



NMDC-CMDC LIMITED

(A Subsidiary of NMDC Ltd.)

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NCL/HO/Dep-4/FC/2024/1462

Date: 22/04/2024

प्रति,

वनमंडलाधिकारी,
दंतेवाड़ा वनमंडल,
जिला – दक्षिण बस्तर दंतेवाड़ा (छ.ग.)

विषय – Proposal for seeking prior approval of the Central Government under section 2 (1) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of M/s NMDC-CMDC Limited for non-forestry use of 682.2722 ha (570.100 ha inside lease and 112.1722 ha outside lease) forest land for Bailadila Iron Ore Deposit-4 Mine in Dantewada Forest Division, South Bastar, Dantewada District in the State of Chhattisgarh– Submission of EDS reply regarding. (Reg.No. FP/CG/MIN/146694/2021)

**संदर्भ – 1. भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली का पत्र दिनांक 07.03.2024.
2. आपका पत्र क्रमांक/मा.चि./2119 दंतेवाड़ा, दिनांक 21.03.2024.**

महोदय,

उपरोक्त विषयान्तर्गत संदर्भित पत्र क्रमांक -1 के माध्यम से वन (संरक्षण एवं संवर्धन) अधिनियम, 1980 के अंतर्गत प्रत्यावर्तन प्रस्ताव पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार के पास प्रचलन में है तथा प्रकरण के अवलोकानोपरांत पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार द्वारा 26 बिन्दुओं पर अतिरिक्त जानकारी चाही गयी है।

उपरोक्त वर्णित प्रकरण में पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार द्वारा चाही गयी 26 बिन्दुओं अंतर्गत अतिरिक्त जानकारी पूर्ण कर आपके सुलभ संदर्भ हेतु प्रेषित है।

अतः महोदय से निवेदन है कि, प्रकरण को अवलोकनोपरांत अग्रेषित करने का कष्ट करें।

भवदीय

प.च.नाईक

(पद्मनाभ नाईक)

मुख्य कार्यपालन अधिकारी

22/4/24

संलग्न :- उपरोक्तानुसार।

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- i. The State Govt had earlier submitted a proposal for diversion of 665.230 ha forest land for Bailadila iron ore mine in favour of NMDC which was rejected by the Central Govt vide letter dated 17/04/2017. However, in the Part-1 of the application form the user agency has not mentioned anything about the same. The reasons for not submitting correct details and the justification for submission of present proposal in view of earlier rejection shall be submitted.

History of old diversion proposal in favour of the NMDC Ltd.:

To get the mining lease of Deposit-4 M.L the lease application to the State Govt. was submitted on 27.2.1991 and based on the above concept, a mining plan was prepared and approved by IBM on 2nd May 1991. However, NMDC Ltd. could not get the Mining Lease for next 20 years.

Ministry of Mines, GoI, New Delhi vide letter dated 30.11.2011 had conveyed prior approval of Central Govt. under section 5(1) of the Mines and Minerals (Development and Regulation) Act – 1957 to the grant of Mining lease of Bailadila Iron Ore Mine Deposit No - 4, Distt: South Bastar Dantewada, C.G. in favour of NMDC Limited. Accordingly, NMDC Ltd. took actions for getting Environment and Forest Clearances for the Mining Lease and associated infrastructure with the Mining Lease.

The Mines and Minerals (Development and Regulation) Amendment Ordinance, 2015 was promulgated on 12.01.2015 and a new Section 10A was inserted in the Mines and Minerals (Development and Regulation) Act – 1957. Section 10A (2)(C) of the MMDR Act-1957 is reproduced below –

“Where the Central Government has communicated previous approval as required under sub-section (1) of section 5 for grant of a mining lease, or if a letter of intent (by whatever name called) has been issued by the State Government to grant a mining lease, before the commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, the mining lease shall be granted subject to fulfilment of the conditions of the previous approval or of the letter of intent within a period of two years from the date of commencement of the said Act.”

Rule 8(4) of the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules – 2016 is also reproduced below -

“Where an order for grant of mining lease has been issued under sub-rule (2), the mining lease shall be executed with the applicant in the format specified in Schedule VII and registered on or before 11th January, 2017, failing which the right of such an applicant under clause (c) of sub-section (2) of Section 10A for grant of a mining lease shall be forfeited and in such cases, it would not be mandatory for the State Government to issue any order in this regard.”

Thus, Mining Lease of Bailadila Iron Ore Deposit-4, was supposed to be registered by 11.01.2017 in view of the amended / new provisions. EAC (Non-Coal Mining), MoEF&CC in its meeting held on 24.05.2016 recommended the project for Environmental clearance. Registration of the Forest Diversion proposal was done on 13.05.2013. **As the Mining Lease of Deposit-4 could not be registered in favour of NMDC Ltd. within the dead line of 11.01.2017, hence, right of NMDC Ltd. to get the Mining Lease also got lapsed irrespective of the outcome of the Forest Clearance as per new provision of the MMDR Act-1957.** Hence, after lapsing of the right to get the ML of Deposit-4, NMDC Ltd. did not pursue pending Forest Clearance. Afterwards on 17.04.2017, proposal for diversion of Forest Land for Bailadila Iron Ore Deposit-4 was rejected by the MoEF&CC on the ground that NMDC Ltd. had sufficient Iron Ore Reserve base in its Mining Leases and opening of the new forest area for mining especially Deposit-4

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would have adverse impact on the local ecological regimes specially water sources and tree ferns.

As, present proposal for diversion of Forest Land for the Mining Lease of Bailadila Iron Ore Deposit-4, is by a separate entity, i.e. NMDC-CMDC Ltd., with a fresh reservation for the Mining in its name, hence, old proposal, which was related to NMDC Ltd., was not linked with the present one. However, it may be noted here that details of the old case of NMCD Ltd. in respect of Deposit-4 along-with status of Forest Clearance is clearly mentioned in the Letter of Intent for the Mining Lease of Depsoit-4 in favour of the NMCD-CMDC Ltd. issued by the Chhattisgarh State Government vide letter No. F 2-20 / 2005 / 12, dated – 26.06.2021 and copy of the same has been uploaded in the Part-1 of the Form-A of the present Forest Diversion application (Annexure-1.1).

Justification for submission of present proposal:

The Union Cabinet chaired by the Prime Minister has given its approval for National Steel Policy (NSP) – 2017 on 03.05.2017 i.e. just after the lapsing of NMDC's right for the Mining Lease of the Bailadila Iron Ore Deposit-4 (Annexure-1.2).

Key features of the NSP 2017 are as follows –

- a. Create self-sufficiency in steel production by providing policy support & guidance to private manufacturers, MSME steel producers, CPSEs,
- b. Encourage adequate capacity additions,
- c. Development of globally competitive steel manufacturing capabilities,
- d. Cost-efficient production,
- e. **Domestic availability of iron ore**, coking coal & natural gas,
- f. Facilitating foreign investment,
- g. Asset acquisitions of raw materials &
- h. Enhancing the domestic steel demand.

India produced around 127.2 MT of steel in FY23. The New Steel Policy, 2017 aspires to achieve 300 MT of crude steel-making capacity and 255 MT crude steel production by 2030. This will necessitate production of 400 - 450 million tonnes of iron ore annually. Further, in the projected scenario for FY47, it is anticipated that there will be a domestic demand of ~570 MT of iron ore.

Despite India's projected increase in scrap consumption to 55 million metric tons by 2030-31, the BF-BOF route's share is anticipated to rise to 60-65% during the same period, making iron ore a crucial raw material. As India focuses on decarbonizing the steel sector, the long-term market is expected to witness the emergence of numerous hydrogen-based blast furnaces. Consequently, there will be a substantial demand for iron ore in the world's second-largest steel-producing nation, primarily propelled by the BF-BOF route.

Steel Policy also says that Ministry of Steel through policy measures will ensure availability of raw materials like Iron ore, Coking coal and non-coking coal, Natural gas etc. at competitive rates. Success of Policy is dependent on the indigenous availability of high-grade iron ore and non-coking coal – the two critical inputs of steel production. Steel Policy also identifies NMDC, OMC and Odisha Miners as key Iron Ore suppliers.

In the fiscal year FY 2023, the iron ore mining sector in India achieved its highest-ever production figure of 255.63 million metric tons (MT), compared to the 251.11 MT production recorded in the previous fiscal year of 2022.

To achieve the targets set by National Steel Policy-2017, Ministry of Steel, Gol has asked NMDC Ltd. to increase its Iron Ore Production capacities. Accordingly, NMDC has targeted to achieve



Iron Ore production of 100 MTPA by 2030. Out of this, 86 MT is planned from the Bailadila Sector. To achieve this, NMDC planned for opening up of green field projects and enhance capacity expansion of brown field projects. Projects identified under green field were Bailadila Iron Ore Deposit-13 and 4.

[**Remarks** - Out of the projected future requirement of 450 Million Tonnes of Iron Ore by the year 2030 (as per NSP-2017), minimum 25% has to come from Chhattisgarh (i.e. 112.50 MT) against the present contribution of around 18% - 20% in the Country's total Iron Ore Production. At present, Bailadila Regions is contributing approx. 75% of the total Iron Ore production of Chhattisgarh and more than 99% of the total Non-Captive Iron Ore Production of the Chhattisgarh, hence, future requirements from the Bailadila region will be minimum 84 MT – 85 MT. Here it may be noted that during the FY 2022-23 it were the Iron Ore Mines of the NMDC Ltd. / CMDC Ltd. which have given 100% of the Iron Ore production in the Non-Captive Category.]

