

Recommendation of Divisional Forest Officer, Latehar for Banhardi Coal Block Project of M/s Patratu Vidyut Utpadan Nigam Ltd.

FCA proposal No: FP/JH/MIN/147316/2021

Proposed Forest area for diversion: 515.32 Ha (Notified Forest: 497.02 Ha, Deemed Forest (GMJJ): 18.3 Ha)

Total area: 1467.42 Ha; Non-Forest area: 952.10 Ha

Mineable Reserve (Geological Report): 270.81 MT

The proposed Banhardi Coal Block is situated in the villages of Banhardi, Bari, Barwadih, Rampur, Surli, Tota, Ate, Jagaldaga & Sabano on forest and non-forest areas of Latehar & Chandwa forest ranges of Latehar Forest Division. This area is a part of landscape significant in terms of ecological and hydrological functions. This is an important habitat and part of transit route for wildlife (including wild elephants).



Fig-01: Location of Coal Blocks near Banhardi CB area

Four mega coal projects (Upcoming mines at Chakla-12 km & Rajbar-0.5 km; and operational mines at Sikni-0.2 km & Tubed-5.5 km) are very close to this proposed mining site. The advent of open cast mining in the proposed site shall further enhance ecological degradation of the increasingly fragile landscape. Therefore it is very important to consider the complete landscape and cumulative impact of these mining operations at every step of decision making and planning.

The proposed area has dense Tropical Dry Deciduous forest vegetation with an average canopy density of **0.5 to 0.6** and **Eco class III** having a predominance of *Shorea rubusta* (Sal) and its associate species. **114229 trees** enumerated on the proposed forest area depicts a large pool of Carbon Stock in an ecologically and hydrologically significant tract of forest.

PVUNL has informed that the forest land of 352.1 Ha which is to be used for temporary OB dump & garland drain area will be further used for mining in future once the OB dump will be used in filling up the mined out area. Detailed survey and exploration for 1049.00 ha out of 1467.42 ha area of mining lease is already completed and further detailed exploration of remaining 418.42 ha area is ongoing. Out of total 1467.42, ha of lease area, 515.32 ha is forest land for which PVUNL is applying

for forest diversion proposal. Therefore the proposed forest area (including the area to be used for temporary OB dump & garland drain) is unavoidable and barest minimum.

Based on a thorough cost-benefit analysis of the project vis-à-vis the landscape dynamics, to balance the trade-off between *ecological security* and *energy security* while ensuring that both the interests go hand in hand in a sustainable manner, the proposal submitted by PVUNL of the diversion of 515.32 Ha forest land under Forest Conservation Act, 1980 for **Coal mining in Banhardi CB** is **recommended with following specific conditions:**

1)

