Diversion of 104.17 ha of forest land in favour of M/s Jayaswal Neco Industries Ltd. (JSIL) for Moitra Coal Mining Project in Hazaribagh West Forest Division of Hazaribagh District of Jharkhand.


The instant proposal is for Moitra Coking Coal Block allotted to M/s Jayaswal Neco Limited vide Ministry of Coal’s letter no. 47011/7(20) 1993-CA dated 13.05.2005 for mining of coking coal. M/s Jayaswals Neco Lt. (JNL) is opening an Integrated Steel Plant (ISP) at Siltara, Raipur in Chhattisgarh. The proposed site falls in Moitra and Hahe villages of Barkagon Forest Block. The land forms part of the North Karanpura Coal field and is the Western Most member of the Damodar Valley coal basin as started by CF, Hazaribagh. The mining plan has been approved by the Ministry of Coal, Government of India.

Out of the total area of 407 ha of the Moitra Block the total forest land is 204.12 ha. However, 113.46 ha of forest area which seems to contain this, has inconsistent and unworkable coal horizons of Kaharbari seams have been excluded from the mine lease area.

**The facts related to proposal as contained in the proposal submitted by the State Government of Jharkhand are given as under:**

<table>
<thead>
<tr>
<th></th>
<th>Name of the Proposal</th>
<th>Diversion of 104.17 ha of forest land in favour of M/s Jayaswal Neco Industries Ltd. (JSIL) for Moitra Coal Mining Project in Hazaribagh West Forest Division of Hazaribagh District of Jharkhand.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Location</td>
<td>i) State</td>
<td>Jharkhand</td>
</tr>
<tr>
<td></td>
<td>ii) District</td>
<td>Hazaribagh</td>
</tr>
<tr>
<td>3. Particulars of Forests</td>
<td>a) Name of Forest Division</td>
<td>Hazaribagh West Forest Division</td>
</tr>
<tr>
<td></td>
<td>b) Forest area involved</td>
<td>104.17 ha</td>
</tr>
<tr>
<td></td>
<td>c) Legal Status/Sy. No</td>
<td>Notified and Protected Forest 34.84 ha</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Notified and un Demarcated forest land 52.56 ha</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GMK under Jungle Jhari forest land 6.08 ha</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>104.17 ha</td>
</tr>
<tr>
<td>---</td>
<td>-------</td>
<td>-----------</td>
</tr>
<tr>
<td>d) Map</td>
<td>SOI Toposheet – 29/c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Location Map 79/c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DGPS Map Pg 732-734/c</td>
<td></td>
</tr>
</tbody>
</table>

4. Topography of the area

(i) Geology
(ii) Vulnerability to erosion

- Vulnerable to sheet and gully erosion

5. Vegetation

i. Tree/Herbs/Shrubs composition
Sal. Mahua, Bargad, Doka, Khair, Farhad, Kajo, Kend, Asan, Sidha, Peepal, Amla, Kusum, Ber, Bhelwa, Semal, etc.

ii. No. of trees which will be affected
- Below 60 cm girth 8021 trees
- Above cm girth 7383 trees
Total 15404 trees

iii. Density
0.5

6. Whether area is significant from wildlife point of view
No

7. Whether forms part of National park, Wildlife Sanctuary, Biosphere Reserve, Tiger Reserve, Elephant Corridor, etc. (if so, details of the area and comments of the Chief Wildlife Warden
No

8. Whether any RET species of flora and fauna are found in the area. If so details thereof
No

9. Approximate distance of the proposed site for diversion from boundary of forest.
Proposed site lies in the forests.

10. Whether any protected archeological/ heritage site/defence establishment or any other
No
11. Whether any work of in violation of the Forest (Conservation) Act, 1980 has been carried out (Yes/No). if yes details of the same including period of work done, action taken on erring officials. Whether work in violation is still in progress. | No |

12. Whether the requirement of forest land as proposed by the user agency in col. 2 of Part-I is unavoidable and barest minimum for the project, if no recommended area item-wise with details of alternatives examined. | Yes. |

13. Details of Mining

| Method of mining | Open cast |

| i. Total Net Geological reserve in the blosk | 215.78 Million Tonnes |

| ii. Mineable Reserve |
| By Open Cast | 38.16 MT |
| By Underground | 177.62 MT |

Purpose wise breakup of mining

| Actual mining | 83.06 ha |
| Waste dump | - |
| Infrastructure | - |
| Garland drain | 17.63 ha |
| Mining safety zone | 3.48 ha |
| Total | 104.17 ha |

14. Compensatory Afforestation

| CA has been proposed over equivalent non-forest land i.e. Initially the CA areas were identified in Giridih Forest Division and Latehar Forest Division, However as reported by PCCF-cum-Executive Director, Westland Development Board, Jharkhand vide letter No 890 dated 03.11.2010, due to some land dispute in Giridih, an area of 88.83 ha was identified in Simdega Forest Division for compensatory afforestation and 20.235 ha was identified in Latehar Forest Division. The concerned DFOs have submitted land suitability |
(i) Details of non-forest area/degraded forest area identified for CA, its distance from adjoining forest, number of patches, size of each patches.