To give an idea of demand and supply gap posed in front of the Bailadila Iron Ore region, a summary of Iron Ore supplied to the major Steel Manufacturers in the FY 2023-24 and their requested quantities for FY 24-25 / FY 25-26 is given in the following table –

Sl.No.	Name of the Parties	Quantity (LT) 2023-24	Demand per year (FY24-25 / FY25-26) (LT)
1	ArcelorMittal Nippon Steel (I) Ltd.	76.53	106.53
2	Jindal Steel and Power Limited (Angul)	4.01	12.24
3	JSW Steel Limited	61.53	110.00
4	KIOCL	20.55	30.00
5	NMDC Steel Limited	18.96	45.00
6	Rashtriya Ispat Nigam Limited	66.50	103.84
7	Welspun Steel Limited	6.03	11.55
8	Others	59.22	62.92
	Total	313.33	482.08

Request letters for increased Iron Ore supplies from NMDC Ltd. by the major Steel manufacturers of Country and few Sponge Iron Manufacturers of C.G. are enclosed as **Annexure-1.3.**

In India, Iron Ore is found mainly in following five zones –

Zone A – Odisha – Jharkhand (Noamundi, Kiriburu, Thakurani, Daitari etc.)

Zone B – Chhattisgarh (Bailadila, Dalli, Rajhara, Rowghat etc.)

Zone C – Karnataka (Bellary – Hospet region)

Zone D – Goa and Reddi area of Maharashtra

Zone E – Karnataka (Kudremukh, Bababudan etc.)

There is no exploitation of Iron Ore in Zone E due to environmental issues. Also, there is restrictions / capping on Iron Ore Mining in Zone C and Zone D. Zone E is having Magnetitic Iron Ore and Zone C / Zone D are having presence of Low-Grade Iron Ore. Zone A and Zone B are having medium to High Grade Iron Ore with captive and non-captive Mining Leases. Iron Ore of the Bailadila region of the Chhattisgarh is best grade Iron Ore on Chemical and Physical parameters. In Zone A and Zone B, mainly NMDC Ltd. and OMC are biggest commercial Iron Ore Miner (i.e. Non-Captive) with high grade deposits in possession of NMDC Ltd. High Grade Iron Ore from the Bailadila Mines of NMDC Ltd. is being used by the Steel / Sponge producers to blend with low – medium grade of Iron Ore sourced from other parts of the Country. Iron Ore

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from Bailadila region is preferred choice amongst Steel Makers as it reduces requirement of other raw material like – Coal, Limestone and Dolomite etc. which in turn lessen the adverse impact on environment at the site of the end-users.

Thus, increase in Iron Ore production from the Deposits of Bailadila becomes imperative in achieving the Targets set by the National Steel Policy-2017. For this to happen, capacity of the existing Mines in Bailadila has to be expanded and also new deposits are required to be developed on urgent basis, otherwise Steel / Sponge Plants will starve off the High-Grade Iron Ore.

Bailadila range trending from North to South direction, is having 14 major Iron Ore Deposits and these Iron Ore Deposits are numbered from 1 to 14. There are two sub-parallel ridges about 40 KM long & 4 KM Wide. These ridges, in the extreme North direction, merge and coalesce into one ridge north of Deposit-1 near Faraspal Village and in the extreme South Direction end in Depsoi-13 and 4 near Kirandul. Prospecting work in the Bailadila Iron Ore Range was conducted by the GSI and IBM – Nagpur during the period of 1960-68. Later on, NMDC Ltd. conducted detailed exploration work of Bailadila Range from 1968 to 1997. Prior to NMDC, no exploration was done of Deposit No-4. The initial geological work of Deposit No-4 was started in November 1968, followed by the detailed exploratory works.

Out of these 14 Deposits, NMDC Ltd. opened only 4 Deposits spread over 5 Mining Leases and these are Deposit-5, Deposit 10, Deposit 11 (11A, 11B and 11C) and Deposit-14. Out of these, Sub-Deposit-11C is spread in the Mining Lease of 11 and 14 NMZ, i.e. 10 Nos. of Deposits are still undeveloped. Out of the remaining deposits, only two deposits viz. Deposit-4 and Deposit-13 are properly explored. Based on market scenario and requirement of the country, Deposit-13 and Deposit-4, though explored more than 50 years back were not proposed for Mining till recent years. Though, Mining Lease of Depsoit-13 was registered on 10.01.2017, however, due to unforeseen circumstances, this Mine could not be opened up even after passing of 7 years.

Development of Bailadila Iron Ore Deposit-4 was conceptualized many years back in view of the upcoming Steel Plant at Nagarnar – Jagdalpur, C.G. Deposit-4 had been planned as preferred supplier of the Iron Ore for the Nagarnar Steel Plant. Now, Nagarnar Steel Plant with 3 MTPA capacity and cost of Rs. 24,000 / = Crores has been made operational in the year 2023. In absence of Deposit-4, Nagarnar Steel Plant is forced to take Iron Ore from other Bailadila Iron Ore Mines of NMDC Ltd. which in turn reducing the availability of High-Grade Iron Ore not only for Sponge makers of Chhattisgarh but also for the Major Steel Makers outside Chhattisgarh.

Exploration in any other virgin deposit of Bailadila region, i.e. Deposit 1,2,3,6,7,8, 9 and 12 and their development for Mining will take at-least 10 -15 years' time, thus, as of now Deposit-4 is only option in Bailadila region which can contribute to the cause of the NSP-2017.

In view of the difficulties being faced by the Domestic Sponge Iron Units and Steel Plants present in the State of Chhattisgarh and to fulfill their demand of Iron Ore, State Government of Chhattisgarh has recommended for the reservation of Bailadila Iron Ore Deposit-4 in favour of the Joint Venture Company formed between NMDC Ltd. (A Central Govt. PSU) CMDC Ltd. (A State Govt. PSU). Accordingly, agreeing with the need of the project, Ministry of Mines, Govt. of India has reserved the Bailadila Iron Ore Deposit-4 in favour of the JV Company i.e. NMDC-CMDC Limited (NCL) on 30.09.2019 and as per Section 17A of the MMDR Act-1957, ***Mining Lease of the Depsoit-4 has to be registered by 30.09.2024 i.e. within a period of 5 years from the date of reservation. Letter No. 4/2/2018-M.VI, dated-13.04.2024 from Ministry of Mines, Govt. of India directing to obtain all the statutory clearances in time and execute the ML as per the time lines is enclosed as Annexure 1.4.***

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Here, it is very important to note that in view of the new provisions of additional premium of 22.5% on the Sale Value of Iron Ore of the Government Mining Leases and CMDC having a share of 49% in the JV Company, State of Chhattisgarh will be the biggest beneficiary of the Bailadila Iron Ore Deposit-4.

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- ii. **The State shall intimate whether before opening up new area a study to assess the maximum permissible production level which can be sustained ecologically without hampering the existing natural resources has been conducted in the Bailadila Mountain Range.**

To augment the production and to improve the quality of product mix from Bailadila Sector, the schemes of NMDC Ltd. like SP-III Kirandul, relocating Crushing Plant of Dep.14 & 11/C and Downhill conveyor, additional screening lines in Bacheli & Kirandul, Rapid Wagon Loading System (RWLS) etc. are under progress. Increase in evacuation capacity being a major area of focus for enhancing the life of mines, the schemes like beneficiation plant at Bacheli / Kirandul and Slurry pipeline from Bacheli to Nagarnar has also been taken up.

Following will be the future Iron Ore evacuation capacity of the Bailadila region for which constructions / expansion works are under progress –

Sl.No.	Mode of Iron Ore Transportation	Planned Capacity (In Million Tonnes per annum)	Remarks
1	Rail	60	NMDC has taken up doubling of KK line between Kirandul to Jagdalpur & Jagdalpur to Amdagaon for Iron ore transportation. Also, railway has also planned to connect Rawghat to Jagdalpur (approx. 140 km). Completion of this rail route will enable transportation of iron ore from Bailadila sector to the iron and steel industry situated in other parts of Chhattisgarh.
2	Road	~ 5	Chhattisgarh Parties
3	Slurry Pipe Line AMNS	8	Already operating
4	Slurry Pipe Line NMDC	15	A 15 MTPA Slurry pipeline from Bacheli to Jagdalpur, Beneficiation Plant at Bacheli including a 2 MTPA Pellet Plant at Nagarnar are under construction.
	Total	~ 88	

Thus, sufficient evacuation capacities will be available in the Bailadila Region for planned 86 Million Tonnes of the Iron Ore in future.

