंगी श्रेणी (बृहद एवं मध्यम) उद्योगों को बोर्ड द्वारा जारी कारण बताओं नोटिस, निक्षेपण एवं अन्य महत्वपूर्ण प्रकरणों में उ0प्र0 प्रदूषण नियंत्रण बोर्ड की स्वयं की प्रयोगशालाओं द्वारा सम्बन्धित उद्योगों में किये गये औद्योगिक उत्सर्जन एवं परिवेशीय वायुगुणता की जांच रिपोर्ट ही मान्य होगी।
8. प्रयोगशाला के स्थल में यदि कोई परिवर्तन किया जाता है तो इसकी पूर्व सूचना बोर्ड को दी जानी होगी।
9. पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार से प्रयोगशाला की प्राप्त मान्यता की वैधता समाप्त होने की दशा, वैधता समाप्त होने की तिथि से 02 माह के अन्दर वैधता का नवीनीकरण करा कर बोर्ड में प्रस्तुत किया जाएगा। निर्धारित समयावधि में वैधता का नवीनीकरण प्रस्तुत नहीं किये जाने की दशा में बोर्ड द्वारा प्रदान की गयी मान्यता को निरस्त किये जाने की कार्यवाही की जा सकती है।

भवदीय,

(राम गोपाल)
मुख्य पर्यावरण अधिकारी,
केन्द्रीय प्रयोगशाला

प्रतिलिपिः मुख्य पर्यावरण अधिकारी, प्रशासन, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, लखनऊ को सूचनार्थ प्रेषित।

मुख्य पर्यावरण अधिकारी,
केन्द्रीय प्रयोगशाला

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Web Site : www.uppcb.com

CERTIFICATE

This is to Certify that the Management System of

ECOMEN LABORATORIES PVT. LTD.

SECOND FLOOR HALL, HOUSE NO. B-1/8, SECTOR -H, ALIGANJ,
LUCKNOW - 226024, UTTAR PRADESH, INDIA

has been audited and found to comply with the requirements of:

ISO 9001:2015
(Quality Management System)

For the Scope of activities described below:

ENVIRONMENTAL MONITORING, STUDIES, TESTING SERVICES IN CHEMICAL FIELD, ENVIRONMENTAL IMPACT ASSESSMENT, ENVIRONMENTAL MANAGEMENT PLAN AND CONSULTANCY SERVICES

Certificate No.: IN87518A

Date of initial registration	*Date of this Certificate*	*Surv. audit on or before/ Certificate expiry*	*Recertification Due*
07 January 2020	*06 January 2023*	*06 January 2024*	*06 January 2026*

Validity of this certificate is subject to successful completion of surveillance audit on or before due date, in case surveillance audit not conducted this certificate shall be suspended/cancelled.

Director

For verification and updated information concerning the present certificate visit to www.lmscert.com

LMS Certification Limited
Labrynth Business Centre, 43 Middle Hill Gate, Stockport,
Great Manchester, England-SK1 3DG
Phone :+44 208 935 5094
Company No.: 11029176
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KAB-QC-71

CERTIFICATE

This is to Certify that the Management System of

ECOMEN LABORATORIES PVT. LTD.

SECOND FLOOR HALL, HOUSE NO. B-1/8, SECTOR -H, ALIGANJ, LUCKNOW - 226024, UTTAR PRADESH, INDIA

has been audited and found to comply with the requirements of:

ISO 45001:2018
(Occupational Health & Safety Management System)

For the Scope of activities described below:

ENVIRONMENTAL MONITORING, STUDIES, TESTING SERVICES IN CHEMICAL FIELD, ENVIRONMENTAL IMPACT ASSESSMENT, ENVIRONMENTAL MANAGEMENT PLAN AND CONSULTANCY SERVICES

Certificate No.: IN32538C-1

Date of initial registration	*Date of this Certificate*	*Surv. audit on or before/ Certificate expiry*	*Recertification Due*
15 July 2015	*22 July 2022*	*14 July 2023*	*14 July 2024*

Validity of this certificate is subject to successful completion of surveillance audit on or before due date, in case surveillance audit not conducted this certificate shall be suspended/cancelled.

Director

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LMS/FM001/Q.REv06

No. IA-J-11015/104/2021-IA-II (NCM)
Government of India
Ministry of Environment, Forest and Climate Change
Impact Assessment Division
***

2nd Floor, Prithvi Wing,
Indira Paryavaran Bhavan,
Jor Bagh Road, Aliganj,
New Delhi-110 003

Dated: 11th March, 2022

To,

M/s NMDC-CMDC Ltd (NCL),
Green Villey City, Housing Board Colony,
Boriyakala, Sejbahar, Raipur,
Chhattisgarh – 492 015.

Subject:- Proposal for Terms of Reference (ToR) of M/s National Mineral Development Corporation - Chhattisgarh Mineral Development Corporation Limited (NCL), a joint venture of National Mineral Development Corporation Limited (a Central Government Public Sector Undertaking under the administrative control of Ministry of Steel), and Chhattisgarh Mineral Development Corporation Limited (a Government of Chhattisgarh Public Sector Undertaking) is for mining of Iron ore in Bailadila Iron Ore Deposit-4 Mine with production capacity of 7.0 MTPA ROM Iron ore and 6.41 MTPA Waste Excavation (Total Excavation 13.41 MTPA) along with 2000 TPH Crushing plant in the mine lease area of 646.596 ha, located at Village & Tehsil Bacheli, District Dantewada, Chhattisgarh – [File. No: IA-J-11015/104/2021-IA-II(NCM) Proposal No: IA/CG/MIN/251288/2021; Consultant: M/s Ecomen Laboratories Pvt Limited] - Terms of Reference (ToR) regarding.

Sir,

This has reference to the online proposal no. IA/CG/MIN/251288/2021 of M/s National Mineral Development Corporation - Chhattisgarh Mineral Development Corporation Limited (NCL), a joint venture of National Mineral Development Corporation Limited (a Central Government Public Sector Undertaking under the administrative control of Ministry of Steel), and Chhattisgarh Mineral Development Corporation Limited (a Government of Chhattisgarh Public Sector Undertaking) is for mining of Iron ore in Bailadila Iron Ore Deposit-4 Mine with production capacity of 7.0 MTPA ROM Iron ore and 6.41 MTPA Waste Excavation (Total Excavation 13.41 MTPA) along with 2000 TPH crushing plant in the mine lease area of 646.596 ha, located at Village & Tehsil Bacheli, District Dantewada, Chhattisgarh. The mine lease area is located between Latitude 18°41'26.17920"N to 18°43'38.52758"N and Longitude 81°12'02.90192"E to 81°13'07.02661"E. The mine lease area falls under the Survey of India Toposheet No: 65F/2 and falls in Seismic Zone-II. The Project Proponent presented the KML file during the presentation to indicate the location of mine lease on Google Earth.

2. The Project Proponent initially made an online application vide proposal no: IA/CG/MIN/241426/2021 dated 30.11.2021 and submitted Form1 and Prefeasibility report under the provisions of the EIA Notification, 2006. The proposal was earlier considered in the 43rd EAC (Non-Coal Mining) meeting held during 14th – 16th December, 2021. During the meeting, the Committee noted that the Project Proponent informed that the Mineral beneficiation plant is proposed outside the mine lease area. The Committee observed that the instant proposal is covered under category of 2(b) of EIA notification, 2006, which is standalone and outside the mine lease area and hence the EAC (Non-Coal Mining) Committee cannot appraise the instant project proposal. Therefore, the Committee returned the proposal in present form and was of the view that the Project Proponent should revise the Form1 and PFR accordingly with the factual information and data.

3. Now, the Project Proponent submitted a fresh proposal vide proposal no: IA/CG/MIN/251288/2021 dated 14.01.2022 and submitted Form1 and Prefeasibility report under the provisions of the EIA Notification, 2006. The proposed project activity is listed at schedule no. 1(a) Mining of Minerals under Category "A" of the schedule of the EIA Notification, 2006 as the mining lease area is greater than 100 ha and appraised at Central level.

4. Details of Mine lease:

S.no	Lease particulars	Date of the grant	Name of the Mineral	Validity	Granted by	Mine lease area in Ha
1	Ministry of Mines vide Notification G.S.R. 697(E) reserves an area of 646.596ha in Bailadila reserve forest, Deposit No. 4, District South Bastar, Chhattisgarh for mineral iron ore for undertaking prospecting or mining operations	30.09.2019	Iron ore	5 years	Ministry of Mines, GoI	646.596
2	Letter of Intent for grant of mining lease vide Lr No: F-2-2-/2005/12	26.06.2021	Iron ore	5 years	Mineral Resource Department, Government of Chhattisgarh	646.596

3	Amendment in Letter of Intent granted vide Lr No 2-20/ 2005/12 prescribing the requirement of approved Mining Plan	07.08.2021	Iron ore	5 years	Mineral Resource Department, Government of Chhattisgarh	646.596

5. The Project Proponent submitted that Approval of Mining Plan including Progressive Mine Closure Plan approved by Indian Bureau of Mines vide Lr No Dantewada /Fe/Khanij-1292/2021/-Raipur dated 24.09.2021 over an area of 646.596ha.

6. The Project Proponent submitted that fully mechanized opencast method of mining will be adopted. PP submitted it is proposed to deploy 150 mm dia rotary percussive drills along with crawler drills of 100mm dia for mine development and bench preparation of mines during 1st five years of operation. Charge per hole is around average of 140 kg for 150 mm dia hole & around average of 400 kg for 250 mm dia hole in ore and waste. PP reported that the mineable reserves estimated about 109.01 MT which will last for about 21 years with proposed production capacity of 7 MTPA. PP also reported that bench height of 12m and bench width of 30m will be maintained during operation phase. The ultimate pit slope will be 45°. Ore production and waste removal will be done by 3.2 cum bucket excavator. 4.0 cu.m Front-end loaders will be used for loading purposes including final products. PP submitted that the haulage of blasted ore from mining faces to the mobile ore dressing plant will be done by means of conventional off high way heavy duty dumpers having a payload capacity of 25 T. The same capacity truck will be used for waste transportation to waste dump. PP also submitted that the during the 1st five years of mining operations, mobile ore dressing plant will be installed at the mine site for production of CLO/Lump (-40+10mm size & -20mm +10mm) & Fines (-10 mm). Once the Crushing plant along with Downhill Conveyor facilities are installed the ore will be Crushed in the Crusher and subsequently transported through Downhill conveyor for further processing. The crushing plant proposed to be installed at hilltop within the mine lease boundary. To connect Primary Stockpile at hilltop and Screening Plant at foothill, various options of downhill conveyor system have been worked out. The crushed ore will be transported through downhill closed conveyor belt system to the screening plant. Once, these facilities are installed, ROM ore, (-) 1,200 mm, from the mine shall be fed to the crushing plant with the help of dumpers at the truck dumping position. The crushed ore of (-) 350mm after being passed through the metal detector is fed to a scalping screen for separation of (-) 150mm size material. The oversize (+150mm) from the scalping screen will pass through secondary cone crusher and reduce to (-) 150mm size. During the plan period, only dry process will be adopted. There will not be any generation of sub-grade middling's and rejects. ROM excavated from the pit will be directly fed to the ore dressing plant. Hence, quantity of the ROM excavation and feed to the plant will be same. Since, dry process is proposed to be adopted during first five year plan period, product grade will be same as feed grade of the plant. The products, i.e., CLO (-40+10 mm) & Fines (-10 mm) generated at mine head by mobile ore dressing plant installed temporarily during this mining plan period will be

transported to loading plant proposed near Bhansi Railway Station for onward dispatch to NMDC Steel Plant at Nagarnar, Jagdalpur (C.G.) and other customers. PP reported that the waste generation till the life of the mine will be 68.173 Million Tonne (MT). Waste (Shale and Banded Hematite Quartzite) will be dumped in the waste dump at top level of 1040 MRL (dump1) and 995MRL (dump2) during this plan period which is outside ultimate pit limit. Remaining amount of waste will be backfilled in the North block after extracting all the ores and associated waste materials during the life of the mine. PP reported that the mining activity will not intersect the ground water table during life of the mine.

7. The Project Proponent reported that the water requirement envisaged to be around 4,250 cu.m per day which will be met from the source of existing Sankini Nalla at EL. (+) 1025.00 at Hill-top and Nerli Nalla at EL. (+) 450.00 at Foot-Hill. PP also submitted that Permission for withdrawal of water from Sankini Nalla and Nerli Nalla will be obtained from Water Resource Department, Government of Chhattisgarh.

8. Nearest village / town/ highway/railway station / water bodies:

Particulars	Particular's Name	Distance & Directions
Village	Nerli	4.7 km, NE
	Bhansi	7.5 km, NE
	Hiroli	7.8 km, W
	Gyatapara	5.0 km, E
	Padhapur	4.5 km SE
Town	Bacheli Town	3.1 km, ESE
	Kirandul Town	6.3 km, SE
Highway	SH-5	3.7 km, E
Railway station	Bacheli Railway station ,	2.7 km, E
	Bhansi Railway station,	7.5 km, NNE
	Kirandul Railway station	7.7 km, SE
Water bodies	Tumka Nala	3.0km, W
	Berudi Nadi	6.0km, W
	Mari Nadi	3.2km, NW
	Pali Nadi	5.3km, NW
	Sankani Nadi	5.4km, E,
	Koyar Nadi	8.2km, SE
	Kadampal Dam	8.2km, SE

9. The Project Proponent reported that the entire mine lease area of 646.596 ha is forest land. PP submitted that the forest clearance will be obtained for a total area of 570.1 ha [646.596ha - 76.496ha (tree fern area not to be diverted)] inside the mining lease area and 100.077ha outside the mining lease area. PP also submitted that application for Stage-I Forest Clearance applied vide proposal no. FP/CG/MIN/146694/2021 dated 04.10.2021 and is under process. PP also reported that there are no National Park, Wildlife Sanctuary, Eco Sensitive Areas, Elephant/Tiger Reserve, Biosphere Reserve within 10km radius of the mining lease area.

10. The Project Proponent submitted that during plan period of first five years greenbelt/plantation will be developed over an area of 58.48 ha. Greenbelt will be

undertaken once the mining operation commences and will be developed over 7.5 m (8.488ha) around the mining lease boundary. PP also submitted that afforestation will be carried out on 144.59 Ha of left out excavation area. At conceptual stage, total afforested area will be 521.321 Ha. (Including gap plantation) excluding the Tree fern area. Soil binding species like *Agave Sislan* (Sisal), *Dendrocalmus Strictus* (Kanta Bamboo) etc., will be planted to stabilize the slope. Densification to the extent of 2700 saplings per hectate of native and pioneer species like *Albizza lebbek* (Siris), *Anilotica* (Babul), *Acateshu* (Karanji), *Dendrocalmus Strictus* (Bamboo), *Phoenix lumilis* (Khajur) etc., succeeded by leguminoseae variety will be planted on the terraces. PP submitted that plantation will be undertaken in consultation with the Forest Department. PP earmarked a budget of Rs 3.20 Cr towards green plant & plantation till the end of life of mine. PP also earmarked a budget of Rs 1.0 Cr towards nursery.

11. The Project Proponent submitted that the mine lease area does not cover any habitation and the mining activities do not involve any displacement of human settlement.

12. The Project Proponent submitted that there is no any litigation pending against the project and/or land in which the project is proposed to be set up.

13. The Project Proponent submitted that the estimated total capital cost of the project is Rs 4091.33 Cr. The mine will provide employment to 700 persons.

14. Observation and Recommendation of the Committee:

The proposal for Terms of Reference was considered in the 46th EAC (Non-Coal Mining) meeting held during 15th-17th February, 2022. After detailed deliberations made by the Project Proponent and the Consultant, the Committee **recommended** the proposal for grant of Terms of Reference (ToR) for M/s National Mineral Development Corporation - Chhattisgarh Mineral Development Corporation Limited (NCL), a joint venture of National Mineral Development Corporation Limited (a Central Government Public Sector Undertaking under the administrative control of Ministry of Steel), and Chhattisgarh Mineral Development Corporation Limited (a Government of Chhattisgarh Public Sector Undertaking) for mining of Iron ore in Bailadila Iron Ore Deposit-4 Mine with production capacity of 7.0 MTPA ROM Iron ore and 6.41 MTPA Waste Excavation (Total Excavation 13.41 MTPA) along with 2000 TPH crushing plant in the mine lease area of 646.596 ha, located at Village & Tehsil Bacheli, District Dantewada, Chhattisgarh for undertaking detailed EIA/EMP study subject to the specific conditions in addition to the standard ToR conditions applicable for non-coal mining projects.

15. The matter was examined in the Ministry in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto and the undersigned is directed to say that the Ministry of Environment Forest & Climate Change after accepting the recommendation of EAC during its 46th EAC (Non-Coal Mining) meeting held during 15th-17th February, 2022 hereby accords Specific and Standard Terms of Reference (ToR) for M/s National Mineral Development Corporation - Chhattisgarh Mineral Development Corporation Limited (NCL), a joint venture of National Mineral Development Corporation Limited (a Central Government Public Sector Undertaking under the administrative control of

Ministry of Steel), and Chhattisgarh Mineral Development Corporation Limited (a Government of Chhattisgarh Public Sector Undertaking) for mining of Iron ore in Bailadila Iron Ore Deposit-4 Mine with production capacity of 7.0 MTPA ROM Iron ore and 6.41 MTPA Waste Excavation (Total Excavation 13.41 MTPA) along with 2000 TPH crushing plant in the mine lease area of 646.596 ha, located at Village & Tehsil Bacheli, District Dantewada, Chhattisgarh for undertaking detailed EIA/EMP study subject to the following specific conditions in addition to the standard ToR conditions applicable for non-coal mining projects:-

A. SPECIFIC TERMS OF REFRERENCE

i. The Project Proponent should install the continuous ambient air quality monitoring stations in such numbers as per the scientific study and in consultation with CPCB.

ii. The Project Proponent needs to carry out the cumulative impact assessment by considering all the mining activity of the adjoining mines, crusher and beneficiation plant in the study area and should indicate the capacity of the each mine considered for predication of air quality modeling. The control case and worst-case scenario needs to be demonstrated with controlling factor and GLCs values for all the pollutants needs to be clearly mentioned. The input parameters used for the modeling also needs to be submitted.

iii. The Project Proponent should prepare the EMP considering the scenario of pollution to be generated for normative and peak total excavation for assessing air and noise pollution by considering all the mining activity.

iv. The Project Proponent needs to submit the restoration plan for waste dumps to be located in the forest land. PP should also submit the map demarcating the mineralized and non-mineralized zone in the forest land and non-forest land in the mine lease area.

v. The Project Proponent needs to carry out the Public Hearing as per provisions of EIA Notification, 2006. PP should also submit the time bound action plan on concerns of the public through proper separate budget for the concerns of the local people in terms of health care facilities for COVID, betterment of schools nearby and to facilitate the online education system by providing Wi-Fi connectivity, smart classrooms and desktops/tablets, infrastructure, and environment protection.

vi. The Project Proponent should submit the detailed plantation/greenbelt plan in tabular format (year wise for entire life of mine) with proper capital and recurring cost. PP shall undertake the adequate plantation with the seedling of 10 ft height with at least 90% survival rate and the peripheral plantation shall be completed within 6 months from the start of mining operations. The causalities of each year shall be replaced every year with new saplings and such number of saplings shall not be counted in the number of saplings proposed to plant in that year. PP shall undertake the progressive

bench plantation up to HFL for eco restoration of water bodies. Undertaking in this regard needs to be submitted by the PP.

vii. The Project Proponent needs to submit the certificate obtained from Forest Department regarding tree fern area not to be diverted at the time of appraisal of EC.

viii. The Project Proponent needs to submit the certified EC compliance report of adjacent mines for Deposit 5 & Deposit 10 at the time of appraisal of EC.

B. STANDARD TOR FOR MINING PROJECT

1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994. The production details need to submit since inception of mine duly authenticated by Department of Mines & Geology, State Government.
2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
4) All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
5) Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the proposed safeguard measures in each case should also be provided.

8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
12) A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
13) Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and

fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March - May (Summer Season); October - December (post monsoon season); December - February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be.
30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.
31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA

report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

37) Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

38) Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster Management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Activity-wise time-bound action plan on the issues raised and commitment made during public hearing to be submitted as part of the final EMP Report in compliance of the Ministry's OM F.No.22-65/2017-IA.III dated 30th September, 2020.

16. Besides the above, the below mentioned general points are also to be followed: -

a) All documents to be properly referenced with index and continuous page numbering.
b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
d) Where the documents provided are in a language other than English, an English translation should be provided.
e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II (I) dated

4th August, 2009, which are available on the website of this Ministry, should be followed.

g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

h) As per the circular no. J-11011/618/2010-IA.II (I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

17. The prescribed TOR would be valid for a period of four years for submission of the EIA/EMP report, as per the notification S.O 751 (E) dated 17.02.2020. The instant TOR is valid up to four years from the date of issuance of TOR.

18. The Project Proponent should submit the EIA/EMP report as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006 after incorporating the details of public hearing conducted and covering the above-mentioned issues, to take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.

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

Yours faithfully,

Pankaj Verma

(Pankaj Verma)
Scientist 'E'

Copy to:

1. **The Secretary,** Ministry of Mines, Government of India, Shastri Bhawan, New Delhi-110 001.
2. **The Secretary,** Department of Environment, Government of Chhattisgarh.
3. **The Secretary,** Department of Mines and Geology, Government of Chhattisgarh, Chhattisgarh.
4. **The Chairman,** Chhattisgarh Environment Conservation Board, Nanak Niwas, Civil Lines, Raipur, Chhattisgarh.

5. **The Additional Principal Chief Conservator of Forests(C),** Ministry of Environment, Forest and Climate Change, Regional Office (WCZ), Ground Floor, East Wing, New Secretariat Building, Civil Lines, Nagpur - 440001.
6. **The Controller General,** Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
7. **Regional Officer,** Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Ground Floor, East Wing, New Secretariat Building, Civil Lines, Nagpur - 440001.
8. **The Chairman,** Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
9. **The Member Secretary,** Chhattisgarh State Pollution Control Board, Commercial Complex, Chhattisgarh Housing Board Colony, Kabir Nagar, Raipur, Chhattisgarh.
10. **The Member Secretary,** Central Ground Water Authority, 18/11, Jam Nagar House, Man Singh Road, New Delhi-110011.
11. **The Chief Wildlife Warden,** Govt. of Chattisgarh, Aranya Bhavan, Jail Road, Fafadih Chowk, Raipur - 492001.
12. **The District Collector,** District Dantewada, Govt. of Chhattisgarh.
13. **Guard File.**
14. **PARIVESH Portal.**

Pankaj Verma

(Pankaj Verma)
Scientist 'E'

F. No. IA-J-11011/23/2022-IA-II(IND-I)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj,
New Delhi – 110003
E-mail: r.sundar@nic.in
Tel: 011-24695304

Dated: 21st February, 2022

To

Shri. Pankaj,
CEO,
M/s. NMDC – CMDC Limited
Green Villey City, Housing Board Colony, Post Sejbahar, NH-30
Raipur Chhattisgarh - 492015
Email: ceonmdccmdc@gmail.com

Subject: Screening Cum Beneficiation Plant (750 TPH of 4 lines each) along with 2200 TPH Downhill Conveyor System and Loading Facilities in 195.537 Ha. Area (Forest area of 100.077 Ha. and 95.46 Ha. of revenue land) located at outside the Mine Lease area of Bailadila Iron Ore Deposit-4 (646.596 Ha.) **by M/s. NMDC – CMDC Limited** at Village Bhansi, Tehsil Bacheli, **District Dantewada, Chhattisgarh – Prescribing of Terms of Reference – regarding.**

Sir,

1. This refers to the online application of M/s. NMDC – CMDC Limited made vide proposal no. IA/CG/IND/251437/2022 dated 25/01/2022 in prescribed format (Form-1), copy of pre-feasibility report and proposed ToRs for undertaking detailed EIA study as per the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at schedule no. 2(b) Mineral Beneficiation under Category "A" of the schedule of the EIA Notification, 2006 and appraised at central level.

2. The proposal cited above was considered in 53rd meeting of Reconstituted Expert Appraisal Committee (Industry 1 sector) held on 10-11th February, 2022. The EAC proceeding of the said meeting is furnished as below:

Details submitted by Project proponent

3. The project of M/s. NMDC – CMDC Limited will be Village Bhansi, Tehsil Bacheli, District Dantewada, Chhattisgarh for Screening Cum Beneficiation Plant (750 TPH of 4 lines each) along with 2200 TPH Downhill Conveyor System and Loading Facilities.

4. Environmental site settings:

S No.	Particulars	Details	Remarks
i.	Total Land	195.537 ha [Forest area: 100.077 ha. and Revenue land: 95.46 ha]	Land use: Forest land and Revenue land.

<table>
<tr><th>S No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td>ii.</td><td>Land acquisition details as per MoEF&CC O.M. dated 7/10/2014.</td><td>Total land of 195.537 ha is yet to be acquired. Out of 195.537 ha, 100.077 ha is forest land 100.077 ha (falling outside ML area). for obtaining Forest clearance. 95.46 Ha. of revenue land is required at Bhansi for establishment of ancillary facilities.</td><td>For the diversion of Forest land, PP has submitted application vide proposal no. FP/CG/MIN/146694/2021 on 04/10/2021.</td></tr>
<tr><td>iii.</td><td>Existence of habitation & involvement of R&R, if any.</td><td>Project Site: About 95.46 Ha. of revenue land is required at Bhansi for establishment of ancillary facilities. R&R Policy as per "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation And Resettlement Act, 2013" will Be Prepared In Respect Of The Project Affected Families (PAFs).

Study Area:<table><tr><td>Habitation</td><td>Distance</td><td>Direction</td></tr><tr><td>Bacheli</td><td>2.65 km</td><td>SSW</td></tr><tr><td>Bhansi</td><td>0.12 km</td><td>East</td></tr></table></td><td></td></tr>
<tr><td>iv.</td><td>Latitude and Longitude of all Corners of the project site.</td><td>Screening cum Beneficiation Plant<table><tr><td>Point</td><td>Latitude</td><td>Longitude</td></tr><tr><td>S1</td><td>N18° 46' 23.47</td><td>E81° 15' 27.23</td></tr><tr><td>S2</td><td>N18° 46' 23.45</td><td>E81° 15' 39.40</td></tr><tr><td>S3</td><td>N18° 46' 05.19</td><td>E81° 15' 39.37</td></tr><tr><td>S4</td><td>N18° 46' 05.21</td><td>E81° 15' 27.20</td></tr></table>Tailing Pond<table><tr><td>Point</td><td>Latitude</td><td>Longitude</td></tr><tr><td>SL7</td><td>N18° 44' 35.41</td><td>E81° 15' 52.24</td></tr><tr><td>SL8</td><td>N18° 44' 35.64</td><td>E81° 15' 52.91</td></tr><tr><td>TP1</td><td>N18° 44' 40.64</td><td>E81° 16' 08.03</td></tr><tr><td>TP2</td><td>N18° 43' 59.32</td><td>E81° 16' 10.19</td></tr><tr><td>TP3</td><td>N18° 44' 05.40</td><td>E81° 15' 46.89</td></tr><tr><td>TP4</td><td>N18° 44' 34.03</td><td>E81° 15' 48.04</td></tr></table>Admin Office<table><tr><td>Point</td><td>Latitude</td><td>Longitude</td></tr><tr><td>AD1</td><td>N18° 46' 26.68</td><td>E81° 16' 00.70</td></tr><tr><td>AD2</td><td>N18° 46' 29.93</td><td>E81° 16' 00.53</td></tr><tr><td>AD3</td><td>N18° 46' 30.09</td><td>E81° 16' 03.95</td></tr><tr><td>AD4</td><td>E81° 16' 04.11'</td><td>N18° 46' 26.84</td></tr></table></td><td></td></tr>
<tr><td>v.</td><td>Elevation of the project site</td><td>Screening cum Beneficiation Plant- 580 m AMSL
Loading Plant- 532 m AMSL
Tailing pond- 500 m AMSL</td><td></td></tr>
<tr><td>vi.</td><td>Water body (Rivers, Lakes Pond, Nala, Natural Drainage,</td><td>Project Site: Nil.

Study Area:<table><tr><td>Water Body</td><td>Distance</td><td>Direction</td></tr><tr><td>Sankini nallah</td><td>3.0 km</td><td>West</td></tr></table></td><td></td></tr>
</table>

S No.	Particulars	Details			Remarks
	Canal etc.) exists within the project site as well as study area	Nerli Nalla	4.5 km	East	
vii.	Existence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve etc. if any within the study area	NIL			

5. The unit configuration and capacity of proposed project is given as below:

S No	Plant Equipment/ Facility	Configuration	Capacity	Remarks
1.	Downhill Conveyor System	7.55 km	2200 TPH	--
2.	Screening Plant with Plant with Beneficiation Facilities	4x750 TPH	3000 TPH	--
3.	Tertiary Crushing	2x800 TPH	1600 TPH	--
4.	Loading and Stacking Facilities	1	3000 TPH	--
5.	Slimes Disposal into Tailing Pond along with Slurry Pipeline	1	68.130 ha. Capacity: 9.50 million tons (40 lakh m^3)	--

6. The details of the raw material requirement for the proposed project along with its source and mode of transportation is given as below:

Raw Material	Quantity required per annum	Source	Distance from site (Kms)	Mode of Transportation
ROM Iron Ore	7.00 MTPA	Bailadila Iron Ore Deposit- 4 Mine	13-15 km	During first 5 years of operation, the processed ore after in-pit crushing & screening is proposed to be transported by Tippers of 25-ton capacity by utilizing existing road (proposed to be strengthened) covering a distance of 13-15 km from hilltop to Loading plant area proposed to established near Bhansi railway station. After establishment of infrastructure facilities outside lease, the crushed ROM will be conveyed through downhill conveyor system from the crushing plant

Raw Material	Quantity required per annum	Source	Distance from site (Kms)	Mode of Transportation
				inside lease area to the Screening cum Beneficiation Plant outside lease area. The products from the plant will be conveyed to the Loading plant at Bhansi through a conveyor. The CLO and Fine ore will be transported through rail from Bhansi railway siding.

7. The water requirement for the proposed project is estimated to be 8,630 m^3/day, which will be sourced from the existing Sankini Nalla and Nerli Nalla. Considering the future requirements including Mine, infrastructure, and proposed township, water Requirement is envisaged to be around 20,000 m^3/day at the peak rated capacity which will be met from the source of existing Sankini Nalla and Nerli Nalla. NMDC-CMDC has submitted application for obtaining water permission for 20,000 KLD with Water Resource Department, Raipur, vide letter No. NCL/ HO/ Dep-4/ WR/ 2021/960 Dated 08/12/2021.

8. The power requirement for the proposed project is estimated as 6 MVA (Mining and infrastructure both interlinked projects), which will be obtained from the Chhattisgarh State Power Distribution Company Limited.

9. The capital cost of the is Rs. 4,091.33 Crores. The capital cost for environmental protection measures will be submitted in EIA/EMP report. The employment generation from the proposed project is 700 people. The cost of the project and employment includes both mining and infrastructure projects.

10. It has been reported by PP that, there is no violation under EIA Notification, 2006/court case/ show cause/ direction related to the project under consideration.

11. Name of the EIA consultant: M/s. Ecomen laboratories Private Limited [S No 156, NABET Certificate/ Ext. ltr no. NABET/EIA/2023/RA 0203 valid up to 21/09/2023; Rev. 18, January 05, 2022].

12. Proposed Terms of Reference (Baseline data collection period: December 2021 to February 2022):

Attributes	Parameters	Sampling		Remarks
		No. of Location	Frequency	
A. Air				
a. Meteorological parameters	Wind speed & direction, temperature, Relative humidity, rainfall	1	Hourly recording 24hrly	
b. AAQ parameters	PM_{10}, $PM_{2.5}$, SO_2, NO_X, CO, O_3, CO, NH_3, C_6H_6, As, Ni, BaP & Pb	10	24 hourly sample twice a week for a month covering one-full season	

Attributes	Parameters	Sampling		Remarks
		No. of Location	Frequency	
			CO: 8-hour sample.	
B. Noise	Noise levels in dBA Leq day time & Leq night time	10	Once during study period	
C. Water				
Surface water/ Ground water quality parameters	Physical, Chemical and Bacteriological parameters as per IS: 2296/10500 standards.	11	Once during study period.	(6 surface water and 5 for ground water
D. Land				
a. Soil quality	pH, conductivity, texture, NPK, organic matter, moisture content, grain size distribution.	6	Once during study period	
b. Land Use	Land use / land cover will be prepared through using IRS satellite data (LISS-IV) and Arc GIS/ Erdas imagine software.	Study area	Once during study period	
E. Biological a. Aquatic b. Terrestrial	Flora and Fauna, studies authenticated separately for core and buffer zone based on primary field survey, clearly indicating that Schedule of fauna present. In case of any schedule-1 fauna found in the study area, specific wildlife conservation plan will be prepared. Secondary data shall be collected from Forest Deptt's working plans and primary data through field survey.	Study area	Once during study period	
F. Socio-economic parameters	Socio-economic characteristics	Study area	Secondary data from Census 2011 and	

Attributes	Parameters	Sampling		Remarks
		No. of Location	Frequency	
			primary data from field survey.	

Observations of the Committee

13. The EAC noted the following:
    i. The instant proposal is for seeking ToR for undertaking EIA study for setting up of 7.0 MTPA IOBP along with 2200 TPH downhill conveyer, loading and unloading facility and tailing pond.
    ii. Total land of 195.537 ha is proposed for project out of which 100.077 ha is forest area and 95.46 ha area is revenue land.
    iii. 2 Km Slurry pipeline to tailing pond will be passed through Reserved Forests (RF). Railway siding also passes through 2 RFs. There are 16 roads to be constructed which will also pass through 2 RFs.
    iv. With respect to the ongoing baseline data collection, 10 Nos of AAQ stations selected are grossly inadequate for staggered project area. Along the conveyor route also at least one AAQ station is required. Baseline data already collected is not acceptable as the number of stations are inadequate. AAQ stations shall be decided based on meteorology and topography of the area.

Recommendations of the Committee

14. After deliberations, the Committee recommended the project proposal for prescribing following specific ToRs for undertaking detailed EIA and EMP study in addition to the generic ToRs enclosed at Annexure-1 read with additional ToRs at Annexure-2:
    i. Project proponent shall collect fresh one season Ambient Air Quality (AAQ) data based on meteorology and topography of the area.
    ii. A scheme for Dry disposal of Iron Ore Beneficiation Plant (IOBP) tailings after dewatering shall be submitted.
    iii. Cumulative impact assessment shall be carried out for iron ore mines and beneficiation plant.
    iv. Detail regarding no. of trees to be cut, girth & height, age and species of the trees shall be provided in the EIA/EMP report.
    v. R&R shall be implemented as per Land Acquisition, Rehabilitation and Resettlement (LARR) Act 2013. The details shall be furnished in EIA report.
    vi. Status of Forest Clearance for the diversion of 100.07 ha of forest land shall be submitted.
    vii. Details regarding downhill pipe conveyor, Right of Way for the conveyor and the noise control measures to be adopted in the conveyor route shall be submitted.
    viii. Action plan to limit the particulate matter emission from all the stacks below 30 mg/Nm^3 shall be furnished.
    ix. Action plan for fugitive emission control in the plant premises shall be provided.
    x. Action plan for green belt development in 33% of total area with tree density of 2500 plants per ha shall be submitted. This shall include 20 m green belt development inside the project area towards the Bhansi Village located at distance of 250 meter from the project site.
    xi. Action plan for rain water harvesting shall be submitted.

xii. Action plan for the stock piles with impervious floor, provision of garland drains and catch pits to trap run off material shall be submitted.

xiii. Action plan for developing connecting and internal road in terms of MSA as per IRC guidelines shall be submitted.

xiv. Details of flora and fauna existing in the study area shall duly be authenticated by the concerned DFO of the area. In case of existence of any endangered species and schedule I fauna, authenticated conservation plan shall be submitted.

Decision of MoEF&CC

15. The undersigned is directed to inform that Ministry of Environment, Forest and Climate Change has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the Expert Appraisal Committee (Industry-1) hereby decided to accord above-said specific ToRs, in addition to the standard ToRs and Sector Specific ToRs as enclosed at Annexure I read with additional ToRs at Annexure-2 for carrying out detailed EIA/EMP for the above project.

16. It is requested that the draft EIA Report may be prepared in accordance with the above-mentioned specific ToRs and enclosed generic ToRs and additional ToRs and thereafter further necessary action including conduct of public consultation may be taken for obtaining Environment Clearance in accordance with the procedure prescribed under the EIA Notification, 2006 as amended.

17. The ToRs are valid for a period of four years from date of issue of this letter as per the Ministry's Notification S.O. 751 (E) dated 17/02/2020.

18. This issue with the approval of the Competent Authority.

P. Ramanathan 21/2/22

(Sundar Ramanathan)
Scientist 'E'

Copy to: -

1. Secretary, Department of Environment, Government of Chhattisgarh.
2. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum office complex, East Arjun Nagar, Delhi-110032.
3. Chairman, Chhattisgarh Environment Conservation Board, Nanak Niwas, Civil Lines, Raipur, Chhattisgarh.
4. Regional Officer, Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Aranya Bhawan, North Block, Sector-19 Naya Raipur, Atal Nagar, Chhattisgarh - 492002.
5. Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
6. Chief Wildlife Warden, Govt. of Chattisgarh, Aranya Bhavan, Jail Road, Fafadih Chowk, Raipur – 492001.
7. District Collector, Dantewada, District, Chhattisgarh.
8. Guard File/Record File/Monitoring File.
9. MoEF&CC website.

P. Ramanathan 21/2/22

(Sundar Ramanathan)
Scientist 'E'

ANNEXURE –1

GENERIC TERMS OF REFERENCE (ToR) IN RESPECT OF INDUSTRY SECTOR

1. **Executive Summary**
2. **Introduction**
   i. Details of the EIA Consultant including NABET accreditation
   ii. Information about the project proponent
   iii. Importance and benefits of the project

3. **Project Description**
   i. Cost of project and time of completion.
   ii. Products with capacities for the proposed project.
   iii. If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any.
   iv. List of raw materials required and their source along with mode of transportation.
   v. Other chemicals and materials required with quantities and storage capacities
   vi. Details of Emission, effluents, hazardous waste generation and their management.
   vii. Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract)
   viii. The project proponent shall furnish the requisite documents from the competent authority in support of drawl of ground water and surface water and supply of electricity.
   ix. Process description along with major equipment and machineries, process flow sheet (Quantitative) from raw material to products to be provided
   x. Hazard identification and details of proposed safety systems.
   xi. Expansion/modernization proposals:
      a. Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MoEF&CC/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment, Forest and Climate Change as per circular dated 30th May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, status of compliance of Consent to Operate for the ongoing /existing operation of the project from SPCB/PCC shall be attached with the EIA-EMP report.
      b. In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.

4. **Site Details**
   i. Location of the project site covering village, Taluka/Tehsil, District and State, Justification for selecting the site, whether other sites were considered.
   ii. A toposheet of the study area of radius of 10km and site location on 1:50,000/1:25,000 scale on an A3/A2 sheet. (Including all eco-sensitive areas and environmentally sensitive places)
   iii. Co-ordinates (lat-long) of all four corners of the site.
   iv. Google map-Earth downloaded of the project site.

v. Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an Industrial area/Estate/Complex, layout of Industrial Area indicating location of unit within the Industrial area/Estate.
vi. Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular.
vii. Land use break-up of total land of the project site (identified and acquired), government/private - agricultural, forest, wasteland, water bodies, settlements, etc shall be included. (Not required for industrial area)
viii. A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area
ix. Geological features and Geo-hydrological status of the study area shall be included.
x. Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (Mega green field projects)
xi. Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.
xii. R&R details in respect of land in line with state Government policy.

5. Forest and wildlife related issues (if applicable):

i. Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department. (If applicable).
ii. Land use map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (in case of projects involving forest land more than 40 ha).
iii. Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.
iv. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden-thereon.
v. Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area.
vi. Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife.

6. Environmental Status

i. Determination of atmospheric inversion level at the project site and site-specific micro-meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall.
ii. AAQ data (except monsoon) at 8 locations for PM_{10}, $PM_{2.5}$, SO_2, NO_X, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.
iii. Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQQM Notification of Nov. 2009 along with – min., max., average

and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.

iv. Surface water quality of nearby River (60m upstream and downstream) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.

v. Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC.

vi. Ground water monitoring at minimum at 8 locations shall be included.

vii. Noise levels monitoring at 8 locations within the study area.

viii. Soil Characteristic as per CPCB guidelines.

ix. Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.

x. Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.

xi. Socio-economic status of the study area.

7. Impact Assessment and Environment Management Plan

i. Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modelling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be well assessed. Details of the model used and the input data used for modelling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.

ii. Water Quality modelling – in case, if the effluent is proposed to be discharged in to the local drain, then Water Quality Modelling study should be conducted for the drain water taking into consideration the upstream and downstream quality of water of the drain.

iii. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor-cum-rail transport shall be examined.

iv. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E (P) Rules.

v. Details of stack emission and action plan for control of emissions to meet standards.

vi. Measures for fugitive emission control

vii. Details of hazardous waste generation and their storage, utilization and disposal. Copies of MOU regarding utilization of solid and hazardous waste shall also be included. EMP shall include the concept of waste-minimization, recycle/reuse/recover techniques, Energy conservation, and natural resource conservation.

viii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.

ix. Action plan for the green belt development plan in 33 % area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning

schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated.

x. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.

xi. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.

xii. Action plan for post-project environmental monitoring shall be submitted.

xiii. Onsite and Offsite Disaster (natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.

8. **Occupational health**

i. Details of existing Occupational & Safety Hazards. What are the exposure levels of above mentioned hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved,

ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre-designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre-placement and periodical examinations give the details of the same. Details regarding last month analysed data of abovementioned parameters as per age, sex, duration of exposure and department wise.

iii. Annual report of health status of workers with special reference to Occupational Health and Safety.

iv. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers.

9. **Corporate Environment Policy**

i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.

ii. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.

iii. What is the hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.

iv. Does the company have system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report

10. Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.

11. To address the Public Hearing issues, provisions contained. under Ministry's Office Memorandum vide F.No. 22-65/2017-IA.III dated 30/09/2020 shall be complied.

12. Any litigation pending against the project and/or any direction/order passed by any Court of

Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.

13. A tabular chart with index for point wise compliance of above ToRs.
14. The ToRs prescribed shall be valid for a period of three years for submission of the EIA-EMP reports along with Public Hearing Proceedings (wherever stipulated).

The following general points shall be noted:

i. All documents shall be properly indexed, page numbered.
ii. Period/date of data collection shall be clearly indicated.
iii. Authenticated English translation of all material in regional languages shall be provided.
iv. The letter/application for environmental clearance shall quote the MOEF&CC file No. and also attach a copy of the letter.
v. The copy of the letter received from the Ministry shall be also attached as an annexure to the final EIA-EMP Report.
vi. The index of the final EIA-EMP report must indicate the specific chapter and page no. of the EIA-EMP Report
vii. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MOEF&CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry shall also be followed.
viii. The consultants involved in the preparation of EIA-EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA-EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. Name of the Consultant and the Accreditation details shall be posted on the EIA-EMP Report as well as on the cover of the Hard Copy of the Presentation material for EC presentation.
ix. ToRs' prescribed by the Expert Appraisal Committee (Industry) shall be considered for preparation of EIA-EMP report for the project in addition to all the relevant information as per the 'Generic Structure of EIA' given in Appendix III and IIIA in the EIA Notification, 2006. Where the documents provided are in a language other than English, an English translation shall be provided. The draft EIA-EMP report shall be submitted to the State Pollution Control Board of the concerned State for conduct of Public Hearing. The SPCB shall conduct the Public Hearing/public consultation, district-wise, as per the provisions of EIA notification, 2006. The Public Hearing shall be chaired by an Officer not below the rank of Additional District Magistrate. The issues raised in the Public Hearing and during the consultation process and the commitments made by the project proponent on the same shall be included separately in EIA-EMP Report in a separate chapter and summarized in a tabular chart with financial budget (capital and revenue) along with time-schedule of implementation for complying with the commitments made. The final EIA report shall be submitted to the Ministry for obtaining environmental clearance.

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ANNEXURE-2

ADDITIONAL ToRS FOR BENEFICIATION PLANT

1. Complete process flow diagram describing each unit, its processes and operations, along with material and energy inputs & outputs (material and energy balance).

2. Details regarding pollution control measures to be adopted in the mineral handling area, loading and unloading areas including all transfer points shall be submitted.

3. The Project proponent shall submit action plan for conditioning of the ore with water to mitigate fugitive dust emission, without affecting flow of ore in the ore processing and handling areas.

4. Treatment details regarding effluent generated from the ore beneficiation plant and the mode of transportation of tailing slurry shall be submitted.

5. Separate chapter on design of the tailing/slime pond by considering the rainfall in the area, proximity of the tailing/slime pond to the nearby water bodies and safety etc., shall be submitted.

6. Action plan for regular monitoring of ground water level and quality in and around the project area of beneficiation plant and tailing/slime pond shall be submitted by establishing a network of existing wells and constructing new piezometers.

7. Details regarding establishment of garland drain around the tailing/slime pond and the quantity of decanted water to be re-circulated from the tailing/slime pond shall be submitted along with complete water balance.

8. Technology to be adopted for maximum recovery of ore in order to reduce slurry discharge and to increase the life of the tailing/slime pond shall be submitted.

******

Executive Summary

Executive summary of the report in about 8-10 pages incorporating the following:

i. Project name and location (Village, District, State, Industrial Estate (if applicable)
ii. Products and capacities. If expansion proposal, then existing products with capacities and reference to earlier EC.
iii. Requirement of land, raw material, water, power, fuel, with source of supply (Quantitative)
iv. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes. Materials balance shall be presented.
v. Measures for mitigating the impact on the environment and mode of discharge or disposal.
vi. Capital cost of the project, estimated time of completion
vii. Site selected for the project – Nature of land – Agricultural (single/double crop), barren, Govt./private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest, eco-sensitive zones, accessibility, (note – in case of industrial estate this information may not be necessary)
viii. Baseline environmental data – air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
ix. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
x. Likely impact of the project on air, water, land, flora-fauna and nearby population
xi. Emergency preparedness plan in case of natural or in plant emergencies
xii. Issues raised during public hearing (if applicable) and response given
xiii. CSR plan with proposed expenditure.
xiv. Occupational Health Measures
xv. Post project monitoring plan

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रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY
भाग II—खण्ड 3—उप-खण्ड (i)
PART II—Section 3—Sub-section (i)
प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 572] नई दिल्ली, सोमवार, सितम्बर 30, 2019/आश्विन 8, 1941
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खान मंत्रालय

अधिसूचना

नई दिल्ली, 30 सितम्बर, 2019

सा. का. नि. 697(अ).—केंद्रीय सरकार, छत्तीसगढ़ की राज्य सरकार से परामर्श के पश्चात, खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) की धारा 17क की उप-धारा (1क) के द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, मैसर्स राष्ट्रीय खनिज विकास निगम - छत्तीसगढ़ खनिज विकास निगम लिमिटेड (एन. सी. एल.), राष्ट्रीय खनिज विकास निगम लिमिटेड (इस्पात मंत्रालय के प्रशासनिक नियंत्रणाधीन केंद्रीय सरकार का एक पब्लिक सेक्टर का उपक्रम) और मैसर्स छत्तीसगढ़ खनिज विकास निगम लिमिटेड (छत्तीसगढ़ सरकार का एक पब्लिक सेक्टर का उपक्रम) का एक संयुक्त उद्यम के माध्यम से खनिज लौह अयस्क के पूर्वेक्षण अथवा खनन प्रचालन करने के लिए बैलाडिला आरक्षित वन निक्षेप सं. 4, जिला दक्षिणी बस्तर, छत्तीसगढ़ में ऐसे आरक्षित क्षेत्र के नीचे यथानिर्दिष्ट सीमा (अक्षांश और देशांतर द्वारा सीमांकित) के भीतर पड़ने वाले 646.596 हेक्टेयर के क्षेत्र को पांच वर्ष की अवधि के लिए आरक्षित करती है :-

खनिज का नाम	स्थिति	क्षेत्र	पिलर	अक्षांश	देशांतर
लौह अयस्क	बैलाडिला आरक्षित वन, निक्षेप सं. 4 जिला दक्षिण बस्तर, छत्तीसगढ़	646.596 हैक्टेयर	A	81°12'10.40"	18°43'45.70"
			B	81°13'10.80"	18°43'40.90"
			C	81°13'08.80"	18°43'05.90"
			D	81°13'05.50"	18°43'05.80"
			E	81°12'57.30"	18°41'27.70"
			F	81°12'28.80"	18°41'52.90"
			G	81°11'57.70"	18°41'58.70"

[फा. सं. 4/2/2018-एम VI]
निरंजन कुमार सिंह, संयुक्त सचिव

MINISTRY OF MINES

NOTIFICATION

New Delhi, the 30th September, 2019

G.S.R. 697(E).—In exercise of the powers conferred by sub-section (1A) of section 17A of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957), the Central Government, after consultation with the State Government of Chhattisgarh hereby reserves an area of 646.596 hectares in Bailadila reserve forest, Deposit No. 4, District South Bastar, Chhattisgarh for mineral iron ore for undertaking prospecting or mining operations through M/s National Mineral Development Corporation – Chhattisgarh Mineral Development Corporation Limited (NCL), a joint venture of National Mineral Development Corporation Limited (a Central Government Public Sector Undertaking under the administrative control of Ministry of Steel), and Chhattisgarh Mineral Development Corporation Limited (a Government of Chhattisgarh Public Sector Undertaking), for a period of five years lying within the boundary (demarcated by latitude and longitude) of such reserve area as specified below:-

Name of Mineral	Location	Area	Pillar	Longitude	Latitude
Iron ore	Bailadila reserve forest, deposit No. 4, District South Bastar, Chhattisgarh	646.596 hects	A	81°12'10.40"	18°43'45.70"
			B	81°13'10.80"	18°43'40.90"
			C	81°13'08.80"	18°43'05.90"
			D	81°13'05.50"	18°43'05.80"
			E	81°12'57.30"	18°41'27.70"
			F	81°12'28.80"	18°41'52.90"
			G	81°11'57.70"	18°41'58.70"

[F. No. 4/2/2018-M.VI]

NIRANJAN KUMAR SINGH, Jt. Secy.

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रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

सी.जी.-डी.एल.-अ.-18022021-225248
CG-DL-E-18022021-225248

असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (i)
PART II—Section 3—Sub-section (i)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 79] नई दिल्ली, बृहस्पतिवार, फरवरी 18, 2021/माघ 29, 1942
No. 79] NEW DELHI, THURSDAY, FEBRUARY 18, 2021/MAGHA 29, 1942

खान मंत्रालय

अधिसूचना

नई दिल्ली, 18 फरवरी, 2021

सा.का.नि. 119(अ).—केंद्रीय सरकार, खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) की धारा 17क की उप-धारा (1क) के द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, छत्तीसगढ़ के राज्य सरकार से परामर्श से भारत सरकार, खान मंत्रालय की अधिसूचना संख्या 697(अ) तारीख 30 सितंबर, 2019 जो भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में प्रकाशित की गई थी, में निम्नलिखित संशोधन करती है, अर्थात्:—

2. उक्त अधिसूचना में "खनिज का नाम" शब्दों के साथ आरंभ होकर और "18^0 41'58.70" उत्तर आंकड़े के साथ अंत होने वाले के स्थान पर निम्नलिखित रखा जाएगा:

खनिज का नाम	स्थिति	क्षेत्र	पिलर	अक्षांश	देशांतर
लौह अयस्क	बैलाडिला आरक्षित वन, निक्षेप सं. 4 जिला दक्षिण बस्तर, छत्तीसगढ़	646.596 हेक्टेयर	ए	81^{0}12'03.25650"पूर्व	18^{0}43'38.32617" उत्तर
			बी	81^{0}13'04.84428"पूर्व	18^{0}43'38.52758" उत्तर

			सी	81⁰13’06.24991”पूर्व	18⁰43’12.30677” उत्तर
			डी	81⁰13’03.60782”पूर्व	18⁰43’12.27943” उत्तर
			ई	81⁰13’07.02661”पूर्व	18⁰41’26.17920” उत्तर
			एफ	81⁰12’31.89279”पूर्व	18⁰41’48.22195” उत्तर
			जी	81⁰12’02.90192”पूर्व	18⁰41’50.38796” उत्तर

[फा. सं. 4/2/2018-एम VI]

डॉ. वीणा कुमारी डरमल, संयुक्त सचिव

MINISTRY OF MINES

NOTIFICATION

New Delhi, the 18th February, 2021

G.S.R. 119(E).—In exercise of the powers conferred by sub-section (1A) of section 17A of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957) the Central Government in consultation with the State Government of Chhattisgarh, hereby makes the following amendments in the notification of the Government of India in the Ministry of Mines, dated 30th September, 2019 published in the Gazette of India, Extraordinary, Part II, Section 3, sub-section (i), *vide* number 697(E), dated the 30th September, 2019, namely:

2. In the said notification, beginning with the words “Name of Mineral” and ending with the figure “18⁰41’58.70” N”, the following shall be substituted:

Name of Mineral	Location	Area	Pillar	Longitude	Latitude
Iron ore	Bailadila reserve forest, deposit No. 4, District South Bastar, Chhattisgarh	646.596 hects.	A	81⁰12’03.25650”E	18⁰43’38.32617”N
			B	81⁰13’04.84428”E	18⁰43’38.52758”N
			C	81⁰13’06.24991”E	18⁰43’12.30677”N
			D	81⁰13’03.60782”E	18⁰43’12.27943”N
			E	81⁰13’07.02661”E	18⁰41’26.17920”N
			F	81⁰12’31.89279”E	18⁰41’48.22195”N
			G	81⁰12’02.90192”E	18⁰41’50.38796’N

[F. No. 04/02/2018-M.VI]

Dr. VEENA KUMARI DERMAL, Jt. Secy.