CA area has been identified in two patches in Latehar and Giridih District detail is as under:

<table>
<thead>
<tr>
<th>District</th>
<th>Village</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giridih</td>
<td>Bengabad</td>
<td>16.394</td>
</tr>
<tr>
<td>-do-</td>
<td>Gamhardih</td>
<td>20.032</td>
</tr>
<tr>
<td>Latehar</td>
<td>Badhania Khand</td>
<td>20.235</td>
</tr>
<tr>
<td>Giridih</td>
<td>Gamhardih</td>
<td>8.094</td>
</tr>
<tr>
<td>-do</td>
<td>Fuljori</td>
<td>23.472</td>
</tr>
<tr>
<td>-do-</td>
<td>Lataki</td>
<td>16.115</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>104.342</td>
</tr>
</tbody>
</table>

(ii) Map showing non-forest/degraded forest area identified for CA and adjoining forest boundaries. -

(iii) Detailed CA scheme including species to be planted, implementing agency, time schedule, cost structure, etc. -

(iv) Total financial outlay for CA -

(v) Certificate from the competent authority regarding suitability of the area identified for CA and from management point of view. -

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td>Site Inspection Report from the</td>
<td>-</td>
</tr>
<tr>
<td>16.</td>
<td>Catchment Area Treatment</td>
<td>N.A.</td>
</tr>
<tr>
<td>17.</td>
<td>Rehabilitation of Oustees</td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>No of families involved</td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Category of families</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>Details of rehabilitation plan</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>SC/ST families - 38</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Reclamation of mined areas</td>
<td>Enclosed at Pg 69-71/c</td>
</tr>
<tr>
<td>19.</td>
<td>Mining Plan along with progressive Mine Closure Plan</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Whether clearance under Environment (Protection) Act, 1986 is required?</td>
<td>No (the project proponent has submitted that they are carrying out mining within existing lease and there is no increase in the pollution load).</td>
</tr>
</tbody>
</table>
Site Inspection Report, Regional Office, Bhubaneswar

The site inspection was carried out the Regional Office from 07.05.2012 to 08.05.2012 along with Dr. R. Thanga Pandian, DFO, Hazaribag (West), and Shri U.S.Rai, Vice President from user agency.

1. **Legal status of the forest land proposed for diversion**
   As per report of Divisional Forest Officer, Hazaribagh West Division in part II of the proposal the legal status of the forest land is as listed below:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Notified &amp; demarcated forest land</td>
<td>15.53 ha</td>
</tr>
<tr>
<td>2.</td>
<td>Notified un-demarcated forest land</td>
<td>52.56 ha</td>
</tr>
<tr>
<td>3.</td>
<td>G.M.K. under Jungle Jhari forest land</td>
<td>6.08 ha</td>
</tr>
</tbody>
</table>
2. Item-wise break-up details of the forest land proposed for diversion:
As per the diversion proposal submitted by the user agency the purpose wise break up is as follows:

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Purpose</th>
<th>Area in (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Actual mining</td>
<td>83.06</td>
</tr>
<tr>
<td>2.</td>
<td>Waste dump</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Infrastructure</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Garland drain</td>
<td>17.63</td>
</tr>
<tr>
<td>5.</td>
<td>Mining safety zone</td>
<td>3.48</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>104.17</strong></td>
</tr>
</tbody>
</table>

3. Whether proposal involves any construction of buildings (Including Residential) or not. If yes, details thereof:
As stated in point number 2 above.

4. Total cost of the project at present rates:
As stated by the user agency the cost of the project is Rs. 80 crores

5. Wildlife:
Whether forest area proposed for diversion is important from wildlife point of view or not:
As reported by DFO, Hazaribagh West Division, the wildlife found in the area are Elephant, Leopard, Hyena, Python, Pangolin, Wild Duck, Monitor Lizard, Chameleon.

6. Vegetation:
As reported by the DFO, Hazaribagh West, the tree density is 0.5 and also the area is vulnerable to sheet and gully erosion.