In the Bailadila region, at present Iron Ore Mines are being operated by the NMDC Limited only. **To minimize the impact of Mining on the ecology, NMDC has signed an MoU with DFO, Dantewada for implementation of R&R / EMP works at Kirandul complex (on 01.02.21) and Bacheli Complex (on 09.03.24) at a total cost of Rs.1,615.00 lakhs and Rs. 1,021.42 lakhs respectively as per the recommendation of ICFRE, Dehradun.** Environmental protection and ecological restoration work include plantation in and around the lease areas, construction and repair of buttress walls, check dams, check bunds, garland drains, rainwater harvesting pits, broadcasting of grass seeds and laying of geo-coir matting on the inactive waste dumping sites are being implemented. The R&R works suggested by M/s Indian Council of Forest Research and Education (ICFRE, Dehradun) in the Environmental Management and Reclamation & Rehabilitation Plan for Kirandul Complex and Bacheli Complex of the NMDC Limited are under implementation stage. Further, for betterment of the surrounding environment, NMDC has undertaken following works also -

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- R&D works in the field of air, water, solid waste etc. are being undertaken by engaging institutes of repute such as ISM Dhanbad, NIT– Raipur and VNIT – Nagpur.
- Water Audit is conducted at regular intervals at all projects of NMDC and recommendations of audit are being implemented to conserve water and to improve the efficiency of motors / pumps, arrest leakages, etc.
- The environmental pollution control works are undertaken such as de-silting of check dams / check bunds, tailing dams, construction of buttress walls at toe of waste dumps and geo-coir matting for stabilization of waste rock dumps.
- About 96 nos. wells are being monitored at NMDC projects to monitor underground water level, which also covers the quality analysis in all 4-seasons of the year. Studies are revealed that there has been an increasing trend in the ground water due to hydraulic loading by the existing check dams and check bunds. Limited usage of ground water and continuous recharge has also helped in the process.
- NMDC has set-up Sewage Treatment Plant (STP) with advanced treatment technology (Sequential Batch Reactor) at Bachel (2 MLD) for treatment of domestic waste water. The treated water is reused for green belt development.
- Since inception of Mining activities in Bailadila, around 10 -12 Lakh trees have been planted in and around leases of NMDC Limited. NMDC is actively contributing funds to Government of Chhattisgarh flagship programme “Hariyar Chhattisgarh” for undertaking roadside tree plantation in the state of C.G by CGRVVN Limited.
- NMDC also supports natural habitation and wild life protection by implementing bio-diversity conservation plan through State Forest Dept to maintain the ecological balance of the area.

NMDC employs safe, scientific and environment friendly methods of mining and mineral processing. NMDC stands committed for promoting greater environmental responsibility in mining and processing of minerals in its mines. NMDC strives for excellence for improvement in quality of life of its surrounding communities through CSR, based on ethical, transparent and sound governance practices. NMDC's well-defined CSR policy reflects the Company's commitment towards its stakeholders and the society at large. NMDC makes efforts to add value and augment quality of life of the people living primarily in and around NMDC's projects. The focus areas of Company's CSR initiatives include education, infrastructure development, cleanliness campaign under Swachh Bharat Mission, health care, sanitation and hygiene, drinking water, environment, skill development, promotion of sports and culture.

Some of the major CSR activities implemented by NMDC which have benefitted the society are given below:

- Sponsoring Tribal girl students for Nursing Course under the 'NMDC Balika Siksha Yojana', which is a unique initiative in State of Chhattisgarh to benefit Tribal girls of Bastar region.
- Coverage of SC/ST background students under NMDC Shiksha Sahyag Yojna, Scholarship Scheme for continuation of education beyond 8th class.
- Integrated Village Development Programme in 18 backward villages around NMDC's Bailadila projects, which are primarily inhabited by Tribal(s)
- Residential School at Nagarnar, Bastar, Chhattisgarh
- Industrial Training Institute (ITI) at Nagarnar, Bastar, Chhattisgarh
- ITI at Bhansi, Dantewada
- Education Hub at Jawanga Geedam in Dantewada
- Polytechnic College at Dantewada
- Astha Gurukul - Residential School for SC, ST, Orphans etc.
- Saksham - Residential School for children with special needs
- Education Hub at Bijapur, Chhattisgarh

T. C. S. D.

- Aakar Bhavan at Sukma
- Science Park and Museum at Sukma
- Nal Jal Yojana for providing safe drinking water through piped supply to the rural communities

A large section of population does not have access to reliable health services in large parts of India. Realizing the fact that our projects are located in remote and backward areas, NMDC has taken encouraging steps in providing reliable health services such as free medical facilities to the local populace, Hospital on Wheels for remote villages etc.

Bastar region has traditionally been devoid of a major health centre for advanced diagnostics and treatment. Hence, NMDC has volunteered to provide monetary contribution for establishment of a medical college and Hospital at Jagdalpur which is envisioned to be a Centre of Excellence with latest ultra-modern equipment, to cater to the needs of the local people with all types of treatment. The college would also address the issue of availability of trained medical staff in the region.

NMDC is creating infrastructural facilities in difficult geographic regions, far off and remote with an objective to help local communities gain opportunities for overall socio-economic development.

Mines of the NMDC- CMDC Ltd. will also follow the CSR Policy of the NMDC Ltd.

V. Chand

- iii. Further, the detail of total forest land involved in the project / mining lease, along with the detail of forest land diversion approvals obtained in the past and the area for which approval is yet to be obtained shall be submitted.

Total Forest Land involved in the project is 682.2722 Ha of which break-up is as follows -

Sl.No.	Description	Reserve Forest Area (Ha)	Revenue Forest Area (Ha)
1	Total Area in Mining Lease	646.596	-
2	Tree-Fern Area inside the Mining Lease not proposed for diversion	76.4960	
3	Area in Mining Lease proposed for diversion	570.100	-
4	Area outside the Mining Lease proposed for diversion	100.077	12.0952
	Sub-Total (Area for diversion)	670.177	12.0952
	Grand-Total (Area proposed for diversion)	682.2722	

For the above-mentioned area proposed for Forest land diversion, no approval has been obtained in the past and approval is sought for complete 682.2722 Ha.

T. Chand

- iv. **The State shall examine the proposal as per para 7.8 of the Chapter 7 of the Consolidated Guidelines dated 29.12.2023 and submit the requisite documents and justifications as required.**

Examination of the proposal as per para 7.8 of the Chapter 7 of the Consolidated Guidelines dated 29.12.2023 is as follows -

Sl.No.	Description	Remarks
1	Point (i) - Brief profile of the lessee/company	Brief profile and details of the existing Mining Leases of NMDC CMDC Ltd. in the State of Chhattisgarh is enclosed as Annexure 4.1.
2	Point (i) - Details of their existing mining leases in the State with their capacity of production, the present level of average annual production, location of these pits and the status of reclamation of forest land that are exhausted minerals	
3	Point (i) - Details of all other mining leases for Iron Ore with their capacity and average annual production	Details of mining leases of Iron Ore NMDC Ltd., CMDC Ltd. and other companies in the State of Chhattisgarh is enclosed as Annexure 4.2. A summary of the Iron Ore production in the Chhattisgarh during the FY 2022-23 is also given at the end of the Annexure 4.2.
4	Point (i) - Projected future requirements of Iron Ore	Out of the projected future requirement of 450 Million Tonnes of Iron Ore by the year 2030 (as per NSP-2017), minimum 25% has to come from Chhattisgarh (i.e. 112.50 MT) against the present contribution of around 18% - 20% in the Country's total Iron Ore Production. At present, Bailadila Regions is contributing approx. 75% of the total Iron Ore production of Chhattisgarh, hence, future requirements from the Bailadila region will be minimum 84 MT – 85 MT. Here it may be noted that during the FY 2022-23 it were the Iron Ore Mines of the NMDC Ltd. / CMDC Ltd. which have given 100% of the Iron Ore production in the Non-Captive Category.
5	Point (i) - Justification for the necessity of opening new Iron Ore mining lease	To meet the Targets set by National Steel Policy – 2017 and as detailed under the reply to the Point No. (i).
6	Point (i) (a)	N.A.
7	Point (i) (b)	N.A.
8	Point (i) (c) - Comprehensive study of solid waste management and land reclamation with post mining land use plan and decommissioning - plan should envisage the minimum possible overburden dumping outside the mine.	Same has been taken care in the approved Mining Plan and EIA / EMP of the Project.

P. Chandra

Sl.No.	Description	Remarks
9	Point (i) (c) - In place where the non-forest land is available, the external dumping of the overburden should be planned on non-forest land.	No non-forest land is available in the vicinity of the Bailadila Iron Ore Deposit-4 for dumping of the overburden.
10	Point (i) (c) - Special attention should be given to top-soil and sub –soil handling and management.	Same has been taken care in the approved Mining Plan and EIA / EMP of the Project.
11	Point (i) (d)	N.A.
12	Point (i) (e)	N.A.
13	Point (i) (f) - Approach Road/conveyor belt and other ancillary activities related to mining shall be considered as part of the mining project	Present proposal of the Forest Land diversion for the Bailadila Iron Ore Deposit-4 is inclusive of all the ancillary activities related to the mining including approach Roads and Conveyor Belts outside the Mining Lease.
14	Point (i) (f) - Supplementary linear projects linked to mining that are conceived after the start of the original mining	N.A.
15	Point (i)(f)(1) - All forthcoming forest clearance proposals (both for green field mining as well as brown field expansion) shall have an additional column for the project proponent to certify that they have critically examined the mineral extraction pathways and have found them to be adequate, and that no new extraction path outside mining area shall be proposed in the next five years.	Certificate from the Project Proponent that no new extraction path outside mining area shall be proposed in the next five years is enclosed as Annexure 4.3 .
16	Point (i)(f)(2) - As far as possible, existing roads/ rails/ belts should be strengthened to minimise forest / tree cover loss.	There is an existing unmetalled jeepable road (4m wide approx.) from Village Bhansi to Hill-Top of Deposit - 4. This road is in existence before the year 1980 and still in use by the Villagers and Forest Department. Accordingly, this existing road has been proposed to be suitably widened so that the total width of road shall be 10m including drains and bund on valley side.
17	Point (i)(f)(3) - In case of later-stage supplementary proposal for extraction path (linear projects such as road/ rail/ conveyer belt project including the loading/unloading point), the concerned Regional Officer shall ensure that cogent and convincing reasons/justifications of not including such linear infrastructure at the inception stage are provided by the State Government/UT Administration.	N.A.
18	Point (i)(f)(4) - The State Government/User agency shall ensure that dispensation considered by the Ministry is not misused in any way and likely tendencies to detach linear projects from main proposal of mining should not be encouraged. To the extent possible, linear infrastructure such as	N.A.