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छत्तीसगढ शासन
खनिज साधन विभाग
मंत्रालय
महानदी भवन, नवा रायपुर, अटल नगर–492 002

क्रमांक एफ 2–20/2005/12, नवा रायपुर अटल नगर, दिनांक जून, 2021

प्रति,

26 JUN 2021

मुख्य कार्यपालन अधिकारी,
एनएमडीसी–सीएमडीसी लिमिटेड(एनसीएल),
ग्रीन विले सिटी, हाऊसिंग बोर्ड कालोनी,
सेजबहार, बोरिया कला, शदाणी दरबार के सामने,
एनएच–30, रायपुर, छत्तीसगढ़ –492 015.

विषयः– जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला, डिपॉजिट नं. 4 के कुल रकबा 646.596 हेक्टर क्षेत्र खनिज लौह अयस्क का खनिपट्टा की स्वीकृति हेतु–मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल)।

संदर्भः– आपका पत्र क्रमांक No. NCL/HO/Dep-4/LEASE/2017/597, Date 09.10.2019.

जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला डिपॉजिट–4 के कुल रकबा 646.596 हेक्टेयर क्षेत्र में खनिज आयरन ओर का खनिपट्टा हेतु मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) द्वारा दिनांक 21.11.2019 को आवेदन पत्र प्रस्तुत किया गया है।

2/ प्रश्नाधीन क्षेत्र का विवरण निम्नानुसार है :–

2.1 एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) एक संयुक्त उपक्रम की कम्पनी (JVC) है जिसमें एनएमडीसी एवं सीएमडीसी लिमि. का क्रमशः 51:49 की भागीदारी है। राज्य के स्पंज/स्टील उद्योगों की लौह अयस्क की आवश्यकता की आपूर्ति संबंधी कठिनाई को ध्यान में रखते हुए इस संयुक्त उपक्रम कम्पनी (JVC) द्वारा बैलाडीला डिपाजिट क्रमांक–04 का विकास किये जाने हेतु एनएमडीसी एवं सीएमडीसी मे मध्य सहमति हुई है और एक औपचारिक सहमति (मेमोरेडम आफ अडरस्टैडिंग) निष्पादित किया गया है।

2.2 प्रश्नाधीन क्षेत्र में एनएमडीसी के पक्ष में पूर्ववर्ती मध्यप्रदेश शासन के पत्र क्र. 4043/4381/12, दिनांक 03.09.1971 द्वारा पूर्वेक्षण अनुज्ञप्ति स्वीकृत किया गया था। पूर्वेक्षण कार्य के आधार पर एनएमडीसी ने क्षेत्र पर 107 मिलियन टन लौह अयस्क के माइनेबल भण्डार प्रमाणित किये हैं।

2.3 एनएमडीसी द्वारा जिला दक्षिण बस्तर दंतेवाड़ा के बैलाडिला स्थित डिपाजिट क्रमांक–4 के वन कक्ष कमांक 659, 661, 662, 663, 664, 665, 666, 667, 668, 672 एवं 676, 778 (टोपोशीट 65 एफ/2) के क्षेत्र पर खनिज लौह अयस्क का खनिपट्टा स्वीकृति हेतु आवेदन पत्र दिनांक 27.02.1991 प्रस्तुत किया गया, जिस पर निर्णय लेते हुए विभागीय पत्र दिनांक 30.09.2010 के माध्यम से पूर्वानुमोदन प्रस्ताव भारत सरकार, खान मंत्रालय को प्रेषित किया गया। जिसके परिप्रेक्ष्य में भारत सरकार, खान मंत्रालय ने अपने पत्र कमांक 5/103/2010–M.IV, दिनांक 30.11.2011 द्वारा 20 वर्ष की अवधि के लिए खनिपट्टा स्वीकृत किए जाने हेतु एमएमडीआर एक्ट, 1957 की धारा–5(1) के तहत पूर्वानुमोदन एवं धारा–6(1)(बी) के तहत् निर्धारित सीमा में छूट निम्नानुसार अतिरिक्त शर्त के तहत प्रदान की गई :–

"There shall be no change in the equity ratio of 51:49 in the Joint Venture between M/s National Mineral Development Corporation Ltd. and M/s Chhattishgarh Mineral Development Corporation without the approval of the Central Government."

2.4 उपरोक्त के संदर्भ में विभागीय समसंख्यक पत्र दिनांक 13.01.2012 द्वारा एनएमडीसी को खनिपट्टा स्वीकृति हेतु आईबीएम द्वारा अनुमोदित मायनिंग प्लान एवं वन संरक्षण अधिनियम 1980 के तहत् आवश्यक अनुमति वन विभाग से प्राप्त कर प्रस्तुत करने हेतु (LoI) लेख किया गया।

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2.5 एनएमडीसी ने पत्र दिनांक 13.08.2013 के माध्यम से भारतीय खान ब्यूरो, नागपुर के पत्र दिनांक 26.07.2013 द्वारा रकबा 646.596 हेक्टेयर क्षेत्र का अनुमोदित मायनिंग प्लान प्रस्तुत किया गया, किन्तु भारत सरकार, पर्यावरण एवं वन मंत्रालय से वांछित वन एवं पर्यावरणीय अनुमति प्रस्तुत नहीं किया गया।

2.6 विभागीय समसंख्यक मत्र दिनांक 13.01.2012 द्वारा जारी LoI के संदर्भ में एनएमडीसी द्वारा वन एवं पर्यावरणीय सम्मितियाँ आदि MMDR Act, 1957 (यथा संशोधित 2015) की धारा–10A(2)(c) अनुसार निर्धारित तिथि 11.01.2017 तक प्रस्तुत नही की जा सकी। अतएव MMDR Act, 1957 (यथा संशोधित 2015) की धारा–10A(2)(c) सहपठित खनिज (परमाणु और हाइड्रोकार्बन ऊर्जा खनिजों से भिन्न) रियायत नियम, 2016 के नियम–8(4) के तहत् विषयक खनिपट्टा प्रकरण में खनिपट्टा स्वीकृति आदेश जारी नही किया गया जो कि अधिनियम के उक्त प्रावधानों के तहत् स्वमेव समाप्त हो गया।

2.7 एनएमडीसी द्वारा उक्त के संदर्भ में माननीय उच्च न्यायालय छत्तीसगढ़, बिलासपुर के समक्ष प्रकरण क्रमांक W.P.(c) No. 100/2017., NMDC Ltd Vs UoI & Others दायर किया गया। एनएमडीसी द्वारा याचिका वापस लेने के कारण माननीय न्यायालय के आदेश दिनांक 21.04.2017 द्वारा उक्त रिट पिटिशन dismissed as withdrawn किया गया है।

2.8 संयुक्त उद्यम कम्पनी (JVC) एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) द्वारा उपर्युक्त क्षेत्र जिला बस्तर के बैलाडीला आयरन ओर डिपॉजिट–4 के कुल रकबा 646.596 हेक्टेयर को MMDR Act, 1957(यथा संशोधित 2015) की धारा–17A(1A) के तहत् खनिपट्टा स्वीकृति हेतु दिनांक 21.11.2019 को आवेदन प्रस्तुत किया गया। जिसके संदर्भ में विभागीय समसंख्यक पत्र दिनांक 17.01.2018 द्वारा धारा–17A(1A) के तहत् उपर्युक्त क्षेत्र को एनसीएल के पक्ष में आरक्षित करने हेतु भारत सरकार, खान मंत्रालय को प्रस्ताव प्रेषित किया गया।

2.9 भारत सरकार, खान मंत्रालय, नई दिल्ली की अधिसूचना दिनांक 30.09.2019 द्वारा मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पक्ष में MMDR Act, 1957(यथा संशोधित 2015) की धारा–17A(1A) के तहत् बैलाडीला डिपॉजिट क्रमांक–4 के कुल रकबा 646.596 हेक्टेयर के निम्नलिखित क्षेत्र को 05 वर्ष की अवधि के लिए आरक्षित किया गया है :–

खनिज का नाम	स्थिति	क्षेत्र	पिलर	अक्षांश	देशांतर
लौह अयस्क	बैलाडीला आरक्षित वन, निक्षेप सं. 4 जिला दक्षिण बस्तर, छत्तीसगढ़	646.596 हेक्टेयर	A	81°12'10.40"	18°43'45.70"
			B	81°13'10.80"	18°43'40.90"
			C	81°13'08.80"	18°43'05.90"
			D	81°13'05.50"	18°43'05.80"
			E	81°12'57.30"	18°41'27.70"
			F	81°12'28.80"	18°41'52.90"
			G	81°11'57.70"	18°41'58.70"

2.10 उक्त के संदर्भ में एनसीएल द्वारा जिला दक्षिण बस्तर दंतेवाड़ा के बैलाडीला आयरन ओर डिपॉजिट–4 के कुल रकबा 646.596 हेक्टेयर क्षेत्र को MMDR Act, 1957(यथा संशोधित 2015) की धारा–17A(1A) के तहत् खनिज लौह अयस्क के खनिपट्टा स्वीकृति हेतु दिनांक 21.11.2019 को आवेदन प्रस्तुत किया गया, जिसे संचालक भौमिकी तथा खनिकर्म, छत्तीसगढ़ ने अपने प्रस्ताव दिनांक 29.04.2020 द्वारा इस विभाग को प्रेषित किया।

2.11 उपरोक्त के परिप्रेक्ष्य में विभागीय समसंख्यक पत्र दिनांक 02.12.2020 द्वारा एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पक्ष में पैरा–2.9 की तालिका में उल्लेखित क्षेत्र पर MMDR Act, 1957 (यथा संशोधित 2015) की धारा–17A(2A) के तहत 05 वर्ष की अवधि के लिए खनिज लौह अयस्क का खनिपट्टा स्वीकृति का सैद्धांतिक निर्णय लिया जाकर क्षेत्र में खनन कार्य हेतु वन संरक्षण अधिनियम, 1980 एवं पर्यावरण संरक्षण अधिनियम, 1986 के तहत आवश्यक वन एवं पर्यावरणीय अनुमति प्राप्त कर इस विभाग को प्रस्तुत करने की अनुमति प्रदान की गई है।

2.12 एनसीएल के द्वारा दिनांक 28.08.2020 को इस विभाग को पत्र प्रेषित कर प्रस्तावित LoI (खनिपट्टा स्वीकृति हेतु आशय–पत्र) के परिप्रेक्ष्य में अनुरोध किया गया कि विषयांकित क्षेत्र का खनिपट्टा स्वीकृति हेतु जारी किये जाने वाले आशय पत्र में एनएमडीसी के द्वारा प्रस्तावित क्षेत्र को किये गये डीजीपीएस सर्वेक्षण से प्राप्त को–ऑर्डिनेट्स एवं भारत सरकार के द्वारा जारी अधिसूचना में दर्शित को–ऑर्डिनेट्स में विभिन्नता पाये जाने के कारण तथा डीजीपीएस सर्वेक्षण से प्राप्त को–ऑर्डिनेट्स वैज्ञानिक व तकनीकि रूप से सामान्य को–ऑर्डिनेट्स से अधिक उपयुक्त एवं त्रुटियों से रहित होने के फलस्वरूप डीजीपीएस को–ऑर्डिनेट्स के आधार पर खनिपट्टा स्वीकृति हेतु आशय पत्र जारी किये जाने हेतु इस विभाग से अनुरोध किया गया।

2.13 उक्त पत्र में निहित तथ्यों का परीक्षण किये जाने उपरान्त तथा जारी अधिसूचना व एनएमडीसी के द्वारा प्रस्तावित क्षेत्र को डीजीपीएस को–ऑर्डिनेट्स में व्यापक भिन्नता होने के फलस्वरूप भारत सरकार, खान मंत्रालय की अधिसूचना दिनांक 30.09.2019 में आवश्यक संशोधन हेतु विभागीय समसंख्यक पत्र दिनांक 26.12.2019 के माध्यम से भारत सरकार, खान मंत्रालय को प्रस्ताव प्रेषित किया गया तथा पुराने वन कंपार्टमेंट के स्थान पर नये वन कंपार्टमेंट नंबरों के आधार पर संशोधन करते हुए इस विभाग के प्रस्ताव पत्र दिनांक 26.12.2020 पर यथोचित कार्यवाही किये जाने हेतु विभागीय समसंख्यक पत्र दिनांक 26.03.2021 द्वारा भारत सरकार, खान मंत्रालय को प्रेषित किया गया।

2.14 भारत सरकार, खान मंत्रालय के पत्र क्रमांक 4/2/200–M.VI, दिनांक 09.04.2021 के द्वारा अवगत कराया गया कि इस विभाग के प्रस्ताव दिनांक 26.12.2020 एवं संशोधित पत्र दिनांक 26.03.2021 में निहित तथ्यों के परिप्रेक्ष्य में भारत सरकार, खान मंत्रालय की अधिसूचना दिनांक 30.09.2019 में आवश्यक संशोधन किया जाकर G.S.R. No. 119(E), दिनांक 18.02.2021 को संशोधित अधिसूचना जारी कर दिया गया है।

2.15 भारत के राजपत्र प्रकाशन G.S.R. No. 119(E), दिनांक 18.02.2021 को संशोधित अधिसूचना के परिपालन में मेसर्स एनएमडीसी–सीएमडीसी (एनसीएल) के पक्ष में MMDR Act, 1957 की धारा–17A(1A) के तहत् बैलाडीला डिपॉजिट क्रमांक–4 के कुल रकबा 646.596 हेक्टेयर के निम्नलिखित क्षेत्र को 05 वर्ष की अवधि के लिए खनिज लौह अयस्क के पूर्वेक्षण अथवा खनन प्रचालन करने के लिए आरक्षित किया गया है :–

खनिज का नाम	स्थिति	क्षेत्र	पिलर	अक्षांश	देशांतर
1.	2.	3.	A	81°12'03.25650"E	18°43'38.32617"N
लौह अयस्क	बैलाडीला आरक्षित वन निक्षेप क्रमांक–4 जिला दक्षिण बस्तर दंतेवाड़ा, छत्तीसगढ़	646.596 हेक्टेयर	B	81°13'04.84428"E	18°43'38.52758"N
			C	81°13'06.24991"E	18°43'12.30677"N
			D	81°13'03.60782"E	18°43'12.27943"N
			E	81°13'07.02661"E	18°41'26.17920"N
			F	81°12'31.89279"E	18°41'48.22195"N
			G	81°12'02.90192"E	18°41'50.38796"N

2.16 एनसीएल के पत्र दिनांक 19.03.2021 के साथ वन मंडलाधिकारी जिला दक्षिण बस्तर दंतेवाड़ा के पत्र दिनांक 26.02.2021 अनुसार खनिपट्टा स्वीकृति हेतु प्रश्नाधीन क्षेत्र का विवरण निम्नानुसार है :–

क्र.	वनमंडल का नाम	वन कक्ष क्रमांक (पुराना)	वन कक्ष क्रमांक (नया)	कुल रकबा (हे. में)	खनिपट्टा हेतु प्रस्तावित रकबा (हे. में)
1.	2.	3.	4.	5.	6.
1	दक्षिण परिक्षेत्र बचेली	665	1832	273.155	9.052
2		664	1833	190.017	104.332
3		663	1886	368.585	45.239
4		662	1885	389.901	160.862
5		666	1834	212.612	140.372
6		659	1842	193.670	32.917
7		667	1841	316.004	153.310
8		676	1826	232.561	0.512
			योग	2176.505	646.596

3/ भारत सरकार, खान मंत्रालय, नई दिल्ली द्वारा जारी अधिसूचना दिनांक 18.02.2021 अनुसार शासकीय उपक्रम की कंपनी मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पक्ष में MMDR Act, 1957 (यथा संशोधित 2015) की धारा–17A(1A) के तहत् बैलाडीला डिपॉजिट कमांक–4 के कुल रकबा 646.596 हेक्टेयर क्षेत्र को 05 वर्ष की अवधि के लिए खनिज लौह अयस्क का पूर्वेक्षण अथवा खनन प्रचालन करने के लिए आरक्षित किया गया है। क्षेत्र में मेसर्स एनएमडीसी लिमि. के पक्ष में पूर्वेक्षण अनुज्ञप्ति स्वीकृत था। पूर्वेक्षण कार्य के आधार पर एनएमडीसी ने क्षेत्र पर 107 मिलियन टन लौह अयस्क के माइनेबल भण्डार प्रमाणित किये है। प्रश्नाधीन क्षेत्र में लौह अयस्क खनन हेतु भारतीय खान ब्यूरो, नागपुर ने पत्र दिनांक 26.07.2013 द्वारा मायनिंग प्लान अनुमोदित किया गया है।

4/ अतः उपरोक्त तथ्यों के प्रकाश में एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पक्ष में पैरा–2.15 एवं 2.16 की तालिका में उल्लेखित क्षेत्र पर MMDR Act, 1957 (यथा संशोधित 2015) की धारा–17A(2A) के तहत 05 वर्ष की अवधि के लिए खनिज लौह अयस्क का खनिपट्टा स्वीकृति का सैद्धांतिक निर्णय लिया जाकर क्षेत्र में खनन कार्य हेतु वन संरक्षण अधिनियम, 1980 एवं पर्यावरण संरक्षण अधिनियम, 1986 के तहत आवश्यक वन एवं पर्यावरणीय अनुमति प्राप्त कर इस विभाग को प्रस्तुत करने की अनुमति प्रदान की जाती है।

5/ वन संरक्षण अधिनियम, 1980 एवं पर्यावरण संरक्षण अधिनियम, 1986 के तहत जारी की जा रही इस अनुमति से उपर्युक्त आवेदित क्षेत्र पर प्रवेश करने या खनन कार्य करने का कोई अधिकार कंपनी को प्राप्त नहीं होगा।

संलग्नः–नक्शा।

26/06/2021

(कुन्दन कुमार बंजारे)
अवर सचिव
छत्तीसगढ़ शासन,
खनिज साधन विभाग

पृ0क्रमांक एफ 2–20/2005/12, नवा रायपुर, अटल नगर दिनांक

प्रतिलिपि :–

1. सचिव, भारत सरकार, खान मंत्रालय, शास्त्री भवन, नई दिल्ली।
2. सचिव, भारत सरकार, वन एवं पर्यावरण मंत्रालय (एफसी डिवीजन) पर्यावरण भवन सीजीओर काम्प्लेक्स, लोधी रोड, नई दिल्ली।
3. सदस्य सचिव, छत्तीसगढ़ पर्यावरण संरक्षण मंडल, पर्यावास भवन, सेक्टर–19, नवा रायपुर अटल नगर, छत्तीसगढ़।
4. क्षेत्रीय खान नियंत्रक, भारतीय खान ब्यूरो, दूसरी मंजिल, जीएसआई फील्ड प्रशिक्षण केन्द्र, महालेखाकार ऑफिस कॉम्पलेक्स, पोस्ट विधान सभा, रायपुर, छत्तीसगढ़।
5. महानिदेशक, सेफ्टी ऑफ माईन्स, सीपत रोड, बिलासपुर, छत्तीसगढ़
6. संचालक, भौमिकी तथा खनिकर्म, इन्द्रावती भवन, नवा रायपुर अटल नगर, छत्तीसगढ़।
7. अध्यक्ष सह प्रबंध निदेशक, एन.एम.डी.सी. लिमिटेड, खनिज भवन 10–3–311/ए. कैस्टल हिल्स मासाब टैंक, हैदराबाद।
8. अतिरिक्त प्रधान मुख्य वन संरक्षक (भू–प्रबंध), नोडल अधिकारी वन संरक्षण अधिनियम, 1980 छत्तीसगढ़ अरण्य भवन, जेल रोड, रायपुर।
9. प्रबंध संचालक, छत्तीसगढ़ मिनरल डेव्हलपमेंट कार्पोरेशन लिमिटेड, सोनाखान भवन, रिंग रोड, रायपुर, छत्तीसगढ़
10. कलेक्टर, जिला–दक्षिण बस्तर दंतेवाड़ा, छत्तीसगढ़

की ओर आवश्यक कार्यवाही हेतु सूचनार्थ।

11. गार्ड फाईल।

हस्ता/–
अवर सचिव
छत्तीसगढ़ शासन
खनिज साधन विभाग

4

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By Speed Post

छत्तीसगढ़ शासन
खनिज साधन विभाग
मंत्रालय
महानदी भवन, नवा रायपुर, अटल नगर–492 002

क्रमांक एफ 2–20/2005/12, नवा रायपुर अटल नगर, दिनांक 07 AUG 2021

प्रति,

मुख्य कार्यपालन अधिकारी,
एनएमडीसी–सीएमडीसी लिमिटेड(एनसीएल),
ग्रीन विले सिटी, हाऊसिंग बोर्ड कालोनी,
रोजबहार, बोरिया कला, शदाणी दरबार के सामने,
एनएच–30, रायपुर, छत्तीसगढ़ –492 015.

विषयः– जिला दक्षिण बस्तार दंतेवाड़ा, बैलाडीला, डिपॉजिट नं. 4 के कुल रकबा 646.596 हेक्टर क्षेत्र खनिज लौह अयस्क का खनिपट्टा की स्वीकृति हेतु–मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल)।

संदर्भः– 1. इस विभाग का समसंख्यक पत्र दिनांक 26.06.2021.
2. आपका पत्र क्रमांक No. NCL/HO/Dep-4/Lease/2020/878, Date 15.07.2021.
3. आईबीएम, रायपुर पत्र क्र. RPR-1309/01/2016-MP, Date14.07.2021.

कृपया संदर्भित पत्रों का अवलोकन करें। मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पत्र दिनांक 15.07.2021 तथा भारतीय खान ब्यूरो (आईबीएम) रायपुर के पत्र दिनांक 14.07.2021 के परिप्रेक्ष्य में जिला दक्षिण बस्तार दंतेवाड़ा, बैलाडीला, डिपॉजिट नं. 4 के कुल रकबा 646.596 हेक्टर क्षेत्र खनिज लौह अयस्क का खनिपट्टा की स्वीकृति हेतु जारी आशय पत्र दिनांक 26.06.2021 के अनुक्रम में प्रश्नाधीन क्षेत्र हेतु खनिज (परमाणु, हाइड्रो कार्बन और ऊर्जा खनिजों से भिन्न) रियायत नियम, 2016 के नियम–13 के तहत् भारतीय खान ब्यूरो से अनुमोदित मायनिंग प्लान प्रस्तुत करने की अनुमति प्रदान की जाती है।

2/ इस विभाग के समसंख्यक पत्र दिनांक 26.06.2021 द्वारा जारी आशय पत्र में उल्लिखित शेष शर्तें यथावत रहेंगी।

07/08/2021

(कुन्दन कुमार बंजारे)
अवर सचिव
छत्तीसगढ़ शासन,
खनिज साधन विभाग

पृ0क्रमांक एफ 2–20/2005/12, नवा रायपुर अटल नगर, दिनांक

प्रतिलिपि :–

1. सचिव, भारत सरकार, खान मंत्रालय, शास्त्री भवन, नई दिल्ली।
2. सचिव, भारत सरकार, वन एवं पर्यावरण मंत्रालय (एफसी डिवीजन) पर्यावरण भवन सीजीओ कॉम्प्लेक्स, लोधी रोड, नई दिल्ली।
3. सदस्य सचिव, छत्तीसगढ़ पर्यावरण संरक्षण मंडल, पर्यावास भवन, सेक्टर–19, नवा रायपुर अटल नगर, छत्तीसगढ़।
4. क्षेत्रीय खान नियंत्रक, भारतीय खान ब्यूरो, दूसरी मंजिल, जीएसआई फील्ड प्रशिक्षण केन्द्र, महालेखाकार ऑफिस कॉम्पलेक्स, पोस्ट विधान सभा, रायपुर, छत्तीसगढ़ की ओर उनके पत्र क्र. RPR-1309/01/2016-MP, Date14.07.2021 के संदर्भ में उपरोक्तानुसार सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

5. महानिदेशक, सेफ्टी ऑफ माईन्स, सीपत रोड, बिलासपुर, छत्तीसगढ़,

6. संचालक, भौमिकी तथा खनिकर्म, इन्द्रावती भवन, नवा रायपुर अटल नगर, छत्तीसगढ़।

7. अध्यक्ष सह प्रबंध निदेशक, एन.एम.डी.सी. लिमिटेड, खनिज भवन 10–3–311/ए, कैस्टल हिल्स मासाब टैंक, हैदराबाद।

8. अतिरिक्त प्रधान मुख्य वन संरक्षक (भू–प्रबंध), नोडल अधिकारी वन संरक्षण अधिनियम, 1980 छत्तीसगढ़ अरण्य भवन, जेल रोड, रायपुर।

9. प्रबंध संचालक, छत्तीसगढ़ मिनरल डेव्हलपमेंट कार्पोरेशन लिमिटेड, सोनाखान भवन, रिंग रोड, रायपुर, छत्तीसगढ़,

10. कलेक्टर, जिला–दक्षिण बस्तर दंतेवाड़ा, छत्तीसगढ़

की ओर आवश्यक कार्यवाही हेतु सूचनार्थ।

11. गार्ड फाईल।

हस्ता./-
अवर सचिव
छत्तीसगढ़ शासन
खनिज साधन विभाग

रजिस्ट्री सं. डी.एल.- 33004/99

REGD. No. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

सी.जी.-डी.एल.-अ.-18022021-225248
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असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (i)
PART II—Section 3—Sub-section (i)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 79] नई दिल्ली, बृहस्पतिवार, फरवरी 18, 2021/माघ 29, 1942
No. 79] NEW DELHI, THURSDAY, FEBRUARY 18, 2021/MAGHA 29, 1942

खान मंत्रालय

अधिसूचना

नई दिल्ली, 18 फरवरी, 2021

सा.का.नि. 119(अ).—केंद्रीय सरकार, खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) की धारा 17क की उप-धारा (1क) के द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, छत्तीसगढ़ के राज्य सरकार से परामर्श से भारत सरकार, खान मंत्रालय की अधिसूचना संख्या 697(अ) तारीख 30 सितंबर, 2019 जो भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में प्रकाशित की गई थी, में निम्नलिखित संशोधन करती है, अर्थात्:—

2. उक्त अधिसूचना में "खनिज का नाम" शब्दों के साथ आरंभ होकर और "18° 41'58.70" उत्तर आंकड़े के साथ अंत होने वाले के स्थान पर निम्नलिखित रखा जाएगा:

खनिज का नाम	स्थिति	क्षेत्र	पिलर	अक्षांश	देशांतर
लौह अयस्क	बैलाडिला आरक्षित वन, निक्षेप सं. 4 जिला दक्षिण बस्तर, छत्तीसगढ़	646.596 हेक्टेयर	ए	81°12'03.25650"पूर्व	18°43'38.32617" उत्तर
			बी	81°13'04.84428"पूर्व	18°43'38.52758" उत्तर

			मी	81°13'06.24991"पूर्व	18°43'12.30677" उत्तर
			डी	81°13'03.60782"पूर्व	18°43'12.27943" उत्तर
			ई	81°13'07.02661"पूर्व	18°41'26.17920" उत्तर
			एफ	81°12'31.89279"पूर्व	18°41'48.22195" उत्तर
			जी	81°12'02.90192"पूर्व	18°41'50.38796" उत्तर

[फा. सं. 4/2/2018-एम VI]

डॉ. वीणा कुमारी डरमल, संयुक्त सचिव

MINISTRY OF MINES

NOTIFICATION

New Delhi, the 18th February, 2021

G.S.R. 119(E).—In exercise of the powers conferred by sub-section (1A) of section 17A of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957) the Central Government in consultation with the State Government of Chhattisgarh, hereby makes the following amendments in the notification of the Government of India in the Ministry of Mines, dated 30th September, 2019 published in the Gazette of India, Extraordinary, Part II, Section 3, sub-section (i), *vide* number 697(E), dated the 30th September, 2019, namely:

2. In the said notification, beginning with the words "Name of Mineral" and ending with the figure "18°41'58.70" N", the following shall be substituted:

Name of Mineral	Location	Area	Pillar	Longitude	Latitude
Iron ore	Bailadila reserve forest, deposit No. 4, District South Bastar, Chhattisgarh	646.596 hects.	A	81°12'03.25650"E	18°43'38.32617"N
			B	81°13'04.84428"E	18°43'38.52758"N
			C	81°13'06.24991"E	18°43'12.30677"N
			D	81°13'03.60782"E	18°43'12.27943"N
			E	81°13'07.02661"E	18°41'26.17920"N
			F	81°12'31.89279"E	18°41'48.22195"N
			G	81°12'02.90192"E	18°41'50.38796"N

[F. No. 04/02/2018-M.VI]

Dr. VEENA KUMARI DERMAL, Jt. Secy.

Uploaded by Dte. of Printing at Government of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054.

Annexure-1.5

By Speed Post

छत्तीसगढ शासन
खनिज साधन विभाग
मंत्रालय
महानदी भवन, नवा रायपुर, अटल नगर–492 002

क्रमांक एफ 2–20/2005/12, नवा रायपुर अटल नगर, दिनांक जून, 2021

प्रति,

मुख्य कार्यपालन अधिकारी,
एनएमडीसी–सीएमडीसी लिमिटेड(एनसीएल),
ग्रीन विले सिटी, हाऊसिंग बोर्ड कालोनी,
सेजबहार, बोरिया कला, शदाणी दरबार के सामने,
एनएच–30, रायपुर, छत्तीसगढ़ –492 015.

26 JUN 2021

विषयः– जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला, डिपॉजिट नं. 4 के कुल रकबा 646.596 हेक्टर क्षेत्र खनिज लौह अयस्क का खनिपट्टा की स्वीकृति हेतु–मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल)।

संदर्भः– आपका पत्र क्रमांक No. NCL/HO/Dep-4/LEASE/2017/597, Date 09.10.2019.

जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला डिपॉजिट–4 के कुल रकबा 646.596 हेक्टेयर क्षेत्र में खनिज आयरन ओर का खनिपट्टा हेतु मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) द्वारा दिनांक 21.11.2019 को आवेदन पत्र प्रस्तुत किया गया है।

2/ प्रश्नाधीन क्षेत्र का विवरण निम्नानुसार है :–

2.1 एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) एक संयुक्त उपक्रम की कम्पनी (JVC) है जिसमें एनएमडीसी एवं सीएमडीसी लिमि. का क्रमशः 51:49 की भागीदारी है। राज्य के स्पंज/स्टील उद्योगों की लौह अयस्क की आवश्यकता की आपूर्ति संबंधी कठिनाई को ध्यान में रखते हुए इस संयुक्त उपक्रम कम्पनी (JVC) द्वारा बैलाडीला डिपाजिट क्रमांक–04 का विकास किये जाने हेतु एनएमडीसी एवं सीएमडीसी मे मध्य सहमति हुई है और एक औपचारिक सहमति (मेमोरेडम आफ अडरस्टैडिंग) निष्पादित किया गया है।

2.2 प्रश्नाधीन क्षेत्र में एनएमडीसी के पक्ष में पूर्ववर्ती मध्यप्रदेश शासन के पत्र क. 4043/4381/12, दिनांक 03.09.1971 द्वारा पूर्वेक्षण अनुज्ञप्ति स्वीकृत किया गया था। पूर्वेक्षण कार्य के आधार पर एनएमडीसी ने क्षेत्र पर 107 मिलियन टन लौह अयस्क के माइनेबल भण्डार प्रमाणित किये हैं।

2.3 एनएमडीसी द्वारा जिला दक्षिण बस्तर दंतेवाड़ा के बैलाडिला स्थित डिपाजिट क्रमांक–4 के वन कक्ष कमांक 659, 661, 662, 663, 664, 665, 666, 667, 668, 672 एवं 676, 778 (टोपोशीट 65 एफ/2) के क्षेत्र पर खनिज लौह अयस्क का खनिपट्टा स्वीकृति हेतु आवेदन पत्र दिनांक 27.02.1991 प्रस्तुत किया गया, जिस पर निर्णय लेते हुए विभागीय पत्र दिनांक 30.09.2010 के माध्यम से पूर्वानुमोदन प्रस्ताव भारत सरकार, खान मंत्रालय को प्रेषित किया गया। जिसके परिप्रेक्ष्य में भारत सरकार, खान मंत्रालय ने अपने पत्र क्रमांक 5/103/2010–M.IV, दिनांक 30.11.2011 द्वारा 20 वर्ष की अवधि के लिए खनिपट्टा स्वीकृत किए जाने हेतु एमएमडीआर एक्ट, 1957 की धारा–5(1) के तहत पूर्वानुमोदन एवं धारा–6(1)(बी) के तहत् निर्धारित सीमा में छूट निम्नानुसार अतिरिक्त शर्त के तहत प्रदान की गई :–

"There shall be no change in the equity ratio of 51:49 in the Joint Venture between M/s National Mineral Development Corporation Ltd. and M/s Chhattishgarh Mineral Development Corporation without the approval of the Central Government."

2.4 उपरोक्त के संदर्भ में विभागीय समसंख्यक पत्र दिनांक 13.01.2012 द्वारा एनएमडीसी को खनिपट्टा स्वीकृति हेतु आईबीएम द्वारा अनुमोदित मायनिंग प्लान एवं वन संरक्षण अधिनियम 1980 के तहत् आवश्यक अनुमति वन विभाग से प्राप्त कर प्रस्तुत करने हेतु (LoI) लेख किया गया।

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2.5 एनएमडीसी ने पत्र दिनांक 13.08.2013 के माध्यम से भारतीय खान ब्यूरो, नागपुर के पत्र दिनांक 26.07.2013 द्वारा रकबा 646.596 हेक्टेयर क्षेत्र का अनुमोदित मायनिंग प्लान प्रस्तुत किया गया, किन्तु भारत सरकार, पर्यावरण एवं वन मंत्रालय से वांछित वन एवं पर्यावरणीय अनुमति प्रस्तुत नहीं किया गया।

2.6 विभागीय समसंख्यक पत्र दिनांक 13.01.2012 द्वारा जारी LoI के संदर्भ में एनएमडीसी द्वारा वन एवं पर्यावरणीय सम्मितियॉ आदि MMDR Act, 1957 (यथा संशोधित 2015) की धारा–10A(2)(c) अनुसार निर्धारित तिथि 11.01.2017 तक प्रस्तुत नही की जा सकी। अतएव MMDR Act, 1957 (यथा संशोधित 2015) की धारा–10A(2)(c) सहपठित खनिज (परमाणु और हाइड्रोकार्बन ऊर्जा खनिजों से भिन्न) रियायत नियम, 2016 के नियम–8(4) के तहत् विषयक खनिपट्टा प्रकरण में खनिपट्टा स्वीकृति आदेश जारी नही किया गया जो कि अधिनियम के उक्त प्रावधानों के तहत् स्वमेव समाप्त हो गया।

2.7 एनएमडीसी द्वारा उक्त के संदर्भ में माननीय उच्च न्यायालय छत्तीसगढ़, बिलासपुर के समक्ष प्रकरण क्रमांक W.P.(c) No. 100/2017., NMDC Ltd Vs UoI & Others दायर किया गया। एनएमडीसी द्वारा याचिका वापस लेने के कारण माननीय न्यायालय के आदेश दिनांक 21.04.2017 द्वारा उक्त रिट पिटिशन dismissed as withdrawn किया गया है।

2.8 संयुक्त उद्यम कम्पनी (JVC) एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) द्वारा उपर्युक्त क्षेत्र जिला बस्तर के बैलाडीला आयरन ओर डिपॉजिट–4 के कुल रकबा 646.596 हेक्टेयर को MMDR Act, 1957(यथा संशोधित 2015) की धारा–17A(1A) के तहत् खनिपट्टा स्वीकृति हेतु दिनांक 21.11.2019 को आवेदन प्रस्तुत किया गया। जिसके संदर्भ में विभागीय समसंख्यक पत्र दिनांक 17.01.2018 द्वारा धारा–17A(1A) के तहत् उपर्युक्त क्षेत्र को एनसीएल के पक्ष में आरक्षित करने हेतु भारत सरकार, खान मंत्रालय को प्रस्ताव प्रेषित किया गया।

2.9 भारत सरकार, खान मंत्रालय, नई दिल्ली की अधिसूचना दिनांक 30.09.2019 द्वारा मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पक्ष में MMDR Act, 1957(यथा संशोधित 2015) की धारा–17A(1A) के तहत् बैलाडीला डिपॉजिट क्रमांक–4 के कुल रकबा 646.596 हेक्टेयर के निम्नलिखित खेत्र को 05 वर्ष की अवधि के लिए आरक्षित किया गया है :–

खनिज का नाम	स्थिति	क्षेत्र	पिलर	अक्षांश	देशांतर
लौह अयस्क	बैलाडीला आरक्षित वन, निक्षेप सं. 4 जिला दक्षिण बस्तर, छत्तीसगढ़	646.596 हेक्टेयर	A	81°12'10.40"	18°43'45.70"
			B	81°13'10.80"	18°43'40.90"
			C	81°13'08.80"	18°43'05.90"
			D	81°13'05.50"	18°43'05.80"
			E	81°12'57.30"	18°41'27.70"
			F	81°12'28.80"	18°41'52.90"
			G	81°11'57.70"	18°41'58.70"

2.10 उक्त के संदर्भ में एनसीएल द्वारा जिला दक्षिण बस्तर दंतेवाड़ा के बैलाडीला आयरन ओर डिपॉजिट–4 के कुल रकबा 646.596 हेक्टेयर क्षेत्र को MMDR Act, 1957(यथा संशोधित 2015) की धारा–17A(1A) के तहत् खनिज लौह अयस्क के खनिपट्टा स्वीकृति हेतु दिनांक 21.11.2019 को आवेदन प्रस्तुत किया गया, जिसे संचालक भौमिकी तथा खनिकर्म, छत्तीसगढ़ ने अपने प्रस्ताव दिनांक 29.04.2020 द्वारा इस विभाग को प्रेषित किया।

2.11 उपरोक्त के परिप्रेक्ष्य में विभागीय समसंख्यक पत्र दिनांक 02.12.2020 द्वारा एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पक्ष में पैरा–2.9 की तालिका में उल्लेखित क्षेत्र पर MMDR Act, 1957 (यथा संशोधित 2015) की धारा–17A(2A) के तहत 05 वर्ष की अवधि के लिए खनिज लौह अयस्क का खनिपट्टा स्वीकृति का सैद्धांतिक निर्णय लिया जाकर क्षेत्र में खनन कार्य हेतु वन संरक्षण अधिनियम, 1980 एवं पर्यावरण संरक्षण अधिनियम, 1986 के तहत आवश्यक वन एवं पर्यावरणीय अनुमति प्राप्त कर इस विभाग को प्रस्तुत करने की अनुमति प्रदान की गई है।

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2.12 एनसीएल के द्वारा दिनांक 28.08.2020 को इस विभाग को पत्र प्रेषित कर प्रस्तावित **LoI** (खनिपट्टा स्वीकृति हेतु आशय–पत्र) के परिप्रेक्ष्य में अनुरोध किया गया कि विषयांकित क्षेत्र का खनिपट्टा स्वीकृति हेतु जारी किये जाने वाले आशय पत्र में एनएमडीसी के द्वारा प्रस्तावित क्षेत्र को किये गये डीजीपीएस सर्वेक्षण से प्राप्त को–ऑर्डिनेट्स एवं भारत सरकार के द्वारा जारी अधिसूचना में दर्शित को–ऑर्डिनेट्स में विभिन्नता पाये जाने के कारण तथा डीजीपीएस सर्वेक्षण से प्राप्त को–ऑर्डिनेट्स वैज्ञानिक व तकनीकि रूप से सामान्य को–ऑर्डिनेट्स से अधिक उपयुक्त एवं त्रुटियों से रहित होने के फलस्वरूप डीजीपीएस को–ऑर्डिनेट्स के आधार पर खनिपट्टा स्वीकृति हेतु आशय पत्र जारी किये जाने हेतु इस विभाग से अनुरोध किया गया।

2.13 उक्त पत्र में निहित तथ्यों का परीक्षण किये जाने उपरान्त तथा जारी अधिसूचना व एनएमडीसी के द्वारा प्रस्तावित क्षेत्र को डीजीपीएस को–ऑर्डिनेट्स मं व्यापक भिन्नता होने के फलस्वरूप भारत सरकार, खान मंत्रालय की अधिसूचना दिनांक 30.09.2019 में आवश्यक संशोधन हेतु विभागीय समसंख्यक पत्र दिनांक 26.12.2019 के माध्यम से भारत सरकार, खान मंत्रालय को प्रस्ताव प्रेषित किया गया तथा पुराने वन कंपार्टमेंट के स्थान पर नये वन कंपार्टमेंट नंबरों के आधार पर संशोधन करते हुए इस विभाग के प्रस्ताव पत्र दिनांक 26.12.2020 पर यथोचित कार्यवाही किये जाने हेतु विभागीय समसंख्यक पत्र दिनांक 26.03.2021 द्वारा भारत सरकार, खान मंत्रालय को प्रेषित किया गया।

2.14 भारत सरकार, खान मंत्रालय के पत्र क्रमांक 4/2/200–M.VI, दिनांक 09.04.2021 के द्वारा अवगत कराया गया कि इस विभाग के प्रस्ताव दिनांक 26.12.2020 एवं संशोधित पत्र दिनांक 26.03.2021 में निहित तथ्यों के परिप्रेक्ष्य में भारत सरकार, खान मंत्रालय की अधिसूचना दिनांक 30.09.2019 में आवश्यक संशोधन किया जाकर G.S.R. No. 119(E), दिनांक 18.02.2021 को संशोधित अधिसूचना जारी कर दिया गया है।

2.15 भारत के राजपत्र प्रकाशन G.S.R. No. 119(E), दिनांक 18.02.2021 को संशोधित अधिसूचना के परिपालन में मेसर्स एनएमडीसी–सीएमडीसी (एनसीएल) के पक्ष में MMDR Act, 1957 की धारा–17A(1A) के तहत् बैलाडीला डिपॉजिट क्रमांक–4 के कुल रकबा 646.596 हेक्टेयर के निम्नलिखित क्षेत्र को 05 वर्ष की अवधि के लिए खनिज लौह अयस्क के पूर्वेक्षण अथवा खनन प्रचालन करने के लिए आरक्षित किया गया है :–

खनिज का नाम	स्थिति	क्षेत्र	पिलर	अक्षांश	देशांतर
1.	2.	3.	A	81°12'03.25650"E	18°43'38.32617"N
लौह अयस्क	बैलाडीला आरक्षित वन निक्षेप क्रमांक–4 जिला दक्षिण बस्तर दंतेवाड़ा, छत्तीसगढ़	646.596 हेक्टेरयर	B	81°13'04.84428"E	18°43'38.52758"N
			C	81°13'06.24991"E	18°43'12.30677"N
			D	81°13'03.60782"E	18°43'12.27943"N
			E	81°13'07.02661"E	18°41'26.17920"N
			F	81°12'31.89279"E	18°41'48.22195"N
			G	81°12'02.90192"E	18°41'50.38796"N

2.16 एनसीएल के पत्र दिनांक 19.03.2021 के साथ वन मंडलाधिकारी जिला दक्षिण बस्तर दंतेवाड़ा के पत्र दिनांक 26.02.2021 अनुसार खनिपट्टा स्वीकृति हेतु प्रश्नाधीन क्षेत्र का विवरण निम्नानुसार है :–

क्र.	वनमंडल का नाम	वन कक्ष क्रमांक (पुराना)	वन कक्ष क्रमांक (नया)	कुल रकबा (हे. में)	खनिपट्टा हेतु प्रस्तावित रकबा (हे. में)
1.	2.	3.	4.	5.	6.
1	दक्षिण परिक्षेत्र बचेली	665	1832	273.155	9.052
2		664	1833	190.017	104.332
3		663	1886	368.585	45.239
4		662	1885	389.901	160.862
5		666	1834	212.612	140.372
6		659	1842	193.670	32.917
7		667	1841	316.004	153.310
8		676	1826	232.561	0.512
			योग	2176.505	646.596

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3/ भारत सरकार, खान मंत्रालय, नई दिल्ली द्वारा जारी अधिसूचना दिनांक 18.02.2021 अनुसार शासकीय उपक्रम की कंपनी मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पक्ष में MMDR Act, 1957 (यथा संशोधित 2015) की धारा–17A(1A) के तहत् बैलाडीला डिपॉजिट क्रमांक–4 के कुल रकबा 646.596 हेक्टेयर क्षेत्र को 05 वर्ष की अवधि के लिए खनिज लौह अयस्क का पूर्वेक्षण अथवा खनन प्रचालन करने के लिए आरक्षित किया गया है। क्षेत्र में मेसर्स एनएमडीसी लिमि. के पक्ष में पूर्वेक्षण अनुज्ञप्ति स्वीकृत था। पूर्वेक्षण कार्य के आधार पर एनएमडीसी ने क्षेत्र पर 107 मिलियन टन लौह अयस्क के माइनेबल भण्डार प्रमाणित किये है। प्रश्नाधीन क्षेत्र में लौह अयस्क खनन हेतु भारतीय खान ब्यूरो, नागपुर ने पत्र दिनांक 26.07.2013 द्वारा मायनिंग प्लान अनुमोदित किया गया है।

4/ अतः उपरोक्त तथ्यों के प्रकाश में एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पक्ष में पैरा–2.15 एवं 2.16 की तालिका में उल्लेखित क्षेत्र पर MMDR Act, 1957 (यथा संशोधित 2015) की धारा–17A(2A) के तहत 05 वर्ष की अवधि के लिए खनिज लौह अयस्क का खनिपट्टा स्वीकृति का सैद्धांतिक निर्णय लिया जाकर क्षेत्र में खनन कार्य हेतु वन संरक्षण अधिनियम, 1980 एवं पर्यावरण संरक्षण अधिनियम, 1986 के तहत आवश्यक वन एवं पर्यावरणीय अनुमति प्राप्त कर इस विभाग को प्रस्तुत करने की अनुमति प्रदान की जाती है।

5/ वन संरक्षण अधिनियम, 1980 एवं पर्यावरण संरक्षण अधिनियम, 1986 के तहत जारी की जा रही इस अनुमति से उपर्युक्त आवेदित क्षेत्र पर प्रवेश करने या खनन कार्य करने का कोई अधिकार कंपनी को प्राप्त नहीं होगा।

संलग्नः–नक्शा।

26/06/2021

(कुन्दन कुमार बंजारे)
अवर सचिव
छत्तीसगढ़ शासन,
खनिज साधन विभाग

पृ0क्रमांक एफ 2–20/2005/12, नवा रायपुर, अटल नगर दिनांक

प्रतिलिपि :–

1. सचिव, भारत सरकार, खान मंत्रालय, शास्त्री भवन, नई दिल्ली।
2. सचिव, भारत सरकार, वन एवं पर्यावरण मंत्रालय (एफसी डिवीजन) पर्यावरण भवन सीजीओर काम्प्लेक्स, लोधी रोड, नई दिल्ली।
3. सदस्य सचिव, छत्तीसगढ़ पर्यावरण संरक्षण मंडल, पर्यावास भवन, सेक्टर–19, नवा रायपुर अटल नगर, छत्तीसगढ़।
4. क्षेत्रीय खान नियंत्रक, भारतीय खान ब्यूरो, दूसरी मंजिल, जीएसआई फील्ड प्रशिक्षण केन्द्र, महालेखाकार ऑफिस कॉम्पलेक्स, पोस्ट विधान सभा, रायपुर, छत्तीसगढ़।
5. महानिदेशक, सेफ्टी ऑफ माईन्स, सीपत रोड, बिलासपुर, छत्तीसगढ़,
6. संचालक, भौमिकी तथा खनिकर्म, इन्द्रावती भवन, नवा रायपुर अटल नगर, छत्तीसगढ़।
7. अध्यक्ष सह प्रबंध निदेशक, एन.एम.डी.सी. लिमिटेड, खनिज भवन 10–3–311/ए, कैस्टल हिल्स मासाब टैंक, हैदराबाद।
8. अतिरिक्त प्रधान मुख्य वन संरक्षक (भू–प्रबंध), नोडल अधिकारी वन संरक्षण अधिनियम, 1980 छत्तीसगढ़ अरण्य भवन, जेल रोड़, रायपुर।
9. प्रबंध संचालक, छत्तीसगढ़ मिनरल डेव्हलपमेंट कार्पोरेशन लिमिटेड, सोनाखान भवन, रिंग रोड, रायपुर, छत्तीसगढ़,
10. कलेक्टर, जिला–दक्षिण बस्तर दंतेवाड़ा, छत्तीसगढ़

की ओर आवश्यक कार्यवाही हेतु सूचनार्थ।

11. गार्ड फाईल।

हस्ता/–
अवर सचिव
छत्तीसगढ़ शासन
खनिज साधन विभाग

Dr. SANJEEV KUMAR SINHA
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RAHAS BIHARI PRADHAN
B.E. (MINING)
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By Speed Post

छत्तीसगढ शासन
खनिज साधन विभाग
मंत्रालय
महानदी भवन, नवा रायपुर, अटल नगर–492 002

क्रमांक एफ 2–20/2005/12. नवा रायपुर अटल नगर, दिनांक 07 AUG 2021

प्रति,

मुख्य कार्यपालन अधिकारी,
एनएमडीसी–सीएमडीसी लिमिटेड(एनसीएल),
ग्रीन विले सिटी, हाऊसिंग बोर्ड कालोनी,
सेजबहार, बोरिया कला, शदाणी दरबार के सामने,
एनएच–30, रायपुर, छत्तीसगढ़ –492 015.

विषयः– जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला, डिपॉजिट नं. 4 के कुल रकबा 646.596 हेक्टर क्षेत्र खनिज लौह अयस्क का खनिपट्टा की स्वीकृति हेतु–मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल)।

संदर्भः– 1. इस विभाग का समसंख्यक पत्र दिनांक 26.06.2021.
2. आपका पत्र क्रमांक No. NCL/HO/Dep-4/Lease/2020/878, Date 15.07.2021.
3. आईबीएम, रायपुर पत्र क्र. RPR-1309/01/2016-MP, Date14.07.2021.

कृपया संदर्भित पत्रों का अवलोकन करें। मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पत्र दिनांक 15.07.2021 तथा भारतीय खान ब्यूरो (आईबीएम) रायपुर के पत्र दिनांक 14.07.2021 के परिप्रेक्ष्य में जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला, डिपॉजिट नं. 4 के कुल रकबा 646.596 हेक्टर क्षेत्र खनिज लौह अयस्क का खनिपट्टा की स्वीकृति हेतु जारी आशय पत्र दिनांक 26.06.2021 के अनुक्रम में प्रश्नाधीन क्षेत्र हेतु खनिज (परमाणु, हाइड्रो कार्बन और ऊर्जा खनिजों से भिन्न) रियायत नियम, 2016 के नियम–13 के तहत् भारतीय खान ब्यूरो सें अनुमोदित मायनिंग प्लान प्रस्तुत करने की अनुमति प्रदान की जाती है।

2/ इस विभाग के समसंख्यक पत्र दिनांक 26.06.2021 द्वारा जारी आशय पत्र में उल्लिखित शेष शर्तें यथावत रहेंगी।

07/08/2021

(कुन्दन कुमार बंजारे)
अवर सचिव
छत्तीसगढ़ शासन,
खनिज साधन विभाग

क्रमांक एफ 2–20/2005/12. नवा रायपुर अटल नगर, दिनांक

प्रतिलिपि :–

1 सचिव, भारत सरकार, खान मंत्रालय, शास्त्री भवन, नई दिल्ली।
2 सचिव, भारत सरकार, वन एवं पर्यावरण मंत्रालय (एफसी डिवीजन) पर्यावरण भवन सीजीओर कॉम्प्लेक्स, लोधी रोड, नई दिल्ली।
3. सदस्य सचिव, छत्तीसगढ़ पर्यावरण संरक्षण मंडल, पर्यावास भवन, सेक्टर–19, नवा रायपुर अटल नगर, छत्तीसगढ़।
4. क्षेत्रीय खान नियंत्रक, भारतीय खान ब्यूरो, दूसरी मंजिल, जीएसआई फील्ड प्रशिक्षण केन्द्र, महालेखाकार ऑफिस कॉम्पलेक्स, पोस्ट विधान सभा, रायपुर, छत्तीसगढ़ की ओर उनके पत्र क्र. RPR-1309/01/2016-MP, Date14.07.2021 के संदर्भ में उपरोक्तानुसार सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

Dr. SANJEEV KUMAR SINHA
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छत्तीसगढ शासन
खनिज साधन विभाग
मंत्रालय
महानदी भवन, नवा रायपुर, अटल नगर–492 002

क्रमांक एफ 2–20/2005/12. नवा रायपुर अटल नगर, दिनांक 07 AUG 2021

प्रति,

मुख्य कार्यपालन अधिकारी,
एनएमडीसी–सीएमडीसी लिमिटेड(एनसीएल),
ग्रीन विले सिटी, हाऊसिंग बोर्ड कालोनी,
सेजबहार, बोरिया कला, शदाणी दरबार के सामने,
एनएच–30, रायपुर, छत्तीसगढ़ –492 015.

विषयः– जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला, डिपॉजिट नं. 4 के कुल रकबा 646.596 हेक्टर क्षेत्र खनिज लौह अयस्क का खनिपट्टा की स्वीकृति हेतु–मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल)।

संदर्भः– 1. इस विभाग का समसंख्यक पत्र दिनांक 26.06.2021.
2. आपका पत्र क्रमांक No. NCL/HO/Dep-4/Lease/2020/878, Date 15.07.2021.
3. आईबीएम, रायपुर पत्र क्र. RPR-1309/01/2016-MP, Date14.07.2021.