(a) Total number of trees to be felled.

15404

Effect of removal of tree growth on the general ecosystem in the area:
As there are a large number of trees to be felled, it will naturally adversely affect the ecosystem.

(b) Important species:
Sal. Mahua, Bargad, Doka, Khair, Farhad, Kajo, Kend, Asan, Sidha, Peepal, Amla, Kusum, Ber, Bhelwa, Semal, etc.

Number of trees of girth below 60 cm.
As submitted by the user agency, the tree enumeration has been done on the basis of sample survey of 8 plots each of 1 hectare area. Accordingly, as per calculation the number of trees below 60 cm in 8021.

**Number of trees of girth below 60 cm.**
As submitted by the user agency, the tree enumeration has been done on the basis of sample survey of 8 plots each of 1 hectare area. Accordingly, as per calculation the number of trees above 60 cm in 7383.

7. **Background not on the proposal:**
M/s Jayaswals Neco Lt. (JNL) is opening an Integrated Steel Plant (ISP) at Siltara Raipur in Chhattisgarh. The proposed site falls in Moitra and Hahe villages of Barkagon block and forest range. The land forms part of the North Karanpura Coal field and is the western most member of the Damodar Valley coal basin as started by CF, Hazaribagh. The mining plan has been approved by the Ministry of Coal, Government of India.

8. **Compensatory afforestation:**
Initially the CA areas were identified in Giridih Forest Division and Latehar Forest Division, However as reported by PCCF-cum-Executive Director, Westland Development Board, Jharkhand vide letter No 890 dated 03.11.2010, due to some land dispute in Girdih, an area of 88.83 ha was identified in Simdega Forest Division for compensatory afforestation and 20.235 ha was identified in Latehar Forest Division. The concerned DFOs have submitted land suitability certificates in this regard.

Visited the C.A. site of 88.83 ha at Pitra Mauza under Simdega Forest Division along with DFO simdega and personnel from Simdega Forest Division and user agency. The visited CA site is found to be suitable for compensatory afforestation. It is about 1 km from the nearest protected forest and about 1.5 km from Kachidega Beat Office under Simdega Range.

(a) **Whether land for compensatory afforestation is suitable from plantation and management point of view or not.**

As reported by DFO Hazaribagh west Forest Division in part II of the report, the area is suitable for compensatory afforestation in both the Division.

(b) **Whether land for compensatory afforestation is free from encroachment /other encumbrances.**

Non-encroachment and non-encumbrance certificates from the concerned DFOs and revenue authorities have been submitted.
(c) Whether land for compensatory afforestation is important from religious or archeological point of view:

   Not reported.

(d) Land identified for raising compensatory afforestation is in how many patches, whether patches are compact or not:

   As reported by the user agency CA area in Simdega has 51 patches and in Latehar 3 patches.

(e) Map with details.

   The map of CA area is enclosed as annexure-1.

(f) Total financial outlay.

   Rs. 57,14,800.

9. Whether proposal involves violation of forest (Conservation) Act, 1980 or not. If yes, a detailed report on violation including action taken against the concerned officials.

   Not reported.

10. Whether proposal involves rehabilitation of displaced persons. If yes, whether rehabilitation plan has been prepared by the State Government or not:

   As per the information provided by the user agency 12 families will be rehabilitated. A proposal in this regard has been submitted by them (enclosed as annexure-2). The user agency has also submitted an undertaking to implement the Rehabilitation policy of the State Government.

11. Reclamation plan:

   Enclosed as annexure-3.

   Details and financial allocation:

   Details and financial allocation have not been submitted along with the reclamation plan.

12. Details on catchment and command area under the project:

   Not applicable.

   Catchment area treatment plan to prevent siltation of reservoir:

   Not applicable.
13. Cost benefit ratio:
   1:59

14. Recommendations of the Principal Chief Conservator of Forests/State Government
   Yes. The PCCF and the State Government have recommended the proposal.

15. Recommendations of Chief Conservator of Forests (Central) along with detailed reasons:
   Appended separately.

16. Dy. Conservator of Forests shall give detailed comments on whether there are any alternative routes or alignments for locating the project on the non-forest land.
   The mining project is site specific, hence alternative alignment is not possible.

17. Utility of the project:
   The project may improve the socio-economic development of the region. Basic infrastructural development may improve the living condition of the people of the region. The project is likely to generate employment opportunity in the region.

   Number of Scheduled Caste/Scheduled Tribes to be benefited by the project:
   The details not provided.

18. (a) Whether land being diverted has any socio-cultural or religious value:
   Not reported.