M. C. Chaudhary

Sl.No.	Description	Remarks
	roads/railways/conveyor belts, etc. ancillary to mining should be included in the main proposal and under inevitable circumstance only, such proposals submitted by the user agency should be considered as standalone project.	

P. Chel

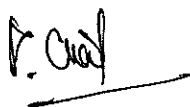
- v. As per the mining plan submitted by the state the total lease area has been mentioned to be 646.596 ha, whereas the proposal has been submitted for the diversion of forest area of 682.272 ha. The proposal further mentions that an area of 570.100 Ha is inside lease and 112.1722 ha is outside the lease. The non forest land involved has been reported to be only 10.3706 ha. There is thus a mismatch in the area proposed for diversion and the area given in the mining plan. The justification for the same along with the component wise breakup shall be submitted.

Letter of Intent for the Mining Lease issued by the State Government is for an area of 646.596 Ha. Accordingly, in the Mining Plan area under the Mining Lease is mentioned as 646.596 Ha. However, in the Chapter 9 of the Mining Plan, at Point No. 9.3.2.2, it is clearly mentioned that an area of 76.496 Ha will not be diverted for Tree Fern conservation. It may be noted here that in the present format of the Mining Plan, provision is made only to discuss the land-use details within the Mining Lease area. In the Mining Plan it is mentioned that few facilities of the project are planned at Bhansi.

Total Land involved in the project is 692.6428 Ha of which break-up is as follows -

Sl.No.	Description	Reserve Forest Area (Ha)	Revenue Forest Area (Ha)	Revenue Railway (Ha)*	+ Land
1	Total Area in Mining Lease	646.596	-	-	
2	Tree-Fern Area inside the Mining Lease not proposed for diversion	76.4960	-	-	
3	Area in Mining Lease proposed for diversion (1-2)	570.100	-	-	
4	Area outside the Mining Lease	100.077	12.0952	10.3706	
5	Forest land for diversion	682.2722 (570.100+100.077+12.0952)			
6	Total Area required for the project	692.6428 (682.2722+10.3706)			

Applications for the Environment Clearances for the Mining Lease and infrastructure outside the Mining Lease have been filed for the above-mentioned area only. Thus, there is no mismatch in the area proposed for diversion and the area given in the mining plan.



- vi. **The State shall ensure that the area proposed for diversion is commensurate with the mining plan. A comparative analysis of the component wise area proposed for diversion and the component wise breakup as per mining plan shall be submitted.**

Following is the break-up of the total 682.2722 Ha Forest land proposed for diversion –

1. Mining Lease (excluding Tree Fern Conservation Area) falling in the Reserve Forest – 570.100 Ha;
2. Ancillary infrastructure outside the Mining Lease falling in the Reserve Forest – 100.077 Ha;
3. Ancillary infrastructure outside the Mining Lease falling in the Revenue Forest – 12.0952 Ha;

Letter of Intent for the Mining Lease issued by the State Government is for an area of 646.596 Ha. Accordingly, in the Mining Plan area under the Mining Lease is mentioned as 646.596 Ha. However, in the Chapter 9 of the Mining Plan, at Point No. 9.3.2.2, it is clearly mentioned that an area of 76.496 Ha will not be diverted for Tree Fern conservation. It may be noted here that in the present format of the Mining Plan, provision is made only to discuss the land-use details within the Mining Lease area. In the Mining Plan it is mentioned that few facilities of the project are planned at Bhansi. A comparative analysis of the component wise area proposed for diversion and the component wise breakup as per mining plan is as follows -

Description	Area as per approved Mining Plan (Ha)	Area as per Forest Diversion Proposal (Ha)
Inside the Mining Lease		
Degradation by Excavation (In-situ) / Area under Mining (In-situ)	94.1100	94.1100
Degradation by Excavation (Float Ore) / Area under Mining (Float Ore)	70.5200	70.5200
Degradation by Dumps & Material Staking / Overburden/Waste Dumping	74.0700	74.0700
Covered under Plants, Shades & Buildings / Covered by Roads & Approaches	65.9000	65.9000
Covered under Environmental Protection, improvement and EMP Works	241.642	241.6420
Covered under Explosive Magazine	15.3700	15.3700
Safety Zone along the ML Boundary	8.4880	8.4880
Tree fern Area not to be diverted	76.4960	-
Sub-Total (excluding Tree Fern area)	570.1000	570.1000
Outside the Mining Lease		
Major part of Downhill conveyor system	-	43.0000
Screening Plant including all allied facilities	-	18.2810
Loading Plant including all allied facilities	-	16.6496
Railway siding	-	6.1603
Existing roads widening / strengthening for two-way traffic	-	27.5160
Pump House	-	0.4000
Pipe line	-	0.1653
Sub-Total (Reserve / Revenue Forest area outside the Mining Lease)		112.1722
Grand Total (Ha)		682.2722

P. Chel

- vii. It has been mentioned by the DCF/CCF in the proposal that the Conveyor belt has been proposed in the area taken up under Compensatory Afforestation. The details of the said Compensatory Afforestation along with the justification for proposing the said area for conveyor belt needs submission. The State shall explore the alternatives for the Conveyor belt and avoid the use of said CA land.

Details of the examination done for the alternatives for the Conveyor Belt is given in the reply to the Point No. xvii. The options deliberated are shown in the plan enclosed as **Annexure-17.3**.

Approx. 1 hectare of the CA area will be affected by the proposed Conveyor Belt of the Deposit-4. NCL is giving undertaking for paying additional cost for the affected CA area coming in the Conveyor belt alignment (**Annexure-7.1**).

P. Chaudhary

- viii. **State Government has mentioned in their recommendation that there will be negative impact on tree-ferns located on both sides of nala by the mining activity. Therefore, a study by experts Indian Council for Forestry Research and Education (ICFRE) needs to be conducted to know exact distance from how far the mining activity and infrastructure has to be proposed from the existing tree-fern area for its conservation. The State shall submit the status of the study so proposed by the authorities of the State Government.**

Tree Ferns are located along the stream of the Galli Nala and not at far distance from it. For the Tree Fern conservation purpose, already, an area of 76.4960 Ha (having boundary with varying distance of 50 Mtrs -180 Mtrs from the Galli Nala on both sides) within the Mining Lease of the Bailadila Iron Ore Deposit-4 has been identified and not included in the Forest Diversion proposal.

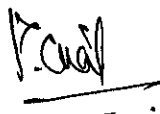
NMDC-CMDC Ltd. has engaged "**We the Foresters Welfare Society – Chhattisgarh**" to undertake a study for preparation of the Bio-diversity conservation Plan, Soil – Water & Moisture Conservation Plan specific to Tree Fern area and Wild life Conservation & Management Plan. Reports of Bio-diversity conservation Plan and Soil – Water & Moisture Conservation Plan have been approved by the Chhattisgarh State Bio-diversity Board on 21.08.2023. Copy of the approval letter and Bio-diversity conservation Plan and Soil – Water & Moisture Conservation Plan is enclosed as **Annexure-20.1**.

The team of experts have done data collection in respect of Tree Fern species in Project area (ML area) along Galli Nalla and outside project area in other forest areas outside Project area -

- Recorded data for Tree Fern Within Project area along Galli Nalla in Compartment Nos. RF 1834, RF 1841 and RF 1842 – 368
- Recorded data for Tree Fern Outside Project area in RF 1846, RF 1882, RF 1883 – 295.

As a precautionary measure it is recommended in the report that the area between Mine pits and Galli Nalla should be notified as **NO GO** area (Buffer area for mine) where movement of any kind shall be restricted. No mining activity of any type shall be allowed in this area. Chain link fencing (height 6 ft. and gap in chain link 2-inch x 2 -inch.) to be provided in the NO GO area belonging to Tree Fern and nearby area. As per field observation, the Tree Fern area, which fall within ML area is majorly confined along both sides of Galli Nalla and its tributary. So, Chain link fencing to be fixed at suitable distance (approx. **200 Mts** from the Galli Nalla) on either side of Galli Nalla to protect the nalla and its tributaries towards Western and Eastern side of Nalla. Chain link fencing shall be done by the forest department at the cost of the NMDC-CMDC Ltd. It means, there will be a buffer zone between the non-diverted area of 76 Ha (tree fern conservation zone) and ultimate pit limit of the Mine wherever required.

Presently, other than above mentioned study, no separate study has been undertaken by the Indian Council for Forestry Research and Education (ICFRE). If, MoEF&CC, GoI desires to have an additional study in the matter either through ICFRE or through some other expert organization / agency, then same may be done at the cost of the NMDC-CMDC Ltd.



- ix. **DFO, Dantewada has mentioned in Part-II that there is presence of rare/ endangered/unique species of flora and fauna found in the area. Details of the same needs to be submitted by the State Government.**

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. Copy of the approval letter and Wildlife Conservation & Management Plan is enclosed as **(Annexure-20.2)**. and 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 **(Annexure-20.1)**.