कृपया संदर्भित पत्रों का अवलोकन करें। मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पत्र दिनांक 15.07.2021 तथा भारतीय खान ब्यूरो (आईबीएम) रायपुर के पत्र दिनांक 14.07.2021 के परिप्रेक्ष्य में जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला, डिपॉजिट नं. 4 के कुल रकबा 646.596 हेक्टर क्षेत्र खनिज लौह अयस्क का खनिपट्टा की स्वीकृति हेतु जारी आशय पत्र दिनांक 26.06.2021 के अनुक्रम में प्रश्नाधीन क्षेत्र हेतु खनिज (परमाणु, हाइड्रो कार्बन और ऊर्जा खनिजों से भिन्न) रियायत नियम, 2016 के नियम–13 के तहत् भारतीय खान ब्यूरो सें अनुमोदित मायनिंग प्लान प्रस्तुत करने की अनुमति प्रदान की जाती है।

2/ इस विभाग के समसंख्यक पत्र दिनांक 26.06.2021 द्वारा जारी आशय पत्र में उल्लिखित शेष शर्तें यथावत रहेंगी।

07/08/2021

(कुन्दन कुमार बंजारे)
अवर सचिव
छत्तीसगढ़ शासन,
खनिज साधन विभाग

क्रमांक एफ 2–20/2005/12. नवा रायपुर अटल नगर, दिनांक

प्रतिलिपि :–

1 सचिव, भारत सरकार, खान मंत्रालय, शास्त्री भवन, नई दिल्ली।
2 सचिव, भारत सरकार, वन एवं पर्यावरण मंत्रालय (एफसी डिवीजन) पर्यावरण भवन सीजीओर कॉम्प्लेक्स, लोधी रोड, नई दिल्ली।
3. सदस्य सचिव, छत्तीसगढ़ पर्यावरण संरक्षण मंडल, पर्यावास भवन, सेक्टर–19, नवा रायपुर अटल नगर, छत्तीसगढ़।
4. क्षेत्रीय खान नियंत्रक, भारतीय खान ब्यूरो, दूसरी मंजिल, जीएसआई फील्ड प्रशिक्षण केन्द्र, महालेखाकार ऑफिस कॉम्पलेक्स, पोस्ट विधान सभा, रायपुर, छत्तीसगढ़ की ओर उनके पत्र क्र. RPR-1309/01/2016-MP, Date14.07.2021 के संदर्भ में उपरोक्तानुसार सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

Dr. SANJEEV KUMAR SINHA
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NMDC LIMITED (A Govt of India Enterprises)

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छत्तीसगढ शासन
खनिज साधन विभाग
मंत्रालय
महानदी भवन, नवा रायपुर, अटल नगर–492 002

क्रमांक एफ 2–20 / 2005 / 12, नवा रायपुर अटल नगर, दिनांक 5 MAY 2022

प्रति,

मुख्य कार्यपालन अधिकारी,
एनएमडीसी–सीएमडीसी लिमिटेड(एनसीएल),
ग्रीन विले सिटी, हाऊसिंग बोर्ड कालोनी,
सेजबहार, बोरिया कला, शदाणी दरबार के सामने,
एनएच–30, रायपुर, छत्तीसगढ़–492015.

17/05/2022

AGM(MM)

विषयः– जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला, डिपॉजिट नं.–4 के कुल रकबा 646.596 हेक्टर क्षेत्र खनिज लौह अयस्क का खनिपट्टा की स्वीकृति हेतु–मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल)।

संदर्भः– 1. इस विभाग का समसंख्यक आशय पत्र दिनांक 26.06.2021 तथा 07.08.2021.
2. आपका पत्र क्रमांक No. NCL/HO/Dep-4/Lease/2021/970, Date 16.12.2021.

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कृपया संदर्भित पत्रों का अवलोकन करें। मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के संदर्भित पत्र दिनांक 16.12.2021 के माध्यम से विभागीय पत्र दिनांक 26.06.2021 द्वारा जारी LoI के संदर्भ में पर्यावरण स्वीकृति हेतु MoEF & CC में दिनांक 30.11.2021 को प्रस्ताव प्रेषित किया गया था, जिस पर MoEF & CC द्वारा ToR जारी करने हेतु दिनांक 14.12.2021 को एजेण्डा पॉइन्ट 1.4 के माध्यम से पॉवर पॉइंट प्रस्तुति को कहा गया उक्त प्रस्तुति के दौरान EAC कमिटी की अनुशंसा अनुसार विभाग द्वारा जारी LoI की अवधि जो 05 वर्ष है उसे MMDR, (Amenndment) Act, 2015 की धारा–8(A)(2) एवं खनिज (परमाणु और हाईड्रोकार्बन ऊर्जा खनिजों से भिन्न) रियायत नियम, 2016 यथासंशोधित 2021 के नियम–73 के तहत 50 वर्ष का सांकेतिक अनुमोदन प्रदान करने जिससे वन एवं पर्यावरण स्वीकृति 50 वर्ष की अवधि के लिए प्राप्त की जा सके, बाबत् NCL द्वारा अनुरोध किया गया है।

2/ मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पत्र दिनांक 16.12.2021 के परिप्रेक्ष्य में जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला, डिपॉजिट नं. 4 के कुल रकबा 646.596 हेक्टर क्षेत्र खनिज लौह अयस्क का खनिपट्टा की स्वीकृति हेतु जारी विभागीय समसंख्यक आशय पत्र दिनांक 26.06.2021 तथा 07.08.2021 के अनुक्रम में एनसीएल के आवेदन दिनांक 16.12.2021 पर संचालक, भौमिकी तथा खनिकर्म छत्तीसगढ़ ने अपने पत्र दिनांक 11.03.2022 द्वारा अवगत कराया गया कि एमएमडीआर एक्ट, 1957 (यथा संशोधित) की धारा–17A(2C) के तहत् राज्य शासन को खनिपट्टा स्वीकृति का अधिकार है। उक्त अधिनियम की धारा–17A(2A) एवं धारा–17A(4) के प्रावधानों के तहत् आरक्षण अवधि के भीतर खनिपट्टा स्वीकृत किया जाना है तथापि खनिपट्टा अवधि एमएमडीआर एक्ट, 1957 (यथा संशोधित) की धारा–8(A)(2) के तहत् परिभाषित होगी।

3/ एनसीएल के पत्र दिनांक 30.11.2021 के द्वारा भारतीय खान ब्यूरो, रायपुर के पत्र क्रमांक दंतेवाड़ा / लौह / खयो–1292 / 2021–रायपुर, दिनांक 24.09.2021 द्वारा प्रश्नाधीन क्षेत्र बैलाडीला डिपॉजिट–4 का अनुमोदित माईनिंग प्लान (**Working proposal period**-From 1st Year To 5th Year) दिनांक 24.09.2021 को प्रस्तुत किया गया है।

4/ भारत सरकार, खान मंत्रालय की अधिसूचना दिनांक 30.09.2019 एवं संशोधित अधिसूचना दिनांक 18.02.2021 द्वारा NCL के पक्ष में लौह अयस्क के पूर्वेक्षण अथवा खनन प्रचालन के लिये डिपॉजिट–4 के कुल रकबा 646.596 हेक्टर क्षेत्र को धारा–17A(1A) के तहत 05 वर्षो के लिये आरक्षित किया गया है। जिसके परिप्रेक्ष्य में विभागीय पत्र दिनांक 02.12.2020 एवं संशोधित पत्र दिनांक 26.06.2021 द्वारा NCL के पक्ष में MMDR Act, 1957 (यथासंशोधित 2015) की धारा–17A(2A) के तहत 05 वर्ष की अवधि के लिए खनिज लौह अयस्क का खनिपट्टा स्वीकृति का सैद्धांतिक निर्णय लिया जाकर क्षेत्र में खनन कार्य हेतु वन संरक्षण अधिनियम, 1980 एवं पर्यावरण संरक्षण अधिनियम, 1986 के तहत आवश्यक वन एवं पर्यावरणीय अनुमति प्राप्त कर इस विभाग को प्रस्तुत करने की अनुमति प्रदान की गई है।

5/ शासकीय कपनी को क्षेत्र आरक्षण किये जाने हेतु एमएमडीआर एक्ट 1957 (यथासंशोधित) की धारा–17A(1A) के प्रावधान निम्नानुसार है :–

Reservation of area for purpose of conservation-

"17A(1A) "The Central Government may in consultation with the State Govermant, reserve any area not already held under any prospecting licence or mining lease, for undertaking prospecting or mining operation through a government company or corporation owned of controlled by it, and where it proposes to do so, it shall, by notification in the Official Gazatte, specity the boundrys of such area and the mineral or minerals in respect of which such area will be reserved."

उपरोक्त उल्लेखित अधिसूचना/प्रावधान अनुसार भारत सरकार, खान मंत्रालय की अधिसूचना दिनांक 30.09.2019 एवं संशोधित अधिसूचना दिनांक 18.02.2021 द्वारा NCL के पक्ष में लौह अयस्क के पूर्वेक्षण अथवा खनन प्रचालन के लिये प्रश्नाधीन क्षेत्र डिपॉजिट–4 के कुल रकबा 646.596 हेक्टर क्षेत्र को धारा–17A(1A) के तहत 05 वर्षो के लिये आरक्षित किया गया है।

6/ Ministry of Law and Justice द्वारा The Mines and Minerals (Development and Regulation) Act, 1957 में संशोधन करते हुए, The Mines and Minerals (Development and Regulation) Amendment Act, 2021 जारी किया है, जो भारत का राजपत्र में प्रकाशन की तिथि 28.03.2021 से प्रभावशील है जिसके अंतर्गत शासकीय कंपनियों को आरक्षण उपरांत पूर्वेक्षण अनुज्ञप्ति, खनिपट्टा अथवा कम्पोजिट लाइसेंस दिये जाने के संबंध में धारा–17A(2A) में निम्नानुसार प्रावधान प्रतिस्थापित किया गया है :–

Reservation of area for purpose of conservation-

17A(2A) *"Where in exercise of the powers conferred by sub-section (1A) or sub-section (2), the central Government or the State Government, as the case may be reserves any area for undertaking prospecting or mining operations or prospecting operations followed by Mining operations, the State Government shall grant prospecting licence, mining lease or composite licence, as the case may be, in respect of such area to such government company or corporation within the period specified in this section:''*

7/ एमएमडीआर एक्ट 1957 की धारा–8A(2) में खनिपट्टा अनुदत्त करने की कालावधि के संबंध में निम्नानुसार प्रावधान दिये गये है :–

Period of grant of a mining lease for minerals other than coal, lignite and atomic minerals.

8A(2) *"On and from the date of the commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, all mining lease shall be granted for the period of fifty years.''*

8/ Ministry of Mines द्वारा खनिज (परमाणु और हाइड्रोकार्बन ऊर्जा खनिजों से भिन्न) रियायत नियम, 2016 में संशोधन करते हुए, खनिज (परमाणु और हाइड्रोकार्बन ऊर्जा खनिजों से भिन्न) रियायत (चौथा संशोधन) नियम, 2021 जारी किया गया है, जो भारत का राजपत्र में प्रकाशन की तिथि 02.11.2021 से प्रभावशील है, जिसके अंतर्गत सरकारी कंपनियों को प्रदत्त खनन पट्टे की अवधि के संबंध में नियम, 73(1) में निम्नानुसार प्रावधान किये गये है :–

73 .Period of mining lease granted to Governmet companies or corporation on or after 12th Januaary,-2015

"(1) All mining leases granted to a Government company of corporation for minerals shall be for a period of fifty years."

9/ उपर्युक्त पैरा में वर्णित तथ्यों एवं एमएमडीआर एक्ट, 1957 (यथा संशोधित) की धारा–8A(2), धारा–17A(2A) तथा खनिज (परमाणु और हाइड्रोकार्बन ऊर्जा खनिजों से भिन्न) रियायत (चौथा संशोधन) नियम, 2021 के नियम, 73(1) के प्रावधानों के तहत् विचारोपरांत राज्य शासन, एतद्द्वारा, जारी आशय पत्र दिनांक 26.06.2021 तथा 07.08.2021 के अनुक्रम में मेसर्स एनएमडीसी–सीएमडीसी लिमिटेड (एनसीएल) के पक्ष में जिला दक्षिण बस्तर दंतेवाड़ा, बैलाडीला डिपॉजिट–4 के कुल रकबा 646.596 हेक्टर क्षेत्र पर 50 वर्ष की अवधि के लिए खनिज लौह अयस्क का खनिपट्टा स्वीकृति प्रदान करने हेतु सैद्धांतिक निर्णय लिया जाकर निम्नलिखित शर्तों के अधीन संशोधित आशय पत्र जारी करता है।

9.1 NCL द्वारा पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली से विषयांतर्गत क्षेत्र का वन संरक्षण अधिनियम, 1980 एवं पर्यावरण संरक्षण अधिनियम, 1986 के अधीन आवश्यक वन एवं पर्यावरणीय अनुमति/स्वीकृति प्राप्त कर प्रस्तुत करने पर भारत सरकार, खान मंत्रालय की अधिसूचना दिनांक 30.09.2019 के तहत 05 वर्षों के लिये आरक्षित अवधि के भीतर खनिपट्टा स्वीकृति की आवश्यक कार्यवाही की जायेगी।

9.2 भारत सरकार, पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली से का वन संरक्षण अधिनियम, 1980 एवं पर्यावरण संरक्षण अधिनियम, 1986 के अधीन आवश्यक वन एवं पर्यावरणीय अनुमति/स्वीकृति प्राप्त करने के लिए जारी किये जाने वाले आशय–पत्र से NCL को आवेदित क्षेत्र पर प्रवेश करने या खनन कार्य करने का कोई अधिकार प्राप्त नहीं होगा। जब तक कि NCL को क्षेत्र में भूमि प्रवेश हेतु सक्षम अधिकारी से अनुमति प्राप्त नहीं हो जाती।

10/ NCL को प्रश्नाधीन क्षेत्र का खनिपट्टा स्वीकृत किये जाने पर निम्नानुसार कार्यवाही किया जाना होगा :–

10.1 NCL को राज्य शासन के साथ खनिपट्टा का अनुबंध निष्पादन एवं माईंन डेव्हलपमेंट एण्ड प्रोडक्शन एग्रीमेंट (MDPA) का निष्पादन करना होगा।

10.2 NCL द्वारा राज्य सरकार को एमएमडीआर एक्ट, 1957 (यथा संशोधित) की अनुसूची–5 में दी गई दर पर अतिरिक्त राशि का भुगतान किया जाएगा।

10.3 NCL द्वारा खनिज(परमाणु और हाइड्रोकार्बन ऊर्जा खनिजों से भिन्न) रियायत (चौथा संशोधन) नियम, 2021 के नियम, 74(1) एवं 74(2) के प्रावधानों के तहत निर्धारित अन्य राशि का संदाय करेगा।

10.4 NCL द्वारा किसी विधि के अधीन केन्द्रीय/राज्य सरकार द्वारा अधिरोपित कर/लेवी राशि का भुगतान केन्द्रीय/राज्य सरकार को किया जाएगा।

10.5 NCL द्वारा अनुमोदित माईनिंग प्लान में उल्लेखित शर्तो तथा वन संरक्षण अधिनियम, 1980 एवं पर्यावरण संरक्षण अधिनियम, 1986 के अधीन प्राप्त वन एवं पर्यावरणीय अनुमति/स्वीकृति का पालन करेगा।

10.6 NCL द्वारा आवेदित क्षेत्र के अंतर्गत सार्वजनिक स्थल (यदि कोई हो तो) तथा मार्ग के समीप उत्खनन का कार्य प्रतिबंधित दूरी को छोड़ते हुए किया जाएगा।

11/ इस विभाग के समसंख्यक पत्र दिनांक 26.06.2021 तथा 07.08.2021 द्वारा जारी आशय पत्र में उल्लिखित शेष शर्तें यथावत रहेंगी।

छत्तीसगढ़ के राज्यपाल के नाम से
तथा आदेशानुसार

4/5/22

(पुष्पा साहू)
संयुक्त सचिव
छत्तीसगढ़ शासन,
खनिज साधन विभाग

पृ0क्रमांक एफ 2–20/2005/12, नवा रायपुर अटल नगर, दिनांक

प्रतिलिपि :–

1. सचिव, भारत सरकार, खान मंत्रालय, शास्त्री भवन, नई दिल्ली।
2. सचिव, भारत सरकार, वन एवं पर्यावरण मंत्रालय (एफसी डिवीजन) पर्यावरण भवन सीजीओर काम्प्लेक्स, लोधी रोड, नई दिल्ली।
3. सदस्य सचिव, छत्तीसगढ़ पर्यावरण संरक्षण मंडल, पर्यावास भवन, सेक्टर–19, नवा रायपुर अटल नगर, छत्तीसगढ़।
4. क्षेत्रीय खान नियंत्रक, भारतीय खान ब्यूरो, दूसरी मंजिल, जीएसआई फील्ड प्रशिक्षण केन्द्र, महालेखाकार ऑफिस कॉम्पलेक्स, पोस्ट विधान सभा, रायपुर, छत्तीसगढ़ की ओर उनके पत्र क्र. RPR-1309/01/2016-MP, Date14.07.2021 के संदर्भ में उपरोक्तानुसार सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।
5. महानिदेशक, सेफ्टी ऑफ माईन्स, सीपत रोड, बिलासपुर, छत्तीसगढ़,
6. संचालक, भौमिकी तथा खनिकर्म, इन्द्रावती भवन, नवा रायपुर अटल नगर, छत्तीसगढ़।

7. अध्यक्ष सह प्रबंध निदेशक, एन.एम.डी.सी. लिमिटेड, खनिज भवन 10–3–311/ए, कैस्टल हिल्स मासाब टैंक, हैदराबाद।
8. अतिरिक्त प्रधान मुख्य वन संरक्षक (भू–प्रबंध), नोडल अधिकारी वन संरक्षण अधिनियम, 1980 छत्तीसगढ़ अरण्य भवन, जेल रोड़, रायपुर।
9. प्रबंध संचालक, छत्तीसगढ़ मिनरल डेव्हलपमेंट कार्पोरेशन लिमिटेड, सोनाखान भवन, रिंग रोड, रायपुर, छत्तीसगढ़,
10. कलेक्टर, जिला–दक्षिण बस्तर दंतेवाड़ा, छत्तीसगढ़

की ओर आवश्यक कार्यवाही हेतु सूचनार्थ।

11. गार्ड फाईल।

हस्ता./-
संयुक्त सचिव
छत्तीसगढ़ शासन
खनिज साधन विभाग

कार्यालय प्रधान मुख्य वन संरक्षक एवं वन बल प्रमुख छत्तीसगढ़, अरण्य भवन, सेक्टर – 19, नार्थ ब्लाक, अटल नगर, नवा रायपुर

(अपर प्रधान मुख्य वन संरक्षक – भू–प्रबंध)

दूरभाषः 0771 – 2512840 ई – मेलः apccf-lm.cg@gov.in

क्र./भू–प्रबंध/खनिज/331–305/ 1289 रायपुर, दिनांक 13/06/2022

प्रति,

वनमंडलाधिकारी
दंतेवाड़ा वनमंडल दंतेवाड़ा
छत्तीसगढ़

विषयः– **दंतेवाडा जिले के दंतेवाड़ा वनमंडल अन्तर्गत वन संरक्षण अधिनियम,1980 के अंतर्गत वन भूमि के गैर वानिकी उपयोग हेतु NMDC CMDC LIMITED द्वारा Proposal for diversion of (570.100 Ha inside lease and 100.077 Ha outside lease) forest land for Bailadila Iron Ore Deposit-4 Mine हेतु क्षेत्रफल 670.177 हे. पंजीयन बाबत।**

संदर्भः – आनलाईन प्राप्त प्रकरण दिनांक 02.06.2022 एवं अभिस्वीकृति प्राप्त दिनांक .16/06/2022 तथा स्टेट सिरियल न. .CG-922/2022

विषयान्तर्गत NMDC CMDC LIMITED द्वारा वन संरक्षण अधिनियम, 1980 अंतर्गत Proposal for diversion of 670.177 Ha (570.100 Ha inside lease and 100.077 Ha outside lease) forest land for Bailadila Iron Ore Deposit-4 Mine हेतु कुल क्षेत्र 670.177 हे. दंतेवाड़ा वन मंडल अंतर्गत वन भूमि के गैर वानिकी उपयोग हेतु आवेदन नोडल कार्यालय को आनलाईन प्राप्त हुआ है जिसमें उनके द्वारा पंजीयन एवं प्रसंस्करण शुल्क रूपये 6000 + 1,15,000 = 1,21,000/– के चालान की स्केन प्रति आनलाईन संलग्न की गई है। उक्त प्रकरण को स्वीकार कर पंजीयन कर लिया गया है।

प्रकरण का आनलाईन **पंजीयन क्रमांक – FP/CG/MIN/146694/2021** आबंटित किया गया है।

पंजीयन एवं प्रसंस्करण शुल्क की राशि पी.डी. खाते में जमा होने संबंधी पुष्टि करें। प्रकरण के पंजीयन पश्चात् हार्ड कापी में प्रस्ताव प्राप्त कर इस कार्यालय को मुख्य वन संरक्षक जगदलपुर वृत्त जगदलपुर के माध्यम से प्रेषित करना सुनिश्चित करें ताकि प्रकरण में अग्रिम कार्यवाही की जा सके।

प्रस्ताव तैयार कर वरिष्ठ कार्यालय को भेजते समय निर्देशों का पालन सुनिश्चित किया जावेः–

1. एफ.एम.आई.एस द्वारा प्रकरण में प्रदायित वनस्पति मानचित्र का डी.जी.पी.एस के.एम.एल फाईल/शेप फाईल से मिलान का सत्यापन, संबंधित वनमंडल के मानचित्रकार/तकनीकी अधिकारी से कराया जाकर मानचित्र पर अथवा पृथक से सत्यापन संबंधी प्रमाण पत्र संलग्न किया जावे तथा जो वनमंडलाधिकारी द्वारा हस्ताक्षरित हो।
2. आवेदित वन भूमि विवरण का सत्यापन डी.जी.पी.एस सर्वे डाटा (के.एम.एल फाईल/शेप फाईल) का वनमंडल कार्यालय में उपलब्ध अभिलेखों के आधार पर संबंधित मानचित्रकार / तकनीकी अधिकारी से कराया जावें इस बाबत् भी सत्यापन प्रमाण पत्र संलग्न किया जावे।
3. संबंधित वनमंडल द्वारा सत्यापित वनस्पति मानचित्र एवं आवेदित वन भूमि के डी.जी.पी.एस सर्वे डाटा (के.एम.एल फाईल/शेप फाईल) का सत्यापन प्रमाण पत्र में वृत्त कार्यालय के मानचित्रकार/तकनीकी अधिकारी के हस्ताक्षर होना अनिवार्य है।

प्रधान मुख्य वन संरक्षक एवं वन बल प्रमुख द्वारा अनुमोदित

अ.मु.व.स (भू–प्रबंध / व. सं. अ)
छत्तीसगढ़

पृ. क्र./ भू–प्रबंध/खनिज/331–305/ 1290 रायपुर, दिनांक 13/06/2022

प्रतिलिपि सूचनार्थ एवं आवश्यक कार्यवाही हेतुः

– **मुख्य वन संरक्षक** जगदलपुर वृत्त जगदलपुर छ.ग.।

– **वन संरक्षक** (वन प्रबंधन सूचना प्रणाली कार्यालय) अरण्य भवन,अटल नगर, रायपुर छ.ग.।

– **CEO**, NMDC CMDC LIMITED, Green Villey City, Housing Board Colony, Post Sejbahar, NH-30 Raipur -492015 Chhattisgarh – आनलाईन फार्म "ए" की हस्ताक्षरित प्रति मय संलग्न मूल अभिलेख, डिमांण्ड ड्राफ्ट के साथ वन मंडल कार्यालय में जमा करें।

वर्तमान में किसी भी वन क्षेत्र में कार्य प्रारंभ करने की अनुमति नहीं है।

अ.प्र.सु.व.स (भू–प्रबंध / व. सं. अ)
छत्तीसगढ़

Annexure-1.9

कार्यालय मुख्य वन संरक्षक

जगदलपुर वृत्त जगदलपुर बस्तर 494001 (छत्तीसगढ़)

फोन (कार्या) : 07782–222006 (निवास) : 227634 (फैक्स) : 07782–222120 E-mail-ccfjagdalpur@rediffmail.com

क्रं./व.त.अ./ 1883 जगदलपुर, दिनांक 03/8/2023

प्रति,

अपर प्रधान मुख्य वन संरक्षक,
(भू – प्रबंध/व.सं.अ.)
नवा रायपुर, अटल नगर, छत्तीसगढ़

विषयः– दंतेवाड़ा जिले के दंतेवाड़ा वनमण्डल अन्तर्गत् वन संरक्षण अधिनियम, 1980 के अन्तर्गत वन भूमि के गैर वानिकी उपयोग हेतु NMDC-CMDC द्वारा PROPOSAL FOR DIVERSION OF FOREST LAND FOR BAILADILA IRON ORE DEPOSIT - 4 MINE हेतु क्षेत्रफल रकबा 670.177 हे. के अतिरिक्त रकबा 12.095 हे. कुल रकबा 682.2722 हे. हेतु व्यपवर्तन प्रस्ताव तैयार करने बाबत्।
पंजीयन क्रमांक- FP/CG/MIN/146694/2021

संदर्भः–1. आपका पत्र क्रमांक/भू–प्रबंध/ खनिज/331–305/1289 रायपुर दिनांक 13/06/2022 एवं पत्र क्रमांक/1250 दिनांक 22/05/2023 एवं पत्र क्रमांक/भू–प्रबंध/खनिज/331–335 दिनांक 22.06.2023
2. वन मण्डलाधिकारी, दंतेवाड़ा वनमण्डल, दंतेवाड़ा के पत्र क्रमांक/क.त.अ./5329 दिनांक 02.08.2023

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विषयांन्तर्गत प्रतिवेदन है कि एन.एम.डी.सी.–सी.एम.डी.सी. लिमिटेड रायपुर को वन संरक्षण अधिनियम, 1980 के अन्तर्गत् **PROPOSAL FOR DIVERSION OF 682.2722 Ha. FOREST LAND FOR BAILADILA IRON ORE DEPOSIT-4 MINE** हेतु आबंटित पंजीयन अनुसार व्यपवर्तन प्रस्ताव में आपत्तियों का निराकरण कर पुनरीक्षित प्रतिवेदन आवेदक संस्थान द्वारा वन मण्डलाधिकारी, दंतेवाड़ा वनमण्डल कार्यालय में प्रेषित किया गया है।

वन मण्डलाधिकारी, दंतेवाड़ा वनमण्डल ने आवेदक संस्थान एन.एम.डी.सी.–सी.एम. डी.सी. लिमिटेड रायपुर से प्राप्त प्रस्ताव का परीक्षण उपरांत आवश्यक जानकारी शामिल कर पूर्ण प्रस्ताव संदर्भित पत्र द्वारा इस कार्यालय में प्रेषित किया गया है।

वन मण्डलाधिकारी, दंतेवाड़ा वनमण्डल से प्राप्त विषयांकित प्रतिवेदन अग्रिम कार्यवाही हेतु तीन प्रतियों में संलग्न सम्प्रेषित है।

संलग्न :– उपरोक्तानुसार
03 प्रतियों में।

मुख्य वन संरक्षक
जगदलपुर वृत्त जगदलपुर

क्रमशः

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पृ.क्रं./व.त.अ./ 1884 जगदलपुर, दिनांक 03/08/2023

प्रतिलिपि :–

1. **कलेक्टर,** दक्षिण बस्तर दंतेवाड़ा की ओर सूचनार्थ अग्रेषित।
2. **वन मण्डलाधिकारी,** दंतेवाड़ा वनमण्डल दंतेवाड़ा की ओर सूचनार्थ अग्रेषित।
3. **मुख्य कार्यपालन अधिकारी,** एन.एम.डी.सी.–सी.एम.डी.सी. लिमिटेड, ग्रीन वेली सिटी, हाऊसिंग बोर्ड कालोनी, बोरियाकला, सेजबहार, रायपुर की ओर सूचनार्थ अग्रेषित।

मुख्य वन संरक्षक
जगदलपुर वृत्त जगदलपुर

Speed post/Email

भारत सरकार, खान मंत्रालय
GOVERNMENT OF INDIA, MINISTRY OF MINES
भारतीय खान ब्यूरो , क्षेत्रीय खान नियंत्रक कार्यालय- रायपुर
INDIAN BUREAU OF MINES, OFFICE OF REGIONAL CONTROLLER OF MINES, RAIPUR
फोन- 0771–2282530 /2285590 / 95, ईमेल- ro.raipur@ibm.gov.in

फाईल क्र.- दंतेवा/लौह/खयो-1292/2021-रायपुर/ 291 दिनाक- 24/09/2021

प्रेषिति- मेसर्स एन एम डी सी-सि एम डी सी लिमिटेड (एनसील)
ग्रीन विले सिटी, हाउसिंग बोर्ड कालोनी,
सेजबहार, बोरिया कला, रायपुर, छत्तीसगढ़ - 492 015
ईमेल- ceonmdccmdc@gmail.com

विषय- खनिज रियायत नियम (परमाणु और हाइड्रोकार्बन ऊर्जा खनिजों से भिन्न) 2016 के नियम 16(1) एवं खनिज संरक्षण एवं विकास नियमावली 2017 के नियम 23 के अंर्तगत प्रस्तुत निकट ग्राम- बचेली तहसील- बचेली जिला- दक्षिण बस्तर दन्तेवाडा, डिपोजिट न.- 4, छत्तीसगढ़ में स्थित कुल रकबा 646.596 हा खनिज लौह अयस्क की खनन योजना सह उत्तरोत्तर खान बंद करने की योजना की प्रस्तुति।

संदर्भ- 1 आपका पत्र दिनांक 10/08/2021 एवम 22/09/2021.
2. इस कार्यालय का सम्संख्यक पत्र दिनांक 02/09/2021.

महोदय

खान एवं खनिज (विकास एवं विनियम) अधिनियम 1957 की धारा 5 की उप धारा 2 के अनुच्छेद (ख) तथा खनिज (परमाणु और हाइड्रोकार्बन ऊर्जा खनिजों से भिन्न) रियायत नियम 2016 के नियम 16 के उप नियम 3 एवम नियम 17 सपठित भारत सरकार के आदेश क्रमांक एस.ओ.(ई) दिनांक 18//05/2016 के द्वारा प्रदत अधिकारों का प्रयोग करते हुए मैं एतद द्वारा उल्लेखित खनन योजना का **अनुमोदन** करता हूं। यह **अनुमोदन** निम्नलिखित शर्तों के अधीन हुआ हा-

1 इस खनन योजना सह उत्तरोत्तर खान बंद करने की योजना का अनुमोदन केंद्र सरकार अथवा अन्य किसी प्राधिकारी द्वारा खान पर समय-समय पर लागू किए गए कानूनों पर प्रतिकूल प्रभाव डाले बिना किया गया हा

2 दस्तावेज में अथवा प्लेट में दर्शाए गए प्रस्ताव आवेदक पट्टा धारक द्वारा प्रस्तुत लीज नक्शा पर आधारित हातथा प्रस्ताव अनुमोदन की तारीख से लागू हा

3 यह भी स्पष्ट किया जाता हाकि इस खनन योजना सह उत्तरोत्तर खान बंद करने की योजना के अनुमोदन में खान एवं खनिज (विकास और विनियम) अधिनियम, 1957 या खनिज (परमाणु और हाइड्रोकार्बन ऊर्जा खनिजों से भिन्न) रियायत नियम 2016 या और किसी अन्य कानून जिसमें वन (संरक्षण) अधिनियम, 1980, पर्यावरण संरक्षण अधिनियम- 1986, खान अधिनियम 1952 सहित अन्य किन्ही कानूनों के किसी अन्य प्रावधान की शर्तों के अनुसार किसी भी प्रकार से सरकार का अनुमोदन समाविष्ट नहीं हा

4 भारतीय खान ब्यूरो ने भूमि पर खनन पट्टे की सीमा का सत्यापन नहीं किया हाअतः आवेदक पट्टा धारक द्वारा प्रस्तुत सटीक एरिया की सीमाओं की सत्यता के संबंध में कोई जिम्मेदारी नहीं ली जाती हा

NMDC·CMDC LTD 812 Dt. 30/9/21 HO RAIPUR (C.G.)

-1-

AGM(Min), NLL

5 किसी भी अवस्था में यदि यह देखा जाता ह□कि खनन योजना में दी गई सूचना या दिनांक असत्य अथवा तथ्यों को गलत ढंग से प्रस्तुत किया ह□तो खनन योजना सह उत्तरोत्तर खान बंद करने की योजना का अनुमोदन तुरंत प्रभाव से वापस लेना माना जाएगा।

6 यह अनुमोदन खनन पट्टे की लीज रजिस्ट्रेशन की तिथि से प्रभावी होंगे। यह अनुमोदन लीज अवधि की वधता के अधीन होगा।

7 **Performance security** की अवधि समाप्ति की दिनांक को अथवा इससे पहले, **Performance security** का वित्तीय आश्वासन राज्य सरकार को प्रस्तुत किया जाएगा ।

8 पर्यावरण वन और जलवायु परिवर्तन मंत्रालय द्वारा जारी पर्यावरण मंजूरी , अंतिम पर्यावरण प्रभाव आकलन रिपोर्ट **(EIA Report)** की प्रति के साथ इस कार्यालय को प्रस्तुत की जाएगी।

9 माइनिंग लीज डीड की प्रति माइनिंग लीज रजिस्ट्रेशन की तिथि से **15** दिनों के भीतर इस कार्यालय को प्रस्तुत की जाएगी।

संलग्नः- अनुमोदित खनन योजना ।

भवदीय

BABULAL GURJAR Digitally signed by BABULAL GURJAR Date: 2021.09.27 18:13:58 +05'30'

(बी. एल. गुर्जर)
क्षेत्रीय खान नियंत्रक
भारतीय खान ब्यूरो

प्रतिलिपि ईमेल द्वारा - सुचनार्थ

1 खान नियंत्रक (मध्य), भारतीय खान ब्यूरो , इंदिरा भवन, सिविल लाईन, नागपुर 440001 - **Email-com.cz@ibm.gov.in**

2 संचालक भौमिकी एवम खनिकर्म, छत्तिसगढ इंद्रावती भवन द्वितीय तल डी ब्लोक, केपिट्ल कोम्प्लेक्स , नया रायपुर, छत्तिसगढ- को अनुमोदित खनन योजना की प्रति के साथ प्रेषित ह□। **Email- dgm.cg@gov.in**

3 निदेशक, खान सुरक्षा निदेशालय, सरोज विहार, खामतरई, बिलासपुर, छत्तिसगढ-495006 **Email- wz.bspdgms@gmail.com**

4 डॉ संजीव कुमार सिन्हा एवम श्री आर. बी. बिहारी प्रधान, कस्टल हिल्स, मसब टैंक, हद्दराबाद - 500028 **Email- sinhask@nmdc.co.in , rbpradhan@nmdc.co.in**

5 खान पत्रावली/ खनन योजना

क्षेत्रीय खान नियंत्रक
भारतीय खान ब्यूरो

राजस्व विभाग

कार्यालय, कलेक्टर, जिला दक्षिण बस्तर दंतेवाड़ा, छत्तीसगढ़ एवं पदेन उप-सचिव, छत्तीसगढ़ शासन, राजस्व एवं आपदा प्रबंधन विभाग

दंतेवाड़ा, दिनांक 24 अगस्त 2023

क्रमांक/695/भू-अर्जन/2023.—चूंकि राज्य शासन को यह प्रतीत होता है कि इससे संलग्न अनुसूची के खाने (1) से (4) में वर्णित भूमि की अनुसूची के खाने (6) में उसके सामने दिये गये सार्वजनिक प्रयोजन के लिये आवश्यकता है अथवा आवश्यकता पड़ने की संभावना है. अत: भूमि अर्जन, पुनर्वासन और पुनर्व्यवस्थापन में उचित प्रतिकर और पारदर्शिता का अधिकार अधिनियम, 2013 (जिसे एतद् पश्चात् अधिनियम 2013 कहा जायेगा) की धारा 11 की उप-धारा (1) के उपबंधों के अनुसार सभी संबंधित व्यक्तियों को इसके द्वारा इस आशय की सूचना दी जाती है कि राज्य शासन एतद्द्वारा अनुसूची के खाने (5) में उल्लेखित प्राधिकारी को उक्त भूमि के संबंध में धारा 12 के अंतर्गत दी गयी शक्तियों का प्रयोग करने के लिए प्राधिकृत करता है :—

अनुसूची

भूमि का वर्णन				धारा 12 के द्वारा	सार्वजनिक प्रयोजन
जिला	तहसील	नगर/ग्राम	लगभग क्षेत्रफल (हेक्टेयर में)	प्राधिकृत अधिकारी	का वर्णन
(1)	(2)	(3)	(4)	(5)	(6)
दंतेवाड़ा	बड़ेबचेली	पोरोकमेली प.ह.नं. 01	4.40	मुख्य कार्यपालन अधिकारी, एन.एम.डी.सी.-सी.एम.डी.सी. रायपुर	बैलाडीला लौह अयस्क परियोजना निक्षेप क्रमांक 04 के खनन पट्टे के बाहर के क्षेत्र में अनुषांगी गतिविधियों हेतु.

भूमि का नक्शा (प्लान) का निरीक्षण अनुविभागीय अधिकारी राजस्व बड़ेबचेली के कार्यालय में किया जा सकता है.

दंतेवाड़ा, दिनांक 24 अगस्त 2023

क्रमांक/697/भू-अर्जन/2023.—चूंकि राज्य शासन को यह प्रतीत होता है कि इससे संलग्न अनुसूची के खाने (1) से (4) में वर्णित भूमि की अनुसूची के खाने (6) में उसके सामने दिये गये सार्वजनिक प्रयोजन के लिये आवश्यकता है अथवा आवश्यकता पड़ने की संभावना है. अत: भूमि अर्जन, पुनर्वासन और पुनर्व्यवस्थापन में उचित प्रतिकर और पारदर्शिता का अधिकार अधिनियम, 2013 (जिसे एतद् पश्चात् अधिनियम 2013 कहा जायेगा) की धारा 11 की उप-धारा (1) के उपबंधों के अनुसार सभी संबंधित व्यक्तियों को इसके द्वारा इस आशय की सूचना दी जाती है कि राज्य शासन एतद्द्वारा अनुसूची के खाने (5) में उल्लेखित प्राधिकारी को उक्त भूमि के संबंध में धारा 12 के अंतर्गत दी गयी शक्तियों का प्रयोग करने के लिए प्राधिकृत करता है :—

अनुसूची

भूमि का वर्णन				धारा 12 के द्वारा	सार्वजनिक प्रयोजन
जिला	तहसील	नगर/ग्राम	लगभग क्षेत्रफल (हेक्टेयर में)	प्राधिकृत अधिकारी	का वर्णन
(1)	(2)	(3)	(4)	(5)	(6)
दंतेवाड़ा	बड़ेबचेली	भांसी प.ह.नं. 01	11.265	मुख्य कार्यपालन अधिकारी, एन.एम.डी.सी.-सी.एम.डी.सी. रायपुर	बैलाडीला लौह अयस्क परियोजना निक्षेप क्रमांक 04 के खनन पट्टे के बाहर के क्षेत्र में अनुषांगी गतिविधियों हेतु.

भूमि का नक्शा (प्लान) का निरीक्षण अनुविभागीय अधिकारी राजस्व बड़ेबचेली के कार्यालय में किया जा सकता है.

छत्तीसगढ़ के राज्यपाल के नाम से तथा आदेशानुसार,
विनीत नंदनवार, कलेक्टर एवं पदेन उप-सचिव.

NMDC-CMDC LIMITED

(A Subsidiary of NMDC Ltd.)

Regd Off : Greens Villey City, Housing Board Colony, Boriyakala,
Sejbahar, Raipur 492015 (C.G.) Tel: 0771-2971919, Fax : 0771-2971920

NCL

CIN : U13100CT2008GOI020711

E-mail : ceonmdccmdc@gmail.com

No. NCL/HO/Dep-4/WR/2021/960 Date: 08/12/2021

To,

The Secretary,
Water Resource Deptt,
Govt. of Chhattisgarh,
Mahanadi Bhavan, Nava Raipur,
Chhattisgarh

Sub: Application for water allotment for the project "Bailadila Iron Ore project Deposit-04, Bacheli, South Bastar Dantewada (C.G.)"

Sir,

Our company (NMDC-CMDC Limited) is setting up a pickup weir at Shankini Nallah and Nerli Nallah, Bhansi, South Bastar Distt-Dantewada (C.G.) in the location explained below for which the water requirement of 20,000 m^3/day at full rated capacity and 1,000 m^3/day for initial years shall be needed for development and operation of mine.

The downstream water from Shankini nallah shall be tapped by providing pick-up weir on downstream side of nallah and distributed by pumping to Mines, both Primary and Secondary Crushing plants, Service Centre, Fire suppression system for downhill conveyor and other infrastructures at Hill-Top of Dep. 4.

The water from Nerli nallah shall be tapped by providing pick-up weir on downstream side of the nallah and distributed by pumping to Screening Plant (partly), Loading Plant, Township, Administration building, Guest house and other infrastructures proposed at Bhansi.

At hilltop, water is required for sprinkling on haul roads and feeder roads, mist spray at crushing plant, service center, auto shop, greenbelt development and domestic purposes in mine.

Details of proposed project are given below:

1	Name of the company	:	NMDC-CMDC Limited
2	Regd Office address	:	Green Villey City, Housing Board Colony, Boriyakala, Sejbahar, Raipur, 492015

3	Type of Organization	:	A JV Company of NMDC Ltd. (a Central Government Public Sector Undertaking under the administrative control of Ministry of Steel) and CMDC Ltd. (a Government of Chhattisgarh Public Sector Undertaking).
4	Name of the project	:	Bailadila Iron Ore Project Deposit-04
5	Location of the project		
	a) Nearest Village	:	Bhansi, Porokameli
	b) Block	:	Dantewada / Bade Bacheli
	c) District	:	South Bastar Dantewada (C.G.)
6	Salient details of the project	:	Bailadila Iron Ore Project Deposit-04 will be fully mechanized opencast mine. The iron Ore will be mined by shovel dumper combination and ore is processed to get two types of products i.e. Calibrated Lump Ore and Fine Ore. Production capacity of the mine will be 7.0 MTPAROM iron Ore (Total excavation 13.41 MTPA) along with 2000 TPH crushing Plant inside lease and ancillary activities related to mining including 2000 TPH screening / wet beneficiation plant outside mining lease. During initial 5 years period of development stage , the mine will be developed with 2 MTPA ROM capacity.
7	Proposed nearest source of water (Location map be enclosed)	:	Shankini Nallah and Nerli Nallah (Location map enclosed)
8	Required Quantity of water	:	**20,000 m^3/day** (at full rated capacity) and **1,000 m^3/day** (for initial years)
9	Project report regarding required water calculation	:	Enclosed
10	Position of MoU	:	MoU will be signed with WRD after obtaining permission for drawal of water.

DECLARATION

1) I/We certify that the information furnished is true to the best of my/our knowledge.

2) I/We agree to pay the water charges fixed by the Government from time to time and also agree to pay commitment charges if any.

3) I/We agree to sign necessary MoU/Agreement.

Place: Raipur
Date: 08/12/2021

Signature

08/12/2021

(Pankaj Kumar Sharma)
CEO, NMDC-CMDC Limited

1) Water requirement for Bailadila Iron Ore Project, Deposit-04, Bacheli, South Bastar Dantewada (C.G.) for initial years during development through Small Scale Mining

Total water Requirement	**: 1,000 m^3/day**
a) Dust suppression on haul road	= 600 m^3/day
b) Drinking/Sanitation	= 100 m^3/day
c) Green Belt	= 150 m^3/day
d) Dust suppression during in pit crushing	= 90 m^3/day
e) Vehicle Washing	= 50 m^3/day
f) Mine operation wet drilling	= 10 m^3/day
Total	**= 1,000 m^3/day**

2) Water requirement for Bailadila Iron Ore Project, Deposit-04, Bacheli, South Bastar Dantewada (C.G.) for full rated capacity Mining

Total water Requirement	**: 20,000 m^3/day**
a) Dust suppression on haul road	= 2000 m^3/day
b) Dust suppression at C/P, DH, S/P & L/P	= 1000 m^3/day
c) Wet screening	= 8380 m^3/day
d) For plantation	= 1000 m^3/day
e) For drinking/sanitation / household	= 7000 m^3/day
f) For domestic purpose	= 100 m^3/day
g) For miscellaneous purpose	= 400 m^3/day
h) Mine operation (wet drilling)	= 120 m^3/day
Total	**= 20,000 m^3/day**

08/12/2024

(Pankaj Kumar Sharma)
CEO, NMDC-CMDC Limited

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Phone No. : 0522 - 4079201/2746282

E-mail: contactus@ecomen.in, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
		Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air		
Sample Registration No.	0009	Name of Location	Within Lease Area (AM-1)
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	01.03.2022 to 31.05.2022	Time of Sample Collection	-
Date of Sample Received	-	Time of Sample Received	-
Start Date of Analysis	01.03.2022 to 31.05.2022	End Date of Analysis	04.06.2022
Weather Condition	Sunny	Sampling Duration	24 Hrs.
Environmental Condition	Temperature: 25 ± 2 °C Humidity: 56 %	Sample ID Code	ECO/LAB/0011-0021/3-5/2022

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
07.03.2022	60.48	28.24	7.20	19.80
11.03.2022	64.94	31.52	8.61	21.26
15.03.2022	63.52	31.26	8.57	18.41
18.03.2022	61.42	29.75	9.82	24.47
21.03.2022	54.54	28.69	8.68	25.26
25.03.2022	63.51	31.57	10.25	23.18
28.03.2022	64.28	28.65	8.63	19.65
31.03.2022	64.84	29.60	9.26	26.34
05.04.2022	66.20	32.17	9.74	21.76
08.04.2022	65.32	30.65	12.54	20.53
11.04.2022	61.46	28.67	10.36	23.83
14.04.2022	67.15	32.26	11.45	22.60
19.04.2022	67.53	33.98	10.26	26.45
23.04.2022	64.32	30.62	8.72	29.16
26.04.2022	62.81	27.16	10.14	25.61
29.04.2022	61.45	27.08	9.76	22.87
03.05.2022	61.91	28.82	8.82	26.17
07.05.2022	63.46	29.27	12.47	23.49
10.05.2022	64.28	31.05	10.65	20.81
13.05.2022	63.13	30.28	9.86	24.76
16.05.2022	61.74	30.62	10.38	28.04
20.05.2022	63.34	31.29	12.20	26.31
23.05.2022	66.94	31.85	10.52	23.82
27.05.2022	64.38	30.58	13.16	25.27
Max.	67.53	33.98	13.16	29.16
Min.	54.54	27.08	7.20	18.41
98th Percentiles	67.53	33.98	13.16	29.16
Limit as per NAAQ Standard	**100**	**60**	**80**	**80**

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
			Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air			
Sample Registration No.	0009		Name of Location	Proposed Screening Plant (AB1)
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative
Date of Sample Collection	01 03 2022 to 31.05 2022		Time of Sample Collection	-
Date of Sample Received	-		Time of Sample Received	-
Start Date of Analysis	01.03.2022 to 31.05 2022		End Date of Analysis	04.06 2022
Weather Condition	Sunny		Sampling Duration	24 Hrs
Environmental Condition	Temperature	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022
	Humidity	56 %		

Date of monitoring	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)
	IS 5182 (Part-23)	IS 5182 (Part-24)	IS:5182 (Part-2)	IS:5182 (Part-6)
07.03.2022	52.60	17.64	10.26	20.84
11.03.2022	48.94	18.28	9.64	24.80
15.03.2022	49.20	16.06	12.30	24.26
18.03.2022	47.29	19.52	9.72	20.51
21.03.2022	52.25	16.29	7.26	20.63
25.03.2022	49.48	17.47	13.41	17.82
28.03.2022	48.32	16.65	8.81	15.96
31.03.2022	47.80	17.46	12.36	19.26
05.04.2022	49.50	18.57	12.04	19.64
08.04.2022	53.60	16.25	15.40	21.15
11.04.2022	52.20	15.50	12.90	23.18
14.04.2022	49.65	17.06	8.72	20.94
19.04.2022	47.13	18.29	13.40	20.43
23.04.2022	50.72	16.57	11.61	23.54
26.04.2022	51.20	15.96	10.84	20.75
29.04.2022	48.60	19.27	12.26	22.26
03.05.2022	51.20	18.82	11.59	18.26
07.05.2022	59.50	21.18	9.62	15.54
10.05.2022	50.83	20.51	11.38	21.26
13.05.2022	48.35	22.38	11.05	19.67
16.05.2022	47.24	21.50	12.28	22.64
20.05.2022	48.42	21.49	9.87	18.26
23.05.2022	50.60	22.08	10.90	20.61
27.05.2022	49.23	23.28	10.07	16.18
Max.	59.50	23.28	15.40	24.80
Min.	47.13	15.50	7.26	15.54
98th Percentiles	59.50	23.28	15.40	24.80
Limit as per NAAQ Standard	100	60	80	80

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By
Technical Manager

Authorized By
Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022	
			Issue Date of Test Report	04.06.2022	
Type of Sample	Ambient Air				
Sample Registration No.	0009		Name of Location	Akash Nagar CISF Camp (AM-2)	
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative	
Date of Sample Collection	01.03.2022 to 31.05.2022		Time of Sample Collection	-	
Date of Sample Received	-		Time of Sample Received	-	
Start Date of Analysis	01.03.2022 to 31.05.2022		End Date of Analysis	04.06.2022	
Weather Condition	Sunny		Sampling Duration	24 Hrs.	
Environmental Condition	Temperature:	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022	
	Humidity:	56 %			

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
08.03.2022	62.59	30.58	8.24	20.48
12.03.2022	65.28	27.48	8.72	21.26
15.03.2022	63.62	29.50	10.24	23.25
19.03.2022	62.70	28.20	9.58	19.26
22.03.2022	65.40	27.23	7.29	22.56
26.03.2022	71.50	30.51	8.56	21.27
29.03.2022	62.38	27.39	11.20	23.82
31.03.2022	59.18	30.60	10.18	20.75
05.04.2022	58.70	28.26	9.36	23.29
09.04.2022	63.70	25.40	7.82	21.48
12.04.2022	62.10	27.62	8.59	19.75
16.04.2022	55.46	30.40	10.58	18.60
19.04.2022	56.80	28.60	11.38	21.25
23.04.2022	54.79	30.40	9.62	25.08
26.04.2022	55.56	29.25	11.18	21.32
30.04.2022	60.40	30.34	9.52	19.62
03.05.2022	67.27	29.60	7.98	18.74
07.05.2022	64.80	30.60	8.29	19.58
10.05.2022	63.80	28.50	10.38	22.74
13.05.2022	65.40	29.26	9.60	24.35
17.05.2022	64.58	28.40	12.27	23.26
21.05.2022	66.70	29.28	10.28	24.58
24.05.2022	64.50	26.50	10.06	21.96
26.05.2022	62.70	24.60	9.28	23.51
Max.	71.50	30.60	12.27	25.08
Min.	54.79	24.60	7.29	18.60
98th Percentiles	71.50	30.60	12.27	25.08
Limit as per NAAQ Standard	**100**	**60**	**80**	**80**

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By
Technical Manager

Authorized By
Quality Manager

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Second Floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow - 226 024

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E-mail: contactus@ecomen.in, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
			Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air			
Sample Registration No.	0009		Name of Location	Padapur (AM-3)
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative
Date of Sample Collection	01.03.2022 to 31.05.2022		Time of Sample Collection	-
Date of Sample Received	-		Time of Sample Received	-
Start Date of Analysis	01.03.2022 to 31.05.2022		End Date of Analysis	04.06.2022
Weather Condition	Sunny		Sampling Duration	24 Hrs.
Environmental Condition	Temperature:	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022
	Humidity:	56 %		

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
04.03.2022	59.46	30.67	8.62	20.75
10.10.2020	64.30	31.29	9.48	18.42
13.10.2020	70.00	33.50	10.41	19.21
17.10.2020	71.20	32.54	7.26	18.75
20.10.2020	68.50	29.47	9.53	23.42
24.10.2020	71.40	31.81	9.18	21.75
27.10.2020	59.80	33.39	12.24	23.09
31.10.2020	56.30	38.40	10.22	21.51
03.11.2020	63.20	33.28	8.38	20.37
07.11.2020	60.41	38.50	9.76	17.63
10.11.2020	64.50	32.29	7.54	19.54
14.11.2020	63.50	33.18	9.38	23.74
17.11.2020	65.20	35.25	11.24	21.57
21.11.2020	60.28	33.31	10.83	19.21
24.11.2020	59.64	35.25	9.64	17.82
28.11.2020	68.50	32.29	9.08	23.25
01.12.2020	64.70	31.76	7.72	25.08
05.12.2020	61.50	26.67	8.56	22.47
08.12.2020	64.50	24.40	10.53	21.30
12.12.2020	68.20	31.60	10.84	23.80
15.12.2020	65.20	33.82	12.30	20.49
08.03.2022	62.03	32.67	10.60	22.21
12.03.2022	63.70	33.50	14.20	23.53
15.03.2022	60.80	32.60	11.58	20.84
Max.	71.40	38.50	14.20	25.08
Min.	56.30	24.40	7.26	17.63
98th Percentiles	71.40	38.50	14.20	25.08
Limit as per NAAQ Standard	**100**	**60**	**80**	**80**

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By
Technical Manager

Authorized By
Quality Manager

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
			Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air			
Sample Registration No.	0009		Name of Location	Pujaripara (AB-2)
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative
Date of Sample Collection	01.03.2022 to 31.05.2022		Time of Sample Collection	-
Date of Sample Received	-		Time of Sample Received	-
Start Date of Analysis	01.03.2022 to 31.05.2022		End Date of Analysis	04.06.2022
Weather Condition	Sunny		Sampling Duration	24 Hrs.
Environmental Condition	Temperature:	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022
	Humidity:	56 %		

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
04.03.2022	55.29	19.37	9.94	21.26
10.10.2020	52.30	18.92	10.26	20.60
13.10.2020	58.31	20.30	11.20	18.59
17.10.2020	61.26	21.76	12.20	20.30
20.10.2020	57.20	20.20	13.00	23.20
24.10.2020	59.18	19.56	13.43	19.48
27.10.2020	58.47	18.54	8.81	20.85
31.10.2020	60.50	20.60	8.24	21.60
03.11.2020	62.08	22.42	9.26	21.64
07.11.2020	55.46	18.65	12.42	19.38
10.11.2020	54.20	19.23	10.20	22.59
14.11.2020	51.20	18.97	13.40	23.51
17.11.2020	55.56	21.50	10.67	21.68
21.11.2020	33.82	20.30	9.58	18.40
24.11.2020	55.57	21.08	8.50	19.36
28.11.2020	58.43	18.60	9.82	24.59
01.12.2020	61.24	21.72	8.59	21.78
05.12.2020	60.20	22.30	12.62	21.30
08.12.2020	59.49	20.56	13.18	23.41
12.12.2020	57.28	23.50	10.44	25.38
15.12.2020	61.24	20.60	9.80	22.30
08.03.2022	60.52	22.37	11.37	20.92
12.03.2022	58.83	19.26	10.38	23.60
15.03.2022	63.18	21.47	10.60	21.10
Max.	63.18	23.50	13.43	25.38
Min.	33.82	18.54	8.24	18.40
98th Percentiles	63.18	23.50	13.43	25.38
Limit as per NAAQ Standard	**100**	**60**	**80**	**80**