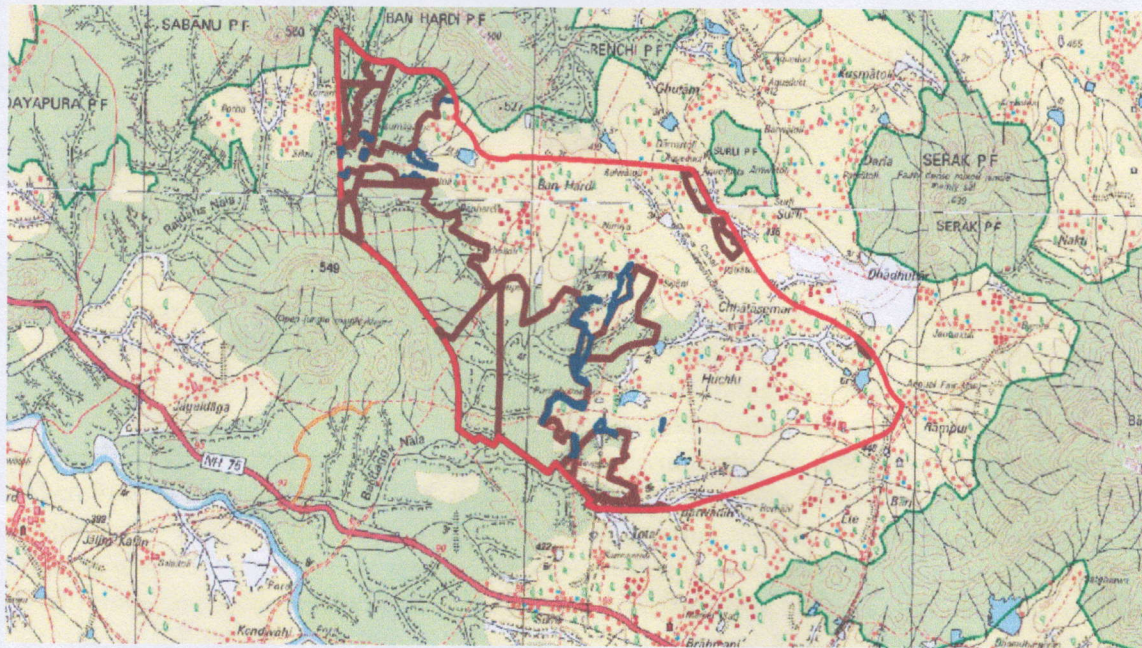


Fig-02: Location of Banhardi CB on Toposheet (showing forest and water bodies in the area).

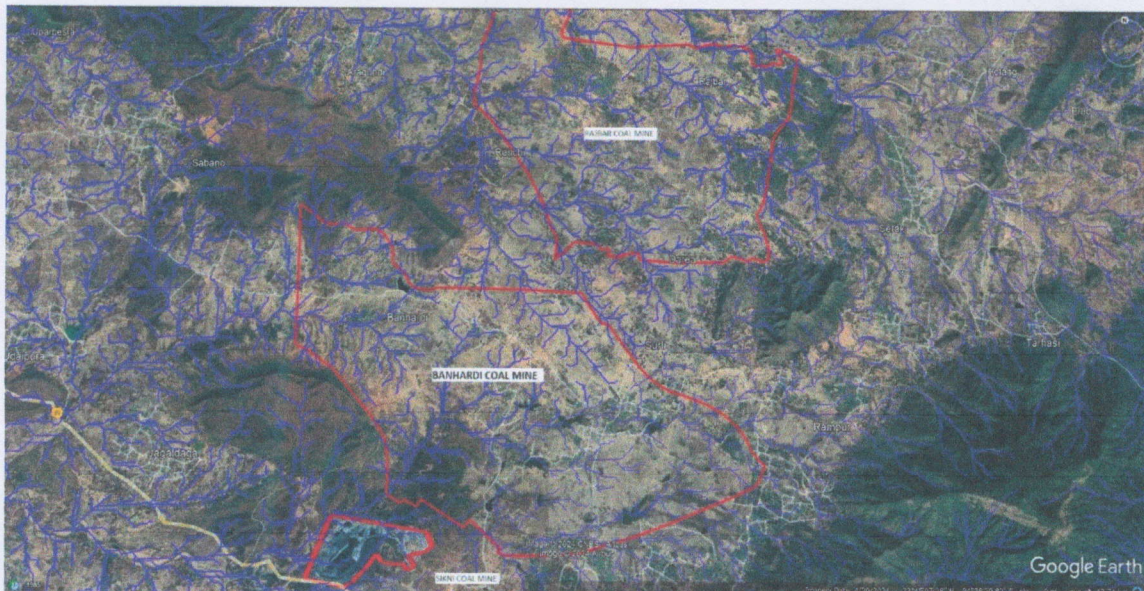
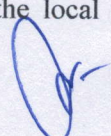


Fig-03: Rivers/streams in and around Banhardi coal block area.

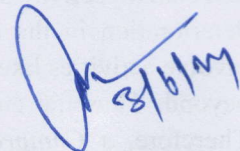
The proposed area of Banhardi Coal Block is a part of landscape significant in terms of *ecological and hydrological functions*. This is also an ecologically significant watershed and the catchment area is interlaced with numerous streams/rivulets/nalas. Thus, the landscape is important from the *Water Security* perspective as well. The water availability is enhanced mainly by streams arising from the forests of the area. Consideration in regard of *Water Security*,

Ecological Restoration and Post-Reclamation of the area is needed in regard of water regime of the whole catchment area because with the advent of open cast mining operation in the area many streams arising from the adjoining hills and forests will be compromised in entirety and entire fragile ecosystem can get affected by water crisis a few years down the line. Opencast mining operation undermines the functional capacity of the stream and also causes irrevocable damage to the riverine ecosystem. Hence, a **Catchment Area Treatment Plan** must be prepared and implemented to mitigate the adverse impacts of open cast mining. Since, four mega projects open cast coal mining is nearby this will lead to cluster of mining projects in the area and therefore *post-reclamation* on the principle of restoration of entire habitat including restoration of soil must be an integral component. *Ecological Restoration* too must also be taken into consideration for maintaining the landscape integrity of the existing forest tract. As a crucial component of the CAT Plan, complete stretch of the stream should be further protected by identifying and developing dense multi row plantation of indigenous species on both side of the river (preferably up to 100 meters) to prevent adverse impacts of sediment deposition and congestion of streams due to overburden dump and opencast mining operations. Concurrent implementation of CAT Plan (with commencement of mining operations) is very much important for desirable outcome