A conservation plan for Cyathea arborea (Indian Tree fern) that is an endangered species has been prepared. There are seven Schedule I Species found in the Study Area namely Sloth Bear, Indian Pangolin, Panther, Python, Bengal Monitor Lizard, Bastar Hill Myna and Common Peafowl.

P. Chid

- x. **DFO, Dantewada has also mentioned in Part- II of the application form that proposed area is highly prone to erosion due to steep gradient of Bailadila hills. Due to presence of rare Tree Fern species, Soil and water conservation is important. However, soil and moisture conservation plan has not been submitted along with the proposal, the same needs to be submitted.**

Soil, Water & Moisture Conservation Plan is prepared as Part-B of the "Biodiversity Conservation Plan and Soil, Water & Moisture Conservation Plan" which is approved by the Chhattisgarh State Bio-diversity Board on 21.08.2023. Same is enclosed as **Annexure-20.1**.


P. Chandel

- xi. **The proposal for diversion of forest land has been submitted for a period of 50 years, whereas the mining plan has been submitted for five years only. This needs justification.**

As per provisions of the MMDR Act-1957, Mining Lease will be granted for a period of 50 years, thus proposal for diversion of the forest land has been also submitted for a period of 50 years. However, as per new format of the Mining Plan, production scheme is required for 5 years period only. As per new rules Mining Plan requires to be reviewed / updated every 5 years. Relevant provisions of the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 are as follows -

“Rule 13(2)(f): The mining plan shall incorporate a tentative scheme of mining and annual programme and plan for excavation from year to year for five years.

Rule 17: Modification and review of the mining plan

(1) The mining plan once approved shall be subject to review and up-dation at an interval of every five years starting from the date of execution of the duly executed mining lease deed.

(2) At least one hundred eighty days before the expiry of every five years period specified in sub-rule (1), the lessee shall submit a mining plan for mining operations for a period of five subsequent years prepared in accordance with rule 15, which shall be disposed of in accordance with rule 16.”


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- xii. **State Government has proposed degraded forest land for Compensatory afforestation. CA on degraded forest land is not permissible in the instant case. The land for Compensatory Afforestation needs to be provided as per provisions contained in Van (Sanrakshan Evam Samvardhan) Rules, 2023, Therefore, suitable land may be accordingly identified for CA and revised CA scheme along with KML file, suitability certificate and DGPS maps etc. needs submission.**

Forest diversion application in Form-A was filed vide proposal no. FP/CG/MIN/146694/2021 dated 04.10.2021 under FCA, 1980. Following is the break-up of the total 692.6428 Ha land involved in the project –

4. Mining Lease and ancillary infrastructure outside the Mining Lease falling in the Reserve Forest – 670.177 Ha;
5. Ancillary infrastructure outside the Mining Lease falling in the Revenue Forest – 12.0952 Ha;
6. Ancillary infrastructure outside the Mining Lease falling in the Private Revenue Land – 6.9585 Ha;
7. Ancillary infrastructure outside the Mining Lease falling in the Railway and Govt. Revenue Land – 3.4121 Ha;

After taking various permissions from Forest deptt., completion of DGPS Survey, boundary demarcation and answering EDS queries etc., final application was accepted by the Nodal Officer (LM) – C.G. and could be registered on 16.06.2022 vide Proposal No. FP/CG/MIN/146694/2021, i.e. before the notification of the Forest (Conservation) Rules, 2022 on 28.06.2022.

Vide, letter no. No.FC -11/118/2021-FC, dated - 18.07.2022, following has been clarified by MoEF&CC –

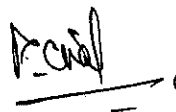
i. Provisions of Forest (Conservation) Rules, 2022 shall apply to the proposals submitted online through Parivesh portal and which have not been accepted by the Nodal officer before 28.06.2022. The Guidelines issued by the Ministry in the Handbook of Forest (Conservation) Act, 1980 dated 28th March, 2019 and the Guidelines issued thereafter separately, from time to time, after 28th March 2019 shall apply to such proposals to the extent, they are not inconsistent or contrary to the Forest (Conservation) Rules, 2022.

ii. Provisions of Forest (Conservation) Rules, 2003 shall apply to the proposals submitted online through Parivesh Portal and which have been accepted by the Nodal Officer before 28.06.2022.

In view of the above, Forest diversion application of Deposit-4 had been processed as per the provisions of Forest (Conservation) Rules, 2003 and the Guidelines issued by the Ministry in the Handbook of Forest (Conservation) Act, 1980 dated 28th March, 2019.

Letter no. 1714/मु.स./2014, dated - 12.09.2014 of the Chief Secretary of C.G. may also be seen in this respect certifying approx. 50% Forest Coverage in the State of Chhattisgarh (**Annexure-12.1**). Certificate from Chief Secretary (CS) – C.G. for non-availability of revenue land in the Chhattisgarh state for compensatory afforestation had been taken on 02.08.2023 (**Annexure-12.2**).

After registration of the proposal on 16.06.22, application completed in all respect with tree enumeration report, site inspections from officials of the Forest Deptt. and identification of the CA area etc. could be submitted to the State Government on 29.04.23. Here, it may be noted that Forest diversion application completed in all respect was lying with the State Government from 16.08.23 to 01.02.24 and same could be forwarded to the Central Government on 02.02.24. This has happened due to imposition of the model code of conduct in view of the Assembly



election and formation of the new government in the State during the said period. Proposal for Forest Diversion has been forwarded by the State Govt. to the MoEF&CC, Gol on 02.02.2024.

Non-Forest area involved in the project is very miniscule in comparison to the total project area (approx. 1.5%) but very important for the project's success. It may also be noted that Mining lease area involved in the project is totally in Forest Land. There is requirement of the Forest Land for the ancillary activities associated with the Mining Lease and required Non-Forest Land is outside the Mining Lease lying in patches between revenue forest land which is also proposed for diversion. There is encroachment of the Villagers on the Forest Land in the Project's area, acquisition of the said private land will also clear the encroachment of the villagers on the reserve Forest Land.

Though Deposit-4 involves acquisition of non-forest land also for the execution of the project, however, as State of Chhattisgarh which is having almost 50% Forest Cover (Letter No. 1714 / मु.स./2014, dated – 12.09.14 of the Chief Secretary of Chhattisgarh) and Certificate from Chief Secretary (CS) – C.G. for non-availability of revenue land in the Chhattisgarh state for compensatory afforestation in respect of the Deposit-4 has been already taken (Letter No. 5528 / 32 / TL /2023/7-1, dated 02.08.2023), and also as application for the diversion of the Forest Land was put-up in the year 2021 which was registered by the State Government for consideration on 16.06.2022 i.e. much before the new requirements in respect of CA area, hence, exception available to the Central PSUs may please be allowed in the instant case.

P. C. S. S.

- xiii. **Examination of KML file as per DSS analysis has revealed that, two patches have been excluded from diversion proposal leading to isolation/fragmentation of the forest area. The same needs justification.**

Two patches which have been excluded from the diversion proposal are involving the area left for in-situ conservation of the Tree Fern (76.4960 Ha) within the Mining Lease of the Deposit-4. There is an existing road leading to the Bailadila Iron Ore Deposit-5 of the NMDC Ltd. which is in existence before the coming of the FC Act-1980.

P. Chel

- xiv. **User Agency has not uploaded the R&R plan on Ministry's web portal in correct format. A compatible copy of R&R plan needs to be uploaded on PARIVESH portal.**

Copies of the survey reports prepared as per provisions of the Chhattisgarh Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation & Resettlement (Survey & Censes of Affected Families and preparation of Rehabilitation & Resettlement Scheme) Rules,2018 are hereby submitted as **Annexure-14.1** and **Annexure-14.2** for both the villages.

Social Impact Assessment as per provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 are enclosed as **Annexures-20.3 and 20.4.**

M. Chaudhary

- xv. **Two sets of Cost benefit analysis have been submitted by the User Agency with C:B ratio of 1:250 and 1:163 both of which are exorbitantly high. The State shall ensure to submit the correct CB analysis on the prescribed format as per the guidelines issued by the Ministry.**

With the present proposal, a cost benefit analysis with C:B Ratio of 1:250 was submitted by the user agency. However, in the proposal forwarded by the State Government, same is mentioned as 1:163.

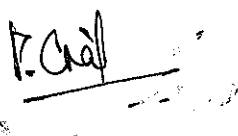
Based on the last 5 years average Iron Ore prices and as per the guidelines issued by the Ministry on the prescribed format, revised cost benefit analysis is enclosed as **Annexure – 15.1**. Revised cost benefit ratio is 1:156.