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

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3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

Technical Manager

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Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
			Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air			
Sample Registration No.	0009		Name of Location	Within 500 M Downwind Direction From Lease Area (AMB1-3)
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative
Date of Sample Collection	01.03.2022 to 31.05.2022		Time of Sample Collection	-
Date of Sample Received	-		Time of Sample Reeeived	-
Start Date of Analysis	01.03.2022 to 31.05.2022		End Date of Analysis	04.06.2022
Weather Condition	Sunny		Sampling Duration	24 Hrs.
Environmental Condition	Temperature:	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022
	Humidity:	56 %		

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
07.03.2022	57.60	28.02	10.26	23.81
11.03.2022	53.94	26.74	12.14	18.60
15.03.2022	50.64	26.49	13.20	21.29
18.03.2022	58.30	27.28	9.54	23.60
21.03.2022	57.25	26.65	14.28	19.29
25.03.2022	54.48	29.26	12.64	18.64
28.03.2022	56.20	30.85	10.51	23.42
31.03.2022	57.10	25.37	9.08	24.62
05.04.2022	55.60	28.51	9.84	19.38
08.04.2022	49.80	26.53	12.22	24.84
11.04.2022	57.20	28.13	15.16	22.72
14.04.2022	54.65	26.47	13.28	25.08
19.04.2022	56.50	28.41	12.78	21.48
23.04.2022	55.72	29.26	15.39	23.51
26.04.2022	56.40	26.49	13.64	18.26
29.04.2022	53.60	30.63	10.62	24.18
03.05.2022	56.20	32.37	12.54	21.74
07.05.2022	47.20	27.24	11.29	20.91
10.05.2022	46.50	33.49	13.67	23.64
13.05.2022	49.50	30.29	12.35	26.05
16.05.2022	56.80	29.86	10.92	22.76
20.05.2022	55.64	28.76	11.78	24.08
23.05.2022	56.40	32.58	11.34	21.57
27.05.2022	57.22	34.06	15.36	23.52
Max.	58.30	34.06	15.39	26.05
Min.	46.50	25.37	9.08	18.26
98th Percentiles	58.30	34.06	15.39	26.05
Limit as per NAAQ Standard	100	60	80	80

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

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2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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E-mail: contactus@ecomen.in, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
			Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air			
Sample Registration No.	0009		Name of Location	Timmenar (AMB-2)
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative
Date of Sample Collection	01.03.2022 to 31.05.2022		Time of Sample Collection	-
Date of Sample Received	-		Time of Sample Received	-
Start Date of Analysis	01.03.2022 to 31.05.2022		End Date of Analysis	04.06.2022
Weather Condition	Sunny		Sampling Duration	24 Hrs.
Environmental Condition	Temperature:	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022
	Humidity:	56 %		

Date of monitoring	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)
	IS:5182 (Part-23)	IS:5182 (Part-24)	IS:5182 (Part-2)	IS:5182 (Part-6)
08.03.2022	46.20	20.58	8.37	18.56
12.03.2022	45.36	22.60	10.24	21.46
15.03.2022	44.82	21.50	10.80	20.60
19.03.2022	45.61	20.20	7.54	17.82
22.03.2022	50.20	21.47	9.62	19.51
26.03.2022	43.57	24.30	10.26	19.16
29.03.2022	45.70	25.39	8.51	23.82
31.03.2022	44.78	20.26	8.20	27.52
05.04.2022	50.60	22.50	7.82	24.38
09.04.2022	52.40	21.58	11.54	31.56
12.04.2022	46.18	20.51	12.26	20.62
16.04.2022	42.30	23.60	10.61	25.22
19.04.2022	44.89	25.30	8.74	21.48
23.04.2022	47.60	21.18	9.56	23.21
26.04.2022	45.30	24.30	6.94	24.57
30.04.2022	50.26	22.81	10.48	22.39
03.05.2022	47.69	20.29	8.28	24.82
07.05.2022	45.79	23.40	9.26	21.57
10.05.2022	50.30	21.76	7.69	23.28
13.05.2022	51.24	24.28	11.24	20.74
17.05.2022	52.60	23.60	10.54	18.76
21.05.2022	53.60	21.70	9.76	23.08
24.05.2022	50.20	22.54	10.54	26.18
26.05.2022	51.60	24.27	12.10	24.94
Max.	53.60	25.39	12.26	31.56
Min.	42.30	20.20	6.94	17.82
98th Percentiles	53.60	25.39	12.26	31.56
Limit as per NAAQ Standard	**100**	**60**	**80**	**80**

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

1. Test results relate to the items sampled & tested.
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----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Baeheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
			Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air			
Sample Registration No.	0009		Name of Location	Near Proposed Conveyor Alignment (A-5)
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative
Date of Sample Collection	01.03.2022 to 31.05.2022		Time of Sample Collection	-
Date of Sample Received	-		Time of Sample Received	-
Start Date of Analysis	01.03.2022 to 31.05.2022		End Date of Analysis	04.06.2022
Weather Condition	Sunny		Sampling Duration	24 Hrs.
Environmental Condition	Temperature:	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022
	Humidity:	56 %		

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
02.03.2022	49.54	21.50	10.36	23.24
05.03.2022	43.71	20.81	10.54	21.60
08.03.2022	45.44	21.60	9.26	22.54
12.03.2022	46.74	20.30	9.82	21.31
15.03.2022	47.28	21.40	12.34	20.75
19.03.2022	44.53	19.80	8.51	18.60
23.03.2022	45.27	20.52	6.38	19.69
26.03.2022	45.38	21.62	8.05	21.28
04.04.2022	45.42	19.70	10.26	23.57
08.04.2022	47.13	20.30	9.58	20.84
12.04.2022	52.28	22.10	10.42	17.95
16.04.2022	53.39	23.73	11.27	19.57
19.04.2022	58.65	25.19	8.64	23.16
22.04.2022	54.13	22.04	7.94	23.52
26.04.2022	45.69	19.67	8.06	20.63
29.04.2022	47.45	20.29	10.24	23.21
03.05.2022	53.19	23.46	9.51	20.80
07.05.2022	54.06	21.30	9.02	18.73
10.05.2022	50.86	19.86	11.26	19.25
13.05.2022	52.64	22.45	10.64	22.54
17.05.2022	53.98	22.94	8.79	24.25
20.05.2022	54.35	20.60	10.60	24.78
24.05.2022	52.52	21.29	10.28	18.58
28.05.2022	55.38	22.60	12.08	21.72
Max.	58.65	25.19	12.34	24.78
Min.	43.71	19.67	6.38	17.95
98th Percentiles	58.65	25.19	12.34	24.78
Limit as per NAAQ Standard	**100**	**60**	**80**	**80**

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

1. Test results relate to the items sampled & tested.
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----End of Report----

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022	
			Issue Date of Test Report	04.06.2022	
Type of Sample	Ambient Air				
Sample Registration No.	0009		Name of Location	Within 500M Downwind Direction From Beneficiation Plant (AMB-4)	
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative	
Date of Sample Collection	01.03.2022 to 31.05.2022		Time of Sample Collection	-	
Date of Sample Received	-		Time of Sample Received	-	
Start Date of Analysis	01.03.2022 to 31.05.2022		End Date of Analysis	04.06.2022	
Weather Condition	Sunny		Sampling Duration	24 Hrs.	
Environmental Condition	Temperature:	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022	
	Humidity:	56 %			

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
02.03.2022	52.34	21.20	10.20	21.24
05.03.2022	48.52	20.72	9.31	19.85
08.03.2022	50.38	20.85	12.64	18.69
12.03.2022	52.27	22.16	10.29	23.40
15.03.2022	49.36	19.43	8.54	22.61
19.03.2022	50.41	21.28	11.36	20.50
23.03.2022	42.98	20.26	13.26	18.78
26.03.2022	50.37	21.94	10.54	21.43
04.04.2022	52.29	22.38	13.60	23.25
08.04.2022	49.51	21.05	9.72	25.16
12.04.2022	54.26	23.41	6.38	21.44
16.04.2022	54.42	24.52	8.29	23.65
19.04.2022	53.12	22.34	11.24	24.08
22.04.2022	55.12	21.86	9.62	21.60
26.04.2022	52.64	19.62	10.28	20.74
29.04.2022	53.83	20.74	12.25	19.26
03.05.2022	51.46	21.27	10.52	21.85
07.05.2022	53.08	22.68	8.73	23.61
10.05.2022	52.58	19.76	9.20	22.56
13.05.2022	55.12	23.29	10.16	24.25
17.05.2022	53.38	21.08	8.82	20.76
20.05.2022	48.26	22.27	8.05	21.56
24.05.2022	54.54	20.64	11.29	23.08
28.05.2022	49.23	22.57	11.58	21.84
Max.	55.12	24.52	13.60	25.16
Min.	42.98	19.43	6.38	18.69
98th Percentiles	55.12	24.52	13.60	25.16
Limit as per NAAQ Standard	**100**	**60**	**80**	**80**

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
		Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air		
Sample Registration No.	0009	Name of Location	Near Kanya Ashram, Dhurli (AMB5)
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	01.03.2022 to 31.05.2022	Time of Sample Collection	-
Date of Sample Received	-	Time of Sample Received	-
Start Date of Analysis	01.03.2022 to 31.05.2022	End Date of Analysis	04.06.2022
Weather Condition	Sunny	Sampling Duration	24 Hrs.
Environmental Condition	Temperature: 25 ± 2 °C Humidity: 56 %	Sample ID Code	ECO/LAB/0011-0021/3-5/2022

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
07.03.2022	51.26	22.53	8.32	15.80
11.03.2022	52.05	22.87	10.96	19.20
15.03.2022	48.53	20.53	9.28	17.62
18.03.2022	51.29	22.34	8.56	21.20
21.03.2022	49.47	20.72	6.59	17.29
25.03.2022	48.72	20.56	7.26	20.54
28.03.2022	50.53	21.35	10.15	17.81
31.03.2022	50.45	21.82	8.81	16.94
05.04.2022	49.57	20.92	7.62	20.48
08.04.2022	48.23	28.45	7.29	18.26
11.04.2022	48.56	20.22	8.41	21.45
14.04.2022	49.71	21.52	9.54	20.65
19.04.2022	51.23	22.67	9.18	20.08
23.04.2022	48.84	21.68	7.62	21.54
26.04.2022	53.21	24.45	9.36	19.26
29.04.2022	51.83	24.63	11.20	17.84
03.05.2022	51.24	29.19	10.50	21.24
07.05.2022	53.29	25.19	8.85	23.50
10.05.2022	53.42	20.68	7.64	18.73
13.05.2022	49.92	23.76	8.17	16.52
16.05.2022	52.68	21.98	10.37	15.98
20.05.2022	53.02	24.48	10.84	20.45
23.05.2022	51.29	21.26	8.62	21.65
27.05.2022	53.52	23.42	9.54	18.39
Max.	53.52	29.19	11.20	23.50
Min.	48.23	20.22	6.59	15.80
98th Percentiles	53.52	29.19	11.20	23.50
Limit as per NAAQ Standard	100	60	80	80

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

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3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By
Technical Manager

Authorized By
Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022	
			Issue Date of Test Report	04.06.2022	
Type of Sample	Ambient Air				
Sample Registration No.	0009		Name of Location	Bhansi (AMB-6)	
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative	
Date of Sample Collection	01.03.2022 to 31.05.2022		Time of Sample Collection	-	
Date of Sample Received	-		Time of Sample Received	-	
Start Date of Analysis	01.03.2022 to 31.05.2022		End Date of Analysis	04.06.2022	
Weather Condition	Sunny		Sampling Duration	24 Hrs.	
Environmental Condition	Temperature:	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022	
	Humidity:	56 %			

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
02.03.2022	55.29	19.37	9.94	21.26
05.03.2022	56.45	18.92	10.26	21.83
08.03.2022	58.31	21.28	10.51	18.59
12.03.2022	61.26	21.76	12.20	19.28
15.03.2022	60.56	20.20	13.00	23.20
19.03.2022	59.18	19.56	13.43	19.48
23.03.2022	58.47	18.54	8.81	20.85
26.03.2022	63.62	23.28	8.24	23.24
04.04.2022	62.08	22.42	9.26	21.64
08.04.2022	55.46	18.65	12.42	19.38
12.04.2022	55.83	19.23	10.20	22.59
16.04.2022	54.79	18.97	13.40	23.51
19.04.2022	55.56	21.50	10.67	21.68
22.04.2022	33.82	20.30	9.58	18.74
26.04.2022	55.57	21.08	9.25	19.36
29.04.2022	58.43	22.43	9.82	24.59
03.05.2022	61.24	21.72	8.59	21.78
07.05.2022	63.51	24.29	12.62	22.54
10.05.2022	59.49	20.56	13.18	23.41
13.05.2022	57.28	23.50	10.44	25.38
17.05.2022	61.24	24.21	10.73	22.74
20.05.2022	60.52	22.37	11.37	20.92
24.05.2022	58.83	19.26	10.38	23.57
28.05.2022	63.18	21.47	11.62	22.16
Max.	63.62	24.29	11.62	25.38
Min.	33.82	18.54	8.24	18.59
98th Percentiles	63.62	24.29	11.62	25.38
Limit as per NAAQ Standard	**100**	**60**	**80**	**80**

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

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3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By
Technical Manager

Authorized By
Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022	
			Issue Date of Test Report	04.06.2022	
Type of Sample	Ambient Air				
Sample Registration No.	0009		Name of Location	Porokameli (AMB-7)	
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative	
Date of Sample Collection	01.03.2022 to 31.05.2022		Time of Sample Collection	-	
Date of Sample Received	-		Time of Sample Received	-	
Start Date of Analysis	01.03.2022 to 31.05.2022		End Date of Analysis	04.06.2022	
Weather Condition	Sunny		Sampling Duration	24 Hrs.	
Environmental Condition	Temperature:	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022	
	Humidity:	56 %			

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
02.03.2022	50.42	25.61	9.31	23.60
05.03.2022	48.29	25.50	10.28	25.28
08.03.2022	48.72	23.92	11.56	20.54
12.03.2022	52.57	24.53	9.42	22.71
15.03.2022	50.43	25.15	8.69	23.51
19.03.2022	51.26	25.37	8.24	22.74
23.03.2022	50.71	24.28	12.32	24.28
26.03.2022	52.54	25.08	11.41	21.92
04.04.2022	49.38	22.65	11.68	19.65
08.04.2022	48.72	22.24	12.39	18.08
12.04.2022	57.19	27.12	13.28	21.63
16.04.2022	58.54	27.76	10.43	23.25
19.04.2022	56.42	25.72	8.27	25.72
22.04.2022	51.46	23.53	9.52	21.94
26.04.2022	56.26	28.28	12.19	20.64
29.04.2022	57.23	28.94	11.62	22.57
03.05.2022	56.26	29.18	13.54	20.49
07.05.2022	57.29	30.53	12.38	23.27
10.05.2022	54.52	27.56	10.81	21.16
13.05.2022	57.28	28.81	10.26	24.64
17.05.2022	56.54	27.72	12.59	25.21
20.05.2022	55.17	26.65	11.68	23.18
24.05.2022	57.28	29.48	10.50	20.65
28.05.2022	54.39	26.29	12.21	22.83
Max.	58.54	30.53	13.54	25.72
Min.	48.29	22.24	8.24	18.08
98th Percentiles	58.54	30.53	13.54	25.72
Limit as per NAAQ Standard	100	60	80	80

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

1. Test results relate to the items sampled & tested.
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3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh		Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
			Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air			
Sample Registration No.	0009		Name of Location	Nerli (AMB-8)
Sampling Method	As per Reference Method		Sample Collected By	ELPL Representative
Date of Sample Collection	01.03.2022 to 31.05.2022		Time of Sample Collection	-
Date of Sample Reeeived	-		Time of Sample Received	-
Start Date of Analysis	01.03.2022 to 31.05.2022		End Date of Analysis	04.06.2022
Weather Condition	Sunny		Sampling Duration	24 Hrs.
Environmental Condition	Temperature:	25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022
	Humidity:	56 %		

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
08.03.2022	49.42	24.23	7.24	13.82
12.03.2022	54.30	24.58	6.68	17.28
15.03.2022	50.20	23.43	10.26	17.64
19.03.2022	51.48	24.84	10.51	15.59
22.03.2022	49.53	24.92	9.38	21.04
26.03.2022	51.26	25.26	8.29	19.64
29.03.2022	50.23	23.58	8.64	17.70
31.03.2022	52.15	25.83	9.54	22.75
05.04.2022	50.80	29.58	11.18	22.34
09.04.2022	49.38	23.35	9.65	20.46
12.04.2022	50.60	26.72	7.28	15.81
16.04.2022	52.08	24.69	7.91	18.32
19.04.2022	51.30	28.74	6.27	21.76
23.04.2022	49.49	25.82	7.54	20.58
26.04.2022	50.00	23.65	9.26	19.42
30.04.2022	51.26	24.39	12.40	23.46
03.05.2022	52.60	25.25	10.38	21.94
07.05.2022	54.20	28.75	10.71	24.62
10.05.2022	53.60	27.56	8.16	20.76
13.05.2022	55.60	24.62	7.83	18.58
17.05.2022	52.43	27.18	11.28	19.27
21.05.2022	53.82	30.84	10.54	21.54
24.05.2022	54.20	23.63	10.16	23.89
26.05.2022	53.52	25.95	9.26	22.48
Max.	55.60	30.84	12.40	24.62
Min.	49.38	23.35	6.27	13.82
98th Percentiles	55.60	30.84	12.40	24.62
Limit as per NAAQ Standard	**100**	**60**	**80**	**80**

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

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Authorized By
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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/10

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
		Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air		
Sample Registration No.	0009	Name of Location	Bacheli (AMB-9)
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	01.03.2022 to 31.05.2022	Time of Sample Collection	-
Date of Sample Received	-	Time of Sample Received	-
Start Date of Analysis	01.03.2022 to 31.05.2022	End Date of Analysis	04.06.2022
Weather Condition	Sunny	Sampling Duration	24 Hrs.
Environmental Condition	Temperature: 25 ± 2 °C Humidity: 56 %	Sample ID Code	ECO/LAB/0011-0021/3-5/2022

Date of monitoring	PM_{10} (µg/m³) IS:5182 (Part-23)	$PM_{2.5}$ (µg/m³) IS:5182 (Part-24)	SO_2 (µg/m³) IS:5182 (Part-2)	NO_2 (µg/m³) IS:5182 (Part-6)
08.03.2022	59.46	27.67	8.50	15.82
12.03.2022	60.39	28.29	9.24	17.26
15.03.2022	59.92	30.50	8.34	16.08
19.03.2022	60.74	29.54	10.29	20.26
22.03.2022	61.29	26.47	9.80	18.54
26.03.2022	60.54	28.81	8.60	19.28
29.03.2022	60.81	30.39	9.38	23.15
31.03.2022	62.26	35.40	10.50	18.60
05.04.2022	59.62	30.28	9.80	16.97
09.04.2022	60.41	35.50	8.50	15.27
12.04.2022	61.38	29.29	9.50	22.35
16.04.2022	62.59	30.18	10.26	20.81
19.04.2022	48.89	32.25	9.54	21.56
23.04.2022	60.28	30.31	8.50	23.59
26.04.2022	59.64	32.25	10.20	19.45
30.04.2022	60.38	29.29	9.60	17.85
03.05.2022	60.59	28.76	10.82	19.36
07.05.2022	61.38	23.67	9.70	21.27
10.05.2022	60.58	21.40	10.40	20.54
13.05.2022	58.98	28.60	8.60	23.28
17.05.2022	60.72	30.82	10.20	24.61
21.05.2022	62.03	29.67	9.54	21.72
24.05.2022	61.41	30.50	10.60	18.53
26.05.2022	60.38	29.60	9.70	20.68
Max.	62.59	35.50	10.82	24.61
Min.	48.89	21.40	8.34	15.27
98th Percentiles	62.59	35.50	10.82	24.61
Limit as per NAAQ Standard	100	60	80	80

Statement of Conformity: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Note:

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
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----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/13

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/AA/0009/0011-0021/3-5/2022
		Issue Date of Test Report	04.06.2022
Type of Sample	Ambient Air		
Sample Registration No.	0009	Name of Location	--
Sampling Method	As per Reference Method	Sample Collected By	ELPL Representative
Date of Sample Collection	01.03.2022 to 31.05 2022	Time of Sample Collection	-
Date of Sample Received	-	Time of Sample Received	10:40 PM
Start Date of Analysis	01 03 2022 to 31.05.2022	End Date of Analysis	04.06.2022
Weather Condition	Sunny	Sampling Duration	24 Hrs.
Environmental Condition	Temperature: 25 ± 2 °C	Sample ID Code	ECO/LAB/0011-0021/3-5/2022
Instrument Name & Lab ID	Sound Level Meter	ECO/LSM/02 Calibration Date (31.05.2024)	

	Parameter	$PM_{10}(\mu g/m^3)$		$PM_{2.5}(\mu g/m^3)$		$SO_2(\mu g/m^3)$		$NO_2(\mu g/m^3)$	
SN	Locations	Max	Min	Max	Min	Max	Min	Max	Min
AM1	Within lease area	67.53	54.54	33.98	27.08	13.16	7.20	29.16	18.41
AB1	Proposed Screening plant	59.50	47.13	23.28	15.50	15.40	7.26	24.80	15.54
AM2	Akash Nagar CISF Camp	71.50	54.79	30.60	24.60	12.27	7.29	25.08	18.60
AM3	Padapur	71.40	56.30	38.50	24.40	14.20	7.26	25.08	17.63
AB2	Pujaripara	63.18	33.82	23.50	18.54	13.43	8.24	25.38	18.40
AMB1	Within 500m downwind direction from lease area	58.30	46.50	34.06	25.37	15.39	9.08	26.05	18.26
AMB2	Timmenar	53.60	42.30	25.39	20.20	12.26	6.94	31.56	17.82
AMB3	Near proposed conveyor alignment	58.65	43.71	25.19	19.67	12.34	6.38	24.78	17.95
AMB4	Within 500M Downwind Direction from Beneficiation Plant	55.12	42.98	24.52	19.43	13.60	6.38	25.16	18.69
AMB5	Near Kanya Ashram, Dhurli	53.52	48.23	29.19	20.22	11.20	6.59	23.50	15.80
AMB6	Bhansi	63.62	33.82	24.29	18.54	11.62	8.24	25.38	18.59
AMB7	Porokameli	58.54	48.29	30.53	22.24	13.54	8.24	25.72	18.08
AMB8	Nerli	55.60	49.38	30.84	23.35	12.40	6.27	24.62	13.82
AMB9	Bacheli	62.59	48.89	35.50	21.40	10.82	8.34	24.61	15.27

Opinion/Observation: Noise Level is meeting requirement as per CPCB Guidelines.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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Second Floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow - 226 024
Phone No. : 0522 - 4079201/2746282
E-mail: contactus@ecomen.in, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI
An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	**Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh**	**Test Report No.**	**ECO/LAB/GW/0027/0301/05/2022**
		Issue Date of Test Report	**19.06.2022**
Type of Sample	Ground Water		
Sample Registration No.	0027	**Name of Location**	Bhansi (GWMB4)
Sampling Method	APHA	**Sample Collected By**	ELPL Representative
Date of Sample Collection	27.05.2022	**Time of Sample Collection**	-
Date of Sample Received	04.06.2022	**Time of Sample Received**	11.15 AM
Start Date of Analysis	04.06.2022	**End Date of Analysis**	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	**Sample Quantity**	As per Requirement
	Humidity: 51 %	**Sample ID Code**	ECO/LAB/0301/05/2022

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	<5.0	5	15
2.	Odour	-	APHA, 23rd Ed. : 2017, 2150 B	Qualitative	Agreeable	Agreeable	Agreeable
3.	Taste	-	APHA, 23rd Ed. 2017, 2160 A+B	Qualitative	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	APHA, 23rd Ed. : 2017, 2130-A+B	1-100	1.02	1	5
5.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	7.05	6.5-8.5	No Relax
6.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	145.0	500	2000
7.	Alkalinity as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2320 A+ B	5-1500	48.0	200	600
8.	Total Hardness as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2340 A+C	5 - 1500	52.0	200	600
9.	Calcium as Ca	mg/l	APHA, 23rd Ed. : 2017, 3500 Ca A+B	5-1000	12.8	75	200
10.	Magnesium as Mg	mg/l	APHA, 23rd Ed. : 2017, 3500 Mg A+B	5-1000	4.86	30	100
11.	Sodium as Na	mg/l	APHA, 23rd Ed. 2017, 3500 Na A+B	1-100	7.23	-	-
12.	Potassium as K	mg/l	APHA, 23rd Ed. 2017, 3500 K A+B	1-100	0.56	-	-
13.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	0.05	1.5
14.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.12	0.3	No Relax
15.	Manganese as Mn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.1-5	BDL	0.1	0.3
16.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	6.0	250	1000
17.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO_4^{2-} E	1-250	72	200	400
18.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO_3^{2-} E	5-100	5.01	45	No Relax
19.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.41	1	1.5
20.	Phenolic Compound as C_6H_5OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.001-10	BDL	0.001	0.005
21.	Mercury as Hg	mg/l	APHA, 23rd Ed. : 2017, 3112 A+B	0.001-2	BDL	0.001	No Relax
22.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.001-5	BDL	0.003	No Relax
23.	Selenium as Se	mg/l	APHA, 23rd Ed. : 2017, 3500 Se A+C	0.02-5	BDL	0.01	No Relax
24.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-2	BDL	0.01	No Relax
25.	Cyanide as CN	mg/l	APHA, 23rd Ed. : 2017, 4500 CN A+D	0.05-5	BDL	0.05	No Relax
26.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-5	BDL	0.01	No Relax
27.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.02	5	15
28.	Total Chromium as T. Cr.	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-50	BDL	0.05	No Relax
29.	Mineral Oil	mg/l	IS 3025 (Part 39) Class -6	0.01-10	BDL	0.5	No Relax
30.	Free Residual Chlorine as FRC	mg/l	APHA, 23rd Ed. : 2017, 4500-Cl B	0.05-10	BDL	0.2	1
31.	Total coliform	cfu/ml	IS15185:2016;RA:2021	<1.0	Absent	Absent	Absent
32.	*E. coli*	cfu/100 ml	IS-15185,2016 RA 2021	<1.0	Absent	Absent	Absent

Statement of Conformity: The above tested parameters confirm as per **IS 10500:2012(Reaff:2018)** limits for above tested parameters.

Note-

1. Test results relate to the items sampled & tested
2. Test report shall not be reprodueed except in full without approval of the laboratory
3. The test samples will be disposed of after one Month from the date of issue of test report
4. BDL- Below detection limit

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	**Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh**	**Test Report No.**	**ECO/LAB/GW/0027/0302/05/2022**
		Issue Date of Test Report	**19.06.2022**
Type of Sample	Ground Water		
Sample Registration No.	0027	**Name of Location**	Nerli (GWMB2)
Sampling Method	APHA	**Sample Collected By**	ELPL Representative
Date of Sample Collection	27.05.2022	**Time of Sample Collection**	-
Date of Sample Received	04.06.2022	**Time of Sample Received**	11.15 AM
Start Date of Analysis	04.06.2022	**End Date of Analysis**	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	**Sample Quantity**	As per Requirement
	Humidity: 51 %	**Sample ID Code**	ECO/LAB/0302/05/2022

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	10.0	5	15
2.	Odour	-	APHA, 23rd Ed. : 2017, 2150 B	Qualitative	Agreeable	Agreeable	Agreeable
3.	Taste	-	APHA, 23rd Ed. 2017, 2160 A+B	Qualitative	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	APHA, 23rd Ed. : 2017, 2130-A+B	1-100	1.33	1	5
5.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	6.97	6.5-8.5	No Relax
6.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	188.00	500	2000
7.	Alkalinity as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2320 A+ B	5-1500	60.00	200	600
8.	Total Hardness as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2340 A+C	5 - 1500	68.00	200	600
9.	Calcium as Ca	mg/l	APHA, 23rd Ed. : 2017, 3500 Ca A+B	5-1000	17.60	75	200
10.	Magnesium as Mg	mg/l	APHA, 23rd Ed. : 2017, 3500 Mg A+B	5-1000	5.83	30	100
11.	Sodium as Na	mg/l	APHA, 23rd Ed. 2017, 3500 Na A+B	1-100	12.20	-	-
12.	Potassium as K	mg/l	APHA, 23rd Ed. 2017, 3500 K A+B	1-100	1.20	-	-
13.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	0.05	1.5
14.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.33	0.3	No Relax
15.	Manganese as Mn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.1-5	BDL	0.1	0.3
16.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	10.00	250	1000
17.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO_4^{2-} E	1 – 250	10.60	200	400
18.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO_3^{2-} E	5-100	6.12	45	No Relax
19.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.16	1	1.5
20.	Phenolic Compound as C_6H_5OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.001-10	BDL	0.001	0.005
21.	Mercury as Hg	mg/l	APHA, 23rd Ed. : 2017, 3112 A+B	0.001-2	BDL	0.001	No Relax
22.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.001-5	BDL	0.003	No Relax
23.	Selenium as Se	mg/l	APHA, 23rd Ed. : 2017, 3500 Se A+C	0.02-5	BDL	0.01	No Relax
24.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-2	BDL	0.01	No Relax
25.	Cyanide as CN	mg/l	APHA, 23rd Ed. : 2017, 4500 CN A+D	0.05-5	BDL	0.05	No Relax
26.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-5	BDL	0.01	No Relax
27.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.12	5	15
28.	Total Chromium as T. Cr.	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-50	BDL	0.05	No Relax
29.	Mineral Oil	mg/l	IS 3025 (Part 39) Class -6	0.01-10	BDL	0.5	No Relax.
30.	Free Residual Chlorine as FRC	mg/l	APHA, 23rd Ed. : 2017, 4500-Cl B	0.05-10	BDL	0.2	1
31.	Total coliform	cfu/ml	IS15185:2016;RA:2021	<1.0	Absent	Absent	Absent
32.	*E. coli*	cfu/100 ml	IS-15185,2016 RA 2021	<1.0	Absent	Absent	Absent

Statement of Conformity: The above tested parameters confirm as per **IS 10500:2012(Reaff:2018)** limits for above tested parameters.

Note-

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2. Test report shall not be reproduced except in full without approval of the laboratory
3. The test samples will be disposed of after one Month from the date of issue of test report
4. BDL- Below detection limit

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	**Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, Distriet South Bastar Dantewada, State Chhattisgarh**	**Test Report No.**	**ECO/LAB/GW/0027/0303/05/2022**
		Issue Date of Test Report	**19.06.2022**
Type of Sample	Ground Water		
Sample Registration No.	0027	**Name of Location**	Bacheli (GWMB1)
Sampling Method	APHA	**Sample Collected By**	ELPL Representative
Date of Sample Collection	27.05.2022	**Time of Sample Collection**	-
Date of Sample Received	04.06.2022	**Time of Sample Received**	11.15 AM
Start Date of Analysis	04.06.2022	**End Date of Analysis**	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	**Sample Quantity**	As per Requirement
	Humidity: 51 %	**Sample ID Code**	ECO/LAB/0303/05/2022

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	<5.0	5	15
2.	Odour	-	APHA, 23rd Ed. : 2017, 2150 B	Qualitative	Agreeable	Agreeable	Agreeable
3.	Taste	-	APHA, 23rd Ed. 2017, 2160 A+B	Qualitative	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	APHA, 23rd Ed. : 2017, 2130-A+B	1-100	1.16	1	5
5.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	6.85	6.5-8.5	No Relax
6.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	160.0	500	2000
7.	Alkalinity as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2320 A+ B	5-1500	44.0	200	600
8.	Total Hardness as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2340 A+C	5 - 1500	52.0	200	600
9.	Calcium as Ca	mg/l	APHA, 23rd Ed. : 2017, 3500 Ca A+B	5 - 1000	16.0	75	200
10.	Magnesium as Mg	mg/l	APHA, 23rd Ed. : 2017, 3500 Mg A+B	5 - 1000	2.92	30	100
11.	Sodium as Na	mg/l	APHA, 23rd Ed. 2017, 3500 Na A+B	1-100	8.98	-	-
12.	Potassium as K	mg/l	APHA, 23rd Ed. 2017, 3500 K A+B	1-100	1.01	-	-
13.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	0.05	1.5
14.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.34	0.3	No Relax
15.	Manganese as Mn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.1-5	BDL	0.1	0.3
16.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5 - 1000	12.00	250	1000
17.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO_4^{2-} E	1 – 250	9.80	200	400
18.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO_3^{2-} E	5 - 100	5.01	45	No Relax
19.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.18	1	1.5
20.	Phenolic Compound as C_6H_5OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.001- 10	BDL	0.001	0.005
21.	Mercury as Hg	mg/l	APHA, 23rd Ed. : 2017, 3112 A+B	0.001-2	BDL	0.001	No Relax
22.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.001-5	BDL	0.003	No Relax
23.	Selenium as Se	mg/l	APHA, 23rd Ed. : 2017, 3500 Se A+C	0.02-5	BDL	0.01	No Relax
24.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-2	BDL	0.01	No Relax
25.	Cyanide as CN	mg/l	APHA, 23rd Ed. : 2017, 4500 CN A+D	0.05-5	BDL	0.05	No Relax
26.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-5	BDL	0.01	No Relax
27.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.09	5	15
28.	Total Chromium as T. Cr.	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-50	BDL	0.05	No Relax
29.	Mineral Oil	mg/l	IS 3025 (Part 39) Class -6	0.01-10	BDL	0.5	No Relax.
30.	Free Residual Chlorine as FRC	mg/l	APHA, 23rd Ed. : 2017, 4500-Cl B	0.05 -10	BDL	0.2	1
31.	Total coliform	cfu/ml	IS15185:2016;RA:2021	<1.0	Absent	Absent	Absent
32.	*E coli*	cfu/100 ml	IS-15185,2016 RA 2021	Absent	Absent	Absent	Absent

Statement of Conformity: The above tested parameters confirm as per **IS 10500:2012(Reaff:2018)** limits for above tested parameters.

Note-

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3. The test samples will be disposed of after one Month from the date of issue of test report
4. BDL- Below detection limit

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/GW/0027/0304/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Ground Water		
Sample Registration No.	0027	Name of Location	Behnar (GWMB7)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	04.06.2022 to 19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0304/05/2022

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	<5.0	5	15
2.	Odour	-	APHA, 23rd Ed. : 2017, 2150 B	Qualitative	Agreeable	Agreeable	Agreeable
3.	Taste	-	APHA, 23rd Ed. 2017, 2160 A+B	Qualitative	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	APHA, 23rd Ed. : 2017, 2130-A+B	1-100	1.08	1	5
5.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	6.97	6.5-8.5	No Relax
6.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	121.0	500	2000
7.	Alkalinity as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2320 A+ B	5-1500	32.0	200	600
8.	Total Hardness as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2340 A+C	5 - 1500	48.0	200	600
9.	Calcium as Ca	mg/l	APHA, 23rd Ed. : 2017, 3500 Ca A+B	5 - 1000	9.6	75	200
10.	Magnesium as Mg	mg/l	APHA, 23rd Ed. : 2017, 3500 Mg A+B	5 - 1000	5.83	30	100
11.	Sodium as Na	mg/l	APHA, 23rd Ed. 2017, 3500 Na A+B	1-100	4.29	-	-
12.	Potassium as K	mg/l	APHA, 23rd Ed. 2017, 3500 K A+B	1-100	0.42	-	-
13.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	0.05	1.5
14.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.11	0.3	No Relax
15.	Manganese as Mn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.1-5	BDL	0.1	0.3
16.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5 - 1000	10.0	250	1000
17.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO_4^{2-} E	1 – 250	5.32	200	400
18.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO_3^{2-} E	5 - 100	6.22	45	No Relax
19.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05 -10	0.42	1	1.5
20.	Phenolic Compound as C_6H_5OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.001- 10	BDL	0.001	0.005
21.	Mercury as Hg	mg/l	APHA, 23rd Ed. : 2017, 3112 A+B	0.001-2	BDL	0.001	No Relax
22.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.001-5	BDL	0.003	No Relax
23.	Selenium as Se	mg/l	APHA, 23rd Ed. : 2017, 3500 Se A+C	0.02-5	BDL	0.01	No Relax
24.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-2	BDL	0.01	No Relax
25.	Cyanide as CN	mg/l	APHA, 23rd Ed. : 2017, 4500 CN A+D	0.05-5	BDL	0.05	No Relax
26.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-5	BDL	0.01	No Relax
27.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.03	5	15
28.	Total Chromium as T. Cr.	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-50	BDL	0.05	No Relax
29.	Mineral Oil	mg/l	IS 3025 (Part 39) Class -6	0.01-10	BDL	0.5	No Relax.
30.	Free Residual Chlorine as FRC	mg/l	APHA, 23rd Ed. : 2017, 4500-Cl B	0.05 -10	BDL	0.2	1
31.	Total coliform	cfu/ml	IS15185:2016;RA:2021	<1.0	Absent	Absent	Absent
32.	*E coli*	cfu/100 ml	IS-15185,2016 RA 2021	<1.0	Absent	Absent	Absent

Statement of Conformity: The above tested parameters confirm as per **IS 10500:2012(Reaff:2018)** limits for above tested parameters.

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4 BDL- Below detection limit

——End of Report——

Verified By

Technical Manager

Authorized By

Quality Manager

ecoMen LABORATORIES PVT LTD.

ECOMEN LABORATORIES PVT. LTD.

Second Floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow - 226 024

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E-mail: contactus@ecomen.in, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/GW/0027/0305/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Ground Water		
Sample Registration No.	0027	Name of Location	PoroKumeli (GWMB3)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	04.06.2022 to 19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0305/05/2022

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	<5.0	5	15
2.	Odour	-	APHA, 23rd Ed. : 2017, 2150 B	Qualitative	Agreeable	Agreeable	Agreeable
3.	Taste	-	APHA, 23rd Ed. 2017, 2160 A+B	Qualitative	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	APHA, 23rd Ed. : 2017, 2130-A+B	1-100	1.54	1	5
5.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	7.10	6.5-8.5	No Relax
6.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	163.0	500	2000
7.	Alkalinity as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2320 A+ B	5-1500	48.0	200	600
8.	Total Hardness as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2340 A+C	5 - 1500	56.0	200	600
9.	Calcium as Ca	mg/l	APHA, 23rd Ed. : 2017, 3500 Ca A+B	5 - 1000	14.4	75	200
10.	Magnesium as Mg	mg/l	APHA, 23rd Ed. : 2017, 3500 Mg A+B	5 - 1000	4.86	30	100
11.	Sodium as Na	mg/l	APHA, 23rd Ed. 2017, 3500 Na A+B	1-100	10.3	-	-
12.	Potassium as K	mg/l	APHA, 23rd Ed. 2017, 3500 K A+B	1-100	1.2	-	-
13.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	0.05	1.5
14.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.21	0.3	No Relax
15.	Manganese as Mn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.1-5	BDL	0.1	0.3
16.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5 - 1000	14.0	250	1000
17.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO_4^{2-} E	1 – 250	11.3	200	400
18.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO_3^{2-} E	5 - 100	BDL	45	No Relax
19.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.21	1	1.5
20.	Phenolic Compound as C_6H_5OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.001-10	BDL	0.001	0.005
21.	Mercury as Hg	mg/l	APHA, 23rd Ed. : 2017, 3112 A+B	0.001-2	BDL	0.001	No Relax
22.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.001-5	BDL	0.003	No Relax
23.	Selenium as Se	mg/l	APHA, 23rd Ed. : 2017, 3500 Se A+C	0.02-5	BDL	0.01	No Relax
24.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-2	BDL	0.01	No Relax
25.	Cyanide as CN	mg/l	APHA, 23rd Ed. : 2017, 4500 CN A+D	0.05-5	BDL	0.05	No Relax
26.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-5	BDL	0.01	No Relax
27.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.11	5	15
28.	Total Chromium as T. Cr.	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-50	BDL	0.05	No Relax
29.	Mineral Oil	mg/l	IS 3025 (Part 39) Class -6	0.01-10	BDL	0.5	No Relax
30.	Free Residual Chlorine as FRC	mg/l	APHA, 23rd Ed. : 2017, 4500-Cl B	0.05 - 10	BDL	0.2	1
31.	Total coliform	cfu/ml	IS15185:2016;RA:2021	<1.0	Absent	Absent	Absent
32.	*E. coli*	cfu/100 ml	IS-15185,2016 RA 2021	Absent	Absent	Absent	Absent

Statement of Conformity: The above tested parameters confirm as per **IS 10500:2012(Reaff:2018)** limits for above tested parameters.

Note-

1. Test results relate to the items sampled & tested
2. Test report shall not be reproduced except in full without approval of the laboratory
3. The test samples will be disposed of after one Month from the date of issue of test report
4. BDL- Below detection limit

---End of Report----

Verified By

Technical Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/GW/0027/0306/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Ground Water		
Sample Registration No.	0027	Name of Location	Dhurli (GWMB5)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	04.06.2022 to 19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0306/05/2022

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	<5.0	5	15
2.	Odour	-	APHA, 23rd Ed. : 2017, 2150 B	Qualitative	Agreeable	Agreeable	Agreeable
3.	Taste	-	APHA, 23rd Ed. 2017, 2160 A+B	Qualitative	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	APHA, 23rd Ed. : 2017, 2130-A+B	1-100	1.10	1	5
5.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	7.08	6.5-8.5	No Relax
6.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	133.0	500	2000
7.	Alkalinity as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2320 A+ B	5-1500	40.0	200	600
8.	Total Hardness as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2340 A+C	5 - 1500	52.0	200	600
9.	Calcium as Ca	mg/l	APHA, 23rd Ed. : 2017, 3500 Ca A+B	5 - 1000	9.6	75	200
10.	Magnesium as Mg	mg/l	APHA, 23rd Ed. : 2017, 3500 Mg A+B	5 - 1000	6.8	30	100
11.	Sodium as Na	mg/l	APHA. 23rd Ed. 2017, 3500 Na A-B	1-100	5.21	-	-
12.	Potassium as K	mg/l	APHA, 23rd Ed. 2017, 3500 K A+B	1-100	0.46	-	-
13.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	0.05	1.5
14.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.08	0.3	No Relax
15.	Manganese as Mn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.1-5	BDL	0.1	0.3
16.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5 - 1000	8.00	250	1000
17.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO_4^{2-} E	1 – 250	9.20	200	400
18.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO_3^{2-} E	5 - 100	BDL	45	No Relax
19.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05 -10	0.36	1	1.5
20.	Phenolic Compound as C_6H_5OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.001- 10	BDL	0.001	0.005
21.	Mercury as Hg	mg/l	APHA, 23rd Ed. : 2017, 3112 A+B	0.001-2	BDL	0.001	No Relax
22.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.001-5	BDL	0.003	No Relax
23.	Selenium as Se	mg/l	APHA, 23rd Ed. : 2017, 3500 Se A+C	0.02-5	BDL	0.01	No Relax
24.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-2	BDL	0.01	No Relax
25.	Cyanide as CN	mg/l	APHA, 23rd Ed. : 2017, 4500 CN A+D	0.05-5	BDL	0.05	No Relax
26.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-5	BDL	0.01	No Relax
27.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.03	5	15
28.	Total Chromium as T. Cr.	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-50	BDL	0.05	No Relax
29.	Mineral Oil	mg/l	IS 3025 (Part 39) Class -6	0.01-10	BDL	0.5	No Relax.
30.	Free Residual Chlorine as FRC	mg/l	APHA, 23rd Ed. : 2017, 4500-Cl B	0.05 -10	BDL	0.2	1
31.	Total coliform	cfu/ml	IS15185:2016;RA:2021	<1.0	Absent	Absent	Absent
32.	*E. coli*	cfu/100 ml	IS-15185,2016 RA 2021	<1.0	Absent	Absent	Absent

Statement of Conformity: The above tested parameters confirm as per **IS 10500:2012(Reaff:2018)** limits for above tested parameters.

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----End of Report----

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/GW/0027/0307/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Ground Water		
Sample Registration No.	0027	Name of Location	Badekameli (GWMB6)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	04.06.2022 to 19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0307/05/2022

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	10.0	5	15
2.	Odour	-	APHA, 23rd Ed. : 2017, 2150 B	Qualitative	Agreeable	Agreeable	Agreeable
3.	Taste	-	APHA, 23rd Ed. 2017, 2160 A+B	Qualitative	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	APHA, 23rd Ed. : 2017, 2130-A+B	1-100	1.11	1	5
5.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	7.15	6.5-8.5	No Relax
6.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	155.0	500	2000
7.	Alkalinity as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2320 A+ B	5-1500	48.0	200	600
8.	Total Hardness as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2340 A+C	5 - 1500	56.0	200	600
9.	Calcium as Ca	mg/l	APHA, 23rd Ed. : 2017, 3500 Ca A+B	5-1000	16.0	75	200
10.	Magnesium as Mg	mg/l	APHA, 23rd Ed. : 2017, 3500 Mg A+B	5-1000	3.89	30	100
11.	Sodium as Na	mg/l	APHA, 23rd Ed. 2017, 3500 Na A+B	1-100	9.08	-	-
12.	Potassium as K	mg/l	APHA, 23rd Ed. 2017, 3500 K A+B	1-100	1.11	-	-
13.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	0.05	1.5
14.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.30	0.3	No Relax
15.	Manganese as Mn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.1-5	BDL	0.1	0.3
16.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	8.00	250	1000
17.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO_4^{2-} E	1-250	10.4	200	400
18.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO_3^- E	5-100	5.01	45	No Relax
19.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.16	1	1.5
20.	Phenolic Compound as C_6H_5OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.001-10	BDL	0.001	0.005
21.	Mercury as Hg	mg/l	APHA, 23rd Ed. . 2017, 3112 A+B	0.001-2	BDL	0.001	No Relax
22.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.001-5	BDL	0.003	No Relax
23.	Selenium as Se	mg/l	APHA, 23rd Ed. : 2017, 3500 Se A+C	0.02-5	BDL	0.01	No Relax
24.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-2	BDL	0.01	No Relax
25.	Cyanide as CN	mg/l	APHA, 23rd Ed. : 2017, 4500 CN A+D	0.05-5	BDL	0.05	No Relax
26.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-5	BDL	0.01	No Relax
27.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.08	5	15
28.	Total Chromium as T. Cr.	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-50	BDL	0.05	No Relax
29.	Mineral Oil	mg/l	IS 3025 (Part 39) Class -6	0.01-10	BDL	0.5	No Relax.
30.	Free Residual Chlorine as FRC	mg/l	APHA, 23rd Ed. : 2017, 4500-Cl B	0.05-10	BDL	0.2	1
31.	Total coliform	cfu/ml	IS15185:2016;RA:2021	<1.0	Absent	Absent	Absent
32.	*E. coli*	cfu/100 ml	IS-15185,2016 RA 2021	<1.0	Absent	Absent	Absent

Statement of Conformity: The above tested parameters confirm as per **IS 10500:2012(Reaff:2018)** limits for above tested parameters.

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/GW/0027/0308/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Ground Water		
Sample Registration No.	0027	Name of Location	Padapur (GWM1)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0308/05/2022

Sl. No.	Tests	Unit	Protocol	Detection Range	Result	Indian Standards as per IS 10500:2012 (Reaff:2018)	
						Desirable	Permissible
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	<5.0	5	15
2.	Odour	-	APHA, 23rd Ed. : 2017, 2150 B	Qualitative	Agreeable	Agreeable	Agreeable
3.	Taste	-	APHA, 23rd Ed. 2017, 2160 A+B	Qualitative	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	APHA, 23rd Ed. : 2017, 2130-A+B	1-100	1.23	1	5
5.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	6.98	6.5-8.5	No Relax
6.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	152.0	500	2000
7.	Alkalinity as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2320 A+ B	5-1500	52.0	200	600
8.	Total Hardness as $CaCO_3$	mg/l	APHA, 23rd Ed. : 2017, 2340 A+C	5 - 1500	64.0	200	600
9.	Calcium as Ca	mg/l	APHA, 23rd Ed. : 2017, 3500 Ca A+B	5 - 1000	19.2	75	200
10.	Magnesium as Mg	mg/l	APHA, 23rd Ed. : 2017, 3500 Mg A+B	5 - 1000	3.89	30	100
11.	Sodium as Na	mg/l	APHA. 23rd Ed. 2017, 3500 Na A+B	1-100	7.40	-	-
12.	Potassium as K	mg/l	APHA. 23rd Ed. 2017, 3500 K A+B	1-100	1.05	-	-
13.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	0.05	1.5
14.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.26	0.3	No Relax
15.	Manganese as Mn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.1-5	BDL	0.1	0.3
16.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5 - 1000	10.0	250	1000
17.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO_4^{2-} E	1 – 250	9.8	200	400
18.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO_3^{2-} E	5 - 100	BDL	45	No Relax
19.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.20	1	1.5
20.	Phenolic Compound as C_6H_5OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.001-10	BDL	0.001	0.005
21.	Mercury as Hg	mg/l	APHA, 23rd Ed. 2017, 3112 A+B	0.001-2	BDL	0.001	No Relax
22.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.001-5	BDL	0.003	No Relax
23.	Selenium as Se	mg/l	APHA, 23rd Ed. : 2017, 3500 Se A+C	0.02-5	BDL	0.01	No Relax
24.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-2	BDL	0.01	No Relax
25.	Cyanide as CN	mg/l	APHA, 23rd Ed. : 2017, 4500 CN A+D	0.05-5	BDL	0.05	No Relax
26.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.005-5	BDL	0.01	No Relax
27.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.09	5	15
28.	Total Chromium as T. Cr.	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-50	BDL	0.05	No Relax
29.	Mineral Oil	mg/l	IS 3025 (Part 39) Class -6	0.01-10	BDL	0.5	No Relax.
30.	Free Residual Chlorine as FRC	mg/l	APHA, 23rd Ed. : 2017, 4500-Cl B	0.05-10	BDL	0.2	1
31.	Total coliform	cfu/ml	IS15185:2016;RA:2021	<1.0	Absent	Absent	Absent
32.	*E. coli*	cfu/100 ml	IS-15185,2016 RA 2021	<1.0	Absent	Absent	Absent

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---End of Report----

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Second Floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow - 226 024
Phone No. : 0522 - 4079201/2746282
E-mail: contactus@ecomen.in, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI
An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/SW/0027/0309/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Surface Water		
Sample Registration No.	0027	Name of Location	Gali Nala (SWM1)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0309/05/2022

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	IS 2296 Class-C
1.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	6.93	6.0-9.0
2.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	20.0	300
3.	Conductivity at 25°C	µmhos/cm	APHA, 23rd Ed.: 2017,2510-A + B	1-2000	416.0	-
4.	Dissolved Oxygen as DO	mg/l	APHA,23 rd Ed.2017 ,4500 A+C	1-15	5.50	4.0
5.	Biological Oxygen Demand as BOD (mg/l) 5 days at 20 °C	mg/l	APHA,23 rd Ed.2017 ,5210A+ B	1-1000	BDL	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA,23 rd Ed.2017 ,5220A+ B	2-1000	2.0	-
7.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	292.0	1500
8.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	16.9	-
9.	Oil & Grease as O & G	mg/l	APHA, 23rd Ed. 2017, 5520 A+D	2.5-1000	BDL	-
10.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	22.0	600
11.	Boron as B	mg/l	APHA, 23rd Ed.: 2017,4500 A+C	0.5-10	BDL	-
12.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO42- E	1 – 250	16.90	400
13.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO32- E	5 - 100	7.30	50
14.	Free Ammonia as NH_3	mg/l	APHA, 23rd Ed.: 2017,4500 NH3 A+F	0.1-100	BDL	-
15.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-2	BDL	0.2
16.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02 -50	0.33	0.50
17.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05 -10	0.54	1.5
18.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-5	BDL	0.1
19.	Copper as Co	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
20.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02 -50	BDL	15
21.	Sodium absorption ratio	-	-	-	0.40	-
22.	Total coliform Organisms	MPN/100 ml	IS-15185:2016;RA:2021	<1.0	380.0	5000

Statement of Conformity: The above tested parameters confirm as per **IS 2296 (CLASS-C)** limits for above tested parameters.

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below detection limit.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	**Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh**	**Test Report No.**	**ECO/LAB/SW/0027/0310/05/2022**
		Issue Date of Test Report	**19.06.2022**
Type of Sample	Surface Water		
Sample Registration No.	0027	**Name of Location**	Nerli DN Discharge D/S of Dam (SWM3)
Sampling Method	APHA	**Sample Collected By**	ELPL Representative
Date of Sample Collection	27.05.2022	**Time of Sample Collection**	-
Date of Sample Received	04.06.2022	**Time of Sample Received**	11.15 AM
Start Date of Analysis	04.06.2022	**End Date of Analysis**	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	**Sample Quantity**	As per Requirement
	Humidity: 51 %	**Sample ID Code**	ECO/LAB/0310/05/2022

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	IS 2296 Class-C
1.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	6.66	6.0-9.0
2.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	15.0	300
3.	Conductivity at 25°C	µmhos/cm	APHA, 23rd Ed.: 2017,2510-A + B	1-2000	316.0	-
4.	Dissolved Oxygen as DO	mg/l	APHA,23 rd Ed.2017 ,4500 A+C	1-15	5.70	4.0
5.	Biological Oxygen Demand as BOD (mg/l) 5 days at 20 °C	mg/l	APHA,23 rd Ed.2017 ,5210A+ B	1-1000	2.0	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA,23 rd Ed.2017 ,5220A+ B	2-1000	10.0	-
7.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	240.0	1500
8.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	17.8	-
9.	Oil & Grease as O & G	mg/l	APHA, 23rd Ed. 2017, 5520 A+D	2.5-1000	BDL	-
10.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	16.0	600
11.	Boron as B	mg/l	APHA, 23rd Ed.: 2017,4500 A+C	0.5-10	BDL	-
12.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO42- E	1 – 250	13.1	400
13.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO32- E	5 - 100	6.1	50
14.	Free Ammonia as NH_3	mg/l	APHA, 23rd Ed.: 2017,4500 NH3 A+F	0.1-100	BDL	-
15.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-2	BDL	0.2
16.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.17	0.50
17.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.56	1.5
18.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-5	BDL	0.1
19.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
20.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	BDL	15
21.	Sodium absorption ratio	-	-	-	0.55	-
22.	Total coliform Organisms	MPN/100 ml	IS-15185:2016;RA:2021	<1.0	240.0	5000

Statement of Conformity: The above tested parameters confirm as per **IS 2296 (CLASS-C)** limits for above tested parameters.