   (b) Whether any sacred grove or very old growth trees/forests exist in the areas proposed for diversion.
   Not reported.

   (c) Whether the land under diversion forms part of any unique ecosystem.
   Not reported.

19. Situation with respect to any Protected Area:
   Not reported.

20. Any other information related to the project.
   A. Reclamation: The land reclamation should be done in both stages i.e. Technical and biological. The user agency prepare a long term plan so that after the end of mining lease, the land so reclaimed can turn into a beautiful landscape or an ecotourism spot which will be important from aesthetic point of view.

   B. Acid mine drainage: Acid mine drainage (AMD) is a challenge at coal mining operations. The user agency should treat AMD actively by installing a water
treatment plant, where the AMD is first dosed with lime to neutralize the acid and then passed through setting tanks to remove the sediment and particulate metals or passively by developing a self-operating system that can treat the effluent without constant human intervention.

C. **CSR activity and capacity building:** The capacity building of the trial is a major necessity for the development of the region. There has to be great emphasis on education, health care, protection and upgradation of traditional agriculture, promotion of traditional crafts and local knowledge, preservation of local identity, improvement of the soil and water conservation mechanisms and of course great thrust on creating alternative source of income. While developing the area, there should be consultation with the local people and with expertise from the reputed institutions, both inside and outside the state. The emphasis of CSR should not be focused at area around the project only, the project authority should venture a little far away areas even in the same district. If the project authority, over a period of time extend their helping hand to the area within the same block, then it would be a great help to the society, and un-skewed development of the area could be checked.

D. **Water conservation:** Water is a precious resource, Jharkhand is facing water crunch. The user agency should take appropriate measures for creation of ponds, for rain water harvesting structures, so that more water can be stored around, which in turn will recharge the ground water.

E. **Establishment of environmental laboratory:** The user agency should establish a modernized environmental laboratory with adequate number of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board for regular monitoring of the environmental status as well as taking remedial measures for maintain better ecological balance.

F. **Protection of Badmahi river:** The Badmahi river, flowing near the mining area controls the main drainage of the area. The user agency should ensure that the water of Badmahi river is not polluted.

G. **Diversion of Rajhar nallah:** One major nallah, viz. Rajhar nallah flows over the Moitra block. This nalla should be diverted from its original flow. The details enclosed as annexure - 4.

H. **Transport system:** The mode of transport from the mine area should be through closed conveyor belt system so that there is little disturbance on the
road. Thus the ancillary problems like congestion, dust pollution etc will be minimized.

I. **Biodiversity study:** As the mining area appears to be having good biodiversity; a study of the same is required. Reputed instituted may by engaged to study the uniqueness of the flora and fauna of the region. The UA should create appropriate facilities for the study of biodiversity of the area, for promotion and protection of wild flora and fauna and they should help Government institutions in financing for the above purpose.

RECOMMENDATION OF THE ADDITIONAL PRINCIPAL CHIEF CONSERVATOR FOREST (CENTRAL) IN RESPECT OF DIVERSION OF 104.17 HA OF FOREST LAND FOR MOTTRA COAL MINING PROJECT OF M/S JAIYSWAL NECO INDUSTRIES LTD IN HAZARIBAGH DISTRICT.

The instant proposal is for diversion of 104.17 ha of forest land for Moitra Coal mining project of M/s Jayaswal Neco industries Ltd. in Hazaribgh district.

On perusal of the records and the site inspection report of the Conservator of Forest (Central), the following observations are made:

1. **Compensatory afforestation:** The present proposal for CA in 54 patches in 2 Divisions (Some even less than 1 acre) is not acceptable which should be in compact block. Moreover, the compensatory afforestation sites fall under naxal affected area where it will be difficult for the officials to inspect and monitor the quality of plantation and prevent encroachment. The user agency may be requested to modify CA proposal and make more compact blocks of large size.

2. **Evacuation of coal:** The user agency has proposed for road transportation. They should use closed pipe conveyor system for transportation of coal from the mine site. This may be insisted upon and given as a condition and road transport should not be allowed so as to avoid environmental pollution and other related problems to the local stakeholders. The user agency may be directed to modify the proposal accordingly.

3. The DGPS map of the mining area submitted by the user agency is not counter signed by the concerned DFO or other leading universities/academic institutions. The copy of design parameters, field data and analyzed report may be given to the ERO for information. Appropriate action based on findings may be taken by the user agency to conserve the gene pool, sending yearly report to the Regional Office. It is emphasized that minimum one year
study for flora and fauna is required to cover all seasons and only Government institutions should conduct the study.