P. Chidambaram

- xvi. **The State Government shall provide the details of safety zone of the mining lease (along with KML files) as per the para 7.9 of chapter 7 of consolidated guidelines and clarifications issued under Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and Van (Sanrakshan Evam Samvardhan) Rules, 2023.**

Point wise compliance in respect of the Safety Zone of the Mining Lease as per para 7.9 of chapter 7 of consolidated guidelines and clarifications issued under Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and Van (Sanrakshan Evam Samvardhan) Rules, 2023 is as follows –

Point No.	Description	Remarks
(i)	All mining projects, including cluster-mines, except underground mining leases, are required to have a 7.5-meter-wide peripheral safety zone (along the inner boundary) within the Mining Lease area, properly demarcated with boundary pillars with DGPS coordinates inscribed on them and to be maintained as effective green belt.	A 7.5 - meter - wide peripheral safety zone (along the inner boundary) within the Mining Lease area of the Bailadila Iron Ore Deposit-4 with an area of 8.4880 Ha has been marked and shown in the component wise KML file submitted under Point (xxv) of the EDS.
(ii)	The minimum width of 10m and 50 m strip on either side of public road and natural stream respectively located inside the mining lease shall be protected but will not be considered as a part of safety zone. Actual width of the strip to be maintained will be decided by the AC subject to the minimum width as mentioned above.	There are two water streams inside the Mining Lease area of Deposit-4, viz. (a) Galli Nalla (b) Sankani nalla. Galli nala is passing in the eastern direction of the Bailadila Iron Ore Deposit-4 inside the mining lease area through the non-diverted forest land of 76.496 Ha. of tree fern area. This area will be treated as conservation zone for tree fern. Sankini Nalla is originating in the form of the "Seep" in the extreme North-East direction of the Mining Lease and same will be protected. The regular flow starts much downstream beyond the Mining Lease.
(iii)	Safety Zone guidelines for Petroleum mining leases	N.A.
(iv)	Safety Zone guidelines for mining projects for which diversion of forest land have been approved before 27 th May 2015.	N.A.
(v)	Safety Zone guidelines for such cases where the proposal for the diversion of forest areas within the safety zone has been submitted by 30.09.2023.	N.A.
(vi)	Provisions of the raising compensatory afforestation, as applicable in the entire forest area proposed for diversion, will be applicable in lieu of forest land located in the safety zone as well.	Complied
(vii)	Any forest land within the safety zone if proposed for any other non-forest use shall require prior approval under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 along with other forest land in the ML for execution of ML under MMDR Act, 1957 as amended from time to time.	N.A.



- xvii. From examination of component wise breakup, it is observed that an area of 65.9 ha of forest land has been proposed under infrastructure (Crushing Plant, Workshop, Administration). Moreover, there are other components like screening plant, loading plant etc. which are also non-site specific in nature. The same can be accommodated on non-forest land.

Reasons for locating the Crushing Plant, Workshop etc. inside the Mining Lease Area at the Hilltop:

Proposed excavation area of the Deposit-4 is at a relief of the 600 – 700 Mtrs above the nearest non-forest / Plain Lands. Any excavated material can be transported only in Eastern or Western Directions as Bailadila Hill Range stretches in North-South Direction wherein Iron Ore formations are there. In the western direction, 2 -3 KMs beyond the Mining Lease boundary after the end of the Bailadila Reserve Forest of Bachel Range (Dantewada District), Nelasnar / Gangaloor Forest Ranges of Bijapur Forest division Starts (Bijapur District). There are few sparsely situated villages with limited revenue land in the western direction. Thus, in the western direction, no non-forest land is available for the infrastructure. In the eastern direction of the Mining Lease of the Bailadila Iron Ore Deposit-4, there is the Mining Lease of Deposit-10 of the NMDC Ltd. with a valley in-between and Bailadila Reserve Forest is spread for another 3 – 3.5 KMs distance with undulating hilly terrain in between.

In-side the Mining Lease, an area of 65.9 Ha has been proposed for infrastructure like - Crushing Plant, Workshop, Administrative Building, Roads etc. Besides for easiness in complying with statutory provisions related to Safety and Mineral Concessions, these facilities are necessitated inside the Mining Lease for functioning of a Heavy Mechanized Mine like Bailadila Iron Ore Deposit-4.

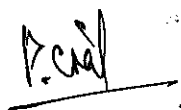
Any blasted material (run-of-mine) has to be transported on the proposed road towards Bhansi for **minimum 10 KMs** for crushing to be done on non-forest land. Transporting the "run-of-mine" Iron Ore (i.e. un-crushed material) outside the Mining Lease in a hilly undulating terrain is neither possible through conveyor belt nor feasible through trucks / dumpers. It will also pose issues in paying the royalty to the State Government.

Further, construction of Gyrotory Crushing Buildings along-with heavy duty Cone Crushers cannot be done in a level area and this 4 / 5 story (multi-level) Crushing buildings are constructed taking the advantage of the slope / contours of the hills. These Gyrotory Crushers are able to easily handle the boulders of 1 – 1.5 Mtrs. dimension which are very frequent in the Bailadila Iron Ore Range. It may be noted here that apart from sustaining un-interrupted Crushing on large scale, these types of the Crushers are environment friendly and helps in curbing the Noise, Air and Soil Pollution.

Here, it may be noted that even if safety and economics allows for transporting the blasted Iron Ore for crushing at such a long distance, then also there is no feasibility of the getting non-forest land beyond the boundary of the Bailadila Reserve Forest in the Eastern direction. To understand the scarcity of the non-forest land in the Dantewada District, here it may be noted that ***NMDC-CMDC Ltd. is finding it very difficult in getting even a 2 Ha of Non-Forest land for construction of the R&R Township for the affected families of the Project. (Annexure-17.1)***

Reasons for locating the Screening Plant, Loading etc. inside the Forest Area:

An area of 28.52 Ha has been proposed for Screening Plant & Loading Plant in the Reserve Forest area. After crushing at the Hill Top, (-)150 mm ore size will be transported to the Screening Plant by downhill conveyor system for further processing. It may be noted here that few



alternative alignments for downhill conveyor system and Screening-cum-beneficiation Plant were explored and same are detailed below –

1. North-Western side of the Deposit-4 (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 before, this option had not been found feasible, hence not selected.

2. South-Eastern Side of the Deposit-4 (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 Bachelu for this option was limited as the existing area was already occupied by the Loading Plant of the NMDC Ltd. For the reason discussed before, 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 is required. **Thus, this option is selected.**
- **Alternative-3b:** This was 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 and new approach road was required to be made. 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 and new approach road was required to be made. Thus, this option was not selected.

In the alignment No. 3a, if Screening Plant and Loading Plant is shifted towards east side of the Railway Line, then, in that direction no suitable Non-Forest Land is available.

The options deliberated above are shown in the plan enclosed as **Annexure-17.2**.

P. Chait

- xviii. **From examination of component wise breakup, it is observed that forest area of 74.07 ha has been proposed for OB dump. There, seems to be no justification for proposing dense forest area for OB Dump. The same can be taken up over non-forest land.**

Proposed excavation area of the Deposit-4 is at a relief of the 600 - 700 Mtrs above the nearest non-forest / Plain Lands. Any excavated material can be transported only in Eastern or Western Directions as Bailadila Hill Range stretches in North-South Direction wherein Iron Ore formations are there. In the western direction, 2-3 KMs beyond the Mining Lease boundary after the end of the Bailadila Reserve Forest of Bachel Range (Dantewada District), Nelasnar / Gangaloor Forest Ranges of Bijapur Forest division Starts (Bijapur District). There are few villages sparsely situated with limited revenue land in the western direction. Thus, in the western direction, no non-forest land is available for the waste dumping. In the eastern direction of the Mining Lease of the Bailadila Iron Ore Deposit-4, there is the Mining Lease of Deposit-10 of the NMDC Ltd. with a valley in-between and Bailadila Reserve Forest is spread for another 3 – 3.5 KMs distance with undulating hilly terrain in between. Any waste material has to be transported on the proposed road towards Bhansi for minimum 10 KMs for dumping to be done on non-forest land.

Here, it may be noted that even if safety and economics allows for transporting the waste material for dumping at such a long distance, then also there is no feasibility of the getting non-forest land beyond the boundary of the Bailadila Reserve Forest in the Eastern direction also. To understand the scarcity of the non-forest land in the Dantewada District, here it may be noted that NMDC-CMDC Ltd. is finding it very difficult in getting even a 2 Ha of Non-Forest land for construction of the R&R Township for the affected families of the Project. (**Annexure-17.1**)

Total mineable waste in the Bailadila Deposit-4 is 68.17 MT, out of this 36.12 MT of waste material will be dumped in the Five nos. of waste dumps externally in and around the ultimate pit area over non-mineralized zones. The final spread of the dumps will be 74.07 Ha. **Remaining amount of Waste, i.e. 32.05 MT (mainly from the South Block of the Mine), will be backfilled in the North Block after extracting all the Ores thereof. Here, it may be noted that not all the dumps will be opened at a time, but in a sequential manner on the basis of the progress of the Mining Pits and simultaneously reclamation works for the old dump will be taken up.**

Dump No.	Area (Ha)	Capacity (Tonnes)	Year of Reclamation
D1	1.69	183018	3 rd year
D2	20.07	10163066	9 th to 10 th year
D3	21.13	8332718	11 th to 12 th year
D4	18.5	10637546	13 th to 14 th year
D5	12.68	6813569	15 th to 16 th year
Total	74.07	36129917	

Dumping of waste would be carried out by adopting retreating method starting from bottom and reaching up to the top by creating terraces at every 20-30 m height with a top width of 20-30 m. Waste rocks will be end-dumped from the trucks / dumpers and the excess material will be bulldozed to construct slopes at the angle of repose (typically 37°–40°), where the outer slope will be just stable under the static loading conditions at the site.

For stabilizing the dumps, engineering structures will be made, biological measures to achieve faster restoration are also proposed. Berms would be provided at the toe of each terrace to avoid water flow over the dump slopes. Wherever necessary, garland drains will be provided and connected to the vertical drains and finally to the check dams followed by Silt Settling Tanks

P. C. S. D.

(SSTs) to control run-off from the slopes. Haul road and mine approach road would also be provided with stone pitched drains. Inactive dumps would be vegetated with suitable plantation immediately after the terraces are made.