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below detection limit.

---End of Report----

Verified By
Technical Manager

Authorized By
Quality Manager

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/SW/0027/0311/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Surface Water		
Sample Registration No.	0027	Name of Location	Berudi Nadi (SWM2)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0311/05/2022

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	IS 2296 Class-C
1.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	7.15	6.0-9.0
2.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	10.00	300
3.	Conductivity at 25°C	µmhos/cm	APHA, 23rd Ed.: 2017,2510-A + B	1-2000	389.0	-
4.	Dissolved Oxygen as DO	mg/l	APHA,23 rd Ed.2017 ,4500 A+C	1-15	7.10	4.0
5.	Biological Oxygen Demand as BOD (mg/l) 5 days at 20 °C	mg/l	APHA,23 rd Ed.2017 ,5210A+ B	1-1000	BDL	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA,23 rd Ed.2017 ,5220A+ B	2-1000	3.0	-
7.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	205.00	1500
8.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	12.20	-
9.	Oil & Grease as O & G	mg/l	APHA, 23rd Ed. 2017, 5520 A+D	2.5-1000	BDL	-
10.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	10.00	600
11.	Boron as B	mg/l	APHA, 23rd Ed.: 2017,4500 A+C	0.5-10	0.16	-
12.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO42- E	1 – 250	9.21	400
13.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO32- E	5 - 100	6.11	50
14.	Free Ammonia as NH_3	mg/l	APHA, 23rd Ed.: 2017,4500 NH3 A+F	0.1-100	BDL	-
15.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-2	BDL	0.2
16.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.240	0.50
17.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.12	1.5
18.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-5	BDL	0.1
19.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
20.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	BDL	15
21.	Sodium absorption ratio	-	-	-	0.270	-
22.	Total coliform Organisms	MPN/100 ml	IS-15185:2016;RA:2021	<1.0	240	5000

Statement of Conformity: The above tested parameters confirm as per **IS 2296 (CLASS-C)** limits for above tested parameters.

Note-

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2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below detection limit.

----End of Report----

Verified By
Technical Manager

Authorized By
Quality Manager

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/SW/0027/0312/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Surface Water		
Sample Registration No.	0027	Name of Location	Sankani River (SWM4)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0312/05/2022

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	IS 2296 Class-C
1.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	7.19	6.0-9.0
2.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	10.00	300
3.	Conductivity at 25°C	µmhos/cm	APHA, 23rd Ed.: 2017,2510-A + B	1-2000	277.0	-
4.	Dissolved Oxygen as DO	mg/l	APHA,23 rd Ed.2017 ,4500 A+C	1-15	6.10	4.0
5.	Biological Oxygen Demand as BOD (mg/l) 5 days at 20 °C	mg/l	APHA.23 rd Ed.2017 ,5210A+ B	1-1000	BDL	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA,23 rd Ed.2017 ,5220A+ B	2-1000	4.0	-
7.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	191.00	1500
8.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	15.30	-
9.	Oil & Grease as O & G	mg/l	APHA, 23rd Ed. 2017, 5520 A+D	2.5-1000	BDL	-
10.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	12.00	600
11.	Boron as B	mg/l	APHA, 23rd Ed.: 2017,4500 A+C	0.5-10	0.24	-
12.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO42- E	1 – 250	9.60	400
13.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO32- E	5 - 100	5.11	50
14.	Free Ammonia as NH_3	mg/l	APHA, 23rd Ed.: 2017,4500 NH3 A+F	0.1-100	BDL	-
15.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-2	BDL	0.2
16.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02 -50	0.200	0.50
17.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05 -10	0.24	1.5
18.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-5	BDL	0.1
19.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
20.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02 -50	0.04	15
21.	Sodium absorption ratio	-	-	-	0.240	-
22.	Total coliform Organisms	MPN/100 ml	IS-15185:2016;RA:2021	<1.0	240	5000

Statement of Conformity: The above tested parameters confirm as per **IS 2296 (CLASS-C)** limits for above tested parameters.

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below detection limit.

---End of Report---

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	**Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh**	**Test Report No.**	**ECO/LAB/SW/0027/0313/05/2022**
		Issue Date of Test Report	**19.06.2022**
Type of Sample	Surface Water		
Sample Registration No.	0027	**Name of Location**	Nala Near Central Workshop,Bacheli (SWM1)
Sampling Method	APHA	**Sample Collected By**	ELPL Representative
Date of Sample Collection	27.05.2022	**Time of Sample Collection**	-
Date of Sample Received	04.06.2022	**Time of Sample Received**	11.15 AM
Start Date of Analysis	04.06.2022	**End Date of Analysis**	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	**Sample Quantity**	As per Requirement
	Humidity: 51 %	**Sample ID Code**	ECO/LAB/0313/05/2022

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	IS 2296 Class-C
1.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	6.90	6.0-9.0
2.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	35.0	300
3.	Conductivity at 25°C	µmhos/cm	APHA, 23rd Ed.: 2017,2510-A + B	1-2000	396.0	-
4.	Dissolved Oxygen as DO	mg/l	APHA,23 rd Ed.2017 ,4500 A+C	1-15	5.40	4.0
5.	Biological Oxygen Demand as BOD (mg/l) 5 days at 20 °C	mg/l	APHA,23 rd Ed.2017 ,5210A+ B	1-1000	BDL	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA,23 rd Ed.2017 ,5220A+ B	2-1000	2.0	-
7.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	280.0	1500
8.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	13.7	-
9.	Oil & Grease as O & G	mg/l	APHA, 23rd Ed. 2017, 5520 A+D	2.5-1000	BDL	-
10.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	20.0	600
11.	Boron as B	mg/l	APHA, 23rd Ed.: 2017,4500 A+C	0.5-10	0.22	-
12.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO42- E	1 – 250	18.5	400
13.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO32- E	5 - 100	5.02	50
14.	Free Ammonia as NH_3	mg/l	APHA, 23rd Ed.: 2017,4500 NH3 A+F	0.1-100	BDL	-
15.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-2	BDL	0.2
16.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.40	0.50
17.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.66	1.5
18.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-5	BDL	0.1
19.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
20.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	BDL	15
21.	Sodium absorption ratio	-	-	-	0.48	-
22.	Total coliform Organisms	MPN/100 ml	IS-15185:2016;RA:2021	<1.0	350.0	5000

Statement of Conformity: The above tested parameters confirm as per **IS 2296 (CLASS-C)** limits for above tested parameters.

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below detection limit.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/SW/0027/0314/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Surface Water		
Sample Registration No.	0027	Name of Location	Confuence Point of Sankani & Koyar River (SWB1)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0314/05/2022

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	IS 2296 Class-C
1.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	6.76	6.0-9.0
2.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	45.00	300
3.	Conductivity at 25°C	µmhos/cm	APHA, 23rd Ed.: 2017,2510-A ÷ B	1-2000	407.0	-
4.	Dissolved Oxygen as DO	mg/l	APHA,23 rd Ed.2017 ,4500 A+C	1-15	4.30	4.0
5.	Biological Oxygen Demand as BOD (mg/l) 5 days at 20 °C	mg/l	APHA,23 rd Ed.2017 ,5210A+ B	1-1000	3.00	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA,23 rd Ed.2017 ,5220A+ B	2-1000	15.0	-
7.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	287.00	1500
8.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	23.70	-
9.	Oil & Grease as O & G	mg/l	APHA, 23rd Ed. 2017, 5520 A+D	2.5-1000	BDL	-
10.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	24.00	600
11.	Boron as B	mg/l	APHA, 23rd Ed.: 2017,4500 A+C	0.5-10	0.19	-
12.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO42- E	1 – 250	15.20	400
13.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO32- E	5 - 100	8.45	50
14.	Free Ammonia as NH_3	mg/l	APHA, 23rd Ed.: 2017,4500 NH3 A+F	0.1-100	BDL	-
15.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-2	BDL	0.2
16.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.230	0.50
17.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.37	1.5
18.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-5	BDL	0.1
19.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
20.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	BDL	15
21.	Sodium absorption ratio	-	-	-	0.540	-
22.	Total coliform Organisms	MPN/100 ml	IS-15185:2016;RA:2021	<1.0	410	5000

Statement of Conformity: The above tested parameters confirm as per **IS 2296 (CLASS-C)** limits for above tested parameters.

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below detection limit.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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LABORATORIES PVT LTD.

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Second Floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow - 226 024
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E-mail: contactus@ecomen.in, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI
An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/SW/0027/0315/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Surface Water		
Sample Registration No.	0027	Name of Location	Nerli Ghati Nala Near CRPFF CAMP-230 (SWM2)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0315/05/2022

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	IS 2296 Class-C
1.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	7.29	6.0-9.0
2.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	15.0	300
3.	Conductivity at 25°C	µmhos/cm	APHA, 23rd Ed.: 2017,2510-A + B	1-2000	328.0	-
4.	Dissolved Oxygen as DO	mg/l	APHA,23 rd Ed.2017 ,4500 A+C	1-15	5.10	4.0
5.	Biological Oxygen Demand as BOD (mg/l) 5 days at 20 °C	mg/l	APHA,23 rd Ed.2017 .5210A+ B	1-1000	2.60	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA,23 rd Ed.2017 ,5220A+ B	2-1000	12.0	-
7.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	249.0	1500
8.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	19.20	-
9.	Oil & Grease as O & G	mg/l	APHA, 23rd Ed. 2017, 5520 A+D	2.5-1000	BDL	-
10.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	20.0	600
11.	Boron as B	mg/l	APHA, 23rd Ed.: 2017,4500 A+C	0.5-10	0.16	-
12.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO42- E	1 - 250	12.40	400
13.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO32- E	5 - 100	5.11	50
14.	Free Ammonia as NH_3	mg/l	APHA, 23rd Ed.: 2017,4500 NH3 A+F	0.1-100	BDL	-
15.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-2	BDL	0.2
16.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.130	0.50
17.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.39	1.5
18.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-5	BDL	0.1
19.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
20.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	BDL	15
21.	Sodium absorption ratio	-	-	-	0.690	-
22.	Total coliform	MPN/100 ml	IS-15185:2016;RA:2021	<1.0	210	5000

Statement of Conformity: The above tested parameters confirm as per **IS 2296 (CLASS-C)** limits for above tested parameters.

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below detection limit.

---End of Report---

Verified By
Technical Manager

Authorized By
Quality Manager

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/09

NAME & ADDRESS OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/SW/0027/0316/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Surface Water		
Sample Registration No.	0027	Name of Location	Jharalawa Nala Near Gamewada (SWB2)
Sampling Method	APHA	Sample Collected By	ELPL Representative
Date of Sample Collection	27.05.2022	Time of Sample Collection	-
Date of Sample Received	04.06.2022	Time of Sample Received	11.15 AM
Start Date of Analysis	04.06.2022	End Date of Analysis	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0316/05/2022

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	IS 2296 Class-C
1.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	7.07	6.0-9.0
2.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	20.0	300
3.	Conductivity at 25°C	µmhos/cm	APHA, 23rd Ed.: 2017,2510-A + B	1-2000	367.0	-
4.	Dissolved Oxygen as DO	mg/l	APHA,23 rd Ed.2017 ,4500 A+C	1-15	5.7	4.0
5.	Biological Oxygen Demand as BOD (mg/l) 5 days at 20 °C	mg/l	APHA,23 rd Ed.2017 ,5210A+ B	1-1000	2.8	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA,23 rd Ed.2017 ,5220A+ B	1-1000	14.0	-
7.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	240.0	1500
8.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	25.2	-
9.	Oil & Grease as O & G	mg/l	APHA, 23rd Ed. 2017, 5520 A+D	2.5-1000	BDL	-
10.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	14.0	600
11.	Boron as B	mg/l	APHA, 23rd Ed.: 2017,4500 A+C	0.5-10	0.2	-
12.	Sulphate as SO_4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO42- E	1 – 250	13.2	400
13.	Nitrate Nitrogen as NO_3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO32- E	5 - 100	7.24	50
14.	Free Ammonia as NH_3	mg/l	APHA, 23rd Ed.: 2017,4500 NH3 A+F	0.1-100	BDL	-
15.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-2	BDL	0.2
16.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.20	0.50
17.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.24	1.5
18.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-5	BDL	0.1
19.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
20.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	BDL	15
21.	Sodium absorption ratio	-	-	-	0.37	-
22.	Total coliform	MPN/100 ml	IS-15185:2016;RA:2021	<1.0	230.0	5000

Statement of Conformity: The above tested parameters confirm as per **IS 2296 (CLASS-C)** limits for above tested parameters.

Note-

1. Test results relate to the items sampled & tested.
2. Test report shall not be reproduced except in full without approval of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.
4. BDL- Below detection limit.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/08

NAME & ADDRES OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/SS/0027/0317/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Soil sample		
Sample Registration No.	0027	Name of Location	Proposed Screening Plant (S-1)
Sampling Method	IS -2720	Sample Collected By	ELPL Representative
Date of Sample Collection	12.05.2023-22.05.2023	Time of Sample Collection	-
Date of Sample Received	25.05.2023	Time of Sample Received	11.15 AM
Start Date of Analysis	25.05.2023	End Date of Analysis	19.06.2022
Laboratory Environmental Condition	Temperature 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity 51 %	Sample ID Code	ECO/LAB/0317/05/2022

Sl. No.	Parameters	Unit	Test Method	Results
1.	pH	-	IS 2720(Part-26) 1987 Reff-2021	7.10
2	Electrical Conductivity	µ mhos/cm	IS:14767. 2000 Reaff- 2021	104.0
3	Available Nitrogen as N	kg/ha	SOP No.S-14 Issue No.2, Date 12.04.2021	75.6
4	Available Phosphorous as P_2O_5	(kg/ha)	SOP No:S-07 Issue No.2, Date 12.04.2021	11.1
5	Available Potassium as K_2O	(kg/ha)	IS 9497:1980 Reff-2020	92.0
6.	Available Calcium as Ca	(kg/ha)	SOP No:S-30 Issue No.2, Date 12.04.2021	380.0
7	Available Magnesium as Mg	(kg/ha)	SOP No S-30 Issue No.2, Date 12.04 2021	128.0
8.	Iron as Fe_2O_3	mg/kg	SOP No:S-28 Issue No.2, Date 12.04.2021	395.0
9	Boron	mg/kg	SOP No:S-25 Issue No.2, Date 12.04 2021	0.81
10	Organic Carbon	%	IS 2720(Part-22)1972 Reff-2020	0.91
11.	Natural Moisture Content	%	IS 2720(Part-2) 1973 Reff-2020	5.20
12	Porosity	%	No:S-06 Issue No 2, Date 12.04.2021	17.54
13	Water Holding Capacity	%	No:S-06 Issue No.2, Date 12.04.2021	12.10
14	Bulk Density	gm/cc	No:S-09 Issue No.2, Date 12.04.2021	1.45
15.	Grain Size Distribution			
a	Textural Class	-	SOP No:S-03 Issue No.2, Date 12.04.2021	Silt Clay Loam
b	Sand	%	SOP No:S-03 Issue No.2, Date 12.04 2021	30
c.	Silt	%	SOP No:S-03 Issue No 2, Date 12.04 2021	32
d	Clay	%	SOP No.S-03 Issue No.2, Date 12.04.2021	38
16	Cation exchange capacity	Meq/100g	No:S-05 Issue No.2, Date 12.04.2021	9.85

Note :

1. Test result applied to the sample as received.
2. Test report will not be generated again without prior written permission of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/08

NAME & ADDRES OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/SS/0027/0318/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Soil sample		
Sample Registration No.	0027	Name of Location	ML Area (S-2)
Sampling Method	IS -2720	Sample Collected By	ELPL Representative
Date of Sample Collection	12.05 2023-22.05.2023	Time of Sample Collection	-
Date of Sample Received	25.05.2023	Time of Sample Received	11.15 AM
Start Date of Analysis	25.05.2023	End Date of Analysis	04.06.2022 to 19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0318/05/2022

Sl. No.	Parameters	Unit	Test Method	Results
1.	pH	-	IS 2720(Part-26) 1987 Reff-2021	7.15
2.	Electrical Conductivity	µ mhos/em	IS:14767: 2000 Reaff- 2021	113.00
3	Available Nitrogen as N	kg/ha	SOP No:S-14 Issue No.2, Date 12 04.2021	56.90
4.	Available Phosphorous as P_2O_5	(kg/ha)	SOP No:S-07 Issue No.2, Date 12.04.2021	13.10
5	Available Potassium as K_2O	(kg/ha)	IS 9497:1980 Reff-2020	84.70
6	Available Calcium as Ca	(kg/ha)	SOP No:S-30 Issue No.2, Date 12.04.2021	428.00
7	Available Magnesium as Mg	(kg/ha)	SOP No:S-30 Issue No.2, Date 12.04.2021	144.00
8.	Iron as Fe_2O_3	mg/kg	SOP No:S-28 Issue No.2, Date 12.04.2021	451.00
9	Boron	mg/kg	SOP No:S-25 Issue No.2, Date 12.04.2021	1.22
10.	Organic Carbon	%	IS 2720(Part-22)1972 Reff-2020	0.85
11.	Natural Moisture Content	%	IS 2720(Part-2):1973 Reff-2020	7.11
12	Porosity	%	No S-06 Issue No.2, Date 12.04.2021	14.59
13	Water Holding Capacity	%	No:S-06 Issue No.2, Date 12 04.2021	13.20
14.	Bulk Density	gm/cc	No:S-09 Issue No.2, Date 12.04.2021	1.39
15	Grain Size Distribution			
a.	Textural Class	-	SOP No:S-03 Issue No.2, Date 12.04.2021	Silty Clay
b.	Sand	%	SOP No:S-03 Issue No.2, Date 12.04.2021	34
c	Silt	%	SOP No.S-03 Issue No.2, Date 12 04.2021	46
d.	Clay	%	SOP No:S-03 Issue No.2, Date 12.04.2021	20
16	Cation exchange capacity	Meq/100g	No:S-05 Issue No.2, Date 12.04.2021	7.55

Note :

1. Test result applied to the sample as received.
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----End of Report----

Verified By

Technical Manager

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Quality Manager

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/08

NAME & ADDRES OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/SS/0027/0319/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Soil sample		
Sample Registration No.	0027	Name of Location	Bhansi Village (S-3)
Sampling Method	IS -2720	Sample Collected By	ELPL Representative
Date of Sample Collection	12 05 2023-22 05 2023	Time of Sample Collection	-
Date of Sample Received	25.05 2023	Time of Sample Received	11.15 AM
Start Date of Analysis	25 05 2023	End Date of Analysis	04.06.2022 to 19.06.2022
Laboratory Environmental Condition	Temperature. 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0319/05/2022

Sl. No.	Parameters	Unit	Test Method	Results
1.	pH	-	IS 2720(Part-26) 1987 Reff-2021	6 83
2	Electrical Conductivity	µ mhos/cm	IS:14767: 2000 Reaff- 2021	154.00
3.	Available Nitrogen as N	kg/ha	SOP No.S-14 Issue No 2, Date 12 04.2021	121 70
4.	Available Phosphorous as P_2O_5	(kg/ha)	SOP No.S-07 Issue No.2, Date 12 04.2021	15.20
5	Available Potassium as K_2O	(kg/ha)	IS 9497:1980 Reff-2020	117 00
6	Available Calcium as Ca	(kg/ha)	SOP No.S-30 Issue No.2, Date 12.04.2021	688.00
7.	Available Magnesium as Mg	(kg/ha)	SOP No·S-30 Issue No.2, Date 12.04.2021	188.00
8	Iron as Fe_2O_3	mg/kg	SOP No:S-28 Issue No.2. Date 12.04.2021	675 00
9.	Boron	mg/kg	SOP No·S-25 Issue No.2, Date 12 04.2021	1.21
10	Organic Carbon	%	IS 2720(Part-22)1972 Reff-2020	1 23
11	Natural Moisture Content	%	IS 2720(Part-2)·1973 Reff-2020	10 20
12.	Porosity	%	No S-06 Issue No 2, Date 12.04.2021	22.34
13	Water Holding Capacity	%	No S-06 Issue No.2, Date 12.04.2021	15.10
14.	Bulk Density	gm/cc	No:S-09 Issue No 2, Date 12 04 2021	1.48
15	Grain Size Distribution			
a.	Textural Class	-	SOP No:S-03 Issue No.2, Date 12.04 2021	Sandy Loam
b	Sand	%	SOP No:S-03 Issue No 2, Date 12.04 2021	54
c	Silt	%	SOP No:S-03 Issue No.2, Date 12.04.2021	21
d.	Clay	%	SOP No:S-03 Issue No 2, Date 12.04.2021	25
16	Cation exchange capacity	Meq/100g	No.S-05 Issue No.2, Date 12.04.2021	8.54

Note :

1. Test result applied to the sample as received.
2. Test report will not be generated again without prior written permission of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/08

NAME & ADDRES OF CUSTOMER:	**Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh**	**Test Report No.**	**ECO/LAB/SS/0027/0320/05/2022**
		Issue Date of Test Report	**19.06.2022**
Type of Sample	Soil sample		
Sample Registration No.	0027	**Name of Location**	Nerli Village (S-4)
Sampling Method	IS -2720	**Sample Collected By**	ELPL Representative
Date of Sample Collection	12.05.2023-22 05.2023	**Time of Sample Collection**	-
Date of Sample Received	25.05 2023	**Time of Sample Received**	11.15 AM
Start Date of Analysis	25.05.2023	**End Date of Analysis**	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	**Sample Quantity**	As per Requirement
	Humidity: 51 %	**Sample ID Code**	ECO/LAB/0320/05/2022

Sl. No.	Parameters	Unit	Test Method	Results
1	pH	-	IS 2720(Part-26) 1987 Reff-2021	7 21
2	Electrical Conductivity	µ mhos/cm	IS 14767: 2000 Reaff- 2021	169.0
3	Available Nitrogen as N	kg/ha	SOP No:S-14 Issue No.2, Date 12.04.2021	132.5
4	Available Phosphorous as P_2O_5	(kg/ha)	SOP No:S-07 Issue No 2, Date 12 04.2021	13.2
5.	Available Potassium as K_2O	(kg/ha)	IS 9497:1980 Reff-2020	126.0
6	Available Calcium as Ca	(kg/ha)	SOP No:S-30 Issue No.2, Date 12.04 2021	748 0
7.	Available Magnesium as Mg	(kg/ha)	SOP No:S-30 Issue No.2, Date 12.04.2021	228 0
8	Iron as Fe_2O_3	mg/kg	SOP No:S-28 Issue No 2, Date 12.04 2021	712.0
9	Boron	mg/kg	SOP No.S-25 Issue No 2, Date 12.04.2021	1.42
10.	Organic Carbon	%	IS 2720(Part-22)1972 Reff-2020	1.32
11	Natural Moisture Content	%	IS 2720(Part-2) 1973 Reff-2020	9 80
12.	Porosity	%	No:S-06 Issue No.2, Date 12.04.2021	21 29
13.	Water Holding Capacity	%	No S-06 Issue No.2, Date 12.04.2021	14.10
14	Bulk Density	gm/ec	No S-09 Issue No 2, Date 12 04 2021	1.51
15.	Grain Size Distribution			
a	Textural Class	-	SOP No:S-03 Issue No.2, Date 12.04.2021	Sandy Loam
b.	Sand	%	SOP No.S-03 Issue No.2, Date 12.04 2021	50
c	Silt	%	SOP No:S-03 Issue No.2, Date 12.04.2021	28
d	Clay	%	SOP No:S-03 Issue No 2, Date 12.04 2021	22
16	Cation exchange capacity	Meq/100g	No S-05 Issue No.2, Date 12.04.2021	8.62

Note :

1. Test result applied to the sample as received.
2. Test report will not be generated again without prior written permission of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

---End of Report----

Verified By

Technical Manager

Authorized By

Quality Manager

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ECOMEN LABORATORIES PVT. LTD.

Second Floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow - 226 024

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

TEST REPORT

FORMAT NO. ECO/QS/FORMAT/08

NAME & ADDRES OF CUSTOMER:	Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh	Test Report No.	ECO/LAB/SS/0027/0321/05/2022
		Issue Date of Test Report	19.06.2022
Type of Sample	Soil sample		
Sample Registration No.	0027	Name of Location	Behnar Village (S-5)
Sampling Method	IS -2720	Sample Collected By	ELPL Representative
Date of Sample Collection	12.05.2023-22 05 2023	Time of Sample Collection	-
Date of Sample Received	25 05 2023	Time of Sample Received	11.15 AM
Start Date of Analysis	25.05.2023	End Date of Analysis	19.06.2022
Laboratory Environmental Condition	Temperature 25 ± 2°C	Sample Quantity	As per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0321/05/2022

Sl. No.	Parameters	Unit	Test Method	Results
1	pH	-	IS 2720(Part-26) 1987 Reff-2021	6 66
2.	Electrical Conductivity	µ mhos/cm	IS:14767. 2000 Reaff- 2021	171.0
3	Available Nitrogen as N	kg/ha	SOP No.S-14 Issue No 2, Date 12 04 2021	128.3
4	Available Phosphorous as P_2O_5	(kg/ha)	SOP No S-07 Issue No 2, Date 12 04.2021	17.1
5.	Available Potassium as K_2O	(kg/ha)	IS 9497.1980 Reff-2020	130.4
6	Available Calcium as Ca	(kg/ha)	SOP No.S-30 Issue No 2, Date 12.04.2021	820.0
7	Available Magnesium as Mg	(kg/ha)	SOP No:S-30 Issue No.2, Date 12.04.2021	272 0
8	Iron as Fe_2O_3	mg/kg	SOP No:S-28 Issue No.2, Date 12.04 2021	821.0
9	Boron	mg/kg	SOP No S-25 Issue No.2, Date 12.04.2021	1.78
10	Organic Carbon	%	IS 2720(Part-22)1972 Reff-2020	1.19
11.	Natural Moisture Content	%	IS 2720(Part-2):1973 Reff-2020	8 3
12	Porosity	%	No:S-06 Issue No.2, Date 12.04.2021	18.22
13.	Water Holding Capacity	%	No:S-06 Issue No.2, Date 12.04.2021	12.40
14	Bulk Density	gm/cc	No:S-09 Issue No.2, Date 12 04.2021	1 47
15	Grain Size Distribution			
a	Textural Class	-	SOP No:S-03 Issue No.2, Date 12 04.2021	Sandy Loam
b	Sand	%	SOP No:S-03 Issue No.2, Date 12.04.2021	47
c	Silt	%	SOP No:S-03 Issue No.2, Date 12 04.2021	20
d.	Clay	%	SOP No:S-03 Issue No.2, Date 12.04 2021	33
16	Cation exchange capacity	Meq/100g	No:S-05 Issue No.2, Date 12 04.2021	9 11

Note :

1. Test result applied to the sample as received.
2. Test report will not be generated again without prior written permission of the laboratory.
3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By

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Authorized By

Quality Manager

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/08

NAME & ADDRES OF CUSTOMER:	**Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh**	**Test Report No.**	**ECO/LAB/SS/0027/0322/05/2022**
		Issue Date of Test Report	**19.06.2022**
Type of Sample	Soil sample		
Sample Registration No.	0027	**Name of Location**	Near Conveyor (S-6)
Sampling Method	IS -2720	**Sample Collected By**	ELPL Representative
Date of Sample Collection	12 05.2023-22 05.2023	**Time of Sample Collection**	-
Date of Sample Received	25.05.2023	**Time of Sample Received**	11.15 AM
Start Date of Analysis	25 05.2023	**End Date of Analysis**	19.06.2022
Laboratory Environmental Condition	Temperature. 25 ± 2°C	**Sample Quantity**	As per Requirement
	Humidity: 51 %	**Sample ID Code**	ECO/LAB/0322/05/2022

Sl. No.	Parameters	Unit	Test Method	Results
1.	pH	-	IS 2720(Part-26) 1987 Reff-2021	6.89
2.	Electrical Conductivity	µ mhos/cm	IS:14767: 2000 Reaff- 2021	110.0
3.	Available Nitrogen as N	kg/ha	SOP No:S-14 Issue No.2, Date 12 04.2021	96.8
4.	Available Phosphorous as P_2O_5	(kg/ha)	SOP No:S-07 Issue No.2, Date 12.04.2021	14.1
5.	Available Potassium as K_2O	(kg/ha)	IS 9497: 1980 Reff-2020	80.5
6.	Available Calcium as Ca	(kg/ha)	SOP No.S-30 Issue No.2, Date 12.04.2021	460.0
7.	Available Magnesium as Mg	(kg/ha)	SOP No:S-30 Issue No.2, Date 12.04 2021	136.0
8	Iron as Fe_2O_3	mg/kg	SOP No:S-28 Issue No.2, Date 12.04 2021	467.0
9.	Boron	mg/kg	SOP No:S-25 Issue No.2, Date 12.04.2021	0.89
10.	Organic Carbon	%	IS 2720(Part-22)1972 Reff-2020	0.82
11.	Natural Moisture Content	%	IS 2720(Part-2):1973 Reff-2020	6.45
12	Porosity	%	No.S-06 Issue No.2, Date 12.04.2021	20.65
13.	Water Holding Capacity	%	No:S-06 Issue No.2, Date 12.04.2021	13.5
14.	Bulk Density	gm/cc	No.S-09 Issue No.2, Date 12.04.2021	1.53
15.	Grain Size Distribution			
a.	Textural Class	-	SOP No:S-03 Issue No.2, Date 12.04.2021	Sandy Loam
b.	Sand	%	SOP No:S-03 Issue No 2, Date 12.04.2021	52
c.	Silt	%	SOP No:S-03 Issue No.2, Date 12.04.2021	16
d.	Clay	%	SOP No:S-03 Issue No.2, Date 12.04.2021	32
16	Cation exchange capacity	Meq/100g	No:S-05 Issue No.2, Date 12.04.2021	8.15

Note :

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3. The test samples will be disposed of after one Month from the date of issue of test report.

----End of Report----

Verified By
Technical Manager

Authorized By
Quality Manager

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TEST REPORT

FORMAT NO. ECO/QS/FORMAT/08

NAME & ADDRES OF CUSTOMER:	**Bailadilla Deposit 4 M/s NMDC-CMDC Limited, Tehsil Bade Bacheli, District South Bastar Dantewada, State Chhattisgarh**	**Test Report No.**	**ECO/LAB/SS/0027/0323/05/2022**
		Issue Date of Test Report	**19.06.2022**
Type of Sample	Soil sample		
Sample Registration No.	0027	**Name of Location**	Bacheli (Ag. Land) (SMB-1)
Sampling Method	IS -2720	**Sample Collected By**	ELPL Representative
Date of Sample Collection	12.05.2023-22.05.2023	**Time of Sample Collection**	-
Date of Sample Received	25.05.2023	**Time of Sample Received**	11.15 AM
Start Date of Analysis	25.05.2023	**End Date of Analysis**	19.06.2022
Laboratory Environmental Condition	Temperature: 25 ± 2°C	**Sample Quantity**	As per Requirement
	Humidity: 51 %	**Sample ID Code**	ECO/LAB/0323/05/2022

Sl. No.	Parameters	Unit	Test Method	Results
1.	pH	-	IS 2720(Part-26) 1987 Reff-2021	5.98
2.	Electrical Conductivity	µ mhos/cm	IS:14767: 2000 Reaff- 2021	212.0
3.	Available Nitrogen as N	kg/ha	SOP No:S-14 Issue No.2, Date 12.04.2021	96.8
4.	Available Phosphorous as P_2O_5	(kg/ha)	SOP No:S-07 Issue No.2, Date 12.04.2021	24.20
5.	Available Potassium as K_2O	(kg/ha)	IS 9497:1980 Reff-2020	244.0
6.	Available Calcium as Ca	(kg/ha)	SOP No:S-30 Issue No.2, Date 12.04.2021	460.0
7.	Available Magnesium as Mg	(kg/ha)	SOP No:S-30 Issue No.2, Date 12.04.2021	120.0
8.	Iron as Fe_2O_3	mg/kg	SOP No:S-28 Issue No.2, Date 12.04.2021	267.0
9.	Boron	mg/kg	SOP No:S-25 Issue No.2, Date 12.04.2021	1.22
10.	Organic Carbon	%	IS 2720(Part-22)1972 Reff-2020	0.88
11.	Natural Moisture Content	%	IS 2720(Part-2):1973 Reff-2020	10.2
12.	Porosity	%	No:S-06 Issue No.2, Date 12.04.2021	27.46
13.	Water Holding Capacity	%	No:S-06 Issue No.2, Date 12.04.2021	32.8
14.	Bulk Density	gm/cc	No:S-09 Issue No.2, Date 12.04.2021	1.40
15.	Grain Size Distribution			
a.	Textural Class	-	SOP No:S-03 Issue No.2, Date 12.04.2021	Sandy Clay
b.	Sand	%	SOP No:S-03 Issue No.2, Date 12.04.2021	39.0
c.	Silt	%	SOP No:S-03 Issue No.2, Date 12.04.2021	21.0
d.	Clay	%	SOP No:S-03 Issue No.2, Date 12.04.2021	40.0
16	Cation exchange capacity	Meq/100g	No:S-05 Issue No.2, Date 12.04.2021	11.08

Note :

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----End of Report----

Verified By

Technical Manager

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Quality Manager

SOCIO ECONOMIC DATA

Annexure No. 3.4

Level	Name	TRU	No_HH	TOT_P	TOT_M	TOT_F	P_06	M_06	F_06	P_SC	M_SC	F_SC	P_ST	M_ST	F_ST	P_LIT	M_LIT	F_LIT	P_ILL	M_ILL	F_ILL	TOT_WORK_P	TOT_WORK_M	TOT_WORK_F	MAINWORK_P	MAINWORK_M	MAINWORK_F
TOWN	Bade Bacheli (M)	Urban	5398	21435	11071	10364	2796	1379	1417	2770	1423	1347	7242	3537	3705	14587	8373	6214	6848	2698	4150	7906	6398	1508	7180	5903	1277
VILLAGE	Bhansi	Rural	347	1365	722	643	215	114	101	26	14	12	895	464	431	632	402	230	733	320	413	683	390	293	551	376	175
VILLAGE	Porokameli	Rural	45	200	94	106	28	12	16	0	0	0	164	75	89	73	47	26	127	47	80	119	56	63	119	56	63
VILLAGE	Dumirpalnar	Rural	44	180	94	86	39	20	19	0	0	0	179	93	86	20	11	9	160	83	77	101	53	48	44	41	3
VILLAGE	Bhatpada	Rural	38	193	102	91	26	15	11	0	0	0	193	102	91	86	55	31	107	47	60	115	53	62	115	53	62
Total (0-3 Km)			**5872**	**23373**	**12083**	**11290**	**3104**	**1540**	**1564**	**2796**	**1437**	**1359**	**8673**	**4271**	**4402**	**15398**	**8888**	**6510**	**7975**	**3195**	**4780**	**8924**	**6950**	**1974**	**8009**	**6429**	**1580**
Average (0-3 Km)			**1174.4**	**4674.6**	**2416.6**	**2258**	**620.8**	**308**	**312.8**	**559.2**	**287.4**	**271.8**	**1734.6**	**854.2**	**880.4**	**3079.6**	**1777.6**	**1302**	**1595**	**639**	**956**	**1784.8**	**1390**	**394.8**	**1601.8**	**1285.8**	**316**
VILLAGE	Belnar	Rural	224	1085	550	535	218	118	100	0	0	0	1061	538	523	16	14	2	1069	536	533	630	316	314	630	316	314
VILLAGE	Markapal	Rural	48	204	95	109	22	10	12	0	0	0	89	44	45	2	2	0	202	93	109	134	64	70	134	64	70
VILLAGE	Porewada	Rural	10	34	18	16	4	2	2	0	0	0	34	18	16	0	0	0	34	18	16	21	15	6	15	12	3
VILLAGE	Bainpal	Rural	150	709	346	363	126	63	63	0	0	0	695	337	358	138	107	31	571	239	332	307	194	113	296	186	110
VILLAGE	Basanpur	Rural	53	226	115	111	35	19	16	0	0	0	214	107	107	12	9	3	214	106	108	132	67	65	108	65	43
VILLAGE	Dhurli	Rural	404	2068	970	1098	339	174	165	6	1	5	2031	952	1079	560	329	231	1508	641	867	1089	501	588	444	329	115
VILLAGE	Gamawada	Rural	389	1574	732	842	260	127	133	30	14	16	1520	702	818	309	200	109	1265	532	733	974	441	533	583	410	173
VILLAGE	Hiroli	Rural	21	115	53	62	16	6	10	0	0	0	115	53	62	42	27	15	73	26	47	68	31	37	51	24	27
VILLAGE	Hiroli	Rural	178	802	381	421	170	83	87	0	0	0	802	381	421	279	149	130	523	232	291	444	210	234	407	206	201
VILLAGE	Jhirka	Rural	68	305	136	169	59	23	36	0	0	0	305	136	169	13	9	4	292	127	165	179	86	93	138	78	60
TOWN	Kirandul (M)	Urban	4638	18887	9776	9111	2317	1150	1167	3001	1483	1513	4234	2154	2080	13919	7813	6106	4968	1963	3005	7013	5624	1389	6452	5259	1193
VILLAGE	Kodenar	Rural	460	1843	924	919	248	123	125	535	273	262	546	267	279	1239	688	551	604	236	368	946	536	410	665	439	226
VILLAGE	Nerli	Rural	193	871	403	468	173	85	88	0	0	0	763	351	412	208	128	80	663	275	388	397	208	189	396	207	189
VILLAGE	Padhapur	Rural	99	406	189	217	74	43	31	0	0	0	401	185	216	72	51	21	334	138	196	240	111	129	225	104	121
Total (3-7 Km)			**6935**	**29129**	**14688**	**14441**	**4061**	**2026**	**2035**	**3572**	**1776**	**1796**	**12810**	**6225**	**6585**	**16809**	**9526**	**7283**	**12320**	**5162**	**7158**	**12574**	**8404**	**4170**	**10544**	**7699**	**2845**
Average (3-7 Km)			**495.3571429**	**2080.642857**	**1049.142857**	**1031.5**	**290.0714286**	**144.7142857**	**145.3571429**	**255.1428571**	**126.8571429**	**128.2857143**	**915**	**444.6428571**	**470.3571429**	**1200.642857**	**680.4285714**	**520.2142857**	**880**	**368.7142857**	**511.2857143**	**898.1428571**	**600.2857143**	**297.8571429**	**753.1428571**	**549.9285714**	**203.2142857**
VILLAGE	Manjhiguda	Rural	118	404	199	205	59	31	28	5	4	1	393	191	202	267	144	123	137	55	82	247	116	131	240	113	127
VILLAGE	Kadampal	Rural	224	969	473	496	151	87	64	0	0	0	969	473	496	595	337	258	374	136	238	582	248	334	285	210	75
VILLAGE	Kamaloor	Rural	148	557	252	305	98	43	55	17	10	7	513	224	289	154	101	53	403	151	252	337	144	193	171	125	46
VILLAGE	Kodripal	Rural	247	1210	631	579	177	94	83	5	4	1	938	497	441	321	211	110	889	420	469	724	383	341	139	134	5
VILLAGE	Masenar	Rural	513	2048	987	1061	377	200	177	5	2	3	2011	966	1045	207	165	42	1841	822	1019	1385	650	735	941	452	489
VILLAGE	Molasnar	Rural	406	1619	817	802	291	162	129	3	0	3	1611	812	799	194	142	52	1425	675	750	972	466	506	652	448	204
VILLAGE	Pinabacheli	Rural	78	321	154	167	62	29	33	6	2	4	313	150	163	51	38	13	270	116	154	163	83	80	103	67	36
VILLAGE	Timmenar	Rural	13	54	30	24	10	7	3	0	0	0	51	29	22	0	0	0	54	30	24	26	20	6	18	15	3
Total (7-10 Km)			**1747**	**7182**	**3543**	**3639**	**1225**	**653**	**572**	**41**	**22**	**19**	**6799**	**3342**	**3457**	**1789**	**1138**	**651**	**5393**	**2405**	**2988**	**4436**	**2110**	**2326**	**2549**	**1564**	**985**
Average (7-10 Km)			**218.375**	**897.75**	**442.875**	**454.875**	**153.125**	**81.625**	**71.5**	**5.125**	**2.75**	**2.375**	**849.875**	**417.75**	**432.125**	**223.625**	**142.25**	**81.375**	**674.125**	**300.625**	**373.5**	**554.5**	**263.75**	**290.75**	**318.625**	**195.5**	**123.125**
Total Value (0-10 Km)			14554	59684	30314	29370	8390	4219	4171	6409	3235	3174	28282	13838	14444	33996	19552	14444	25688	10762	14926	25934	17464	8470	21102	15692	5410
Average Value (0-10 Km)			539.037037	2210.518519	1122.740741	1087.777778	310.7407407	156.2592593	154.4814815	237.3703704	119.8148148	117.5555556	1047.481481	512.5185185	534.962963	1259.111111	724.1481481	534.962963	951.4074074	398.5925926	552.8148148	960.5185185	646.8148148	313.7037037	781.5555556	581.1851852	200.3703704

level	Name	TRU	MAIN_CL_P	MAIN_CL_M	MAIN_CL_F	MAIN_AL_P	MAIN_AL_M	MAIN_AL_F	MAIN_HH_P	MAIN_HH_M	MAIN_HH_F	MAIN_OT_P	MAIN_OT_M	MAIN_OT_F	MARGWORK_P	MARGWORK_M	MARGWORK_F	MARG_CL_P	MARG_CL_M	MARG_CL_F	MARG_AL_P	MARG_AL_M	MARG_AL_F	MARG_HH_P	MARG_HH_M	MARG_HH_F	MARG_OT_P	MARG_OT_M	MARG_OT_F	NON_WORK_P	NON_WORK_M	NON_WORK_F
TOWN	Bade Bacheli (M)	Urban	102	68	34	141	106	35	40	33	7	6897	5696	1201	726	495	231	92	74	18	58	33	25	7	0	7	569	388	181	12529	4673	8856
VILLAGE	Bansi	Rural	379	251	128	30	12	18	10	6	4	132	107	25	132	14	118	111	3	108	14	8	6	0	0	0	7	3	4	682	332	350
VILLAGE	Porakamel	Rural	118	56	62	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	38	43
VILLAGE	Dumripalpar	Rural	44	41	3	0	0	0	0	0	0	0	0	0	57	12	45	5	3	2	52	9	43	0	0	0	0	0	0	79	41	38
VILLAGE	Bhatpaca	Rural	115	53	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	49	29
Total (0-3 Km)			**758**	**469**	**289**	**171**	**118**	**53**	**50**	**39**	**11**	**7030**	**5803**	**1227**	**915**	**521**	**394**	**208**	**80**	**128**	**124**	**50**	**74**	**7**	**0**	**7**	**576**	**391**	**185**	**14449**	**5133**	**9316**
Average (0-3 Km)			**151.6**	**93.8**	**57.8**	**34.2**	**23.6**	**10.6**	**10**	**7.8**	**2.2**	**1405**	**1160.6**	**245.4**	**183**	**104.2**	**78.8**	**41.6**	**16**	**25.6**	**24.8**	**10**	**14.8**	**1.4**	**0**	**1.4**	**115.2**	**78.2**	**37**	**2889.8**	**1026.6**	**1863.2**
VILLAGE	Belnar	Rural	630	316	314	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	455	234	221
VILLAGE	Marsapal	Rural	134	64	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	31	39
VILLAGE	Porewada	Rural	14	11	3	1	1	0	0	0	0	0	0	0	6	3	3	3	1	2	3	2	1	0	0	0	0	0	0	13	3	10
VILLAGE	Bahipa	Rural	134	67	67	8	6	2	0	0	0	154	113	41	11	8	3	5	5	0	4	2	2	0	0	0	2	1	1	402	152	250
VILLAGE	Basanpur	Rural	62	51	11	38	9	29	1	1	0	7	4	3	24	2	22	0	0	0	23	1	22	0	0	0	1	1	0	94	48	46
VILLAGE	Dhurli	Rural	399	394	105	13	10	3	0	0	0	32	25	7	645	172	473	8	2	6	637	170	467	0	0	0	0	0	0	978	469	510
VILLAGE	Gamewada	Rural	453	380	73	111	21	90	0	0	0	19	9	10	391	31	360	90	8	82	294	22	272	1	0	1	6	1	5	600	291	309
VILLAGE	Hiroli	Rural	49	24	25	0	0	0	0	0	0	2	0	2	17	7	10	12	5	7	2	0	2	0	0	0	3	2	1	47	22	25
VILLAGE	Hiroli	Rural	406	205	201	0	0	0	0	0	0	1	1	0	37	4	33	37	4	33	0	0	0	0	0	0	0	0	0	358	171	187
VILLAGE	Jhirka	Rural	136	77	59	0	0	0	0	0	0	2	1	1	41	8	33	0	0	0	41	8	33	0	0	0	0	0	0	126	50	76
TOWN	Kirandul (M)	Urban	63	27	36	44	24	20	68	52	11	6282	5156	1126	561	365	196	7	6	1	5	1	4	15	3	12	534	355	179	11874	4152	7722
VILLAGE	Kocenar	Rural	121	67	54	4	1	3	32	29	3	508	342	166	281	97	184	21	0	21	140	50	90	8	1	7	112	46	66	837	388	509
VILLAGE	Nerli	Rural	0	0	0	294	142	152	3	3	0	99	62	37	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	474	195	279
VILLAGE	Padhapur	Rural	25	17	8	123	39	84	0	0	0	77	48	29	15	7	8	0	0	0	15	7	8	0	0	0	0	0	0	166	78	88
Total (3-7 Km)			**2626**	**1600**	**1026**	**636**	**253**	**383**	**99**	**85**	**14**	**7183**	**5761**	**1422**	**2030**	**705**	**1325**	**183**	**31**	**152**	**1164**	**263**	**901**	**24**	**4**	**20**	**659**	**407**	**252**	**16555**	**6284**	**10271**
Average (3-7 Km)			**187.5714286**	**114.2857143**	**73.28571429**	**45.42857143**	**18.07142857**	**27.35714286**	**7.071428571**	**6.071428571**	**1**	**513.0714286**	**411.5**	**101.5714286**	**145**	**50.35714286**	**94.64285714**	**13.07142857**	**2.214285714**	**10.85714286**	**83.14285714**	**18.78571429**	**64.35714286**	**1.714285714**	**0.285714286**	**1.428571429**	**47.07142857**	**29.07142857**	**18**	**1182.5**	**448.8571429**	**733.6428571**
VILLAGE	Manjhiguda	Rural	199	82	117	0	0	0	0	0	0	41	31	10	7	3	4	1	1	0	0	0	0	0	0	0	6	2	4	157	83	74
VILLAGE	Kadamnal	Rural	184	146	38	9	6	3	0	0	0	92	58	34	297	38	259	193	30	163	100	3	97	0	0	0	14	5	9	387	225	162
VILLAGE	Kamalpur	Rural	140	97	43	3	3	0	0	0	0	28	25	3	166	19	147	1	1	0	169	15	145	1	1	0	4	2	2	220	108	112
VILLAGE	Kocinsal	Rural	118	116	2	1	1	0	3	3	0	17	14	3	585	249	336	333	194	139	252	55	197	0	0	0	0	0	0	486	248	238
VILLAGE	Masenar	Rural	904	432	472	7	4	3	1	1	0	29	15	14	444	198	246	237	122	115	17	8	9	0	0	0	130	68	62	663	337	326
VILLAGE	Molasnar	Rural	699	498	201	0	0	0	1	1	0	12	9	3	320	18	302	309	17	292	10	1	9	0	0	0	1	0	1	647	351	296
VILLAGE	Pinabacheli	Rural	47	44	3	55	23	32	0	0	0	1	0	1	60	16	44	0	0	0	60	16	44	0	0	0	0	0	0	158	71	87
VILLAGE	Timmenar	Rural	18	15	3	0	0	0	0	0	0	0	0	0	8	5	3	6	3	3	2	2	0	0	0	0	0	0	0	28	10	18
Total (7-10 Km)			**2249**	**1370**	**879**	**75**	**37**	**38**	**5**	**5**	**0**	**220**	**152**	**68**	**1887**	**546**	**1341**	**1130**	**368**	**762**	**691**	**100**	**591**	**1**	**1**	**0**	**155**	**77**	**78**	**2746**	**1433**	**1313**
Average (7-10 Km)			**281.125**	**171.25**	**109.875**	**9.375**	**4.625**	**4.75**	**0.625**	**0.625**	**0**	**27.5**	**19**	**8.5**	**235.875**	**68.25**	**167.625**	**141.25**	**46**	**95.25**	**75.125**	**12.5**	**62.625**	**0.125**	**0.125**	**0**	**19.375**	**9.625**	**9.75**	**343.25**	**179.125**	**164.125**
Total Value (0-10 Km)			5533	3439	2194	882	408	474	154	129	25	14433	11716	2717	4832	1772	3060	1521	479	1042	1088	413	1476	32	5	27	1390	875	515	33750	12850	20900
Average Value (0-10 Km)			208.6296296	127.3703704	81.25925926	32.66666667	15.11111111	17.55555556	5.705703704	4.777777778	0.925925926	534.5555556	433.9259259	100.6296296	178.962963	65.62962963	113.3333333	56.33333333	17.74074074	38.59259259	69.96296296	15.29629629	54.66666667	1.185185185	0.185185185	1	51.48148148	32.40740741	19.07407407	1250	475.9259259	774.0740741

Socio Abbreviation:

Tru: total/rural/urban; **no_hh**-no_of_households; **tot_p:** total_population; **tot_m :** total males; **tot_f :** total females; **p_06:** population_age_group_0-6; **m_06: f_06:** female_0-6; **p_sc:** population_sc; **m_sc:** males_sc; **f_sc:** female_sc; **p_st:** population _st; **m_st:** males_st; **f_st:** famales_st; **p_lit** population_literate;**m_lit**:males_literate;**f_lit**:females_lierate; **p_ill**:pop_illiterate; **m_ill**:males_illiterate; **f_ill**:females_illiterate;**tot_work_p:**total_workers_pop;**tot_work_m:**total_workers_males: **tot_work_f:** total_workers_females; **mainwork_p:** mainworkers_population: **mainwork_m:** mainworkers_males; **mainwork_f:**mainworkers_females;**main_cl_p:**main_cultivators_population;**main_cl_m:**main_cultivators_males; **main_cl_f:** main_cultivators_females; **main_al_p:** main_agricultural_leighbourers_population; **main_al_m:**main_agricultural_leighbourers_population_males;**main_al_f;**main_agricultural_leighbourers_population_females;**main_hh_p:**main_household_industries_population;**main_hh_m:**main_household_industries_population_males; **main_hh_f:**main_household_industries_population_females; **main_ot_p:** main_other_workers_population;**main_ot_m:**main_other_workers_males;**main_ot_f:**main_other_workers_females;**margwork_p:**marginal_workers_population;**margwork_m:**marginal_workers_males;**margwork_f:**marginal_workers_females:**marg_cl_p:**marginal_cultivators_pop;**marg_cl_m:**marginal_cultivators_males;**marg_cl_f:**marginal_cultivators_females;**marg_al_p:**marginal_agricult_leighbourers_pop;**marg_al_m:**marginal_agricult_leighbourers_males;**marg_al_f:**marginal_agricult_leighbourers_females;**marg_hh_p:**marginal_household_industries_pop;**marg_hh_m:**marginal_household_industries_males;**marg_hh_f:** marginal_household_industries_females;**marg_ot_p:**marginal_other_workers_population;**marg_ot_m:**marginal_other_workers_males;**marg_ot_f:**marginal_other_workers_females;**non_work_p:**non_workers_population;**non_work_m:**non_workers_males;**non_work_f:**non_workers_females;

Annexure-3.5

कार्यालय वनमण्डलाधिकारी

दन्तेवाड़ा वनमण्डल, दन्तेवाड़ा (छ.ग.)