- 2) The area proposed for diversion is also prone to soil erosion. The open cast mining and associated activities cause serious problems of land degradation, dust generation and deterioration in the environmental quality. Open cast mining and associated activities would involve activities like breaking of land and removal of earth, specially the top soil, in the area and beyond. Thus the entire landscape will be further vulnerable to soil erosion and degradation. Therefore, a **Comprehensive Soil and Moisture Conservation Plan** should be prepared and implemented treating the *entire landscape* to ensure that the detrimental impact of open cast mining on the adjacent vast expanse of forests shall be minimised.
 - 3) The forest area proposed for diversion is having patched of rich forest with average vegetative density of 0.4 to 0.5. It is rich in terms of floral and faunal biodiversity with an ecologically significant gene-pool. Therefore a sincere effort is needed to preserve the germplasm of the area by conducting a thorough **biodiversity and ethno botanical studies** by a specialised agency/team before initiating mining activities. Specific guidelines towards the **Eco-restoration Plan, Biodiversity Conservation Plan** and **Reclamation Plan** may be issued precociously.
 - 4) The Forest area proposed for diversion is situated within the elephant movement route along the contiguous forest areas. The proposed diversion shall be causing hindrance to the free movement of elephants from one forest tract to another. The advent of Open Cast Mining would not only further disturb the ecological stability and landscape continuity but also lead to dissection of contiguous patches. Thus, there should be adequate measures to safeguard the traditional route of wild animals including elephants. In order to minimise Human-Animal conflict in general and Human-Elephant conflict in particular, along with furthering the cause of conservation of elephant and its associate habitat, while maintaining the structural and functional integrity of the eco-system, it is very much necessary to protect the precious habitat from fragmentation, degradation, and destruction. Hence, a **Comprehensive Wildlife Management Plan**, to mitigate the conservation concerns due to the dissection of contiguous habitat patches is recommended.
 - 5) Looking into the significant role of the area in terms of richness of biodiversity of both flora and fauna, and the occurrence of ecologically significant habitat, further it is recommended that there should be a study concerning **Wildlife Habitat Vulnerability & Ecological Habitat Restoration** by the specialised agency before the commencement of Open Cast Mining Operations.
 - 6) It is also recommended that a significant share (preferably 50%) of Corporate Social Responsibility (CSR)/ Community Development Funds should be earmarked for **Environmental Restoration and Habitat Development** under the guidance and supervision of State Forest Department represented by concerned DFO.
 - 7) Diversion of forest land for open cast mining activities threaten the ecological balance of the area and causes irreparable damage to the local forest biodiversity thus greatly affecting the
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indigenous tribe dependent on the forest for Minor Forest Produce/Non-Timber Forest Produce and forest-based livelihood. A **Livelihood Security Plan** for the future of the indigenous community should also be prepared and implemented under the guidance and supervision of State Forest Department represented by concerned DFO.

- 8) Institutionalise a **Concurrent Monitoring and Evaluation Cell** with *Subject Matter Specialist/Technical Experts* under the guidance and supervision of State Forest Department represented by concerned DFO to monitor the implementation of the *mitigation measures* in the Banhardi Coal Block Open Cast Mining Project like Wildlife Management Plan, Catchment Area Treatment Plan, Soil and Moisture Conservation Plan etc. and also while evaluating various studies to be conducted in the area specifically concerning Wildlife Habitat Vulnerability & Ecological Habitat Restoration; Biodiversity studies and Ethnobotanical research; Soil Erosion & Land Reclamation; Water Conservation; Surface Carbon & Carbon Stock depletion; Integrated valuation of ecosystem services and other activities proposed by the MoEF&CC from time to time.
- 9) It is desirable that User Agency should be entrusted with a defined role in the implementation of all the above measures as much as possible under the guidance and supervision of state forest department along with active engagement of locals.
- 10) The entire cost of study, monitoring, logistics and implementation of all the measures shall be borne by User Agency.



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