These waste dumps will be stabilized by planting trees and making terraces and parapet walls at the toe of the dumps. Each of the dump has been planned in stages so as to attain maximum stability. Plantation on the backfilled area and all the mined-out benches will be done with suitable flora. The combinations of grasses, herbs, shrubs, creepers and tree species shall be used in restoration process. Hydro-seeding will be practiced to stabilize barren steep slopes and fragile unstable Surface. In addition to hydro seeding, planting of suitable herbs and shrubs shall be done on the slopes by making holes in geo-textile coir mat. Coir matting will help in trapping the sediment, to protect stream banks and wetland shores from erosion and to provide a stable substrate for plant establishment in the waste dump terraces. Subsequently, plantation will be done in the dump slopes in a phased manner. Total of 74.07 Ha of area under waste dump shall be reclaimed by using engineering & biological measures.

P. Chel

- xix. **In component wise breakup it is also mentioned that 241.642 ha is proposed under Environmental Protection, improvement. Details of activities to be carried out in this regard needs to be submitted.**

This area of 241.642 Ha is the gap area between the boundary of the Mining lease on outside / tree fern conservation zone inside and Mining Pit, Waste Dump, Infrastructure and explosive magazine etc. In the mid of the Mining Lease, this area will act as buffer between Mining Pits and Tree Fern conservation zone. On the extreme east side, this area will act as buffer between Mining Pits of Deposit-10 and Tree Fern conservation zone. On the eastern side this extra area is also required for the safety of the proposed explosive magazine.

Proposed activities in the 241.642 Ha area:

In the summer, Jungle Fire Protection measures will be taken in this area. In the said area of 241.642 Ha, Gap Plantation of Trees and Shrubs along the Banks of Nallas will also be done. This will help in arresting the sediment/silt flow from the site and maintenance of soil moisture. At conceptual stage total area afforested will be 521.321 Ha. (Including gap plantation) excluding the Tree fern area.

Engineering / gully control measures to prevent the water pollution and control of erosion will also be undertaken in this area. Engineering measures are the first line of defense in controlling erosion and they also facilitate quick re-establishment of vegetation over the disturbed and degraded areas. Control of erosion is important for both during mining and post mining period as the waste materials emanating from the fragmented areas such as mine pits, and waste dumps can cause damages to the local environment including forest, soil, water, etc. These measures will also protect the reclaimed area from erosion/runoff due to rain water flow. The gully control measures are effective in retaining silt/sediment/boulders in the stream water channels and due to silt/sediment retention, the channel gradient, flow velocity and consequently carrying capacity of the water course will be reduced and thus, control the further advancement of gully leading to its reclamation.

Number of check dams, check bunds, buttress walls, garland drains and trenches at the toe of waste-dumps etc. will be constructed on eastern and western side of the Mining Pits as per environment protection measures. A plan showing planned / tentative engineering structures is enclosed as **Annexure-19.1**. Details of the same are as follows -

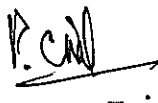
- **Toe Wall/ Retaining Wall/ Buttress Wall**

Retaining/Toe Walls will be constructed at the precipitous slope for arresting sliding/erosion. The structure will be made in such a way that its bottom width will be taken as two thirds of its height and the width is reduced in steps at the top. Retaining wall/Toe wall is the primary requirement for protection of waste dumps from erosion. These will be constructed at the toe of the active dump area. Toe Wall will be provided with weep holes at 1x1m grid points on its body to facilitate seepage of water. The RR stone masonry cement sand mortar toe wall of a height of 3.0 m are proposed for the waste dumps in the lease area, while, RR dry toe wall of a height of 2.0m is proposed.

- **Garland Drains**

Garland drains will be constructed below the retaining/Toe walls and will made to connect the natural water courses downstream for smooth flow of runoff water from the disturbed areas. These will be designed as per the quantum of rainwater flow in the area. It will be made at 1-2 m below the Retaining/Toe wall. The garland drain will be connected to those drains receiving flow from berms and finally channelized through the silt arresting structures such as check dams, settling tanks, etc., before draining into the natural water courses. It should have 2.0 m top width, 1.0 m bottom width and 1.0 m depth.

- **Gabion (Wire Crate) Check Dams (GCD)**



The gabion check dams are preferred in main drainage channels receiving large quantities of runoff and debris, usually in the middle and lower reaches, for grade stabilization of channel bed and retention of soil and debris. These will be constructed with stones/boulders hand packed closely in wire mesh cages made of galvanized iron wire of 10mm gauge thickness. GCDs will encourage good plant growth due to increased moisture regime. They are highly preferred for soil conservation owing to qualities viz., flexibility, porous, stable and economical, etc. GCDs are proposed for the primary surface water courses around the ML area for arresting silt and sediment movement in the surface water flow during rainy season.

- **Loose Boulder Check Dams (LBCD)**

The LBCDs are quite suitable for stabilization of first order stream channels of watersheds receiving small quantities of runoff/ debris. Interspaces may be planted with brush wood and log wood of sprouting plants for additional support. The life of the design usually lasts for 3-5 years. LBCDs are proposed for the primary surface water courses around the ML area for arresting silt and sediment movement in the surface water flow during rainy season.

- **Stone Masonry Check Dam (SMCD) - cement sand mortar (1:6)**

This is usually considered as a key structure constructed at the end of all the gully control structures like GCD, LBCD, etc., to prevent runoff further from the lease area. SMCDs are proposed in various surface water courses for the control of erosion from the lease area.

- **Box culvert**

To protect the natural spring water flow, a suitable site-specific box culvert is planned to be constructed for facilitating free flow of water from the spring into the natural drain.

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 EMP cost include the construction of toe walls, garland drains, geo-coir matting & seed broad casting and plantation on waste dumps, loose boulder check dams, stone masonry check dams, gabion wire check dams, gabion toe walls, rain water harvesting, plantation/greenbelt development, de-silting etc.

Apart from above, cost on implementation of wild life conservation and management plan will be Rs.19.32 Crores and cost on implementation of Biodiversity conservation plan and Soil, Water & moisture Conservation Plan will be Rs.31.08 Crores.

P. Chid

- xx. **As per DSS analysis, the area proposed for diversion has been found to be Inviolate or in High Conservation Zone. The proposed forest land is having presence of Very Dense Forest cover and Hydrological feature like Sankani Nadi. Further, 174 ha of land is characterized with Very Dense Forest cover, 297 ha of land is characterized with Moderately Dense Forest cover. The justification for proposing such biologically rich area for proposed activities shall be provided.**

Iron Ore in Bailadila area is formed as capping deposit above the top of the Hill Range and because of this reason all Iron Ore Deposits in the Bailadila region lies beneath the Forest area. No doubt, in the instant case, area of concern is rich in Forest cover, however, for the reasons detailed in the reply to the Point No. (i) and importance to the growing demand of the country's Steel industry, development of the Bailadila Iron Ore Deposit-4 in a sustainable manner is necessitated. With emphasis on the sustainability, NMDC-CMDC Ltd. has already conducted studies like:

1. Biodiversity Conservation Plan and Soil-Water & Moisture Conservation Plan for Tree Fern Area – approved by the Chhattisgarh State Bio-diversity Board on 21.08.2023 (**Annexure-20.1**)
2. Wild Life Management Plan – approved by the Wild Life Warden, Chhattisgarh State on 25.09.2023 (**Annexure-20.2**)
3. Social Impact Assessment as per provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (**Annexures-20.3 and 20.4**)
4. A detailed study is made and robust plan has been prepared for anticipated Environmental Impacts & Mitigation Measures along-with Environmental Monitoring Programme under EIA – EMP to address social, environmental and ecological concerns. Copy of the EIA-EMP is enclosed as **Annexure-20.5**.

In the proposed Forest Land, it is Sankani Nalla (not the Sankani Nadi) which originates on the extreme North-East direction of the Mining Lease. Sankani Nalla merges with Sankani Nadi much downstream. Sankani Nadi is also called Nerli Nalla in local parlance and it is more than 7 Km away in the eastern direction from the Mining Lease of the Deposit-4. There are no major water streams in Deposit-4 mining lease and screening cum beneficiation plant area. The eastern and western ridges of Bailadila become closer between the Deposit-4 of western ridge and Deposit-8 of eastern ridge separated by shallow saddle. This happens to be the divide point for the drainage direction. The stream flowing towards south is called Galli Nalla and the one flowing towards north is Sankani nalla. Near to Deposit-4 these streams are in the form of "seeps". The regular flow starts much downstream on both sides. Sankani nalla cuts across the eastern ridge near Jhirka village flows down east and north-east and merges with / becomes the Sankani river. Galli nala is passing in the eastern direction of the Bailadila Iron Ore Deposit-4 inside the mining lease area through the non-diverted forest land of 76.496 Ha. of tree fern area. This area will be treated as conservation zone for tree fern and will not be impacted with mining activities.

As already explained at Point No (i) that increase in Iron Ore production from the Deposits of Bailadila becomes imperative in achieving the Targets set by the National Steel Policy-2017. For this to happen, Capacity of the existing Mines need to be expanded and also new deposits like Deposit-4 are required to be developed on urgent basis, otherwise Steel / Sponge Plants will starve off the High-Grade Iron Ore.

Exploration in any other virgin deposit of Bailadila region, i.e. Deposit 1,2,3,6,7,8, 9 and 12 and their development for Mining will take at-least 10 -15 years' time, thus, as of now Deposit-4 is only option in Bailadila region which can help in achieving the Targets set by NSP-2017.