कार्यालय –दूरभाष (07856) 252228, फैक्स–252305 निवास –(07856) 252439 **E-mail:**-dfodnt@rediffmail.com

क्रमांक/क.त.अ./2166 **दन्तेवाड़ा, दिनांक** 31 **/03/2022**

प्रति,

मुख्य कार्यपालन अधिकारी,
एन.एम.डी.सी –सी.एम.डी.सी लिमि.
Regd off: Green Villey City,
Housing Board Colony, Boriyakala, Sejbahar, Raipur

विषयः– **To Conduct Ecological Studies in the buffer zone (10 km radius area) of Bailadiala Iron Ore Deposite – 4 Mine in Dantewada District of Chhatiisgarh State of M/s NMDC Limited.**

संदर्भ :– 1.मुख्य वन संरक्षक जगदलपुर, वृत्त जगदलपुर का पत्र क्रमांक /व.त.अ/1831, जगदलपुर दिनांक 30.03.2022।

2.मेसर्स इकोमेन लेबोरटरीज प्राईवेट लिमिटेड लखनऊ का पत्र क्रमांक/NDL/DFO/02/2022 दिनांक 23.03.2022।

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उपरोक्त विषयान्तर्गत दंतेवाडा वन मंडल अन्तर्गत निक्षेप क्र.– 4 के बफर जोन/कोर जोन (10 कि.मी त्रिज्या) क्षेत्र के आधार–भूत अध्ययन हेतु मेसर्स इकोमेन लेबोरटरीज प्राईवेट लिमिटेड लखनऊ को अध्ययन हेतु अनुमति चाहे गये हैं।

मध्यप्रदेश शासन, वन विभाग के पत्र क्रमांक/5/16/81/3 दिनांक 23–7–1983, भारत सरकार, कृषि मंत्रालय, के परिपत्र क्रमांक/8–22/81/फ्राय (कोन्स) दिनांक 29–6–1983 प्राप्त निर्देश के अनुसार दंतेवाड़ा वनमण्डल के अन्तर्गत **निक्षेप क्रमांक–4 के बफर जोन/कोर जोन (10 कि.मी.त्रिज्या) क्षेत्र के आधार–भूत अध्ययन मेसर्स इकोमेन लेबोरटरीज प्राईवेट लिमिटेड लखनऊ** को वन संरक्षण अधिनियम , 1980 के अन्तर्गत व्यपवर्तन प्रस्ताव में शामिल करने हेतु **परिस्थितिक अध्ययन** कार्य की अनुमति शर्तो पर प्रदाय किया गया हैं।

1. यह अनुमति परिस्थितिक अध्ययन (वन संरक्षण अधिनियम ,1980 के अन्तर्गत व्यपवर्तन प्रस्ताव में शामिल करने हेतु)दी जाती है।

2.परिस्थितिक अध्ययन के दौरान वन क्षेत्र को कोई हानि नहीं पहुंचाई जावेगी एवं वृक्षों की कटाई/छंटाई प्रतिबंधित रहेगी।

3.वनक्षेत्र में परिस्थितिक अध्ययन हेतु किसी भी प्रकार की सड़क, भवन इत्यादि कार्य पूर्णतः प्रतिबंधित रहेगा।

4.परिस्थितिक अध्ययन रिपोर्ट आवश्यक रूप से संबंधित वनमण्डलाधिकारी/मुख्य वन संरक्षक, कार्यालय को आवेदक संस्थान द्वारा प्रेषित की जावेगी।

5.परिस्थितिक अध्ययन की अनुमति के दौरान आवेदक संस्थान द्वारा वन संरक्षण अधिनियम, 1980 भारतीय वन अधिनियम 1927, वन्य प्राणी संरक्षण अधिनियम 1972, का उल्लंघन पाये जाने पर न केवल अधिनियमों/नियमों के प्रावधान लागू होगे, बल्कि आवेदक को सुनवाई का मौका दिये जाने पश्चात् आवेदक का रिर्पोट संतोषजनक न

पाये जाने पर सर्वेक्षण कार्य पर तुरंत रोक लगा दी जावेगी एवं सर्वेक्षण की अनुमति निरस्त कर दी जावेगी तथा तत्काल निम्नानुसार आवश्यक कार्यवाही की जावेगी।

6.परिस्थितिक अध्ययन के दौरान जिम्मेदार वन अधिकारी (परिक्षेत्र अधिकारी स्तर के) नोडल अधिकारी के रूप मे साथ में रहेगें।

7.परिस्थितिक अध्ययन के दौरान वन क्षेत्र में न तो वृक्ष काटे जाएं और न वन भूमि को क्षति पहुँचाई जावें, यदि वृक्ष काटे जाते हैं, और भूमि को क्षति पहुँचाई जाती है तो उसका उत्तरदायित्व संबंधित विभाग का होगा। साथ ही वनाधिकारी भी उत्तरदायी होगा जो सर्वे के समय साथ रहा था। वृक्षो को काटने तथा वन भूमि को क्षति पहुचाने पर सर्वेक्षण हेतु दि: गई अनुमति निरस्त कर दी जावेगी।

8.परिस्थितिक अध्ययन की अनुमति प्रदान करने का तात्पर्य यह नही लगाया जाए की उस प्रकरण वन भूमि प्राप्त हो ही जायेगी। यदि शासन उपयुक्त समझेगा तभी प्रकरण में भूमि उपलब्ध कराने हेतु भारत सरकार की अनुमति प्राप्त करेंगा।

9. परिस्थितिक अध्ययन की **अवधि** 01 **माह** में पूर्ण की जावेगी।

10.वन क्षेत्र में सूर्यास्त के बाद प्रवेश प्रतिबंधित रहेगा।

11.परिस्थितिक अध्ययन की अनुमति राष्ट्रीय उद्यान/अभ्यारण्य के अन्दर नही है। राष्ट्रीय उद्यान/अभ्यारण्य के अन्दर परिस्थितिक अध्ययन की अनुमति हेतु पृथक से निम्नानुसार प्राप्त करना होगा।

12. परिस्थितिक अध्ययन के दौरान वन्य जीव को किसी प्रकार का कोई नुकसान नही किया जावेगा।

निक्षेप क्रमांक – 4 के अन्तर्गत ट्री–फर्न क्षेत्र के संरक्षण के संबंध में स्पष्ट रूप से अध्ययन कर पृथक से योजना तैयार कर प्रस्तुत करें।

अतः उपरोक्त शर्ते के आधार पर बफर जोन/कोर जोन (10 कि.मी. त्रिज्या) क्षेत्र के आधार–भूत अध्ययन हेतु अनुमति दी जाती हैं।

वनमण्डलाधिकारी,
दन्तेवाड़ा वनमण्डल, दन्तेवाड़ा

पृ. क्रमांक/क.त.अ./2467 दन्तेवाड़ा, दिनांक 31 /03/2022

प्रतिलिपि :– 1.मुख्य वन संरक्षक जगदलपुर वृत्त, जगदलपुर की ओर सूचनार्थ संप्रेषित।
2.कलेक्टर, जिला–दक्षिण बस्तर दंतेवाड़ा छ.ग. की ओर सूचनार्थ संप्रेषित।

वनमण्डलाधिकारी,
दन्तेवाड़ा वनमण्डल, दन्तेवाड़ा

पृ. क्रमांक/क.त.अ./2468 दन्तेवाड़ा, दिनांक 31 /03/2022

प्रतिलिपि :– 1.उप वनमण्डलाधिकरी ,दंतेवाड़ा की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु अग्रेषित।
2.परिक्षेत्र अधिकरी, बचेली की ओर सूचनार्थ, कृपया आपके परिक्षेत्र अन्तर्गत निक्षेप क्र.– 4 के बफर जोन/कोर जोन (10 कि.मी त्रिज्या) क्षेत्र के आधार –भूत अध्ययन हेतु मेसर्स इकोमेन लेबोरटरीज प्राईवेट लिमिटेड लखनऊ को अध्ययन हेतु अनुमति जारी किया गया है, मेसर्स इकोमेन लेबोरटरीज प्राईवेट लिमिटेड लखनऊ से संपर्क कर अध्ययन के दौरान उपस्थित रहना सुनिश्चित् करें।

वनमण्डलाधिकारी,
दन्तेवाड़ा वनमण्डल, दन्तेवाड़ा

ECOMEN LABORATORIES PVT. LTD.
Second Floor Hall, House No. B-1/8, Sector-H, Aliganj, Lucknow - 226 024
Phone No. : 0522 - 4079201/2746282
E-mail: contactus@ecomen.in, Website: www.ecomen.in, CIN - U74210UP1989PTC010601,GSTIN : 09AAACE6076H1ZI
An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi

ecoMen LABORATORIES PVT LTI

Date 26/03/2022

To

The CISF Commandant
NMDC BIOM, Bacheli complex
Bacheli, CG

Forwarded please.
(G. Navasiwam)
NCL

Temporary Permission
Total Days 14
From 26/03/22 to 08/4/22
No. of persons 01

Sub: Issue the gate pass for Ecological Biodiversity Expert.

W/o ref no. NCL/HO/Dep-4/Environment/2020/884
Dated 31/07/2021

(NMDC CMOC) Through (DGM) Environment, Bacheli

Dear Sir,

Kindly find attached the Expert (manpower) details for issue the gate pass of diposit-4. Mining lease EIA monitoring core & buffer zone from 26/03/2022 - 08/04/2022.

Pass Section
Unit B.I.O.M. Dep
BACHELI (C.G.)

Expert Person details

Name — Dr. Ashish k. Mishra
Adhar No- 9412 1892 5052

Thanks & Regards

Akm

Dr. Ashish Mishra
(Biodiversity & Ecology Expert)

May be allowed pl
26.03.2

HOD (T,SSE)

C.V. Subramanyam
Dy. General Manager (Min.)
NMDC Limited
BIOM, Bacheli Complex
26/03/2022

Asstt. Commandant
CISF B.I.O.M. DEP-5
Bacheli, Dantewada (C.G.)

कार्यालय वनमण्डलाधिकारी

दन्तेवाड़ा वनमण्डल, दन्तेवाड़ा (छ.ग.)

कार्यालय –दूरभाष (07856) 252228, फैक्स–252305 निवास –(07856) 252439 E-mail:-dfodnt@rediffmail.com

क्रमांक/ क.त.अ./813 दन्तेवाड़ा, दिनांक 04 /01/2022

प्रति,

मुख्य वन संरक्षक,
जगदलपुर, वृत्त जगदलपुर

विषय :– **To conduct Ecological studies in the buffer zone (10 km radius area) of Bailadiala Iron Ore Deposit – 4 Mine in Dantewada District of Chhattisgarh State of M/s NMDC Limited.**

संदर्भ :– 1.मुख्य कार्यपालन अधिकारी सी.एम.डी.सी/एन.एम.डी.सी.बोरिया कला रायपुर का पत्र क्रमांक/NCL/HO/Dep-4/Environment 2020/934 दिनांक 26.10.021

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उपरोक्त विषयांतर्गत निवेदन है कि, खान मंत्रालय GOI नई दिल्ली के राजपत्र अधिसूचना क्र./सी.एस.आर. 697 (अ) दिनांक 30.09.2019 के तहत् एवं छ.ग. शासन का पत्र क्रमांक/एफ–2–20/2005/12 दिनांक 25.06.2021 के तहत् निक्षेप क्रमांक – 04 रकबा 646.546 हें. क्षेत्र को 05 वर्ष की अवधि के लिए आरक्षित किया गया है। (छायाप्रति संलग्न)।

उपरोक्त संदर्भित पत्र के माध्यम से बैलाडिला लौह अयस्क निक्षेप क्र. – 4 के बफर जोन (10 कि.मी. त्रिज्या) क्षेत्र का अध्ययन हेतु एन.एम.डी.सी./सी.एम.डी.सी लिमिटेड ने मेसर्स इकोमेन लेबोरेटरीज प्राईवेट लिमिटेड लखनऊ द्वारा परिस्थितिक अध्ययन करने हेतु कार्य सौपा गया है। मेसर्स इकोमेन लेबोरटरीज प्राईवेट लिमिटेड लखनऊ टीम को अध्ययन हेतु अनुमति चाहा गया है।

अतः कृपया मेसर्स इकोमेन लेबोरटरीज प्राईवेट लिमिटेड लखनऊ को अध्ययन हेतु अनुमति जारी बाबत् अनुरोध है।

संलग्नः– उपरोक्तानुसार।

वनमण्डलाधिकारी,
दंतेवाड़ा, वनमण्डल दंतेवाड़ा

पृ. क्रमांक/क.त.अ./814 दन्तेवाड़ा, दिनांक 04 /01/2022

प्रतिलिपि :– 1. उपवमण्डलाधिकारी दन्तेवाड़ा/परिक्षेत्र अधिकारी बचेली की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु अग्रेषित।

वनमण्डलाधिकारी,
दंतेवाड़ा ,वनमण्डल दंतेवाड़ा

कार्यालय वनमण्डलाधिकारी

दन्तेवाड़ा वनमण्डल, दन्तेवाड़ा (छ.ग.)

कार्यालय –दूरभाष (07856) 252228, फैक्स–252305 निवास –(07856) 252439 E-mail:-dfodnt@rediffmail.com

क्रमांक/ क.त.अ./२३०७ दन्तेवाड़ा, दिनांक २१/03/2022

प्रति,

मुख्य वन संरक्षक,
जगदलपुर, वृत्त जगदलपुर

विषय :– **To conduct Ecological studies in the buffer zone (10 km radius area) of Bailadiala Iron Ore Deposit – 4 Mine in Dantewada District of Chhattisgarh State of M/s NMDC-CMDC Limited.**

संदर्भ :– मेसर्स इकोमेन लेबोरटरीज प्राईवेट लिमिटेड लखनऊ का पत्र क्रमांक/MDL/DFO/02/2022 दिनांक 23.03.2022

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उपरोक्त विषयांतर्गत संदर्भित पत्र के तहत् निक्षेप क्रमांक – 04 के बफर जोन/कोर जोन (10 कि.मी. त्रिज्या) क्षेत्र के आधार–भूत अध्ययन हेतु आवेदन प्रस्तुत किया गया है. (छायाप्रति संलग्न हैं)।

उपरोक्त संदर्भित पत्र के तहत् अध्ययन हेतु दिनांक 26.03.2022 से 25.04.2022 तक की अवधि की अनुमति चाहे गये हैं।

अतः कृपया मेसर्स इकोमेन लेबोरटरीज प्राईवेट लिमिटेड लखनऊ को अध्ययन हेतु अनुमति जारी बाबत् अनुरोध हैं।

संलग्नः– उपरोक्तानुसार।

वनमण्डलाधिकारी,
दंतेवाड़ा, वनमण्डल दंतेवाड़ा

पृ. क्रमांक/क.त.अ./२५०७ दन्तेवाड़ा, दिनांक २१/03/2022

प्रतिलिपि :– 1. मेसर्स इकोमेन लेबोरटरीज प्राईवेट लिमिटेड लखनऊ की ओर सूचनार्थ।

वनमण्डलाधिकारी,
दंतेवाड़ा ,वनमण्डल दंतेवाड़ा

NCL

NMDC-CMDC LIMITED

(A Subsidiary of NMDC Ltd.)

Regd Off : Greens Villey City, Housing Board Colony, Boriyakala,
Sejbahar, Raipur 492015 (C.G.) Tel: 0771-2971919, Fax : 0771-2971920

CIN : U13100CT2008GOI020711

E-mail : ceonmdccmdc@gmail.com

CERTIFICATE OF UNDERTAKING

It is to certify that NMDC-CMDC Limited shall "undertake the progressive bench plantation up to HFL for eco restoration of water bodies" for Bailadila Iron Ore Deposit-4 Project in village Bacheli, Tehsil Bade Bacheli, District Dantewada of Chhattisgarh State.

(Padmanabh Naik)
Chief Executive Officer
NMDC – CMDC Ltd.

ANNEXURE-4.2

Trees Details to be Cut in Outside of Mining Lease Area (Screening cum Beneficiation Plant)

वन मण्डल :– दंतेवाड़ा **प्रभावित रकबा :– 112.172 हे0**

वन परिक्षेत्र :– बचेली

वन भूमि कक्ष कमाकं :– RF- 1824,1825

सेम्पल प्लॉट कोड :– S-1,S-2,C-1,C-2,C-3,C-4,C-5,C-6

प्रजाति	Girth Class Wise (cms.)										
	21-30	31-45	46-60	61-90	91-120	121-150	151-180	181-210	211-240	Over 240	योग
सागौन	0	197	151	41	4	7	0	0	0	0	400
बीजा,शीशम, तिंसा,खम्हार	0	0	53	225	53	60	7	0	0	0	398
साल	0	0	0	0	0	0	0	0	0	0	0
हल्दु,मूढ़ी,कसई	0	26	305	106	86	26	7	0	0	0	558
साजा,अर्जुन	0	0	40	193	60	20	7	0	0	0	319
अन्य	936	4320	5648	6756	1268	677	372	46	0	0	20022
योग	**936**	**4543**	**6198**	**7322**	**1470**	**790**	**392**	**46**	**0**		**21696**

Annexure-4.3

आदेश द्वारा श्री सुधीर कुमार अग्रवाल, प्रधान मुख्य वन संरक्षक, (वन्यजीवन एवं जैव विविधता संरक्षण) सह मुख्य वन्यप्राणी अभिरक्षक, छत्तीसगढ़

सेक्टर–19, नार्थ ब्लॉक, अरण्य भवन, प्रथम तल (एफ.आर.) अटल नगर, नवा रायपुर (छ.ग.)

✉ cwlwcg@gmail.com, ☎0771-2512880

// आदेश //

आदेश क्रमांक/व.प्रा./प्रबंध–637/253 नवा रायपुर, दिनांक25/09/2023

मुख्य वन संरक्षक (क्षेत्रीय) जगदलपुर का पत्र क्र. 1909 दिनांक 10.08.2023 द्वारा भारत सरकार, पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय, इम्पैक्ट असेसमेंट डिवीजन नई दिल्ली का पत्र क्र. IA-J-11011/23/2022-IA-II(IND-I) दिनांक 21.02.2022 द्वारा Screening cum beneficiation Plant (750 TPH of 4 lines each) along with 2200 TPH Downhill Conveyor System and Loading Facilities in 195.537 Ha. Area (Forest area of 100.077 Ha. and 95.46 Ha. of revenue land) located at outside the Mine Lease area of Bailadila Iron Ore Deposit-4 (646.596 ha.) By M/s. NMDC-CMDC Limited at Village Bhansi, Tehsil Bacheli, District Dantewada, Chhattisgarh- हेतु जारी टी.ओ.आर. के बिन्दु क. 5(v) के पालन में आवेदक संस्थान द्वारा वन्यप्राणी संरक्षण योजना स्वीकृति हेतु प्रस्तुत किया गया है।

उक्त वन्यप्राणी संरक्षण योजना वनमण्डलाधिकारी दंतेवाड़ा द्वारा परीक्षित एवं मुख्य वन संरक्षक जगदलपुर द्वारा अनुशंसित है।

प्रस्तुत पक्षी संवर्धन योजना का गहन परीक्षण किया गया। आवेदक संस्थान द्वारा प्रस्तुत वन्यप्राणी संरक्षण योजना का परीक्षण पश्चात कुल 15 वर्षों में घटकवार राशि का उपयोग करते हुए वर्षवार आबंटन किया जाता है। अनुमोदित योजना में मुख्य रूप से जल उपलब्धता में सुधार हेतु तालाब निर्माण, वॉटरहोल, पूर्व से उपलब्ध जलस्रोंतो का सुधार रखरखाव, भूजल संरक्षण के कार्य, खरपतवार एवं अखाद्य घास का उन्मूलन, फलदार वृक्षारोपण रखरखाव सहित, अग्नि सुरक्षा, अनुश्रवण एवं मूल्यांकन, रहवास क्षेत्र का विकास, सरीसृप रहवास क्षेत्रों का विकास, सर्प प्रजातियों का सर्वे, मानव–वन्यजीव संघर्ष में प्रयुक्त सामग्रियों के परिवहन हेतु उपयोगी वाहन पीओएल के साथ, वन्यजीवों की सुरक्षा एवं पर्यावरण विकास कार्यों के लिए लोगों को सशक्त बनाने संबंधी कार्य, जागरूकता, प्रशिक्षण आदि घटकों में राशि **रू. 1931.732 लाख** का बजट प्रावधान किया गया है। वर्षवार एवं घटकवार विवरण **एनेक्जर–1** में संलग्न है।

उक्त वन्यप्राणी संरक्षण योजना की लागत राशि रूपये 1931.732 लाख वर्तमान दरों पर है। परियोजना में देरी होने से समय लागत बढ़ेगी, जिसमें प्राईस इन्डेक्स के हिसाब से वृद्धि होगी। परियोजना के क्रियान्वयन के समय जो भी लागत आयेगी वह प्रस्तावकों को वन विभाग में एकमुश्त जमा करानी होगी, जिससे मूल्य वृद्धि के प्रभाव को समाप्त किया जा सके। वन विभाग इस प्रकार जमा की गई राशि से वन्यप्राणी संरक्षण योजना में दर्शाये समय सारणी के अनुसार क्रियान्वित करेगा।

अनुमोदित वन्यप्राणी संरक्षण योजना में दर्शाये गये उपरोक्त घटकों के संगत फील्ड में किये जाने वाले कार्यों का कार्यवार/स्थलवार प्रोजेक्ट संबंधित वनमण्डलाधिकारी के द्वारा तत्समय प्रचलित मार्गदर्शी सिद्धांतों (व्यय नार्मस, कार्य की प्रकृति, वन्यप्राणी प्रबंधन के संबंध में लागू होने वाले अन्य तकनीकी तथ्यों व निर्देशों) के अनुरूप तैयार कर सक्षमतानुसार तकनीकी स्वीकृति/अनुमोदन हेतु अनुशंसा सहित संबंधित मुख्य वन संरक्षक को प्रेषित किया जावेगा। संबंधित मुख्य वन संरक्षक द्वारा प्रोजेक्ट की तकनीकी स्वीकृति/अनुमोदन की अनुशंसा के साथ मुख्य वन्यप्राणी अभिरक्षक छत्तीसगढ़ को प्रेषित किया जावेगा।

प्रोजेक्ट का परीक्षण वन्यप्राणी प्रबंधन की उपयुक्तता की दृष्टि से किया जाकर मुख्य वन्यप्राणी अभिरक्षक के द्वारा कार्य हेतु प्रशासकीय स्वीकृति जारी किये जाने की अनुशंसा के साथ प्रोजेक्ट, प्रशासकीय स्वीकृति/बजट आबंटन करने हेतु सक्षम अधिकारी को प्रेषित किया जावेगा। प्रशासकीय स्वीकृति आदेश जारी किये जाने के पश्चात ही कार्यों का कियान्वयन व.मं.अ. द्वारा किया जावेगा।

वन्यप्राणी संरक्षण योजना के कार्यों की मॉनिटरिंग का कार्य संबंधित मुख्य वन संरक्षक व मुख्य वन्यप्राणी अभिरक्षक छ.ग. द्वारा किया जावेगा। किये जा रहे कार्यों की भौतिक व आर्थिक प्रगति से मुख्य वन्यप्राणी अभिरक्षक को प्रतिमाह व.मं.अ. द्वारा अवगत कराया जावेगा। आवेदक संस्थान वन्यप्राणी संरक्षण योजना में प्रावधानित राशि **रूपये 1931.732 लाख (रूपये उन्नीस करोड़ इकत्तीस लाख तिहत्तर हजार दो सौ मात्र)** एकमुश्त जमा करना सुनिश्चित करेंगे ।

उपरोक्त के अतिरिक्त वन्यप्राणी संरक्षण योजना के पृष्ठ क. 134 पद दर्शाये गये निम्न कार्यों को आवेदक संस्थान द्वारा स्वयं के व्यय पर पूर्ण किया जावेगा :–

Sr. No.	Recommendations	Cost to be borne by
1	Wetland Habitat Development in Back Filled Area.	Cost shall be entirely borne by User agency (NCL).
2	Management of Over burdens	
3	Safety Barrier and Green Belt Around Mine and Other Built-Up Area	
4	Biological Reclamation After Back Filling in The Mined-OutPits	

संलग्न :– उपरोक्तानुसार एनेक्जर–1.

(सुधीर कुमार अग्रवाल)
प्रधान मुख्य वन संरक्षक (व.प्रा.) एवं
मुख्य वन्यप्राणी अभिरक्षक, छत्तीसगढ़

पृ. क्रमांक/व.प्रा./प्रबंध–637/5413 नवा रायपुर, दिनांक 25/09/2023

प्रतिलिपि सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित :–

1. अपर प्रधान मुख्य वन संरक्षक (भू–प्रबंध) छत्तीसगढ़, नवा रायपुर। कृपया आवेदक संस्थान से अनुमोदित राशि एकमुश्त जमा कराये जाने के संबंध में आवश्यक कार्यवाही किया जाना सुनिश्चित करेंगे।
2. मुख्य वन संरक्षक, जगदलपुर वृत्त की ओर उनके संदर्भित पत्र के अनुक्रम में सूचनार्थ प्रेषित।
3. वनमंडलाधिकारी, दंतेवाड़ा वनमण्डल छत्तीसगढ़।
4. आवेदक संस्था, मुख्य कार्यपालन अधिकारी, एनएमडीसी–सीएमडीसी लिमिटेड, ग्रीन वैली सिटी, हाऊसिंग बोर्ड कॉलोनी, पोस्ट–सेजबहार, एन.एच–30, रायपुर (छ.ग.) ई–मेल ceonmdccmdc@gmail.com

प्रधान मुख्य वन संरक्षक (व.प्रा.) एवं
मुख्य वन्यप्राणी अभिरक्षक, छत्तीसगढ़

Annexure - 1

Proposed Expenditure for Wildlife Management and Conservation Plans in Bailadila Iron Ore Deposit No.- 4, Dantewada Forest Division

ProposedExpenditure(Rs. Inlacs)																	
Sr.No	ITEM	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year	11 Year	12 Year	13 Year	14 Year	15 Year	Total (Rs inlacs)
1	(A) Improvement of water availability by digging of ponds and water holes.	25.0	25.0	25.0	25.0	25.0	25.0	20.0	20.0	20.0	10.0	10.0	5.00	5.00	5.00	5.00	250.0
	(B) Improvement and maintenance of existing water sources	10.0	10.0	10.0	10.0	10.0											50.0
	(C) Soil water conservation works (LBCD, BCD, Gulley plucking, Dams, Gabion structures etc.) specially in Tree Fern area falling in Buffer zone (10 Kms radius) of Mines and other eroded area.	25.0	25.0	25.0	25.0	15.0	15.0										130.0
2	(A) Removal of invasive Alien species hindering the growth and regeneration of valuable species for wildlife. (800 Ha)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0								
		100 Ha	100 Ha	100 Ha	100 Ha	100 Ha	100 Ha	100 Ha	100 Ha								80.0
	(B) Mopping up the same area to remove the reminants		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0							
			100 Ha	100 Ha	100 Ha	100 Ha	100 Ha	100 Ha	100 Ha	100 Ha							32.0

3	(A) Pasture development by removing alien species in natural grass lands and also in potential grass lands where the density of canopy<0.4(500 Ha)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0					100.0
		50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha					
	(B) Pasture development by Planting /sowing of palatable grass seeds/ slips (500Ha)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0					160.0
		50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha					
	(C) Maintenance works forfirst Threeyears(500Ha)		1.5	3.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.0	1.5	49.5
		0	50	100	150	150	150	150	150	150	150	150	150	100	50	0
4	(A) Improvement of stocky dressing of existing stumps of browsable species and cut back (The DFO should inspect the area and after proper marking and hammering, the dressing of live stumpscan be permitted) and Gap plantation of fruit bearing trees like Aonla, Jamun, Bel, Ghular, Bargad, and Peepal by planting in1st earitself) (500Ha)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5					75.0
		50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha	50 Ha					
	(B) Maintenance of fruittreesplantationfor5years		2.0	4.0	6.0	8.0	10.0	10.0	10.0	10.0	10.0	10.0	8.0	6.0	4.0	100.0
			50	100	150	200	250	250	250	250	250	250	200	150	100	50
5	MonitoringandEvaluationofworks		-	-	-	-	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	20.0
6	**FireProtection**	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	150.0

7	**(A) Habitat improvement activities - food resource enhancement for Sloth Bear and FHA i.e. 30plots @ 4 Ha each (120 Ha.) Please Refer Tableno 7.1 and 7.2 in Chapterno. 7 for selection of plantspeciesfor habitat enrichment.**	16.0	16.0	16.0	6.4	6.4	6.4	6.4	6.4	3.2	3.2	3.2	3.2	3.2	0	0	**96.0**
		20 Ha	20 Ha	20 Ha	8Ha	8Ha	8Ha	8Ha	8Ha	4Ha	4Ha	4Ha	4Ha	4Ha			
	(B) 5 years maintenance of food resource enhancement area for Sloth Bear and FHA i.e.,30 plots @ 4 Ha each (120 Ha.)		2.8	5.6	8.4	9.52	9.52	10.64	8.96	7.28	5.6	5.04	4.48	3.92	3.36	0	**85.12**
		0	20 Ha	40 Ha	60 Ha	68 Ha	68 Ha	76 Ha	64 Ha	52 Ha	40 Ha	36 Ha	32 Ha	28 Ha	24 Ha		
8	**(A) Budgetary provision for Development of Reptile habitat niche- 7 locations 20 niches and maintenance from 8th year upto 12th year. Please refer point no. 7.12.2 for plan in Chapter no. 7**	5.0	5.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0	0	0	**25.00**
		5 Niches	5 niches	2 niches	2 niches	2 niches	2 niches	2 niches									
	(B) Budgetary provision for Development of Denning niche for small mammals 'Rock boulder den 7 locations 10 nichesand maintenance from 8th year upto 12th year Please refer point no. 7.12.2 for plan in Chapter no. 7	3.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0	0	0	**15.0**
		3dens	2dens	1 den	1 den	1 den	1 den	1 den									

	(C) Budgetary provision for Development of Denning niche for small mammals 'earthen den' 7 locations 10 niches and maintenance from 8th year upto 12th year. Please refer point no. 7.12.2 for plan in Chapter no. 7	3.0 3 dens	2.0 2 dens	1.0 1 den	1.0 1 den	1.0 1 den	1.0 1 den	1.0 1 den	1.0	1.0	1.0	1.0	1.0	0	0	0	**15.0**
	(D) Budgetary provision for Monitoring of dens	0	0	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0	0	0	0	0	0	**3.5**
	(E) Budgetary provision for Development of earthen and rock dens after monitoring	0	0	0	0	15.0 15 dens	15.0 15 dens	0	0	0	0	0	0	0	0	0	**30.0**
9	**(A) Status Survey of Snake Species. Initiate baseline surveys of snake in the nearest five protected forests sharing the buffer zone**	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0	0	0	0	0	**15.0**
	(B) Monitoring and assessment of the survey in 2nd year onwards	0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0	0	0	0	**10.0**
	(C) Based on the availability of the species, the survey can be extended to the rests of next five in 3rd year.	0	0	2.0	0	0	2.0	0	0	2.0	0	0	2.0	0	2.0	0	**10.0**
	(D) Monitoring and assessment of the status survey in 4th,6th, 8th and 10th year	0	0	0	2.0	0	2.0	0	2.0	0	2.0	0	0	0	0	0	**8.0**

10	Arrangement of utilityvehicle for the field to transport of man, materials used in Human- Wildlife conflicts. With POL and maintenance for 10 years	**70.0**	**5.0**	**5.0**	**5.0**	**5.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**0**	**0**	**0**	**0**	**0**	**110.0**
11	Empowering and sensitizing people for protection of wildlife and Eco-development works etc.	10.0	10.0	8.0	8.0	8.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	**100.0**
12	**Budget for Status survey of threatened mammals and intensive monitoring at least once in two years.**	4.0	2.0	0	2.0	0	2.0	0	2.0	0	2.0	4.0	0	2.0	0	2.0	**22.00**
13	Awareness and Training of people to Reduce Human-Wildlife Conflicts.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	**15.00**
	Total	**227.5**	**169.8**	**169.6**	**168.3**	**172.42**	**168.42**	**128.54**	**129.36**	**112.48**	**98.3**	**59.24**	**48.68**	**41.62**	**34.36**	**27.5**	**1756.12**
	10%Escalation	**22.75**	**16.98**	**16.96**	**16.83**	**17.242**	**16.842**	**12.854**	**12.936**	**11.248**	**9.83**	**5.924**	**4.868**	**4.162**	**3.436**	**2.75**	**175.612**
	GrandTotal	**250.25**	**186.78**	**186.56**	**185.13**	**189.662**	**185.262**	**141.394**	**142.296**	**123.728**	**108.13**	**65.164**	**53.548**	**45.782**	**37.796**	**30.25**	**1931.732**

PCCF (WL) & CWLW

Chhattisgarh

आदेश द्वारा श्री अरूण कुमार पाण्डेय,भा.व.से.अपर प्रधान मुख्य वन संरक्षक
एवं सदस्य सचिव, छत्तीसगढ़ राज्य जैवविविधता बोर्ड,
अरण्य भवन, नॉर्थ ब्लॉक सेक्टर-19, नवा रायपुर अटल नगर, जिला-रायपुर
ईमेल– cgmsbdb@gmail.com फोन/फै.नं.– 0771-2512807

//आदेश//

आदेश क्रमांक/जै.वि.बो./17 **रायपुर,दिनांक 21/08/2023**

भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली के पत्र कमांक IA-J-11015/104/2021-IA-II (NCM), दिनांक 11.03.2022 द्वारा वन संरक्षण अधिनियम 1980 के अंतर्गत वन भूमि के गैर वानिकी उपयोग हेतु NMDC-CMDC Ltd.(NCL) संस्थान द्वारा प्रस्तुत प्रस्ताव Proposal for Diversion of Forest Land For Bailadila Iron Ore Deposit - 4 Mine के संबंध में जारी TOR के बिंदु कमांक 18 के पालन में आवेदक संस्थान द्वारा तैयार किए गए "Biodiversity Conservation Plan and Soil Water & Moisture Conservation Plan for Tree Fern Area" का परीक्षण बोर्ड के विशेषज्ञों के समक्ष संस्थान द्वारा दिए गए प्रस्तुतीकरण दिनांक 18.08.2023 में किया गया। प्लान के संबंध में विस्तृत चर्चा NMDC के अधिकारियों एवं प्लान तैयार करने वाली संस्थान से करने के पश्चात् प्रस्तावित संशोधन/सुधारों को प्रोजेक्ट में शामिल कराया जाकर प्लान को अनुमोदित किया गया। प्लान के संबंध में वनमंडलाधिकारी, दंतेवाड़ा एवं मुख्य वन संरक्षक, जगदलपुर वृत्त द्वारा पत्र कमांक/व.त.अ./1911 दिनांक 10.08.2023 के माध्यम से की गई अनुशंसाओं एवं बोर्ड के विशेषज्ञों द्वारा सुझावए गए संशोधनों को समाहित करते हुए संशोधित प्रोजेक्ट जिसकी कुल लागत राशि रू. 31.07 करोड़ है, का अनुमोदन निम्नानुसार किया जाता है –

1. प्लान में प्रावधानित कार्यों एवं कार्यवार व्यय का आंकलन निम्नानुसार है –

Sr.No	ITEM	Total (Rs. In Lacs)
1	Cost of Infrastructure development for nursery for Tree Fern and RET spp.	100.00
	Nursery Development for Tree Fern and RET species for plantation of 125 Ha. In Impact / Buffer area (Please Refer Chapter 5, point 5.11 of the Plan)	66.4126
2	**Conservation of Tree Fern (For details Please refer chapter 5 of the Plan)** In situ conservation & Protection of Tree fern and its associates falling in Project area Within ML area and along Galli nalla (75. 0 Ha)	100.00
	Ex situ conservation of Tree fern and. its associates falling outside Project area (Within 10 Km from periphery of ML area) (75 Ha.)	105.00
3	Budgetary provision for RET species (i) Nursery Development for RET species for plantation of 50 Ha. In Impact / Buffer area. (Please refer chapter 5 of the Plan)	40.659
	(ii) In-situ Conservation of RET species in PF/RF of (Within 10 Km from periphery of ML area) and its maintenance one plot of 10 Ha. Each year for 5 years (5 Plots = 50 Ha.)	100.00
	(iii) Maintenance of RET species in-situ plots (5years) (50 Ha.)	75.00
	(iv)Ex-situ Conservation of RET species and including maintenance for 5 years (Within 10 Km from periphery of ML area) (50 Ha)	150.00
4	Budgetary provision for Biodiversity Conservation & protection of Forest. (Watch and Ward for 15 years)	75.00
5	Biodiversity Park is proposed to develop at Dantewada district for Education purpose of Front-line staff, Miners, Educational Institutes, reaserchers and local People.	200. 00

Sr.No	ITEM	Total (Rs. In Lacs)
6	Budgetary provision for Research Monitoring and Evaluation of plan including cost of subject specialist/ experts/ expert NGO.	35.00
7	Development of Training and Interpretation center (A). Construction of center	100.00
	(B). Regular Training, Awareness program, Seminar, Lectures and Orientation program on Biodiversity Conservation	90.00
8	Budgetary provision for Training & Awareness for BMC Members at Village level in Buffer area.	90.0
9	(I) Budgetary provision for Grass and leaf fodder species in common land, /farmers land area in 24 affected villages in Impact / Buffer zone (total 120 Ha). Grass land development works may be carried out in nearby forest area by the department, as per the working plan provisions.	48.00
	(II) Additional budgetary provision for Maintenance of grass and leaf fodder plots 5 years	25.00
	(III) Budgetary provision for Additional 100 Ha grass and leaf fodder plot in adjoining forest area (10 Ha each from 6th year onward) including maintenance. (For introducing Systems of rotational grazing)	50.00
10	Plantation of Horticulture species and Ethno- botanical/ medicinal importance species in affected 24 villages and their maintenance for 3 years	120.00
11	Organizing study tour and exposure visit within country for Experts/ Scientists/ People/ Villagers/ Students etc.	50.00
12	**Monitoring of EX-SITU andIN-SITU Conservation activities:** A panel of Expert team shall monitor the EX-SITU and IN-SITU Conservation activities. The budget shall be deposited in Chhattisgarh Biodiversity Board's account.	40.00
13	(I) Budgetary provision for Providing and fixing of Bird nesting boxes (50 boxes in 4 locations and replicate after 2 years) i.e., 400 boxes, under the supervision of Avifauna Experts from the Board.	8.00
	(II) Budgetary provision for Monitoring activity after 2 years	2.00
14	Budgetary provision for Butterfly habitat development in 5 suitable areas	15.00
15	Estimated cost of Soil, Water and Moisture conservation in respect of Tree Fern area fall in ML area. Please refer Part B and Chapter IV	910.1382
16	Repair and Maintenance of SWM Conservation Structure After Every Third year till Plan Period	40.00
17	Provision for Chain link fencing 6feet height for the protection of tree fern area in Buffer Zone (10 Kms radius from ML area) and other area having sporadic occurrence of tree fern species.	190.00
Total		**2825.212**
10% Escalation		**282.5212**
Grand Total		**3107.733**

उक्त कार्यों के सम्पादन हेतु समय–सीमा एवं वर्षवार वित्तीय आंकलन संलग्न है। (**Annexure-1**)

2. RET (Rare Endangered &Thretened) प्रजाति के *Ex-situ* संरक्षण हेतु एवं साथ ही ट्री फर्न के Ex-situ संरक्षण हेतु प्रस्तावित नर्सरी में निम्नानुसार प्रजातियों के पौधे तैयार किया जाना सुनिश्चित किया जावे। (जिसे पश्चात्वर्ती स्थिति में विभिन्न उपयुक्त स्थानों में लगाया जा सकता है) (**Annexure-2**) क्षेत्र में पाई जाने वाली RET प्रजातियॉ, जो प्लान में शामिल हैं एवं साथ ही जैवविविधता बोर्ड के विशेषज्ञों द्वारा पूर्व में अध्ययन के दौरान चिन्हित की गई हैं, निम्नानुसार हैं –

S.N.	Botanical Name/Local Name	Family	S.N.	Botanical Name/Local Name	Family
1	*Acacia concinna (Shikakai)*	Fabaceae	19	*Droceraburmanii (Tropical sundew)*	*Droseraceae*
2	*Alocasia decipiens*Schott	Araceae	20	*Embeliabasaal*(Roem. & Schult.) A. DC./Babrang, Baibrang, Baya Birang	Primulaceae
3	*Aristolochia indica* L./ Iswari, Iswarmool, Eswaramooli	Aristolochiaceae	21	*Equisetum (Horse Tail or Snake grass)*	*Equisetaceae*
4	*Blepharispermum subsessile* DC./ Rasna	Asteraceae	22	*Gloriosa superba* L./ Languli, Kalihari	Colchicaceae
5	*Breynia retusa* (Dennst.) Alston	Phyllanthaceae	23	*Gymnemainodorum*	*Apocynaceae*
6	*Celastruspaniculatus*Willd./Malkangni, Angul	Celastraceae	24	*Gymnemasylvestre*R.Br./ Gudmar, Gurmar	Apocynaeae
7	*Cledodendrumserretum (Bag Flower)*	Lamiaceae	25	Gymnosporia bailadillana Narayan. & Mooney	Celastraceae
8	*Cochlospermumreligiosum*(L.) Alston/ Kumbi, Gabdi, Ganiar, Galgal, Galgala	Bixaceae	26	*Huberanthacerasoides*	*Annonaceae*
9	*Cosmostigmaracemosum*	*Apocynaceae*	27	*Litseaglutinosa*(Lour.) Robinson/ Garbijaur, Maida, Maidalakri	Lauraceae
10	*Curculigoorchioides (Kali Musli)*	Hypoxidaceae	28	*Mucuna pruriens* (L.) DC./ Kavach, Kiwach	Leguminosae
11	*Curcuma petiolata*Roxb./Jangli Haldi	Zingiberaceae	29	*Peucedanumnagpurense*(C.B. Clarke) Prain	Apiaceae
12	*Cyathea alata (Tree Fern Sps.)*	*Cyayheaceae*	30	*Plumbago zeylanica (Ceylon leadwort)*	*Plubaginaceae*
13	*Cyathea arborea (Tree fern Sps.)*	*Cyayheaceae*	31	*Pterocarpus marsupium* Roxb./Bijasal, Vijayasar	Leguminosae
14	*Dilleniaaurea*Sm./ Kalle	Dilleniaceae	32	Pueraria tuberosa (Willd.) DC./ Vidharikand, Vidari, Patal Kumbha	Leguminosae
15	*Dilleniapentagyna*Roxb./ Karmal, KallaKarmeta	Dilleniaceae	33	*Solanum erianthum*	*Solanaceae*
16	*Dioscoreahispida*Dennst./Baichadi, Karodi	Dioscoreaceae	34	*Strychnospotatorum (Cleaning Nut Tree)*	*Loganiaceae*
17	*Dracaena terniflora*Roxb.	Asparagaceae	35	*Symplocosracemosa*Roxb./Loadh, Loadhra	Symplocaceae
18	*Drimia indica* (Roxb.) Jessop/ Janglipiyaz, Kande, Koli-kanda,	Asparagaceae	36	*Utricularia sps.(Bladderworts)*	*Lentibulariaceae*

3. ट्री फर्न एरिया जिन क्षेत्रों में पाया जाता है, संबंधी जानकारी प्लान के पैरा 5.7 A & B में दी गयी है। सुनिश्चित किया जावे कि जिन नालों में ट्री फर्न पाये जा रहे है, उन समस्त की सुरक्षा मजबूत चैनलिंक फेसिंग के माध्यम से एवं भूजल संरक्षण कार्य वर्षवार व्यय के आंकलन के बिन्दु क्रमांक 15 एवं 17 में अनुमानित राशि क्रमशः 910.1382 लाख एवं 190.00 लाख से की जावे। अध्ययन क्षेत्र, (कोर जोन एवं बफर जोन जो कि माईनिंग लीज एरिया से 10 कि.मी. की परिधि में है) में आने वाले समस्त नालों जिनमें ट्री फर्न पाये जा रहे है कि समुचित सुरक्षा सुनिश्चित की जावे।

4. माईनिंग लीज एरिया के 10 Km की परिधि के अंतर्गत सीमा पर स्थित 24 ग्रामों में इको विकास के कार्य में प्राथमिकता पूर्वक घास एवं लैग्यूम प्रजातियों का रोपण उपलब्ध स्थलों में ग्रामवासियों की सहमति से इस प्रकार किया जावे कि मवेशियों के लिये चारे की आपूर्ति हो सके, जिससे कि वनक्षेत्र में अनयिमित चराई का भार न्यूनतम रहे। वन विभाग की योजनाओं में यदि घास भूमि विकास का कार्य समीप के वनक्षेत्रों में किये जा सकते है तो प्रावधानित राशि (**Annexure-I** बिन्दु कमांक 9**(I) , (II)** व **III** अनुसार) से यह कार्य किया जावे।

5. जिले में उचित स्थल का चयन कर जैवविविधता पार्क (Annexure-1 बिंदु क. 5 में प्रावधानित राशि से) तैयार किया जावे। माइनिंग लीज एरिया में पायी जाने वाली RET प्रजातियों के अतिरिक्त अन्य विशिष्ट प्रजातियों सहित हर्ब/शर्ब/क्लाइम्बर्स/ मेडिसिनल प्लांट आदि का प्रदर्शन क्षेत्र तैयार हो सके, जो कि शैक्षणिक संस्थानों अनुसंधानकर्ताओं एवं विषय विशेषज्ञों हेतु उपयोगी हो सकेगा।
6. प्रस्तावित कार्यो में भविष्य की परिस्थितियों में यदि विचलन किया जाना प्रस्तावित हो तो मुख्य वन संरक्षक की अनुमति से वनमंडलाधिकारी कार्य करने हेतु सक्षम होंगे।
7. जैवविविधता के संरक्षण एवं संवर्धन के लिए *In-situ* एवं *Ex-situ* संरक्षण कार्यो की सतत मॉनिटरिंग बोर्ड के अधिकारियों एवं विषय विशेषज्ञों द्वारा की जावेगी इस हेतु अनुमोदित तालिका (Annexure-1) के बिन्दु कमांक 12 में प्रावधानित राशि बोर्ड के खाते में जमा करते हुए अनुमोदित प्लान की शेष राशि प्रचलित नियम अनुसार यूजर एजेन्सी वन विभाग में जमा करायेंगे।
8. उक्त जैवविविधता संरक्षण योजना की लागत राशि रू. 31.07 करोड़ रू. वर्तमान दरों पर है। परियोजना में विलंब होने से समय लागत बढ़ेगी, जिसमें प्राईस इन्डेक्स के हिसाब से वृद्धि होगी। परियोजना के कियान्वयन के समय जो भी लागत आयेगी, वह प्रस्तावकों को वन विभाग में एकमुश्त जमा करानी होगी, जिससे मूल्य वृद्धि के प्रभाव को समाप्त किया जा सके। वन विभाग इस प्रकार जमा की गई राशि से जैवविविधता संरक्षण योजना में दर्शाए समय सारणी के अनुसार कियान्वयित करेगा।
9. अनुमोदित जैवविविधता संरक्षण प्लान में दर्शाए गए घटकों के संगत किए जाने वाले क्षेत्रीय कार्यवार/स्थलवार प्रोजेक्ट संबंधित वनमंडल अधिकारी द्वारा विभाग में तत्समय प्रचलित निर्देशों, व्यय नार्म्स आदि के अनुरूप तैयार कर सक्षमता अनुसार मकनीकी स्वीकृति जारी की जावेगी/प्राप्त की जावेगी। संबंधित मुख्य वन संरक्षक द्वारा प्रोजेक्ट की तकनीकी स्वीकृति/अनुशंसा के साथ प्रशासकीय स्वीकृति हेतु सदस्य सचिव, राज्य जैवविविधता बोर्ड को प्रेषित किया जावेगा। प्रशासकीय स्वीकृति आदेश जारी होने के पश्चात् कार्यों का कियान्वयन वनमंडलाधिकारी के द्वारा किया जावेगा, कार्यों का सतत् निरीक्षण मुख्य वन संरक्षक, जगदलपुर एवं बोर्ड के अधिकारियों/विशेषज्ञों द्वारा समय-समय पर किया जावेगा।

संलग्न – उपरोक्तानुसार।

(अरूण कुमार पाण्डेय)
सदस्य सचिव,
छत्तीसगढ़ राज्य जैवविविधता बोर्ड,
नवा रायपुर अटल नगर

पृ.क्रमांक/जै.वि.बो./1509 रायपुर,दिनांक 21/08/2023

प्रतिलिपि :–

1. अपर प्रधान मुख्य वन संरक्षक एवं नोडल अधिकारी (भू. प्रबंध) अटल नगर नवा रायपुर की ओर सूचनार्थ।
2. मुख्य वन संरक्षक, जगदलपुर वृत्त को पत्र कमांक 1911, दिनांक 10.08.2023 के संबंध में सूचनार्थ एवं आवश्यक कार्यवाही हेतु।
3. वनमंडलाधिकारी दंतेवाड़ा, वनमंडल दंतेवाड़ा
4. मुख्य कार्यपालन अधिकारी, NMDC- CMDC Ltd.(NCL)
5. संस्थान वी. द. फारेस्टर वेलफेयर सोसायटी, नया रायपुर

की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

सदस्य सचिव,
छत्तीसगढ़ राज्य जैवविविधता बोर्ड,
नवा रायपुर अटल नगर

Annexure - I

Approved Expenditure For Bio Diversity Conservation

In Iron Ore Mines Area NMDC CMDC Ltd. Deposit 4

(W.R. to the Project titled " Biodiversity Conservation Plan and Soil Water & Moisture Conservation Plan for Tree Fern Area" approved vide Member Secretary, Chhattisgarh State Biodiversity Board's Order No. 17, dated 21.08.2023)

Dantewada Forest Division

Sr. No	ITEM	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total (Rs. In Lacs)
1	Cost of Infrastructure development for nursery for tree fern and RET spp.	50.00	20.00	10.00	10.00	10.00	0	0	0	0	0	0	0	0	0	0	**100.00**
	Nursery Development for Tree Fern and RET species for plantation of 125 Ha. In Impact / Buffer area Please Refer Chapter 5, point 5.11	47.4375	12.9375	4.7438	1.2938	0	0	0	0	0	0	0	0	0	0	0	**66.4126**
2	**Conservation of Tree Fern (For details Please refer chapter 5)** In situ conservation & Protection of Tree fern and its associates falling in Project area Within ML area and along Galli nalla (75. 0 Ha)	10	10	10	10	10	5	5	5	5	5	5	5	5	5	5	**100**
	Ex situ conservation of Tree fern and. its associates falling outside Project area (Within 10 Km from periphery of ML area) (75 Ha.)	0	0	0	20	20	20	5	5	5	5	5	5	5	5	5	**105**

Member Secreatary,
Chhattisgarh State Biodiversity Board,
Naya Raipur.

Sr. No	ITEM	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total (Rs. In Lacs)
3	Budgetary provision for RET species (For details Please refer chapter 5) (i) Nursery Development for RET species for plantation of 50 Ha. In Impact / Buffer area. Please refer chapter 5	29.90	7.47	2.99	0.299	0	0	0	0	0	0	0	0	0	0	0	**40.659**
	(ii) In-situ Conservation of RET species in PF/RF of (Within 10 Km from periphery of ML area) and its maintenance one plot of 10 Ha. Each year for 5 years (5 Plots = 50 Ha.)	20.0 1 Plot (10Ha.)	20.0 1 Plot (10Ha.)	20.0 1 Plot (10Ha.)	20.0 1 Plot (10 Ha.)	20.0 1 Plot (10 Ha.)	0	0	0	0	0	0	0	0	0	0	**100.00**
	(iii) Maintenance of RET species in-situ plots (5years) (50 Ha.)	0	3.0 1 plot (10 ha)	6.0 2 plots (20Ha.)	9.0 3 plots (30Ha.)	12.0 4 Plots (40Ha.)	15.0 5 plots (50Ha.)	12.0 4 plots (40Ha.)	9.0 3 plots (30Ha.)	6.0 2 plots (20Ha.)	3.0 1 plot (10Ha.)	0	0	0	0	0	**75.00**
	(iv)Ex-situ Conservation of RET species and including maintenance for 5 years (Within 10 Km from periphery of ML area) (50 Ha)	0	0	0	30.0 10 Ha	30.0 10 Ha	30.0 10 Ha	30.0 10 Ha	30.0 10 Ha	0	0	0	0	0	0	0	**150.0**
4	Budgetary provision for Biodiversity Conservation & protection of Forest. (Watch and Ward for 15 years	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	**75.00**

Member Secreatary,
Chhattisgarh State Biodiversity Board,
Naya Raipur.

Sr. No	ITEM	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total (Rs. In Lacs)
5	Biodiversity Park is proposed to develop at Dantewada district for Education purpose of Front-line staff, Miners] Educational Institutes, reaserchers and local People.	150.0	50.0	0	0	0	0	0	0	0	0	0	0	0	0	0	**200. 0**
6	Budgetary provision for Research Monitoring and Evaluation of plan including cost of subject specialist/ experts/ expert NGO.	0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	1.0	1.0	**35.00**
7	Development of Training and Interpretation center (A) Construction of center	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**100.00**
	(B) Regular Training, Awareness program, Seminar, Lectures and Orientation program on Biodiversity Conservation	0	10	10	10	10	5	5	5	5	5	5	5	5	5	5	**90.00**
8	Budgetary provision for Training & Awareness for BMC Members at Village level in Buffer area.	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	**90.0**
9	I) Budgetary provision for Grass and leaf fodder species in common land, /farmers land area in 24 affected villages in Impact / Buffer zone (total 120 Ha). Grass land development works may be carried our in nearby Forest area by the	10.0	10.0	10.0	10.0	8.0	0	0	0	0	0	0	0	0	0	0	**48.00**
		25 Ha (5	25 Ha (5	25 Ha (5	25 Ha (5	20 Ha (4											

Member Secreatary,
Chhattisgarh State Biodiversity Board,
Nava Raipur.

Sr. No	ITEM	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total (Rs. In Lacs)
	department, as per the working plan provisions.	village)	village)	village)	village)	village)											
	II) Additional budgetary provision for Maintenance of grass and leaf fodder plots 5 years	0	1.0 25 Ha	2.0 50 Ha	3.0 75 Ha	4.0 100 Ha	4.8 120 Ha	3.8 95 Ha	2.8 70 Ha	1.8 45 Ha	1.0 25 Ha	0.8 20 Ha	0	0	0	0	**25.00**
	(III) Budgetary provision for Additional 100 Ha grass and leaf fodder plot in adjoining forest area (10 Ha each from 6th year onward) including maintenance. (For Introducing System of rotational grazing)	0	0	0	0	0	5.0 10 Ha	5.0 10 Ha	5.0 10 Ha	5.0 10 Ha	5.0 10 Ha	5.0 10 Ha	5.0 10 Ha	5.0 10 Ha	5.0 10 Ha	5.0 10 Ha	**50.00**
10	Plantation of Horticulture species and Ethno-botanical/ medicinal importance species in affected 24 villages and their maintenance for 3 years	40.0	40.0	40.0	0	0	0	0	0	0	0	0	0	0	0	0	**120.0**
11	Organizing study tour and exposure visit within country for Experts/ Scientists/ People/ Villagers/ Students etc.	10.0	10.0	10.0	10.0	10.0	0	0	0	0	0	0	0	0	0	0	**50.00**

Member Secretary,
Chhattisgarh State Biodiversity Board,
Naya Raipur.