P. C. Ad

- xxi. **As per Satellite imagery, some built-up area along with conveyor belt is visible in the proposed forest land for diversion. Whereas the State has not reported any violation in the matter. The same needs clarification.**

The said built-up area belongs to the infrastructure for the downhill conveyor system of the Bailadila Iron Ore Deposit-5 of the NMDC Ltd. and same has been constructed prior to the year 1980. As per Forest Stock Map, these infrastructures are lying in the Forest Compartment No. 1842 of the Bailadila Reserve Forest, thus this area has been considered as Reserve Forest in the Forest diversion application. However, as per revenue records, the said infrastructure of the Bailadila Iron Ore Deposit-5 of the NMDC Ltd. falls in Khasra No. 1384 of the Tehsil – Bade Bachel of the District – Dantewada, C.G. For reference, Copy of the Form P-II of the Khasra and Map of the said Khasra is given as **Annexure-21.1 and Annexure-21.2.**

P. Chel

xxii. Non-forestry activity is also visible in the proposed forest land for diversion (Khasra No 7, Bade jhad ke jungle) which has been proposed for Railway siding.

The said Khasra No.7 of the Porokameli Village falls under revenue Forest (Chhote Bade Jhad ke Jungle) category and it is adjoining the boundary of the reserve Forest proposed for the diversion. There are two families who have encroached certain parts of the Khasra No.7 and made their houses on the same. These families will be removed from the encroached land / will be rehabilitated & resettled as per provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. Apart from this, Forest Pattas have been granted in few compartments of the Reserve Forest and few Khasras of the Revenue Forest falling in the Project's boundary also. Land acquisition process is under progress for these Pattas also. Details of these are given in the Annexures submitted under reply to the point No. xiv.

P. Chahal

- xxiii. **The State has not reported any violation, whereas certain forest area has been proposed for the widening of existing roads. This needs clarification.**

There is an existing unmetalled jeepable road (4m wide approx.) from Village Bhansi to the Hill-Top of Deposit 3, 4, 5 etc. This road is in existence before the year 1980 and still in use by the Villagers and Forest Department. As such, the same road is best suitable for use as a main road to Hill-Top of Deposit-4. Accordingly, this existing road has been proposed to be suitably widened so that the total width of road shall be 10m including drains and bund on valley side. The gradient shall be 1 in 25 (maximum 1 in 16) in straight stretches and 1 in 20 on curves. It may be noted here that in few patches new roads for connecting to the Conveyor Belt and Screening Plant have been also proposed.

For reference copies of two Toposheets of the year 1973, showing the old Kuccha Road from Bhansi to the Hilltop of Deposit-4 are given as **Annexure-23.1 and Annexure-23.2.**

P. Chaf

- xxiv. **The mining/non forestry activity is also visible in the area adjoining to the proposed land. In this regard the State shall submit the detail of the adjoining mine along with the approvals obtained for the diversion of forest land. The status of compliance of the stipulated conditions shall also be submitted.**

Forest land proposed for diversion of the Bailadila Iron Ore Deposit-4 Project of the NMDC-CMDC Ltd. is adjoining the Bailadila Iron Ore Deposit-5 and Bailadila Iron Ore Deposit-10 of the NMDC Ltd.


Details of approvals obtained for the diversion of Forest Land for Bailadila Iron Ore Deposit-5 (**Annexure-24.1**):

1. Order No. F.No.8-38/97-FC, Dated – 18.06.1999 of MoEF&CC, Gol (For 20 years co-terminus with lease under MMRD Act-1957 and w.e.f. date of expiry of previous lease)
2. Order No. F 5-49/2015/10-2, Dated – 22.04.2016 of Forest Deptt. – Govt. of Chhattisgarh (FC extended up-to 31.03.2020)
3. Order No. F 5-49/2015/10-2, Dated – 31.03.2020 of Forest Deptt. – Govt. of Chhattisgarh (FC extended up-to 10.09.2035)

Details of approvals obtained for the diversion of Forest Land for Bailadila Iron Ore Deposit-10 (**Annexure-24.2**):

1. Order No. F.No.8-39/97-FC, Dated – 29.07.1998 of MoEF&CC, Gol (For 20 years co-terminus with lease under MMRD Act-1957 and w.e.f. date of expiry of previous lease)
2. Order No. F 5-1/2016/10-2, Dated – 23.04.2016 of Forest Deptt. – Govt. of Chhattisgarh (FC extended up-to 31.03.2020)
3. Order No. F 5-01/2016/10-2, Dated – 31.03.2020 of Forest Deptt. – Govt. of Chhattisgarh (FC extended up-to 10.09.2035)

Status of compliance of the of the stipulated conditions in respect of Bailadila Iron Ore Deposit-5 is enclosed as **Annexure-24.3**. Status of compliance of the of the stipulated conditions in respect of Bailadila Iron Ore Deposit-10 is enclosed as **Annexure-24.4**.



xxv. The Complete KML file of the instant project providing the details of components as well as forest and non-forest land involved has not been submitted, which is required to be done.

The complete KML file of the project showing the details of all the components as well as Forest and Non-Forest land involved is being submitted with this reply.

D. Chand

- xxvi. **As there is presence of Sankani Nadi in the proposed forest land, comments from Water Resource Department needs to be furnished. Further, measures to conserve water regime in the area may also be furnished.**

In the proposed Forest Land, it is Sankani Nalla, not the Sankani Nadi, which originates on the extreme North-East direction of the Mining Lease. Sankani Nalla merges with Sankani Nadi much downstream near Shatdhar junction between Dantewada and Bhansi. Sankani Nadi is also called Nerli Nalla in local parlance and it is more than 7 Km away in the eastern direction from the Mining Lease of the Deposit-4. There are no major water streams in Deposit-4 mining lease and screening cum beneficiation plant area.

The eastern and western ridges of Bailadila become closer between the Deposit-4 of western ridge and Deposit-8 of eastern ridge separated by shallow saddle. This happens to be the divide point for the drainage direction. The stream flowing towards south is called Galli Nalla and the one flowing towards north is Sankani nalla. Near to Deposit-4 these streams are in the form of "seeps". The regular flow starts much downstream on both sides. Sankani nalla cuts across the eastern ridge near Jhirka village flows down east and north-east and merges with / becomes the Sankani river. This joins with Dankini River near Dantewada and becomes Dantewada River, which ultimately flows through west and joins Indravati River.

During the time of exploratory drilling, no water table has been encountered. Ground water of confined and permanent nature may be expected only at much lower levels since the hills have got abrupt relief over 600 meters from the plains.

Water requirement for the Project:

For sourcing the water for the project, two perennial water sources are identified in the area viz. (a) Sankani nallah at EL. (+) 1025.00 at Hill- top and (b) Nerli nallah (Sankani Nadi) at EL. (+) 450.00 at Foot-Hill.

In the past, Bachel Project of the NMDC Ltd. used to have a pump house at Sankani Nalla at Hill-Top and it was used as main source of the water for the Deposit-10 & 11A of the NMDC Ltd. However, Left Wing Extremist blew this pump house few years back. A Plan, prepared on 06.04.1996, showing location of the weir and pump house arrangement is enclosed as **Annexure-26.1**. NMDC-CMDC Ltd. has proposed to use the same arrangement at Sankani Nalla for the partial water requirement of the Deposit-4. Water can 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, Magazine and other infrastructures at Hill-Top of Dep. 4.

Permission for withdrawal of water from Sankani Nalla and Nerli Nalla (Sankani Nadi) will be obtained from Water Resource Department, GoCG. NMDC-CMDC Ltd. has already submitted application for obtaining water permission for 20,000 KLD (considering entire Bailadila Deposit-4 project with peak rated capacity and future requirements including separate township) with Water Resource Department (WRD), GoCG. (**Annexure-26.2**). However, application for water withdrawal with the WRD is not pursued for time-being in view of the pending statutory clearances like EC and FC.

Measures to conserve water regime:

Galli nala is passing in the eastern direction of the Bailadila Iron Ore Deposit-4 inside the mining lease area through the non-diverted forest land of 76.496 Ha. of tree fern area. This area will be

P. Chand

treated as conservation zone for tree fern and will not be impacted with mining activities. A specific water conservation plan has been prepared for this area.

Based on the stipulated ToR conditions for Environment Clearance, the project proponent has incorporated the scheme of dry disposal of iron ore tailings (Hydraulic filter-based technology) in the beneficiation process of Bailadila Iron Ore Deposit-4. Because of this, requirement of slurry pipeline and tailing dam thereof has been done away, resulting in requirement of a lesser area of 122.5428 Ha outside the mining lease area against the initial requirement of 195.537 Ha and water conservation also.

The mining operations will be conducted at hill top which is at a higher-level than the ground water level. The ground water level will not be intersected during mining operation. Since major requirement of the water will be fulfilled from the existing Sankani Nalla and Nerli Nalla to meet the water requirements of mining, beneficiation and allied activities. There will be negligible impact on Ground water.

As the Bailadila region is hilly in terrain and average rainfall is more than 110mm, therefore, rain water harvesting techniques can be implemented in the selected areas of foot-hill region or artificial reservoirs can be made for storing rain water would prove useful and beneficial in the long run. Other-wise, this rain water goes waste down the hilly area. There will be provision of five rain water harvesting pit at the beneficiation plant.

P. Chand