Sr. No	ITEM	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total (Rs. In Lacs)
12	**Monitoring of EX-SITU andIN-SITU Conservation activities:** A panel of Expert team shall monitor the EX-SITU and IN-SITU Conservation activities. The budget shall be deposited in Chhattisgarh Biodiversity Board`s account.	40.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**40.0**
13	(I) Budgetary provision for Providing and fixing of Bird nesting boxes (50 boxes in 4 locations and replicate after 2 years) i.e., 400 boxes, under the supervision of Avifauna Experts from the Board.	4.00 200 Boxes	0	4.0 200 Boxes	0	0	0	0	0	0	0	0	0	0	0	0	**8.00**
	(II) Budgetary provision for Monitoring activity after 2 years	0	0	1.00	0	1.00	0	0	0	0	0	0	0	0	0	0	**2.00**
14	Budgetary provision for Butterfly habitat development in 5 suitable areas.	9.0 3 areas	6.0 2 areas	0	0	0	0	0	0	0	0	0	0	0	0	0	**15.00**
15	Estimated cost of Soil, Water and Moisture conservation in respect of Tree Fern area fall in ML area. Please refer Part B and Chapter IV	**910.1382**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**910.1382**

Member Secretary,
Chhattisgarh State Biodiversity Board,
Naya Raipur.

Sr. No	ITEM	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total (Rs. In Lacs)
16	Repair and Maintenance of SWM Conservation Structure After Every Third year till Plan Period	0	0	0	10	0	0	10	0	0	10	0	0	10	0	0	**40.00**
17	Provision for Chain link fencing 6feet height for the protection of tree fern area in Buffer Zone (10 Kms radius from ML area) and other area having sporadic occurrence of tree fern species.	50.0	50.0	50.0	40.0	0	0	0	0	0	0	0	0	0	0	0	**190.0**
	Total	**1491.476**	**264.4075**	**194.7338**	**197.5928**	**149**	**98.8**	**89.8**	**75.8**	**41.8**	**48**	**33.8**	**33**	**43**	**32**	**32**	**2825.212**
	10% Escalation	**149.1476**	**26.44075**	**19.47338**	**19.75928**	**14.9**	**9.88**	**8.98**	**7.58**	**4.18**	**4.8**	**3.38**	**3.3**	**4.3**	**3.2**	**3.2**	**282.5212**
	Grand Total	**1640.623**	**290.8483**	**214.2072**	**217.3521**	**163.9**	**108.68**	**98.78**	**83.38**	**45.98**	**52.8**	**37.18**	**36.3**	**47.3**	**35.2**	**35.2**	**3107.733**

(Arun Kumar Panday)
Member Secretary
C.G. State Biodiversity Board,
Nava Raipur Atal Nagar

Annexure - II

LIST OF RARE, ENDANGERD AND THREATENED PLANTS SPEICESIN STUDY AREA (Core and Buffer zone)

For Ex-Situ Conservation

(W.R. to the plan " Proposal for Diversion of Forest Land For Bailadila Iron Ore Deposit - 4 Mine")

Sl. No.	Botanical Name/Local Name	Family
1	*Acacia concinna (Shikakai)*	Fabaceae
2	*Alocasia decipiens*Schott	Araceae
3	*Aristolochia indica* L./ Iswari, Iswarmool, Eswaramooli	Aristolochiaceae
4	*Blepharispermum subsessile* DC./ Rasna	Asteraceae
5	*Breynia retusa* (Dennst.) Alston	Phyllanthaceae
6	*Celastruspaniculatus*Willd./Malkangni, Angul	Celastraceae
7	*Cledodendrumserretum (Bag Flower)*	Lamiaceae
8	*Cochlospermumreligiosum*(L.) Alston/ Kumbi, Gabdi, Ganiar, Galgal, Galgala	Bixaceae
9	*Cosmostigmaracemosum*	*Apocynaceae*
10	*Curculigoorchioides (Kali Musli)*	Hypoxidaceae
11	*Curcuma petiolata*Roxb./Jangli Haldi	Zingiberaceae
12	*Cyathea alata (Tree Fern Sps.)*	*Cyayheaceae*
13	*Cyathea arborea (Tree fern Sps.)*	*Cyayheaceae*
14	*Dilleniaaurea*Sm./ Kalle	Dilleniaceae
15	*Dilleniapentagyna*Roxb./ Karmal, KallaKarmeta	Dilleniaceae
16	*Dioscoreahispida*Dennst./Baichadi, Karodi	Dioscoreaceae
17	*Dracaena terniflora*Roxb.	Asparagaceae
18	*Drimia indica* (Roxb.) Jessop/ Janglipiyaz, Kande, Koli-kanda,	Asparagaceae
19	*Droceraburmanii (Tropical sundew)*	*Droseraceae*
20	*Embeliabasaal*(Roem. & Schult.) A. DC./Babrang, Baibrang, Baya Birang	Primulaceae
21	*Equisetum (Horse Tail or Snake grass)*	*Equisetaceae*
22	*Gloriosa superba* L./ Languli, Kalihari	Colchicaceae
23	*Gymnemainodorum*	*Apocynaceae*
24	*Gymnemasylvestre*R.Br./ Gudmar, Gurmar	Apocynaeae
25	Gymnosporia bailadillana Narayan. & Mooney	Celastraceae
26	*Huberanthacerasoides*	*Annonaceae*
27	*Litseaglutinosa*(Lour.) Robinson/ Garbijaur, Maida, Maidalakri	Lauraceae

Member Secreatary,
Chhattisgarh State Biodiversity Board,
Naya Raipur.

Sl. No.	Botanical Name/Local Name	Family
28	*Mucuna pruriens* (L.) DC./ Kavach, Kiwach	Leguminosae
29	*Peucedanumnagpurense*(C.B. Clarke) Prain	Apiaceae
30	*Plumbago zeylanica (Ceylon leadwort)*	*Plubaginaceae*
31	*Pterocarpus marsupium* Roxb./Bijasal, Vijayasar	Leguminosae
32	Pueraria tuberosa (Willd.) DC./ Vidharikand, Vidari, Patal Kumbha	Leguminosae
33	*Solanum erianthum*	*Solanaceae*
34	*Strychnospotatorum (Cleaning Nut Tree)*	*Loganiaceae*
35	*Symplocosracemosa*Roxb./Loadh, Loadhra	Symplocaceae
36	*Utricularia sps.(Bladderworts)*	*Lentibulariaceae*

सदस्य सचिव, छत्तीसगढ़ राज्य जैवविविधता बोर्ड के आदेश कमांक 17, दिनांक 21.08.2023 के बिंदु कमांक 02 से संबंधित कार्यों हेतु अनुमोदित।

(Arun Kumar Panday)
Member Secretary
C.G. State Biodiversity Board,
Nava Raipur Atal Nagar

NMDC-CMDC LTD

CORPORATE ENVIRONMENTAL POLICY (English Version) (Draft)

NMDC - CMDC Ltd, is a joint venture company between NMDC Ltd. (A Govt. of India undertaking) and CMDC Ltd. (A Govt. of Chhattisgarh undertaking) with a shareholding of 51% and 49% respectively.

NMDC – CMDC Ltd. is involved in the development of few Iron Ore Projects and one Diamond Project in the State of Chhattisgarh. NMDC-CMDC Ltd. is committed to prevention and control of Environmental pollution due to its activities, products, and services. The company will monitor its environmental performance on regular basis to ensure the necessary improvement in the same.

NMDC-CMDC Ltd. shall therefore endeavor to:

- Adopt safe, scientific, and environmentally friendly methods of mining and allied activities and firmly committing itself for total compliance of all applicable environmental laws.
- Maintain the machineries in excellent condition to ensure minimum impact of their operation on environment.
- Install, operate, and monitor facilities for prevention and control of air, water, and land pollution.
- Conserve the natural resources by ensuring minimum wastage of its products and optimum consumption of electricity, fuel oil, lubricant oil, water.
- Promote environmental awareness amongst employees, local communities, and interested parties through pro-active communication and training.
- Remain prepared and respond effectively to all foreseeable emergency situations.

Management will review the suitability and effectiveness of environmental control systems and their performances periodically.

This policy shall be communicated to all our employees and will be made available to the public on request.

Sd/-
Raipur Amitava Mukharjee
Date: Chairman – Cum – Managing Director

CORPORATE ENVIRONMENTAL POLICY (HINDI VERSION)

एनएमडीसी–सीएमडीसी लिमिटेड

पर्यावरण नीति (प्रारूप)

एनएमडीसी – सीएमडीसी लिमिटेड, एनएमडीसी लिमिटेड (भारत सरकार का उपक्रम) और सीएमडीसी लिमिटेड (छत्तीसगढ़ सरकार का उपक्रम) के बीच एक संयुक्त उद्यम कंपनी है, जिसमें एनएमडीसी लिमिटेड और सीएमडीसी लिमिटेड की क्रमशः 51% और 49% की हिस्सेदारी है।

एनएमडीसी – सीएमडीसी लिमिटेड, छत्तीसगढ़ राज्य में कुछ लौह अयस्क परियोजनाओं और एक हीरा परियोजना के विकास में प्रयासरत है। एनएमडीसी – सीएमडीसी लिमिटेड अपनी गतिविधियों, उत्पादों और सेवाओं के कारण होने वाले पर्यावरण प्रदूषण की रोकथाम और नियंत्रण के लिए प्रतिबद्ध है। कंपनी अपने पर्यावरण निष्पादन का सतत रुप से निगरानी करेगी जिससे इसमें आवश्यक सुधारो को सुनिश्चित किया जा सके।

एनएमडीसी – सीएमडीसी लिमिटेड इस हेतु प्रयास करेगा कि :–

- सुरक्षित, वैज्ञानिक और पर्यावरण के मैत्रीपूर्ण खनन प्रणालियों एवं इससे संबद्ध गतिविधियों को अपनाये एवं स्वयं को सभी प्रयोज्य पर्यावरण कानूनों के पूर्ण अनुपालन हेतु दृढ़ता से प्रतिबद्ध करे।
- उपकरणों को उत्कृष्ट स्थिति में बनाये रखे जिससे कि पर्यावरण पर उनके संचालन का न्यूनतम प्रभाव सुनिश्चित किया जा सके।
- वायु, जल और भूमि प्रदुषण की रोकथाम और नियंत्रण हेतु सुविधाओं की स्थापना, संचालन और निगरानी की जाये।
- इसके उत्पादों के न्यूनतम अपव्यय एवं बिजली, ईंधन तेल, स्नेहक तेल, पानी के इष्टतम उपयोग को सुनिश्चित करके प्राकृतिक संसाधनों का संरक्षण करे।
- सक्रिय वार्तालाप और प्रशिक्षण के माध्यम से कर्मचारियों, स्थानीय समुदायों और इच्छुक पार्टियों के बीच पर्यावरण जागरूकता को बढ़ावा दिया जाये।
- सभी संभावित आपात स्थितियों के लिए तैयार रहे एवं प्रभावी ढंग से प्रतिक्रिया दे।

प्रबंधन समय–समय पर पर्यावरण नियंत्रण प्रणालियों की उपयुक्तता और प्रभावशीलता और उनके प्रदर्शन की समीक्षा करेगा।

यह नीति हमारे सभी कर्मचारियों को सूचित की जाएगी और अनुरोध पर जनता को उपलब्ध कराई जाएगी।

हस्ताक्षर

रायपुर
दिनांकः

अमिताव मुखर्जी
अध्यक्ष–सह–प्रबंध निदेशक

Integrated Management System Bailadila Iron Ore Deposit-4, (Draft)

We at Bailadila Iron Ore Mine Deposit-4, an iron ore production unit of NCL Ltd. located at Bhansi in Dantewada district of Chhattisgarh, are committed to implement Integrated Management System comprising of ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 and SA 8000:2014.

In this direction:

- we shall strive to achieve satisfaction of interested parties and customers by continual improvement of our performance and by adhering to the requirements of integrated management system
- we shall conduct our business with integrity, applying social and ethical principles to our relationships with our customers, employees, suppliers, contractors, and other interested parties.
- We shall ensure protection of environment and promoting pollution prevention practices with eco efficient processes.
- We shall ensure prevention of injury and ill health by eliminating or reducing hazards and at-risk behaviors with hierarchy of controls and promote wellness.
- We shall implement collective decision-making process in management system improvement activities.
- We shall comply with applicable legal and other requirements, applicable ILO conventions and codes of the company with respect to quality, environment, occupational health and safety and social accountability.
- We shall define objectives, targets, management programs, and operational control measures in line with requirements of IMS.
- We shall review the policy periodically to measure its effectiveness. It shall be displayed at all work places and residences provided by NCL and employees shall be made aware of requirements. It shall also be made available to public and interested parties on request.

एकीकृत प्रबंधन प्रणाली नीति (प्रारूप)

हम बैलाडीला लौह अयस्क खान निक्षेप क्रमांक 4 जो छत्तीसगढ़ राज्य के दंतेवाड़ा जिले के भांसी स्थित एन सी एल लिमिटेड की एक लौह अयस्क उत्पादन इकाई है, जो ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 and SA 8000:2014 सहित एकीकृत प्रबंधन प्रणाली को कार्यान्वित करने हेतु प्रतिबद्ध हैं l

इस दिशा में:-

- हम हमारे कार्य निष्पादन में लगातार सुधार करते हुए तथा एकीकृत प्रबंधन प्रणाली की आवश्यकताओं का अनुपालन सुनिश्चित करते हुए इच्छुक पार्टियों और ग्राहकों को संतुष्टि प्रदान करने का प्रयास करेंगे ।

- हम ग्राहकों कर्मचारियों आपूर्ति कर्ताओं, ठेकेदारों एवं अन्य इच्छुक पार्टियों के साथ हमारे संबंधों में सामाजिक तथा नैतिक सिद्धांतों को लागू करते हुए हमारे व्यवसाय को सत्य निष्ठा से संचालित करेंगे ।

- हम पर्यावरण का संरक्षण सुनिश्चित करेंगे एवं पर्यावरण कुशल प्रक्रियाओं के साथ प्रदूषण प्रतिबंधात्मक उपायों को बढ़ावा देंगे ।

- हम नियंत्रण के पदानुक्रम सहित जोखिम कम अथवा पूरी तरह नष्ट करते हुए चोट तथा खराब स्वास्थ्य की रोकथाम सुनिश्चित करेंगे और स्वास्थता को बढ़ावा देंगे ।

- हम प्रबंधन प्रणाली सुधार गतिविधियों में सामूहिक निर्णय लेने की प्रक्रिया को कार्यान्वित करेंगे ।

- हम गुणवत्ता पर्यावरणए व्यावसायिक स्वास्थ्य एवं सुरक्षा, तथा सामाजिक उत्तरदायित्व, के संबंध में लागू वैधानिक एवं अन्य आवश्यकताओं, आईएलओ सम्मेलनों के लागू नियमों, एवं कंपनी के कोड्स का अनुपालन सुनिश्चित करेंगे ।

- हम एकीकृत प्रबंधन प्रणाली की प्रणाली की आवश्यकताओं के अनुरूप उद्देश्यों, लक्ष्यों, प्रबंधन कार्यक्रमों, तथा प्रचालन नियंत्रण कार्यक्रमों, को परिभाषित करेंगे ।

- हम नीति के प्रभाव को आंकने हेतु इसकी आवधिक समीक्षा करेंगे । नीति को सभी कार्य स्थलों और एनएमडीसी द्वारा प्रावधानित आवासों पर प्रदर्शित करेंगे और कर्मचारियों को नीति की आवश्यकताओं के बारे में अवगत कराएंगे। इच्छुक पार्टियों और आमजन के अनुरोध पर इसे उपलब्ध भी कराया जाएगा ।

Enclosure -1

भारत सरकार
पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय
एकीकृत क्षेत्रीय कार्यालय,
अरण्य भवन, नार्थब्लॉक,
सेक्टर–19, नयारायपुर, अटलनगर
छत्तीसगढ़ – 492002
ईमेल– iro.raipur-mefcc@gov.in

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FORESTS &
CLIMATE CHANGE
INTEGRATED REGIONAL OFFICE
ARANYA BHAWAN, NORTH BLOCK, SECTOR-19,
NAYA RAIPUR, ATAL NAGAR, CHHATTISGARH - 492002
Email – iro.raipur-mefcc@gov.in

पत्र सं. 3-20/2008(ENV)/ 723 दिनांक: 20/05/2022

सेवा में,

M/s. National Mineral Development Corporation Ltd.
Khanij Bhavan 10-3-331/A,
Castle Hills, Masab Tank,
Hyderabad- 500028.

विषय : Certified copy of compliance status report of EC stipulations -reg.

सन्दर्भ: 1. **F. No. J-11015/261/2007-IA.II (M), dated 23.07.2007.**
2. **Your letter no.T,S&E/BIOM/BC/ENV/EC.CAP.EXP/2021/3065 dated 11.11.2021, received in this office on 07.12.2021.**

महोदय,

With reference to the above, I am directed to enclose herewith certified copy of the Monitoring Report providing status of compliance of environment clearance stipulations in accordance with MoEF& CC, New Delhi's Circular No. J-11011/618/2010-IA-II. (I) dated 30.05.2012 as received vide letter from M/s. National Mineral Development Corporation Ltd., mentioned above.

This issues with approval of the Regional Officer, Integrated Regional Office, Raipur.

Following observations have been made during visit: -

i. Project authorities are directed to submit a report of report on de-silting of tailing dams and management of silt shall be submitted to this office **(Specific Condition -II).**
ii. Project authorities are directed to expedite the matter with local forest and wild life department and submit he physical and financial targets to this office **(General Condition -III)**
iii. Project authorities are directed to submit the noise monitoring reports to this office **(General Condition -VII)**
iv. Project authorities are directed to submit the date of financial closures and final approval of the project to this office **(General Condition -XII)**
v. Project authorities are directed to submit the local newspaper advertisement copies in which EC was published tot his office **(General Condition -XVIII)**

Encl: As stated

भवदीय,

(डॉ भारद्वाज आदिराजु)
वैज्ञानिक 'सी'

Copy to:

i. The Member Secretary, IA Division (Non coal mining), Ministry of Environment, Forest & Climate Change, Vayu wing 3rd floor, Indira Paryavaran Bhawan, Aliganj, Jorbagh road, New Delhi-110003 (Email: pankaj.verma@nic.in).

ii. Addl. Director (Monitoring Cell), Ministry of Environment Forest & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jorbagh Road New Delhi-110003 (Email: shruti.rai@nic.in)

वैज्ञानिक 'सी'

Monitoring Report
On
The Status of Compliance of Environmental Clearance Stipulations Expansion project of Bailadila Iron Ore mine (540.05 ha) Deposit No. 5 at Bailadila range Hills at village-Bacheli, in district South Bastar Dantewada, Chhattisgarh for Environmental Clearance regarding.

1. Contents:

1	Project type	**1 (a) Mining**
2	Name of the Project	**Expansion project of Bailadila Iron Ore mine (540.05 ha) Deposit No. 5 at Bailadila range Hills at village-Bacheli, in district South Bastar Dantewada, Chhattisgarh for Environmental Clearance regarding.**
3	Clearance letter(s)/OM No. & date	**EC.No.J-11015/261/2007-IA.II (M)., dated 23rd July, 2007**
4	Locations a. District (s) b. State c. Latitudes d. Longitudes	 **South Bastar Dantewada** **Chhattisgarh** **18°40'00.548" to 18°41'51.387"** **81°10'41.834" to 81°12'31.892"**
5	Address of Correspondence	**M/s National Mineral Development Corporation Ltd** **Khanij Bhavan 10-3-311/A** **Castle Hills, Masab Tank,** **Hyderabad-500028**
6.	Monitored with	**Shri. Chatubhja Behera, IG(F)**
6	Date of Monitoring	**23/03/2022**

2. Present Status:

a) Chronology of EC and its Amendments:

i. The MoEF&CC has accorded Environmental Clearance for Expansion project of Bailadila Iron Ore mine (540.05 ha) Deposit No. 5 at Bailadila range Hills at village-Bacheli, in district South Bastar Dantewada, Chhattisgarh for Environmental Clearance regardingwith vide letter No. EC.No.J-11015/261/2007-IA.II (M)., dated 23rd July, 2007.

b) Consent to Establish (CTE):

i. CTE was obtained from CECB, Raipur to establish for Run Off Mine (ROM) Iron Ore from 6.0 Million Tonnes per Annum to 10.0 Million Tonnes per Annum with vide letter No. 5318/TS/CECB/2007 dated 26.09.2007.

c) **Consent to Operate (CTO):**

i. Renewal of the Consent to Operate was obtained from CECB, Raipur for Run Off Mine (ROM) Iron Ore with production capacity of 10.0 MTPA with vide letter No. 10750/TS/CECB/2020, Nava Raipur, Atal Nagar, Raipur, dated 03/03/2020 valid up to 31.03.2025.

d) **PA has informed that no show-cause was issued by the Pollution control Board in the last three years.**

e) **PA has informed that no court case in any court of law pending against the unit.**

3. Site Photographs

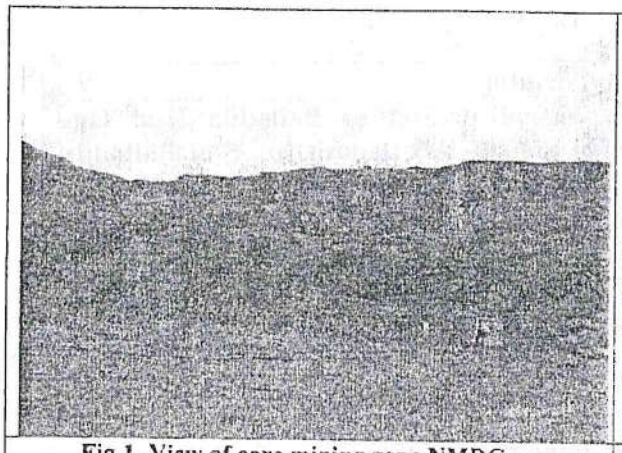


Fig.1. View of core mining zone NMDC

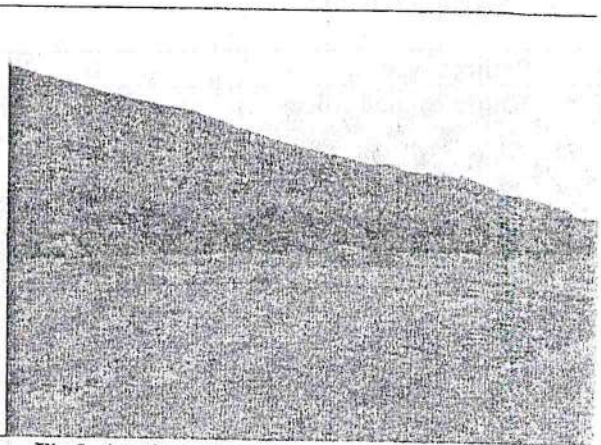


Fig.2. Another view of core mining zone NMDC

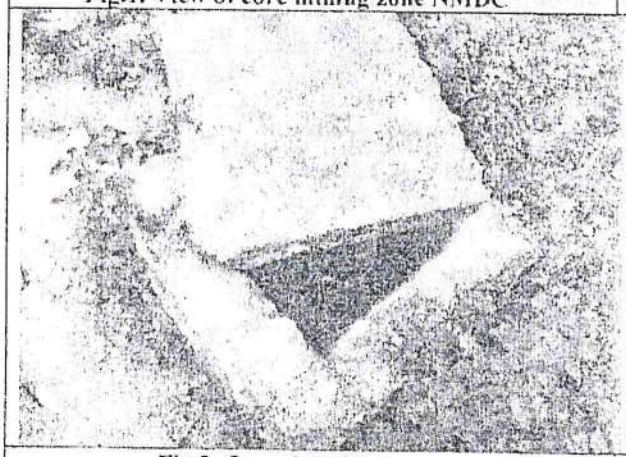


Fig.3. One of the Piezometer

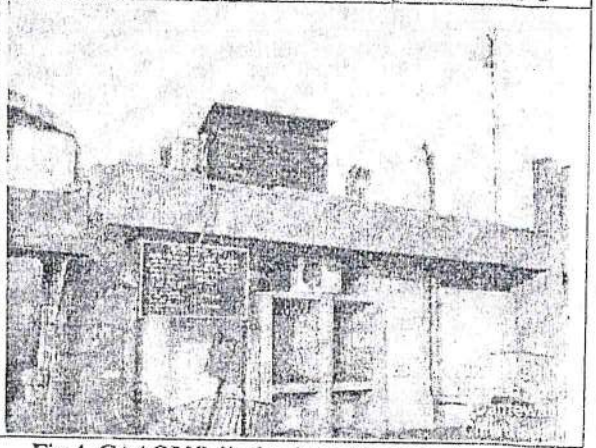


Fig.4. CAAQMS display board in the mine lease area.

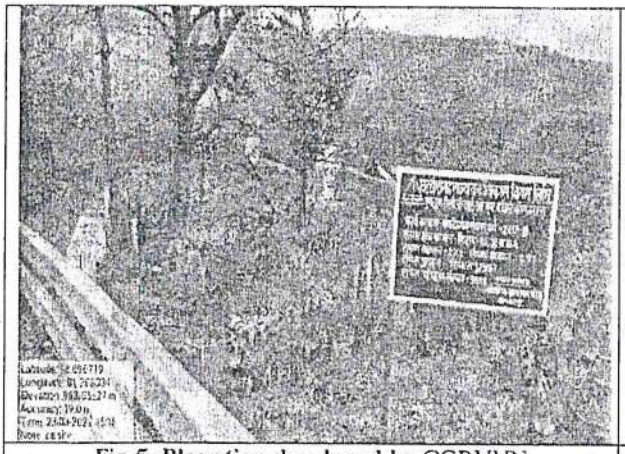


Fig.5. Planation developed by CGRVVN

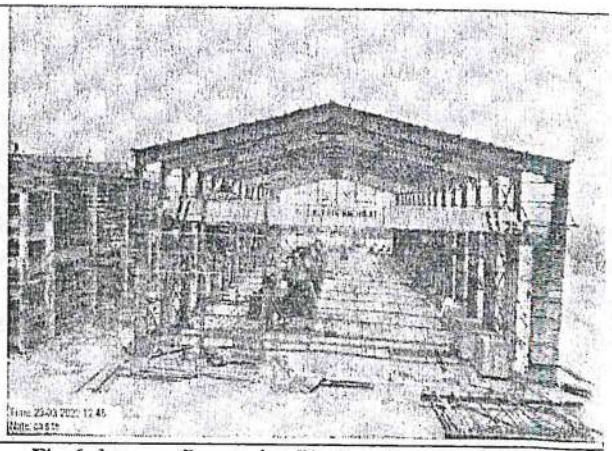


Fig.6. Iron ore Processing Plant under construction.

Fig.7. View of ongoing Dumping site

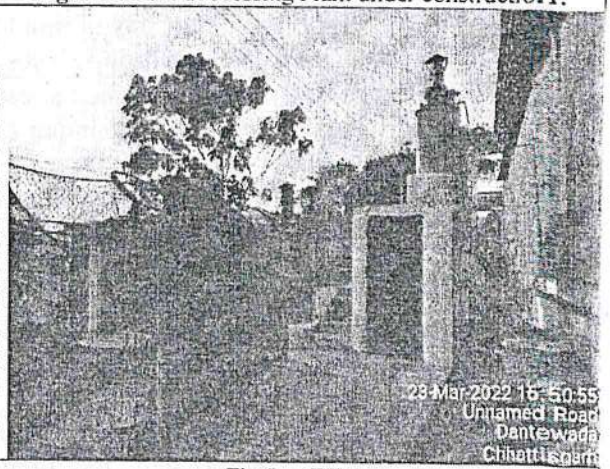


Fig.8. ETP

4. Condition wise compliance status

A	Specific Conditions
(i)	Appropriate management of slime shall be undertaken to prevent pollution of surface water bodies. As per action plan submitted to the Ministry of Environment & Forests for utilization of slime including additional slime to be generated due to proposed expansion, the slime shall be utilized for pellets manufacturing after beneficiation. **Status of Compliance: Complied with respect to said visit.** On the day of monitoring tailing dam has been observed. The slimes generated during the rainy season, is discharged to tailing dam-1. It was informed by PP that regular de-silting is done before onset of Monsoon, to ensure the discharge of clear water from Tailing Dam-1. It has been observed that Iron Ore Processing Plant (Slime Beneficiation) was under construction. It was also informed by PP that Iron Ore concentrates produced from Iron Ore Processing Plant (Slime Beneficiation) at Bacheli will be transported to Pellet Plant (2.0 MTPA capacity) under construction at NMDC Iron and Steel Plant, Nagarnar, Jagdalpur through Slurry Pipeline.
(ii)	Detailed report on de-silting of tailing dams and management of sit shall be submitted to the Ministry of Environment & Forests at regular interval.

	Status of Compliance: Partially Complied with respect to said visit. On the day of monitoring it has been observed that Tailing Dam-1 is constructed and the slimes generated during the rainy season, is sent in tailing dam-1.It was informed by PP that Tailing Dam-1 is de-silted every year in planned intervals. It was also informed by PP that the de-silted tailings are stacked properly for future utilization. **However detailed report on de-silting of tailing dams and management of silt is not provided by PP. PP has been asked to submit detailed report as per the stipulated condition.**
(iii)	Top soil/ solid waste shall be stacked properly with proper slope with adequate safeguards and shall be backfilled (wherever applicable) for reclamation and rehabilitation of mined out area. **Status of Compliance: Complied with respect to said visit.** It has been observed on the day of monitoring that all mining benches are active and top soil has been stacked at identified places within Mining lease area.
(iv)	Over burden (OB) shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 30 m, each stage shall preferably be of 10 m and overall slope of the dump shall not exceed 28°. The OB dump shall be backfilled. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. 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 on six monthly basis. **Status of Compliance: Complied with respect to said visit.** On the day of monitoring, it has been observed that the OB dumps are stacked at earmarked dump sites. It was also informed by PP that the height and slopes are being maintained as per approved Mining Plan by Indian Bureau of Mines. It was also observed that all benches are active. OB no.3 (about 3.0 Hect.) near dynamic stock pile and OB no.1 (4.20 ha) have been stabilized with geo textiles. The OB are also being scientifically vegetated with suitable native species to prevent erosion and surface run off.
(v)	Garland drains shall be constructed to arrest silt and sediment flows from soil, and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly de-silted particularly after monsoon and maintained properly. Garland drain (size, gradient and length) shall be constructed for both mine pit and for waste dump and sump capacity shall 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 shall 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 de-silted at regular intervals. **Status of Compliance: Complied with respect to said visit.** It has been observed on the day of visit that garland drains have been constructed at the toe of Ore dumps and Slime dumps to arrest silt and sediment flows from soil, and mineral dumps before on set of monsoon. It was informed by PP that drains are de-silted regularly and maintained properly. Itwas also observed that Garland drains are also constructed for both mine pit and for

	waste dumps and bottom most bench of mine pits converted into settling tanks to arrest the silt and sediment flows from working benches. It was informed by PP that rain water form mine pits collected into above settling tanks through garland drains to ensure natural settling and treatment of sediments and sediments (fine ore) collected into above settling tanks are de-silted after monsoon period.
(vi)	Slope of the mining bench and ultimate pit limit shall be as per the mining schemeapproved by Indian Bureau of Mines. **Status of Compliance: Complied with respect to said visit.** It was informed by PP thatThe slope of the mining benches and ultimate pit limit are as per the mining plan approved by Indian Bureau of Mines.
(vii)	Drilling and blasting (if any) shall be conducted by using dust extractors/wet drilling. **Status of Compliance: Complied with respect to said visit.** It has been observed on the day of visit that wet drilling mechanism is being adopted while drilling the blast holes and it is equipped with dust extraction system.
(viii)	Plantation shall be raised in 540.05 ha in the ML area, haul roads, OB dump sites etc. Green belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO/Agriculture Department. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. The density of the trees shall be around 2500plants per ha. The company shall involve local people with the help of self help group for plantation programme. **Status of Compliance: Being Complied with respect to said visit.** Ample plantation has been observed in the mine lease area as well as near admin building and residential colony. It was informed by PP that the afforestation/plantation work has been entrusted to M/s. Chhattisgarh Raj Van Vikas Nigam Ltd (CGRVVN) /Social Forestry Division of Chhattisgarh State Forest Department and 12,34,317 no. of plants have been planted covering an area of 573.11 hectares. As informed by PP, following contributions are being made to M/s. Chhattisgarh Raj Van Vikas Nigam Ltd,/Hariyar Chhattisgarh Kosh towards block and road side plantation in Hariyar Chhattisgarh plantation Scheme, since 2010 by PP. The following plantations have been undertaken in year 2020 and 2021.

Forest Circles	Sites	Area (Hectare)	Number of Plants
2020			
Durg	9	34	34000
Mahasamund	2	20.60	27906
Sub total	**11**	**54.6**	**61906**
2021			
Durg	14	20	20000
Kawardha	16	37.10	37100
Sub total	30	57.1	57100
Grand total	**41**	**111.70**	**119006**

(ix)	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board. **Status of Compliance: Complied with respect to said visit.**

	It has been observed that PP has constructed 8 check dams in the vicinity of mine area to increase the ground water quantity. PP has submitted the in-house ground water quality reports of 4 location. It was analyzed and was found to be within prescribed limits. It was also informed by PP that M/s. Space Geotech, Bengaluru has been engaged vide work order no. 1071 letter dated 27/05/2013 for conducting the studies towards implementation of conservation measures to augment ground water resources.
(x)	Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter(January) and the data thus collected shall be regularly sent to MoEF, Central Ground Water Authority and Regional Director, Central Ground Water Board. **Status of Compliance: Complied with respect to said visit.** It has been observed on the day of monitoring that 44 piezometers have been established in core and buffer zone of Mines for regular monitoring of ground water level and quality, four times in a year pre-monsoon (April May), monsoon (August), post-monsoon (November) and winter (January). PP has submitted in house ground water quality reports of 4 locations. It was analyzed and was found to be within prescribed limits.
(xi)	The waste water from the mine shall be treated to conform to the prescribe standards before discharging in to the natural stream. The discharged water from the tailing them shall be regularly monitored and report submitted to the Ministry of Environment & Forests, Central Pollution Control Board and the Andhra Pradesh Pollution Control Board. **Status of Compliance: Complied with respect to said visit.** It has been observed on the day of monitoring that the surface run-off from the mine is diverted into check bunds and check dams through garland drains. It was also informed by PP that Tailings discharged into Tailing Dam only in monsoon season only. The discharge water from Tailing Dam no: 1 is being regularly monitored and the reports of the same have been submitted to this office. It was analyzed and was found to be within prescribed limits.
(xii)	Prior permission from the competent authority shall be obtained for extraction of ground water, if any. **Status of Compliance:** It was informed by PP that no ground waterfor the project isextracted.
(xiii)	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of ores and others shall have valid permissions as prescribed under Central Motor Vehicle Rules, 1989 and its amendments. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles transporting ores shall be covered with a tarpaulin or other Suitable enclosures so that no dust particles / fine matters escape during the course of transportation. No overloading of ores for transportation shall be committed. **Status of Compliance: Complied with respect to said visit.** It has been observed on the day of monitoring that the ore from Primary Crusher to Screening plant and to Loading Plant is transported through belt conveyors and the

	conveyors are completely covered ensuring zero escape of dust particles/fine matters. It was also observed on the day of monitoring that the ore is transported to customers through Railway wagons and trucks and the trucks carrying fine ore are covered with tarpaulin. It was informed by PP that all the project vehicles are periodically checked for its emission once in six months by approved pollution testing center at Bacheli and have valid PUC. It was also informed by PP that water sprinkling is done on mine haul roads and other feeder roads to control fugitive dust emissions and 5 water sprinklers having capacity of 28 Kilo Liters are being used for the dust suppression on haul roads.
(xiv)	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. **Status of Compliance: Agreed Upon.** It was submitted that the condition is "noted" and assured to abide with the condition.
(xv)	A comprehensive report on the details of land oustees, their socio-economic profile and action plan for their rehabilitation including formation of self help groups who canfacilitate promotion of economic opportunity for local indigenous people shall be submitted to the Ministry of Environment & Forest for record. Socio economic Survey of nearby villages to generate baseline data shall also be carried and Socio economic development activities planned accordingly in addition to the ongoing programmes (if any) **Status of Compliance: Complied with respect to said visit.** It was informed by PP that Land oustees are not involved in the project.
B	**GENERAL CONDITIONS**
(i)	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment& Forests. **Status of Compliance: Agreed Upon.** It was submitted that the condition is "noted" and assured to abide with the condition.
(ii)	No change in the calendar plan including excavation, quantum of mineral, limestone and waste shall be made. **Status of Compliance: Agreed Upon.** It was submitted that the condition is "noted" and assured to abide with the condition.
(iii)	Conservation measures for protection of flora and fauna the core & buffer zone shall be drawn up in consultation with the local forest and wildlife department. **Status of Compliance: Partially Complied with respect to said visit.** It was informed by PP that M/s. Indian Institute for Bio-social Research & Development, Kolkata has submitted the Study Report on Biodiversity survey & conservation plan of flora, fauna in the core and buffer zone. The report has been submitted to PCCF (Land Management), Raipur for approval on 08/10/2013. It was also informed by PP that Principal Chief Conservator of Forests (Wildlife)/Chief Wildlife Warden, Raipur has accorded approval for Biodiversity Conservation Plan of Bailadila Iron Ore Mine, Bacheli Complex for an amount of Rs. 14,47,32,700/- vide letter no. WL/Mgmt./FN-315/2017/571 dated 04/02/2017. Divisional Forest Officer, Dantewada Forest Division issued demand note for the payment of Rs. 14,47,32,700/-

	vide letter no. JTO/1202 dated 07/02/2017 for the implementation of above plan within 20 years. Bailadila Iron Ore Mine, Bacheli Complex has deposited Rs. 14,47,32,700/- in CAMPA account through RTGS transfer on 27/03/2017.**PA has been asked to expedite the matter with local forest and wild life department and submit he physical and financial targets to this office.**
(iv)	Four ambient air quality-monitoring stations shall be established in the core Zone as well as in the buffer zone for RPM, SPM, SO_2, NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical Features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. **Status of Compliance: Complied with respect to said visit.** PP has conducted ambient air quality monitoring at 4 locations in core zone i.e. Mine South Block, Mine North Block, Crushing Plant, 100 meter away from the Crushing Plant and 7 locations in buffer zone i.e. Screening Plant, Loading Plant, CRPF Camp, Akash Nagar, Chalkipara Pina, Bacheli Nerli Village, Dhurli Village. The in-house monitoring reports of the same have been submitted to this office. It was analyzed and was found to be within prescribed limits.
(v)	Data on ambient air quality (RPM, SPM, SO_2, NO_x) should be regularly submitted to the Ministry including its Regional office located al Bangalore and the State Pollution Control Board/ Central Pollution Control Board once in six months. **Status of Compliance: Complied with respect to said visit.** PP has conducted ambient air quality monitoring at 4 locations in core zone i.e. Mine South Block, Mine North Block, Crushing Plant, 100 meter away from the Crushing Plant and 7 locations in buffer zone i.e. Screening Plant, Loading Plant, CRPF Camp, Akash Nagar, Chalkipara Pina, Bacheli Nerli Village, Dhurli Village. The in-house monitoring reports of the same have been submitted to this office. It was analyzed and was found to be within prescribed limits.
(vi)	Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained. **Status of Compliance: Complied with respect to said visit.** It was observed that Dust Suppression System (DSS) like mist type sprinklers has been installed at primary crusher, Crushing plant and at transfer points. Water sprinkling is being carried out on Haul roads, transfer points and loading sites to mitigate the emission of fugitive dust on the day of monitoring. The in-house fugitive emission reports have been submitted by the PA and it was observed that emission levels are within the prescribed limits.
(vii)	Measures shall be taken for control of noise levels below 85 dBA in the work environmental. Workers engaged in operations of HEMM, etc. shall be provided with ear plugs / muffs. **Status of Compliance: Partially Complied with respect to said visit.** PP has provided ear muffs / ear plugs to workers in noise prone zones in the mine and OCSL plant areas. It has been observed on the day of monitoring that the HEMM cabins are air conditioned and safely guarded from the noise pollution etc. and rubber coated screens are used in screening plant, rubber lining at some of transfer points of conveyors.**PA didn't**

	provide the noise monitoring reports to this office. PA has been asked submit the noise monitoring reports to this office.
(viii)	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 shall be installed before discharge of workshop effluents. **Status of Compliance: Complied with respect to said visit.** On the day of monitoring tailing dam has been observed. The slimes generated during the rainy season, is discharged to tailing dam-1for treatment. It was observed that ETPs are also available at Service centre, Hill top and Auto workshop for treatment of suspended solids, oil & grease generating during washing of HEM machinery and Light Motor Vehicles respectively. The in-house water quality analysis report of Tailing dam and ETP discharge for Monsoon Season 2021-2022 has been submitted by the PA to this office and it was observed that parameters are within the prescribed limits.
(ix)	Personnel working in dusty areas shall be provided with protective respiratory devices and they shall also be imparted adequate training and information on safety and health aspects. **Status of Compliance: Complied with respect to said visit.** It was observed on the day of monitoring that protective Respiratory devices were being used by the personnel engaged in dust prone area. It was informed by PP that training and awareness program is conducted for the usage of PPEs.
(x)	Occupational health surveillance program of the workers shall be undertaken periodically observe any contractions due to exposure to dust and take corrective measures, if needed. **Status of Compliance: Partially Complied with respect to said visit.** It was informed by PP that the periodical medical examination (PME) is carried out at Occupational Health Centre (OHS), NMDC-Apollo Central Hospital, Bacheli for all employees once in 5 years and PME of Employees above 45 years age done once in every 3 years. **However no documental evidence has been provided by the PP.**
(xi)	A separate Environmental Management Cell with suitable qualified. Personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization. **Status of Compliance: Complied with respect to said visit.** It was informed by PP thata separate Environmental cell available in the project which is managed by 4 qualified Environmental/Mining Engineering personnel who reports to Head of Department (Training, Safety & Environment). HoD (T,S&E) reports to Head of the Production/Mines Manager. CGM (Prod.)/Mines Manager reports to Chief General Manager i.e. Head of Project.
(xii)	The project authorities shall inform to the Regional Office of the Ministry located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the dale of start of land development work. **Status of Compliance: No information provided.**
(xiii)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be

	reported to the Minis try and its Regional Office located at Bhopal. **Status of Compliance: Complied with respect to said visit.** An expenditure of Rs. 2,86,85,099/- have been incurred towards environmental protection works in year 2021-2022 from 01/04/2021 to 30/09/2021 at Bailadila Iron Ore Mine, Bacheli Complex by PP. The copy of expenditure statement has been submitted by PP to this office.
(xv)	The Regional Office of the Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite data / information/ monitoring reports. **Status of Compliance: Agreed Upon.** It was submitted that the condition is "noted" and assured to abide with the condition.
(xvi)	A copy of clearance letter will be marked to concerned Panchayat/ local NGO, if any, from whom suggestion representation has been received while processing the proposal. **Status of Compliance: Complied with respect to said visit.** It was informed by PP that the a copy of the clearance letter was marked to concerned Panchayat / Zila Parishad , Municipal Corporation.
(xvii)	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 **Status of Compliance: Complied with respect to said visit.**
(xviii)	The project authorities shall 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.inand a copy of the same shall be forwarded to the Regional Office of the Ministry located Bangalore. **Status of Compliance: Not Complied With.** **No information was provided by the PP.**
5.	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection. **Status of Compliance: Agreed Upon.** It was submitted that the condition is "noted" and assured to abide with the condition.
6.	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986. **Status of Compliance: Agreed Upon.** It was submitted that the condition is "noted" and assured to abide with the condition.
7.	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. **Status of Compliance: Agreed Upon.** It was submitted that the condition is "noted" and assured to abide with the condition.

General Remarks:

i. Project authorities are directed to submit a report of report on de-silting of tailing dams and management of silt shall be submitted to this office **(Specific Condition -II).**

ii. Project authorities are directed to expedite the matter with local forest and wild life department and submit he physical and financial targets to this office **(General Condition -III)**

iii. Project authorities are directed to submit the noise monitoring reports to this office **(General Condition -VII)**

iv. Project authorities are directed to submit the date of financial closures and final approval of the project to this office **(General Condition -XII)**

v. Project authorities are directed to submit the local newspaper advertisement copies in which EC was published tot his office **(General Condition -XVIII)**

(Dr. Bhardwaj Adiraju)
Scientist 'C'

Mine Mgr./ C.G.M. for kind information pl.

Enclosure-2

भारत सरकार
पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय
एकीकृत क्षेत्रीय कार्यालय,
अरण्य भवन, नार्थ ब्लॉक,
सेक्टर –19, नया रायपुर, अटल नगर
छत्तीसगढ़ – 492002
ईमेल– iro.raipur-mefcc@gov.in

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE,
INTEGRATED REGIONAL OFFICE,
ARANYA BHAWAN, NORTH BLOCK,
SECTOR-19, NAYA RAIPUR, ATAL NAGAR,
CHHATTISGARH – 492002.
Email – iro.raipur-mefcc@gov.in

By Speed Post
F.No.3-23/2011(Env)/ 1356
Dated 12th April, 2023.

To
Dr. Pankaj Verma,
Scientist – E & Member Secretary,
IA Division, Non-Coal Mining Sector,
Ministry of Environment, Forest & Climate Change,
Indira Paryavaran Bhavan, Jorbagh Road, Aliganj,
New Delhi – 110 003.
(E-mail: pankaj.verma@nic.in; Tel./Fax: 011-24695264).

Subject: Capacity expansion from 4.2 to 6.0 MTPA (ROM) of Bailadila Deposit 10 Mine of M/s NMDC Limited with M.L. area of 309.340 Ha located at Bailadila Iron Ore Mine, Bacheli, South Bastar Dantewada District, Chhattisgarh – compliance certification regarding.

Ref: (1) EC letter No.J-11015/506/2008-IA.II(M) dated 13/10/2011 of MoEF&CC.
(2) Amendment letter No. J-11015/506/2008-IA.II(M) dated 19/2/2014 of MoEF&CC.
(3) EC letter No.J-11015/141/2014-IA.II(M) dated 07/07/2017 of MoEF&CC.
(4) Letter No.D05/TSE/2022/2627 dated 09/12/2022 of M/s NMDC Ltd.
(5) E-mail communication dated 17/03/2023 of M/s NMDC Ltd.

Sir,

In response to the letter No.D05/TSE/2022/2627 dated 09/12/2022 of M/s NMDC Ltd., as approved by the Competent Authority, the aforesaid Iron Ore Mining project was monitored by the undersigned on 14/12/2022 along with project authority and the certified compliance report of the above Iron Ore Mining project is enclosed herewith for perusal and further appropriate action. The observed non-compliances inter-alia include the following:

(1). Details regarding implementation of the Bio diversity Conservation and Management plan have not been made available during the visit – **specific condition No.(ii)**.

(2). Though the AAQ is being monitored, the frequency and parameters monitored for the Ambient Air Quality monitoring is not consistent with the NAAQ Monitoring protocol. Continuous online AAQ monitoring station installed is not in functional and the same has not been linked to the servers of the CECB & CPCB. Adequate number of Continuous online AAQ monitoring stations shall be installed as stipulated in the CTO – **specific condition No. (xxxvi), general condition No.(v), (ix) & (xiii)**

(3). PA shall upload the monitored data in the website of the company as stipulated – **general condition No. (xii).**

(4). Approval / NOC for drawal of surface water is still under process. PA shall obtain the NOC for water allocation /utilization from the Govt. of Chhattisgarh – **general condition No. (iii).**

3707
16-04-23

(5). PA claims that some of the stipulated conditions are not applicable. In this regard, it is advised, if any condition is not applicable, the project authority shall get amended the said EC conditions from the MoEF&CC by following the due procedure.

In view of the above, the Project Authority is directed to take immediate corrective action on the above points and comply with all the stipulated conditions contained in the EC letters. The action taken report along with monitored data / supporting documents should be submitted to the Ministry endorsing a copy to this IRO within 30 days from the issue of this letter to enable us to take further necessary action in this matter.

This issues with the approval of the IGF(Central) vide diary No.3986 dated 11/04/2023.

Yours faithfully,

(Dr. M.T. Karuppiah)
Scientist – E

Encls: As above

Copy to:

1. Dr.Shruti Rai Bhardwaj, Scientist-E, Monitoring Cell, IA Division, Indira Paryavaran Bhavan, Ministry of Environment, Forest & Climate Change, Jorbagh Road, Aliganj, New Delhi – 110 003; (E-mail: shruti.rai@nic.in; Ph. 011-24695402).
2. The Member Secretary, State Environment Impact Assessment Authority- Chhattisgarh, Paryavas Bhavan, North Block, Sector-19, Naya Raipur, Chhattisgarh-492002, (Email: seiaacg@gmail.com).
3. The Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhavan, North Block, Sector-19, Naya Raipur, Chhattisgarh-492002, (E-mail:hocecb@gmail.com).
4. Shri. Shiv Shankar Prasad, Head (Training, Safety & Environment), M/s NMDC Ltd., Bailadila Iron Ore Mine, Bacheli Complex, Bacheli, South Bastar Dantewada District, Chhattisgarh – 494 553, ***with reference to the letter No.D05/TSE/2022/2627 dated 09/12/2022 of M/s NMDC Ltd.***

(Dr. M.T. Karuppiah)
Scientist – E

Government of India
Ministry of Environment, Forest and Climate Change (MoEF&CC)
Integrated Regional Office
Aranya Bhawan, Naya Raipur, Chhattisgarh – 492002.

Monitoring Report

F.No.3-23/2011(Env)/

1	Project Type: River valley/Mining/Industry/Thermal/ Nuclear/Other specify	:	Non-coal Mining
2	Name of the project	:	Capacity expansion from 4.2 to 6.0 MTPA (ROM) of Bailadila Deposit 10 Mine of M/s NMDC Limited with M.L. area of 309.340 Ha located at Bailadila Iron Ore Mine, Bacheli, South Bastar Dantewada District, Chhattisgarh.
3	Clearance letter(s)/OM No. and date	:	(i). Letter No.J-11015/506/2008-IA.II(M) dated 13/10/2011 of MoEF&CC. (ii). Amendment letter No. J-11015/506/2008-IA.II(M) dated 19/2/2014 of MoEF&CC. (iii). Letter No.J-11015/141/2014-IA.II(M) dated 07/07/2017 of MoEF&CC.
4	Locations:		
a.	Taluk(s)	:	Bacheli
	District(s)	:	South Bastar Dantewada
b.	State(s)		Chhattisgarh
c.	Latitudes/ Longitudes	:	$18^0$41'23.87"N to $18^0$43'12.59" N and $81^0$13'03.60"E to $81^0$13'44.10" E (As per Project Authority)
5	Address of correspondence:		The Chief General Manager Bailadila Iron Ore Mines, M/s NMDC Ltd., Bacheli Complex, South Bastar Dantewada District, Chhattisgarh-494 553. (Tel: 07857-230323; Fax: 07857-230323)
6	Salient features:		
a.	Present status of the project	:	Existing project in operation.
b.	of the environmental management plans	:	Covered in EIA & EMP submitted to MoEF&CC during project appraisal.
7	Break up of the project area :		
a	Submergence area (forest & non-forests)	:	NA
b	Others		Total lease area is Forest land having 309.340 Ha. Area acquired outside the ML area for locating

infrastructure facilities: 142.80 Ha
(As per Project Authority)

8 Break up of project affected population with enumeration of those losing houses/dwelling units only, agricultural land only, both dwelling units and agricultural land and landless labourers/artisans. : Not Applicable

a SC, ST/Adivasis : Not Applicable

b Others Not Applicable

9 Financial Details:

a Project cost as originally planned and subsequent revised estimates and the years of price reference. : Gross block value of the project as on 31/3/2016 is Rs. 425.87 Crores.
(As per EC)

b Allocations made for environmental management plans, with item wise and year wise breakup (Capital & Recurring). : Fund allocated for Environmental Management

Year	Allocation made under EMP (Rs. Crores)
2021-22	7.96
2020-21	5.00
2019-20	10.08
2018-19	29.10
2017-18	8.0

(As per Project Authority)

c Benefit cost ratio / internal rate of return and the years of assessment. : Not made available.

d Whether (c) includes the cost of environmental management as shown in (b) above. : ----

e Total expenditure on the Project so far. : Rs.128.93 Crores (Net Block of Fixed Assets)
(As per project Authority)

f Actual expenditure incurred on the environmental management plans so far.

Year	EMP cost (Rs. Crores)
2021-22	12.49
2020-21	12.80
2019-20	15.77
2018-19	3.975
2017-18	16.65

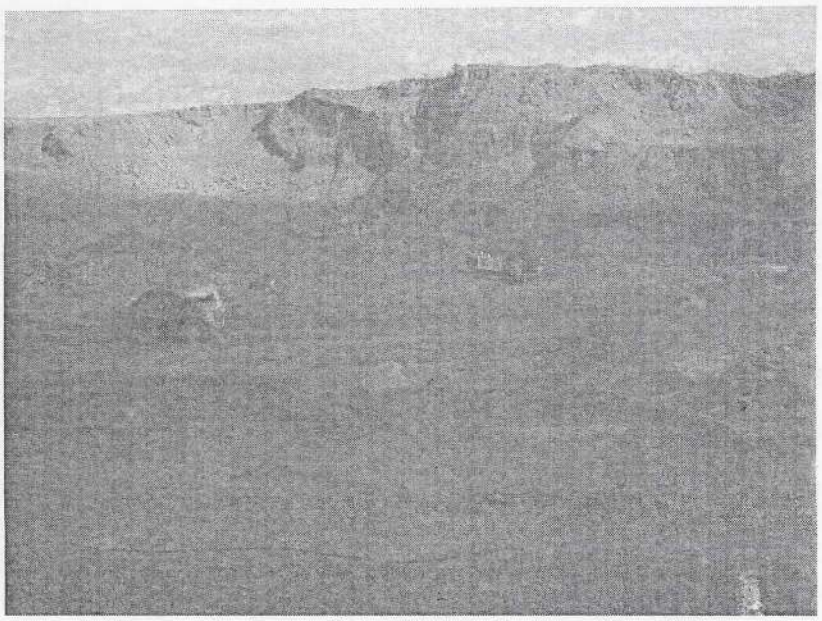
(As per Project Authority)

10 Forest land requirement:

a. The status of approval for a diversion of forest land for non-forestry use. : MoEF&CC vide letter No. 8-39/97-FC dated 29/7/1998 has accorded approval for Stage-II forestry clearance for diversion of 309.34 Ha of forest land in the then Bastar District (presently in the State of Chhattisgarh). Subsequent validity extension of forestry clearance has been accorded by the Chhattisgarh State Forest Department vide letter No.F-5-01/2016/10-2 dated 31/3/2020, which is valid till 11/9/2035.

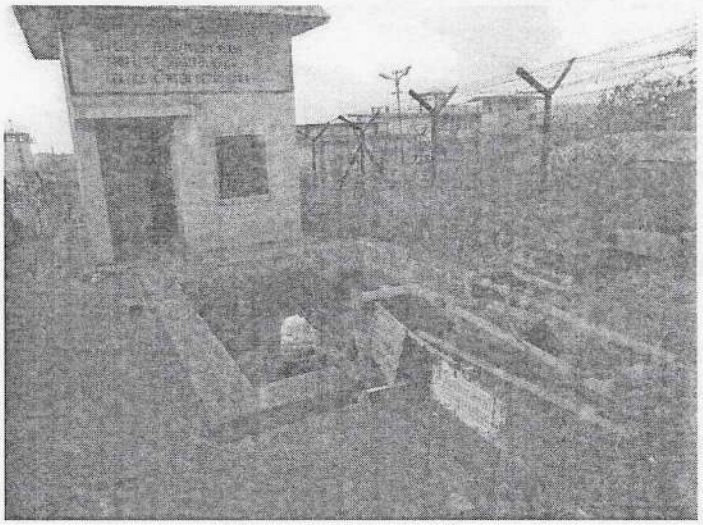
For other infrastructure facilities: MoEF&CC vide letter No. 8-83/97-FC dated 29/07/1998

			has accorded approval for Stage-II forestry clearance for diversion of 142.80 Ha of forest land in the then Bastar District. Subsequent amendment extending the validity of forestry clearance over an area of 142.80 Ha has been accorded by the MoEF&CC vide letter No.F-8-83/1997-FC(Pt) dated 10/7/2019, which is valid till 06/12/2035.
	b.	The status of compensatory afforestation, if any.	:	Reportedly Project Authority has deposited the CA charges in the State Forest Department towards Compensatory Afforestation. **However, details are not made available regarding the amount utilized so far and the extent & coordinates of the area where the compensatory afforestation have been implemented.**
	c.	The status of clear felling.	:	PA informed that tree felling was carried out in 2000-2001 for creation of allied and accessary mining infrastructural facilities within the mining lease. Reportedly, felling of 7811 trees standing over 36.8 Ha area within ML with the approval of Chhattisgarh Forest Department vide letter no.14/Prod.1/786/1212 dated 04/06/2021.
	d.	Comments on the viability and sustainability of compensatory afforestation programme in the light of actual field experience so far.	:	-----
11		The status of clear felling in non-forest area (such as submergence area of reservoir, approach road), if any, with quantitative information.	:	Not applicable
12		<u>Status of construction:</u>		
	a	Date of commencement	:	Reportedly, the mining operations of Deposit-10 was commenced in the year 2003.
	b	Date of completion (actual and / or planned).	:	Capacity expansion of production of 5.835 MTPA achieved in the year 2021-2022.
13		Reasons for the delay if the project is yet to start.	:	Not Applicable
14		<u>Date of site visit:</u>		
	a	Date of site visit for this monitoring report.	:	14/12/2022



Present view of the Mine during the visit

View of the Screening plant



View of the ETP

PRESENT STATUS OF THE PROJECT

Ministry of Environment, Forest & Climate Change vide letter No.J-11015/506/2008-IA.II(M) dated 13/10/2011 accorded environmental clearance (EC) for the expansion of Bailadila Iron Ore Deposit No.10 (ML area 309.340 Ha; Capacity expansion from 3.3 million TPA to 4.2 million TPA) of M/s National Mineral Development Corporation Ltd. (NMDC), Bachelli, Dantewada District, Chhattisgarh, subject to the implementation of conditions and safeguards contained therein the EC. Further, amendment in the EC has been issued by MoEF&CC vide letter No.J-11015/506/2008-IA.II(M) dated 19/2/2014 of MoEF&CC, wherein deleted the specific condition No.4A(i) of the EC dated 13/10/2011, based on the notification No.674(E) dated 13/3/2013. Subsequently, MoEF&CC vide letter No.J-11015/141/2014-IA.II(M) dated 07/07/2017 accorded environmental clearance (EC) for the capacity expansion from 4.2 to 6.0 MTPA (ROM) of Bailadila Deposit 10 Mine of M/s NMDC Limited with M.L. area of 309.340 Ha located at Bailadila Iron Ore Mine, Bacheli, South Bastar Dantewada District, Chhattisgarh, subject to the implementation of conditions and safeguards contained therein the EC.

2. MoEF&CC vide letter No. 8-39/97-FC dated 29/7/1998 has accorded approval for Stage-II forestry clearance for diversion of 309.34 Ha of forest land in the then Bastar District (presently in the South Bastar Dantewada District of Chhattisgarh) for a period of 20 years. Subsequent validity extension of forestry clearance has been accorded by the Chhattisgarh State Forest Department vide letter No. F-5-01/2016/10-2 dated 31/3/2020, which is valid till 10/9/2035. Similarly for other allied and infrastructure facilities, Stage-II forestry clearance for diversion of 142.80 Ha of forest land in the then Bastar District (presently in the South Bastar Dantewada District of Chhattisgarh) has been accorded by the MoEF&CC vide letter No.8-83/97-FC dated 29/07/1998 and reportedly subsequent validity extension of the said forestry clearance has been accorded by the MoEF&CC vide letter No.F-8-83/1997-FC(Pt) dated 10/7/2019.

3. For Deposit 10, initial Mining Lease was reportedly sanctioned with effect from 11.9.1965 to 10.9.1995 for a period of 30 years. Further it was renewed for a period of 20 years from 12.9.1995 to 11.9.2015 for an area of 322.368 Ha. The said Mining lease was further extended for a period of 20 years from 11.9.1995 to 10.9.2015. Mineral Resources Department, Chhattisgarh vide letter No.F-3-83/95/12 dated 17/12/2019 extended the validity of the Mining lease for a period of 20 years w.e.f. 11/9/2015 to 10/9/2035. Mining plan for Deposit-10 ML area have been obtained from the IBM Raipur vide letter no. Dantewada/Fe/Khanij-1218/2019/Raipur/555 dated 16/12/2019, which is valid till 31.3.2025. Mining operation is fully mechanized opencast with formation of benches by drilling and blasting, shovel dumper combination. Reportedly blasting operation is being carried out in the day time between the shift change and in this regard project authority has obtained any NOC from the PESO. As informed average water requirement of the project is around 12375 KLD, which is being met partly from ground water (i.e. 12 bore wells) & surface water from Nala 19 & 25. Requisite NOC for abstraction of ground water has been obtained from the Central Ground Water Authority vide NOC No.CGWA/NOC/MIN/ORIG/2021/13798, which is valid till 23/11/2023. **It appears permission for the surface water allocation is still under process**. Presently mining has not intersected the ground water table. Presently only dry process of crushing and screening is being carried out and wet processing of Iron Ore has been reportedly phased out in the year 2008. As informed balance life of the mine for Deposit 10 is 33 years @ 6MTPA. PA has installed ETP and is in operation. The sewage treatment plant having the capacity of 2 MLD has already commissioned and is in operation.

4. Reportedly broken-up area is around 70 Ha and mining is being continued in single pit with the working depth of around 96m. For Deposit -10 two waste dumps having the height of around 30 m is located western side of the present working pit. Among the two waste dumps, one is active and another one is inactive. So far, no backfilling has been done. Bio diversity Conservation and Management plan of Bailadila Iron Ore Mine, Bacheli Complex has prepared with an estimated cost of Rs.14.47 crores and the same has been approved by the Chhattisgarh State Forest Department vide letter No.WL/Mgmt.//FN-315/2017/571 dated 04.02.2017. Project authority informed an amount of Rs.14,47,32,700/- has been deposited in the CAMPA account

through RTGS transfer on 27/3/2017. **However, details regarding implementation of the Bio diversity Conservation and Management plan have not been made available during the visit.** Details of the production achieved during the past years, furnished by the Project Authority is enclosed as **Annexure-1**. Details regarding the commitments made during the public consultation held and its implementation status made available by the PA is enclosed herewith as an **Annexure-2**. As informed no National Park/sanctuary, Ecologically Sensitive area is located within core and buffer zone of the project. Reportedly, no R&R is involved in the project.

5. Project Authority obtained Consent to Establishment from the Chhattisgarh Environment Conservation Board (CECB) vide Order No. 2203/TS/CECB/2018 dated 07/6/2018 for Iron Ore production of 8.8 MTPA (i.e. 6.0 MTPA from Deposit 10 and 2.8 MTA from Deposit-11A). PA renewed the Consent to Operate from the CECB vide letter No.3242/TS/CECB/2020 Nava Raipur Atal Nagar dated 10/7/2020 under Air and Water Act through scheme of "Auto Renewal of Consent" for the production of 6.0 MTPA of Iron Ore, which is valid from 10/7/2020 to 31/5/2025. Amendment in the existing authorization and subsequent renewal of Authorization under the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 has been obtained for Deposit-10 from Chhattisgarh Environmental Conservation Board vide letter no.7610/HSMD/HO/CECB/2020 Raipur dated 25/11/2020, which is valid till 26/01/2026. Renewal of authorization under rule 10 of the Bio-medical Waste Management Rules, 2016 has been obtained from the Chhattisgarh Environmental Conservation Board vide letter No.3459/BMW/HO/CECB/2021 Raipur dated 18/8/2021, which is valid from 20/7/2020 to 19/7/2023. Presently mining has not intersected the ground water table. During the site visit, the project activity / mining operation was in progress. For the sake of brevity, the similar conditions covered in the previous EC letters have not been reproduced in the status of compliances. The above project has been monitored by the undersigned on 14/12/2022 in presence of the Project Authority and the factual status regarding compliance on the stipulated conditions contained in the ECs are furnished hereunder:

PART-II & III

Subject: Capacity expansion from 4.2 to 6.0 MTPA (ROM) of Bailadila Deposit 10 Mine of M/s NMDC Limited with M.L. area of 309.340 Ha located at Bailadila Iron Ore Mine, Bacheli, South Bastar Dantewada District, Chhattisgarh – compliance certification regarding.

Ref: (1) EC letter No.J-11015/506/2008-IA.II(M) dated 13/10/2011 of MoEF&CC.
(2) Amendment letter No.J-11015/506/2008-IA.II(M) dated 19/2/2014 of MoEF&CC.
(3) EC letter No.J-11015/141/2014-IA.II(M) dated 07/07/2017 of MoEF&CC.

No.	Specific conditions	Status of compliance
9.A. (i)	Environmental clearance granted subject to is outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Chhattisgarh and any other Court of Law, if any, as may be applicable to this project.	**Agreed upon** It was submitted that the condition is 'Noted' and assured to abide the condition.
(ii)	Environmental Clearance is subject to obtaining clearance, if any, under the Wildlife (Protection) Act, 1972 from the Competent Authority, as may be applicable to this project.	**Refer below** Bio diversity Conservation and Management plan of Bailadila Iron Ore Mine, Bacheli Complex has prepared with an estimated cost of Rs.14.47 crores and the same has been approved by the Chhattisgarh State Forest Department vide letter No.WL/Mgmt.//FN-315/2017/571 dated 04.02.2017. Project authority informed an amount of Rs.14,47,32,700/- has been deposited in the CAMPA account through RTGS transfer on 27/3/2017. **However, details regarding implementation of the Bio diversity Conservation and Management plan have not been made available during the visit.**
(iii)	No mining activities will be allowed in forest area, if any, for which the Forest Clearance is not available.	**Reportedly complied** As informed mine activities are restricted only in the areas where the Forestry Clearance have been obtained.
(iv)	The project proponent shall obtain Consent to Operate from the State Pollution Control Board, Chhattisgarh and effectively conditions implement all the stipulated therein.	**Refer below** PA renewed the Consent to Operate from the CECB vide letter No.3242/TS/CECB/2020 Nava Raipur Atal Nagar dated 10/7/2020 under Air and Water Act through scheme of "Auto Renewal of Consent" for the production of 6.0 MTPA of Iron Ore, which is valid from 10/7/2020 to 31/5/2025. Amendment in the existing authorization and subsequent renewal of Authorization under the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 has been obtained for Deposit-10 from Chhattisgarh Environmental Conservation Board vide letter no.7610/HSMD/HO/CECB/2020 Raipur dated

		25/11/2020, which is valid till 26/01/2026. Renewal of authorization under rule 10 of the Bio-medical Waste Management Rules, 2016 has been obtained from the Chhattisgarh Environmental Conservation Board vide letter No.3459/BMW/HO/CECB/2021 Raipur dated 18/8/2021, which is valid from 20/7/2020 to 19/7/2023.
(v)	Project Proponent shall follow mitigation Measures provided in Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October 2014 titled "Impact of mining activities Habitations- On Issues related to the mining project wherein Habitations and villages are the part of mine lease areas or Habitations and villages surrounded by the mine lease area".	**Refer below.** No habitation / villages exist within 5 km radius of Deposit-10 Mine Lease.
(vi)	The pollution due to transportation load on environment will be effectively controlled and water sprinkling will also be done regularly. Project should obtain 'PUC' certificate for all the vehicles from authorized pollution testing centers.	**Being complied** Possible dispersion of pollutant due to loading and transportation of minerals on the environment is controlled by adopting the following control measures: • From the primary crusher to Screening plant and then to the loading plant the ore is being completely transported only through covered downhill conveyor. • Regular water sprinkling is done on mine haul roads and other feeder roads to control fugitive dust emissions by deploying four water tankers having 28 KL. • Mist water spray arrangements are available at primary crusher, Crushing plant and at transfer points. • The ore is transported to customers mostly through Railway wagons. • All the vehicles deployed are periodically tested for its emission and ensured to obtain "pollution under control".
(vii)	There shall be developing and implementing facility of rainwater Harvesting measures on long term basis and implementation of conservation measures to augment ground water resources in the area in consultation with	**Complied** PA has constructed rooftop rainwater harvesting structures to augment ground water resources in the area. However, details are not made available regarding consultation held with Central Ground Water Board in this regard.

	Central Ground Water Board.	
(viii)	Project Proponent shall appoint Occupational Health Specialist Regular for Periodical and medical check- up once in six months and necessary medical care/preventive measures undertaken accordingly. Recommendations of National Institute for Labour for ensuring good occupational environment for mine workers should also be adopted.	**Being complied** PA has established an Occupational Health Centre with qualified medical officer & staff, which is in operation. The periodical medical examination (PME) is being carried out at Occupational Health Centre (OHS) & NMDC-Apollo Central hospital, Bacheli for all Employees once in 5 years. Further, frequency of PME for Employees above 45 years has been reduced from 5 years to 3 years and the records are being maintained.
(ix)	Implementation of action plan raised during the public hearings shall be ensured. The project Proponent shall complete all the tasks as per the Action Plan submitted with budgetary provisions during the public Hearing.	**Refer below.** Details regarding the commitments made during the public consultation held and its implementation status made available by the PA is enclosed herewith as an **Annexure-2**.
(x)	The project Proponent shall make necessary alternative arrangements, where required, in consultation with the state Government to provide alternate area for livestock grazing, if any. In this context, Project Proponent should implement the direction of the Hon'ble Supreme Court with regard to acquiring grazing land. The sparse trees on such grazing ground, which provide mid- day shelter from scorching the sun, be should scrupulously guarded against felling, lest the cattle abandon the grazing ground or return home by noon.	**Refer below.** PA claimed that the condition is not applicable, since no acquisition of grazing land is involved in the project. **If the condition is not applicable, the project authority shall get amended the condition from the MoEF&CC by following the due procedure.**
(xi)	The Project Authority shall adopt best Mining Practice for the given mining conditions. In the mining area, adequate number of check dams, retaining walls/structures, garland drains and settling ponds should be provided to arrest the wash- off with rain water in catchment area.	**Being complied.** Project Authority has adopted best mining practices and in the mining area three number of check dams, five bunds, retaining walls, garland drains have been constructed.
(xii)	The natural water bodies and or streams which are flowing in and around the village should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the project Authorities have to provide water to the villagers for their use. A provision for	**Complied with.** The natural water bodies / streams flowing in and around the villages has not been disturbed. Check dams have been constructed to augment ground water. PA assured to provide water to the villagers, in case of any water scarcity in the area. Regular monitoring of ground water level is being carried out, four times in a year through third party M/s Space Geotech and records are

	regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table.	being maintained.
(xiii)	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. The project Proponents (PPs) must ensure that the biological clock of the villagers is not disturbed by orienting the floodlights/masks away from villages and keeping the noise levels well within the prescribed limits for day/night hours.	**Complied.** The project authority ensured that the biological clock of the villagers is not disturbed by orienting the floodlights/masks towards the inner mine working areas and noise levels being maintained well within the prescribed limits for day/night hours.
(xiv)	The Project Authority shall make necessary alternative arrangements, were required, in consultation with State Government to livestock grazing. In this context, Project Authority should implement the directions of the Hon'ble Supreme Court with regard to acquiring grazing land. The sparse trees on such grazing ground, which provide mid- day shelter the scorching sun should be scrupulously guarded against felling, lest the cattle abandon the grazing ground or return home by noon.	**Refer below.** PA claimed that the condition is not applicable, since no acquisition of grazing land is involved in the project. **If the condition is not applicable, the project authority shall get amended the condition from the MoEF&CC by following the due procedure.**
(xv)	Where ever blasting is undertaken as part of mining activity, the project Authority shall carry out vibration studies well before approaching any such habitats or other buildings to evaluate the zone of influence and impact of blasting on the neighborhood. Within 500 meters of such sites vulnerable to blasting vibration, avoidance of use of explosives and adoption of alternative means of mineral extraction, such as ripper/ dozer/ combination/ rock breakers/surface miners etc. should be seriously considered and practiced wherever practicable. A provision for monitoring of each blast should be made so that the impact of blasting on nearby	**Being complied.** Blasting is carried out by using emulsion explosives with bottom initiation system only during the day time at the time of shift change. Controlled blasting is being practiced. Study of blast induced ground vibrations were conducted by CSIR-CIMFR in 2018-19 and found that all the recorded vibrations near surface structures were within limit as per the standard prescribed by DGMS.

	habitation and dwelling units could be ascertained. The covenant of lease deed under Rule 31 of MCR 1960 provides that no mining operations shall be carried out within 50 meters of public works such public roads and buildings inhabited or sites except with the prior permission from the Competent Authority.	
(xvi)	Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. Crusher and material transfer points should invariably be provided with Bag filters and or dry fogging system. Belt-conveyors should be fully covered to avoid air bore dust.	**Refer below** Regular water sprinkling is done on mine haul roads and other feeder roads to control fugitive dust emissions by deploying four water tankers having 28 KL. Mist water spray arrangements are available at primary crusher, Crushing plant and at transfer points. **No bag filters are installed**. From the primary crusher to Screening plant and then to the loading plant the ore is being completely transported only through covered downhill conveyor.
(xvii)	The Project Authority shall ensure that the productivity of agricultural crops is not affected due to mining operations. Crop Liability Insurance Policy has to be taken by the PP as a precaution to compensate for any crop loss. The impact zone shall be 5 Km-from-the-boundary of mine lease area for such insurance policy. In case, several mines are located in a cluster, the Associations of owners of the cluster mines, formed inter- alia, to sub-serve such an objective, shall take responsibility for securing such Crop Liability Policy.	**Refer below.** PA claimed that the condition is not applicable, since there is no agricultural crops within 5 km radius of Mining Lease area. **If the condition is not applicable, the project authority shall get amended the condition from the MoEF&CC by following the due procedure.**
(xviii)	In case any village is located within the mining leasehold which is not likely to be affected due to mining activities during the life of mine, the Expert Appraisal Committee (EAC) should consider the proposal of Environmental Clearance (EC) for reduced mining area. The Mining lease may be executed for the area for which EC is accorded. The mining plan may also be accordingly revised and required stipulations under the MMDR Act, 1957 and MCR, 1960 met.	**Refer below** No village is located within the mining lease area.
(xix)	Transportation of the minerals by road passing through the village shall not be	**Being complied.** A dedicated electrified Railway line having the

	allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals that the impact of sound, dust and accidents could be mitigated. The PP shall bear the cost towards widening and strengthening of existing public road network in case the same is proposed to be used for the Project. No road movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.	distance of 445 Km has been established between Kirandul (Bailadila) to Visakhapatnam mainly for transportation of Iron Ore. The doubling of Railway line is also under progress between Jagdalpur to Kirandul. Most of the Iron Ore being transported customers through railway wagons. Small quantity of ore for Chhattisgarh customers is transported through road using existing state highway (SH) and national highway (NH). Village road network is not used for transportation of the Iron Ore. Reportedly, by-pass road for a distance of 11 km has been constructed at Dantewada.
(xx)	Likewise, alteration or re-routing of foot paths, pagdandies, cart roads, and village infrastructure/public utilities or roads (for purposes of land acquisition for mining) shall be avoided to the extent possible and in case such acquisition inevitable, alternative arrangements shall be made first and then only the area acquired. In these types of cases, Inspection Reports by sites visit by experts may be insisted upon which should be done through Reputed institutes.	**Complied.** Alteration or re-routing of foot paths, pagdandies, cart roads, and village infrastructure / public utilities or roads (for purposes of land acquisition for mining) is not involved in present project.
(xxi)	At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment (ESC) based on local needs and action plan with financial and physical breakup/details shall be prepared and submitted to the Ministry's concerned Regional Office. Implementation of such program shall be ensured accordingly in a time bound manner.	**Refer below** PA informed that Bailadila Iron Ore Mine, Bacheli Complex has signed following 4 Memorandum of Agreements (MoA) with District administration for supply of clean drinking water to 55 villages of Dantewada districts through pipelines and released the payments to District Administration for implementation of Drinking Water Supply Schemes. 1. **Piped Water Supply Scheme for Padhapur Village Panchayat** at the cost of Rs. 49.00 Lakh. MoA signed on 07/07/2015. First instalment of Rs. 19.60 Lakh released on 09/07/2015 and 2nd instalment of Rs. 19.60 Lakh released on 06/05/2016. 2. **Dhurli Samuh Gramin Jal Praday Yoina** for supply of clean drinking water in 24 villages of Dantewada district through pipeline at the cost of Rs. 54.53 crores. MoA signed on 20/09/2016. 1st instalment of Rs. 1901.94 Lakh released on 09/10/2016. 2nd instalment of Rs. 1901.94 Lakh released on 23/04/2018. 3rd instalment of Rs.

9.51 crores released on 27/08/2019. Reportedly more than 90% work of above scheme has been completed. As per revised estimate final instalment of Rs. 6.99 crores released on 07/12/2021.

3. **Solar System Based Spot Source Water Supply Scheme, Dantewada district** for 32 hand pumps of 30 villages at the cost of Rs. 2.47 crores. MoA signed on 13/07/2017. First instalment of Rs. 98.64 Lakh released on 13/07/2017, 2nd installment of Rs. 98.64 lakh released on 24/09/2022.

4. **Solar System Based Spot Source Water Supply Scheme. Bijapur district** for 56 bore well cum hand pumps and 28 solar dual pumps in 28 villages at the cost of Rs. 3.47 crores. MoA signed on 10/08/2021. Instalment of Rs. 139.18 Lakh released on 10/08/2021.

5. As informed by the PA the expenditure incurred towards CSR during last 5 years under various heads is given below:

Year	Expenditure
2017-2018	7999.13
2018-2019	5734.52
2019-2020	9060.68
2020-2021	5213.38
2021-2022	3791.59

(xxii) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs/STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programs prepared and submitted accordingly, integrating the sect oral programs of line departments of the State Government.

Refer below

No Rehabilitation & Resettlement is involved in this project and thus implementation of R&R plan and compensation details for PAP is not arise. PA shall amend the condition accordingly from the MoEF&CC.

(xxiii) Proponent shall carry out occupational Health surveillance for workers engaged in the Project and records maintained and necessary remedial/preventive

Being complied

PA has established an Occupational Health Centre with qualified medical officer & staff and occupational health surveillance for workers is

	measures to be taken accordingly. Implementation of the Recommendations of National Institute for ensuring good occupational environment mine workers.	being undertaken. The periodical medical examination (PME) is being carried out at Occupational Health Centre (OHS) & NMDC-Apollo Central hospital, Bacheli for all Employees once in 5 years. Further, frequency of PME for Employees above 45 years has been reduced from 5 years to 3 years and the records are being maintained.
(xxiv)	Use of mechanical devices for excavating the ore shall be promoted and reducing use of explosives.	**Refer below** Controlled blasting is being practiced by using emulsion explosives with bottom initiation system. Cap sensitive cast booster is used as primary charge along with site mixed slurry (SMS)/site mixed emulsion (SME) for blasting purpose. Initiation of primary charge (bottom initiation) is done using Non-Electric delay detonator (NONELS) systems with intra-hole and inter- hole delays. Optimum charge per delay is used to control fly rock and ground vibrations. Perusal of records show that the Peak Particle Velocity (PPV) due to blasting is well within the permissible limits.
(xxv)	Concurrent reclamation of mined out areas shall be done.	**Agreed upon** Presently mining benches are active. PA assured that the reclamation of the mining area shall be undertaken as and when mineral beneath area get exhausted as per approved Mining Plan.
(xxvi)	Use of effective sprinkler system to suppress fugitive dust on haul roads and other transfer points and undertaking comprehensive study in a years' time for slope stabilization of mine benches and OB dumps shall be undertaken.	**Complied with** Regular water sprinkling is done on mine haul roads and other feeder roads to control fugitive dust emissions by deploying four water tankers having 28 KL. Mist water spray arrangements are available at primary crusher, Crushing plant and at transfer points. Slope stabilization of mine benches and OB dumps have been undertaken by the Central Institute of Mining and Fuel Research, Dhanbad for scientific study of slope stability two pits of BIOM, Bacheli Complex. Recommendations of the Central Institute of Mining and Fuel Research is being implemented.
(xxvii)	Implementation of Action Plan on the issues raised during the Public Hearing. The Proponent shall complete all the tasks as per the Action plan submitted with the budgetary provisions during Public Hearing.	**Refer below.** Details regarding the commitments made during the public consultation held and its implementation status made available by the PA is enclosed herewith as an **Annexure-2**.
(xxviii)	The mining operations shall be restricted to above ground water table and it	**Complied with.** Presently mining activity has not intersected the

	should not intersect groundwater table. Prior approval of the Ministry of Environment, Forest & Climate Change and Central Ground Water Authority shall be obtained for mining below water table.	ground water table.
(xxix)	The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations.	**Complied** No natural watercourse is obstructed due to mining operations.
(xxx)	Top soil should be stacked with proper slope at earmarked site (s) only with and Adequate measures should be used for reclamation and rehabilitation of mined out areas.	**Refer below** Majority of the area of the Mine is outcrop and thus top soil is limited. Further presently, the mining operations are confined to already broken area of the ML. However, PA assured to stack and use the top soil for plantation, top soil encountered, if any, during opening of new benches.
(xxxi)	The entire waste generated shall be backfilled and there shall be no external over burden dump left at the end of the mine life. The entire backfilled area shall be reclaimed by plantation. The back filling should be carried out in such a manner that it is restored to the normal ground level. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self- sustaining. Compliance status should be submitted to the Ministry of Environment, Forest & Climate Change and its Regional Office, Nagpur on six monthly basis.	**Refer below** Presently no backfilling is carried out, since the mining benches are active. PA assured to comply the condition at the time of compliance stage.
(xxxii)	Catch drains and siltation ponds of appropriate size should be constructed for the working pit, temporary OB and dumps, if any and mineral dumps to arrest flow of silt and sediment. The water so collected should be utilized For watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon, and maintained properly.	**Being complied** Bottom most bench of mine pits acts as settling basins before onset of monsoon to arrest the silt and sediment flows from working benches. Rain water from the mine pits collected into above settling basins through catch drains to ensure natural settling and treatment of sediments. Sediments (fine ore) collected into above settling basins de-silted every year after monsoon period.
(xxxiii)	Garland drains of appropriate size, gradient and length shall be constructed for both mine pit and temporary dumps 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	**Complied with** Garland drains having the dimensions of (200 m (Length) x 1 m (Width) x 1m (depth) in waste dump-1 and 240 m (Length) x 1 m (Width) x 1m (depth) in waste dump-2 has been constructed.

	the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corner of the garland drains and desilted at regular intervals.	
(xxxiv)	Dimension of the retaining wall at the toe of temporary dumps and OB benches within the mine to check run-off and siltation should be based on the rain fall data.	**Complied with** Two waste dumps are existing in the western side of Lease boundary of Deposit-10. Retaining wall has been constructed around the waste Dump-1(inactive dump) with the reported dimensions of [344m (length) x 282m (Width). Waste Dump-1 is protected by 2 lines of buttress walls having the length of 777.3 m and 3 m in height. Second line Buttress wall on the periphery of waste dump-1 is reportedly 100 m long with 4 m wide base, 3 m wide top and 3 m heights. Waste Dump-2 is an active dump covering about 10.02 Ha area [302m (Length) x 285m (Width). Waste Dump-2 is also protected by 2 lines of buttress walls. As informed the dimensions of the retaining wall has been decided based on the rainfall data.
(xxxv)	Plantation shall be raised in the specified area including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around ML area, backfilled and reclaimed area, around water local body, roads etc. in consultation with the DFO/Agriculture Department. The density of the trees should be around 2500 plantsper ha.	**Complied with** Plantation with the cost of Rs 412.79 lakh is being undertaken through M/s. Chhattisgarh Raj Van Vikas Nigam Ltd (CGRVVN)/Social Forestry Division of Chhattisgarh State Forest Department CGRVVN, Industrial Plantation Division (IPD), Jagdalpur has completed the plantation work in safety zone of Depoasit-10 mine by using native species. Reportedly 11000 tree/saplings have been planted in Safety zone of Deposit-10 having the area of 7.07 Ha. Gap plantation is also being undertaken. As informed CGRVVN, IPD, Jagdalpur has completed plantation of 60000 saplings in buffer zone of Deposit-10 mine.
(xxxvi)	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 transfer points. It should be ensured that the Ambient Air Quality parameters to conform the norms prescribed by the Central Pollution Control Board in this regard.	**Complied with** Regular water sprinkling is being carried out in critical areas prone to air pollution such as haul road, loading and unloading point and transfer points as stated above in the report. One continuous online AAQ monitoring station has been installed at Deposit-10 mine, which is under maintenance during the visit. **Further, the same has not been linked to the servers of the CECB & CPCB.** AAQ is being monitored in 9 locations (4 locations in the core zone and 5

		locations in the buffer zone) for the parameters of PM_{10}, $PM_{2.5}$, SO_2, NOx & CO twice in a month through third party laboratory. Monitored data show that the values are within the limit. **It has been observed that the frequency and parameters monitored for the AAQ is inconsistent with the protocols prescribed. PA shall carryout the AAQ monitoring in accordance with the protocols notified by the CPCB.**
(xxxvii)	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.	**Complied** PA has constructed rooftop rainwater harvesting structures to augment ground water resources in the area. However, details are not made available regarding consultation held with Central Ground Water Board in this regard.
(xxxviii)	Regular monitoring of ground water level and quality should be carried out in and around establishing network existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year i.e. January, April-May, August, November and the data thus collected may be sent regularly to Ministry of Environment, Forest & Climate Change, its Regional Office, Nagpur: Central Water Ground Authority and Central Ground Water Board.	**Being complied** Regular monitoring of ground water level and quality is being monitored through third party laboratory by establishing 44 network wells including piezometers constructed. Records are being maintained. The data is being submitted to the regulatory authorities concerned.
(xxxix)	Vehicular emissions should be kept under control and regularly	**Being complied** All the vehicles deployed are being ensured to obtain PUC. Periodical maintenance is being undertaken for the heavy and light Motor Vehicles deployed.
(xxxx)	Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	**Complied with** Reportedly blasting operation is being carried out in the day time between the shift change and in this regard project authority has obtained any NOC from the PESO.
(xxxxi)	Drills shall either be operated with dust extractors or equipped with water injection system.	**Complied with** Wet drilling is practiced and the Drilling equipment is equipped with dust extractor and water injection system.
(xxxxii)	A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment, Forest & Climate change 5	**Agreed upon** It was submitted that the condition is 'Noted' and assured to abide the condition.

years in advance of final mine closure for approval.

B. General Conditions

(i) No change in the mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests.

Complied with.
Blasting and Shovel Dumper combination is being practiced. No change in mining technology and scope of working is observed.

(ii) No change in the calendar plan including excavation, quantum of mineral iron ore and waste shall be made.

Complied with.
Reportedly no change in calendar plan has been observed in the quantum of mineral excavated. The details are furnished below.

S.N.	Year	ROM (Proposed)	ROM (Actual)	Proposed Waste (EMP)	Waste (Actual)
1	2017-18	6000000	4645156	400000	250823
2	2018-19	6000000	5338185	400000	183577
3	2019-20	6000000	5007721	400000	279116
4	2020-21	6000000	4902020	400000	231864
5	2021-22	6000000	5826568	400000	387659
	Total	30000000	25721672	1600000	1394055

17.8.22
For and behalf of
NMDC Limited
Bailadila Iron Ore Mine,
Bacheli Complex

(iii) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and ground water for the project.

Partly complied
As informed average water requirement of the project is around 12375 KLD, which is being met partly from ground water (i.e. 12 bore wells) & surface water (from Nala 19 & 25). Requisite NOC for abstraction of ground water has been obtained from the Central Ground Water Authority vide NOC No.CGWA/NOC/MIN/ORIG/2021/13798, which is valid till 23/11/2023. **It appears permission for the surface water allocation is still under process.**

(iv) Regular monitoring of ground water table to be carried out at the upstream and depth of water available in the dug well is to be measured. Monitoring to be done by establishing a network of existing wells. and constructing new piezometer.

Being complied
Ground water level & quality is being monitored by establishing network of wells inter-alia including piezometers, four times in a year through third party M/s Space Geotech and records are being maintained.

(v) Monitoring of Ambient Air Quality to be carried out based on the 2009 Notification, as amended from time to time by the Central Pollution Control Board. Water sprinkling should be increased at places of loading and unloading points & transfer point to reduce fugitive emissions.

Partly complied.
Regular water sprinkling is being carried out in critical areas prone to air pollution such as haul road, loading and unloading point and transfer points. One continuous online AAQ monitoring station has been installed at Deposit-10 mine, which is under maintenance during the visit. **Further, the same has not been linked to the servers of the CECB & CPCB.** AAQ is being monitored in 9 locations (4 locations in the core zone and 5 locations in the buffer zone) for the parameters of PM_{10}, $PM_{2.5}$, SO_2, NOx & CO

twice in a month through third party laboratory. Monitored data show that the values are within the limit. **It has been observed that the frequency and parameters monitored for the AAQ is inconsistent with the protocols prescribed. PA shall carryout the AAQ monitoring in accordance with the protocols notified by the CPCB.**

(vi) The upliftment of scheduled caste/scheduled tribe population, specific programmes have been taken in to consideration specially with respect to education, health care, livelihood generation, infrastructure development & promotion of sports & culture for SC/ST population and that these will be intensified in future.

Being complied

Reportedly NMDC has undertaken various projects in the focus areas of education, health & hygiene, drinking water, rural development, infrastructure & sustainability & income generation, etc. Some of the major projects / initiatives undertaken by NMDC under its CSR program at South Bastar Dantewada District, which inter-alia include Industrial Training Institutes (ITIS), Polytechnic College at Dantewada, Siksha Sahayog Yojana, Education Improvement Program, Balika Siksha Yojana, NMDC-Aastha Gurukul - A residential CBSE school, for Students from disadvantaged back ground etc. The expenditure incurred under CSR scheme is furnished below:

Year	CSR expenditure (Rs. Lakhs)
2016-2017	6429.03
2017-18	7999.12
2018-19	5734.52
2019-20	9060.68
2020-21	5213.38

(vii) Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around waterbody, 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 ha. Greenbelt shall be developed all along the mine lease area in the phased manner and shall be completed within first five years.

Complied with

Plantation with the cost of Rs 412.79 lakh is being undertaken through M/s. Chhattisgarh Raj Van Vikas Nigam Ltd (CGRVVN)/Social Forestry Division of Chhattisgarh State Forest Department CGRVVN, Industrial Plantation Division (IPD), Jagdalpur has completed the plantation work in safety zone of Depoasit-10 mine by using native species. Reportedly 11000 tree/saplings have been planted in Safety zone of Deposit-10 having the area of 7.07 Ha. Gap plantation is also being undertaken. As informed CGRVVN, IPD, Jagdalpur has completed plantation of 60000 saplings in buffer zone of Deposit-10 mine.

(viii) Dimension of the retaining wall at the toe of over burden dumps and OB benches within the mine to check run-off and siltation shall be based on the

Complied with

Retaining wall has been constructed around the waste Dump-1(inactive dump) with the reported dimensions of [344m (length) x 282m (Width).

	rain fall data.	Waste Dump-1 is protected by 2 lines of buttress walls having the length of 777.3 m and 3 m in height. Second line Buttress wall on the periphery of waste dump-1 is reportedly 100 m long with 4 m wide base, 3 m wide top and 3 m heights. Waste Dump-2 is an active dump covering about 10.02 Ha area [302m (Length) x 285m (Width). Waste Dump-2 is also protected by 2 lines of buttress walls.
(ix)	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM_{10} and $PM_{2.5}$ such as haul road, loading and unloading point and 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.	**Partly complied.** Regular water sprinkling is being carried out in critical areas prone to air pollution such as haul road, loading and unloading point and transfer points. Ore transportation is done through closed conveyors system. One continuous online AAQ monitoring station has been installed at Deposit-10 mine, which is under maintenance during the visit. **Further, the same has not been linked to the servers of the CECB & CPCB**. AAQ is being monitored in 9 locations (4 locations in the core zone and 5 locations in the buffer zone) for the parameters of PM_{10}, $PM_{2.5}$, SO_2, NOx & CO twice in a month through third party laboratory. Monitored data show that the values are within the limit. **It has been observed that the frequency and parameters monitored for the AAQ is inconsistent with the protocols prescribed. PA shall carryout the AAQ monitoring in accordance with the protocols notified by the CPCB.**
(x)	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. Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring date should be maintained and submitted to the Ministry of Environment, Forest & Climate Change, its Regional Office, Nagpur, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.	**Being complied** Regular monitoring of flow rate of the springs and perennial nallahs flowing around the mine lease is being carried out and records are being maintained. Water flow measurements are being carried out at 17 locations. Regular monitoring of upstream and downstream of water bodies is being carried out and records are being maintained.
(xi)	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	**Being complied** Ground water level & quality is being monitored by establishing network of wells inter-alia including piezometers, four times in a year

	constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year- pre-monsoon (April- May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest & Climate Change and its Regional Office, Nagpur, Central Ground Water Authority and Regional Director. Central Ground Water Board.	through third party M/s Space Geotech and records are being maintained.
(xii)	The critical parameters such as PM_{10} (size less than 10 micro meter), $PM_{2.5}$ (size less than 2.5 micro meter), 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- 20012/1/2009-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest & Climate Change, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.	**Partly complied** The critical parameters such as PM_{10}, $PM_{2.5}$ and NOx, is being monitored in the ambient air. However, frequency of monitoring is inadequate. The peak particle velocity at 300m distance is being monitored periodically and records are being maintained in accordance with DGMS guidelines. Quality of discharge water is being monitored from the Tailing dam no: 2 and Check dam of 10/11A and records are being maintained. **PA shall upload the monitored data in the website of the company as stipulated.** Six monthly reports are uploaded on the website of the company. The monitoring data displayed on a display board at the administrative Building of the project site.
(xiii)	Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for PM_{10}, $PM_{2.5}$, SO_2 & 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. Data on ambient air quality should be regularly submitted to the Ministry including its Regional office located at Nagpur and the State Pollution Control Board/Central Pollution Control	**Partly complied** One continuous online AAQ monitoring station has been installed at Deposit-10 mine, which is under maintenance during the visit. **Further, the same has not been linked to the servers of the CECB & CPCB**. AAQ is being monitored in 9 locations (4 locations in the core zone and 5 locations in the buffer zone) for the parameters of PM_{10}, $PM_{2.5}$, SO_2, NOx & CO twice in a month through third party laboratory. Monitored data show that the values are within the limit. **It has been observed that the frequency and parameters monitored for the AAQ is inconsistent with the protocols prescribed. PA shall carryout the AAQ monitoring in accordance with the protocols notified by**

	Board once in six months.	**the CPCB.**
(xiv)	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.	**Being complied** Fugitive dust emissions from all the sources are being controlled by adopting regular water sprinkling, Mist water spray arrangements at Crushing Plant and transportation of Iron Ore from Crushing plant to Loading Plant is through closed conveyor system. Fugitive emission is being monitored once in a month.
(xv)	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 car plugs/muffs.	**Being complied** As part of noise control measures heavy vehicles deployed are provided with sound proof cabins, controlled blasting is in practice. Appropriate PPE's are being provided to the personals engaged in operations of HEMM, etc. Noise levels are being monitored during day and night and records are being maintained. Though the values are within the limit, PA shall enhance the frequency of noise level monitoring.
(xvi)	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 31 December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharged of workshop effluents.	**Being complied** From the mining operation no waste water is generated. Washings from the workshop is being treated in the ETP installed with oil and grease trap facilities and the treated water conforms the standards stipulated.
(xvii)	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.	**Being Complied** Personnel working in dust prone areas are provided with PPE's. Reportedly training and awareness on safety and health aspects were organized.
(xviii)	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.	**Being complied** Occupational health surveillance is being carried out to all the employees once in 5 years below 45 years, once in every 3 years for employees above 45 years and records are being maintained.
(xix)	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.	**Complied with** A separate environmental management cell with qualified personnel have been set up and is in functional under the control of senior executive, who report directly to Chief General Manager i.e., Head of Project.
(xx)	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise	**Reportedly complied** An expenditure of Rs. 9,62,97,760/- have been incurred towards environmental protection works in year 2021-2022 from 01/10/2021 to

	expenditure should be reported to the Ministry and its Regional Office located at Nagpur.	31/03/2022 at Bailadila Iron Ore Mine, Bacheli Complex.
(xxi)	The project authorities should inform to the Regional Office located at Nagpur regarding date of financial closures and final approval of the project by the concerned authorities andthe date of start of land development work.	**Details are not made available.** PA claimed that the condition is not applicable, since Deposit-10 is an existing iron ore mining and capacity expansion of Deposit-10 from 4.2 to 6.0 MTPA involved without any additional financial expenditure.
(xxii)	The Regional Office of this Ministry of located at Nagpur shall monitor compliance 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.	**Complied with** PA extended full co-operation to the Officer of the MoEF&CC, IRO, Raipur during the visit by providing requisite data / information.
(xxiii)	The Project Proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest& Climate Change, its Regional Office, Nagpur, Central Pollution Control Board and State Pollution Control Board.	**Being complied** PA submitting the six monthly compliance reports to the IRO of MoEF&CC.
(xxiv)	The Project Proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest& Climate Change, its Regional Office, Nagpur, Central Pollution Control Board and State Pollution Control Board.	**Being complied** PA submitting the six monthly compliance reports to the IRO of MoEF&CC.
(xxv)	A copy of clearance letter will be marked to concerned Panchayat/ local NGO, if any, from whom suggestion/ representation has been received while processing the proposal.	**Reportedly complied** It appears that the condition has been reportedly complied with.
(xxvi)	State Pollution control Board should display a copy of the clearance letter at the Regional Industry Centre and Collector's Office / Tehsildar's Office for 30 days.	**Reportedly complied** It appears that the condition has been reportedly complied with.
(xxvii)	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	**Complied with** PA has advertised the grant of EC in the dailys viz. Nai Dunia (Hindi) and Hitavada (English) on 24/7/2017. Copy of clearance letter is available in the website of MoEF&CC.

	the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with State Pollution Control Board and also at web site of the Ministry of Environment, Forest & Climate Change at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located Nagpur.	
10.	The Ministry or any Competent Authority may alter/modify the above condition or stipulate any further condition in the interest of environment protection.	**Agreed upon** It was submitted that the condition is 'Noted' and assured to abide the condition.
11.	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	**Agreed upon** It was submitted that the condition is 'Noted' and assured to abide the condition.
12.	The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India / High Court of Chhattisgarh and any other Court of Law relating to the subject matter.	**Complied with** PA renewed the Consent to Operate from the CECB vide letter No.3242/TS/CECB/2020 Nava Raipur Atal Nagar dated 10/7/2020 under Air and Water Act through scheme of "Auto Renewal of Consent" for the production of 6.0 MTPA of Iron Ore, which is valid from 10/7/2020 to 31/5/2025. Amendment in the existing authorization and subsequent renewal of Authorization under the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 has been obtained for Deposit-10 from Chhattisgarh Environmental Conservation Board vide letter no.7610/HSMD/HO/CECB/2020 Raipur dated 25/11/2020, which is valid till 26/01/2026. Renewal of authorization under rule 10 of the Bio-medical Waste Management Rules, 2016 has been obtained from the Chhattisgarh Environmental Conservation Board vide letter No.3459/BMW/HO/CECB/2021 Raipur dated 18/8/2021, which is valid from 20/7/2020 to 19/7/2023. Public Liability Insurance has been obtained vide policy No.181632227120000002, which is valid from 01/03/2022 to 28/02/2023.
13.	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	**Refer below** As per the records available in this office no appeal has been preferred within a period of 30 days.

Observed non-compliances & recommendation for immediate corrective action:

(1). Details regarding implementation of the Bio diversity Conservation and Management plan have not been made available during the visit – **specific condition No.(ii)**.

(2). Though the AAQ is being monitored, the frequency and parameters monitored for the Ambient Air Quality monitoring is not consistent with the NAAQ Monitoring protocol. Continuous online AAQ monitoring station installed is not in functional and the same has not been linked to the servers of the CECB & CPCB. Adequate number of Continuous online AAQ monitoring stations shall be installed as stipulated in the CTO – **specific condition No. (xxxvi), general condition No.(v), (ix) & (xiii)**

(3). PA shall upload the monitored data in the website of the company as stipulated – **general condition No. (xii).**

(4). Approval / NOC for drawal of surface water is still under process. PA shall obtain the NOC for water allocation / utilization from the Govt. of Chhattisgarh – **general condition No. (iii).**

(5). PA claims that some of the stipulated conditions are not applicable. In this regard, it is advised, if any condition is not applicable, the project authority shall get amended the said EC conditions from the MoEF&CC by following the due procedure.

This issues with the approval of IGF(Central) vide diary No.3986 dated 11/04/2023.

(Dr. M.T. Karuppiah)
Scientist – E

Annexure-1

एनएमडीसी लिमिटेड
(भारत सरकार का उद्यम)
NMDC Limited
(A Government of India Enterprise)
CIN - L13100TG1958GOI001674

ISO 9001 : 2008
ISO 14001 : 2004
ISO 18001 : 2007

बैलाडीला आयरन ओर माईन, बचेली कॉम्पलेक्स
बचेली - 494553
जिला - दक्षिण बस्तर दंतेवाड़ा (छ. ग.)
Bailadila Iron Ore Mine, Bacheli Complex
Bacheli - 494553
Distt. - South Bastar Dantewada (C. G.)
Fax : 07857-230423, 230310, 230170, 230225

D5/T&SE/2023-44/3410

Date:- 17 /03/2023

Year wise production details of Deposit - 10 Mine

S.N.	Year	ROM (Proposed)	ROM (Actual)	Proposed Waste (EMP)	Waste (Actual)
1	2017-18	6000000	4645158	400000	250823
2	2018-19	6000000	5338185	400000	183577
3	2019-20	6000000	5007721	400000	279115
4	2020-21	6000000	4902020	400000	231864
5	2021-22	6000000	5828588	400000	387659
	Total	30000000	25721672	1600000	1394055

17-03-23

For and behalf of
NMDC Limited
Bailadila Iron Ore Mine,
Bacheli Complex

SHIV SHANKAR PRASAD
Head of Department & Safety Officer
Training, Safety & Environment Department
NMDC Limited
BIOM, Bacheli Complex

SHIV SHANKAR PRASAD
Head of Department & Safety Officer
Training, Safety & Environment Department
NMDC Limited
BIOM, Bacheli Complex

Annexure-2

एनएमडीसी लिमिटेड
(भारत सरकार का उद्यम)
NMDC Limited
(A Government of India Enterprise)
CIN - L13100AP1958GOI001674

ISO 9001: 2008
ISO 14001: 2004
ISO 18001: 2007

बैलाडीला आयरन ओर माईन,बचेली कॉम्प्लेक्स
बचेली – 494553
जिला – दक्षिण बस्तर दंतेवाड़ा (छ.ग.)
Bailadila Iron Ore Mine,Bacheli Complex
Bacheli - 494553
Dist.- South Bastar Dantewada (C.G.)
Fax : 07857-230423,230310,230170,230225

D5/T&SE/2023-44/3412

Date:- 17 /03/2023

The Compliance of commitment made in Public Hearing on 15/11/2016 at 11:30 AM at Van Kastagar, Dantewada Van Mandal, South Bastar Dantewada District, Chhattisgarh.

S. N.	Proposed actions in Action Plan and their Compliance status
1	**Proposed action in Action plan:-**The trucks carrying iron ore from nearby NMDC mine i.e. Kirandul which passes through Bacheli will be covered with tarpaulin. In order to provide safe and potable drinking water to the nearby villages, NMDC has consented to fund "Group Water Supply Scheme". The scheme will be implemented by PHE Deptt as deposit work. NMDC has already given its clearance for the above scheme at estimated cost of Rs.6,237.40 lakhs which covers 32 villages in Dantewada District under Nerli and Dhurli group water supply scheme. **Compliance status:-**The trucks carrying iron ore covered with tarpaulin. Nerli and Dhurli group water supply scheme implemented by PHE Deptt as deposit work at cost of Rs. 6935.55 (Rs. 1482.55 lakhs for Nerli Scheme covering 8 villages + Rs. 5453 lakhs for Dhurli Scheme covering 24 villages) in Dantewada District.
2	**Proposed action in Action plan:-**The budget allocation during F.Y 2016- 17 for CSR works to be taken by Bacheli complex is given below:

Focus Area	Rs. in Lakhs
Education	3148.11
Drinking water	342.35
Health & Hygiene	1222.65
Infrastructure	1318.05
Skill development	481.28
Sports	55.00
Culture and Heritage	55.00
Miscellaneous	119.30
TOTAL	6,741.74

Compliance status:-The details of CSR expenditure of Bailadila Iron Ore Mine, Bacheli complex for past 6 years is as follow.

CSR expenditure of last 06 years (in crores)	
Year	Total
2016-17	63.92
2017-18	79.99
2018-19	57.35
2019-20	90.61
2020-21	52.13
2021-22	37.92
Grand Total	381.92

3	• The tree plantation program will be continued every year by planting

एनएमडीसी लिमिटेड
(भारत सरकार का उद्यम)
NMDC Limited
(A Government of India Enterprise)
CIN - L13100AP1958GOI001674

ISO 9001:2008
ISO 14001:2004
ISO 18001:2007

बैलाडीला आयरन ओर माईन,बचेली कांप्लेक्स
बचेली – 494553
जिला – दक्षिण बस्तर दंतेवाड़ा (छ.ग.)
Bailadila Iron Ore Mine,Bacheli Complex
Bachelli - 494553
Dist.- South Bastar Dantewada (C.G.)
Fax : 07857-230423,230310,230170,230225

	around 20,000 samplings. • The ground water monitoring study will be continued. **Compliance status:-**The afforestation/plantation work has been entrusted to M/s. Chhattisgarh Raj Van Vikas Nigam Ltd (CGRVVN of Chhattisgarh State Forest Department. • MoU signed between NMDC Limited and Chhattisgarh Rajya Van Vikas Nigam (CGRVVN) for Safety Zone Management works in Deposit-5 and Deposit-10/11A Mines on 15/05/2017 at the cost of Rs. 412.79 lakh. Above works include plantation of 28297 trees and fencing works (outer chain link mesh and inner barbed wire) in Safety zone (7.5 meter strip all along the Mining Lease boundary) of Deposit-5, Deposit-10 and Deposit-11A Leases by CGRVVN, Industrial Plantation Division, Jagdalpur. CGRVVN, Industrial Plantation Division (IPD), Jagdalpur has completed the 28297 plantation work in safety zone of Deposit-5, Deposit-10 and Deposit-11A mines in 2 phase (9667 in 1st phase + 18630 in 2nd phase). • Besides above another MoU was signed with CGRVVN, IPD, Jagdalpur for undertaking Gap plantation works by planting of 250000 tree saplings in open or free areas in Deposit-5, Deposit-10 and Deposit-11A Mining Leases in phased manner over time period of 5 years on 17/05/2019 at the total cost of Rs. 691.375 lakh. Rs. 100.375 lakh was released to CGRVVN, IPD, Jagdalpur on 05/07/2019 for plantation of 50000 trees in Deposit-5, Deposit-10 and Deposit-11A Mining Leases. Till date CGRVVN, IPD, Jagdalpur has completed plantation of 60000 trees in buffer zone of Deposit-10 mine. • Regular Ground water level and quality monitoring is being carried out four times in a year– pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January). • Above work has been entrusted to M/s. Space Geotech, Bengaluru.
4	NMDC, Bacheli project will attend the issue of Smt. Daya, Mundarapara, Bacheli who sought light and water connection in locality and take necessary action under CSR funds. **Compliance status:-**Complied.
5	NMDC, Bacheli project will attend the issue of Smt. Rambati, Ward No.1, Bacheli who sought light and water connection in locality and take necessary action under CSR funds. **Compliance status:-**Complied.

17.8.23

For and behalf of NMDC Limited
Bailadila Iron Ore Mine,
SHIV SHANKAR PRASAD Bacheli Complex
Department & Safety Officer
Safety & Environment Department
NMDC Limited
Bacheli Complex