4. **Biodiversity survey:** The user agency should arrange for a quick biodiversity survey with the help of BSI, ZSI or some other leading universities/academic institutions. The copy of design parameters, field data and analyzed report may be given to the ERO for information. Appropriate action based on findings may be taken by the user agency to conserve the gene pool, sending yearly report to the Regional Office. It is emphasized that minimum one year study for flora and fauna is required to cover all seasons and only Government institutions should conduct the study.

5. **Study on shale for utilization:** The user agency should be directed to provide adequate fund for a study by a reputed government institution regarding use of shale as a source of fuel for power generation.

6. **Pyrite and Methane** are important causes of pollution in the open cast coal mining but they are not accounted. Pyrite is also the cause of initiation of fire in coal stacks and also release of acidic water due to Sulphur. Therefore the user agency should provide data for pyrite and Methane content seam-wise by arranging a study through CMFRI, Dhanbad. General grading/ degree should not be accepted.

7. **Post mining land use:** A Comprehensive post mining land use plan for the entire mining lease area should be submitted by the user agency. The plan should ensure that the agriculture land is not reduced. The plan should include different zones such as agriculture, horticulture, plantation, wilderness, ecotourism, water bodies and pisciculture zone, etc. The objective of this plan should be to make the land on completion of mining suitable for habitation and relocation of villages providing all infrastructural facilities. The post mining land use plan is a commitment of the user agency to the government and society to develop the land for optimal productivity. Any change in post mining land use plan should be done only with the approval of the Ministry of Environment and forests.

8. **Preservation of Soil:** In mining site significant area of the land is degraded but it remains one of the most important sources of energy. The process of coal extraction drastically alters the physical and biological structures of the mined out areas, so the preservation of top and sub soil becomes inevitable. From the initial phases of the mining the preservation of top and sub soil
becomes inevitable. From the initial phases of the mining the preservation of soil should be given prime importance. Top and sub soil shall have to be stacked sparsely at earmarked places so as to conserve precious natural resource and ensure better stability of dumps. Qualities of top and sub soil (Stored and used) should be sparsely recorded in a measurement book.

9. **Greening of non mineralized zones:** The user agency should prepare a plan for taking up plantation in the non mineralized zones and implement it. The top soil should be preserved in active form so as to use it for the greenery of the area as early as possible. They should incorporate vermin-composting/composting in their greening plan, so that sufficient nutrients are available to the seedlings during plantation.

10. **Water pollution:** The major source of water pollution in the coal mines is the carry over of the suspended solids in the drainage system of the mine sump water, storm water drainage and waste water from coal beneficiation plant. Necessary measures should be taken to avoid water pollution caused due to all such possible sources.

11. **Environmental awareness programme:** The user agency should arrange environmental awareness programme to create awareness among the employees as well as nearby people regarding better environmental management and its safeguards. There should be programs, weeks for the forests and wildlife, to be celebrated by the miners and other stakeholders, the wildlife lovers, officials involved in the process should participate in such function and the idea protection of precious natural resources like forest, wildlife, etc should leave an indelible impact in the mind of the people voluntarily and enthusiastically work for the protection and enrichment of the forests and wildlife of the region.

12. **CSR activities:** The user agency should implement a corporate plan for the overall development of the people in the vicinity like providing quality primary and secondary education, creating employment opportunities & health care facilities. Sanitation aspect, literacy drive, etc. should also be taken care of by them. The user agency should provide training programme for the mining engineering students in their lease area and also engage them in research work so that the students will be benefited. The user agency should also support the economically backward students in their education in terms of providing study materials and stipends.
Considering the above issues, Conservator of Forest (Central)’s site inspection report along with the fact that the coal blocks of this region are under CBI enquiry, the Ministry may take appropriate decision on the above diversion proposal.

The Regional Office in the site inspection report raised certain issues related to compensatory afforestation, evacuation of coal, biodiversity survey, shale utilization, water pollution, etc. which needed to be addressed by the State Government. Accordingly, this Ministry vide its letter dated 26.10.2012 requested the State Government to furnish its comments on the site inspection report of the Regional Office, Bhubaneswar.

The State Government vide its letter dated 3.08.2013, placed along with its annexure at page /c, has submitted its comments on the site inspection report. Detailed comments may kindly be seen at F/X below however a summary of the same is given as under:

**Compensatory Afforestation**
For raising CA, the user agency has proposed 51 patches in the original proposal. In order to make compensatory afforestation blocks more compact, 20 (twenty) plots recommended to be discarded and 32 (thirty two) plots are to be acquired by the User Agency.

**Evacuation of Coal:**
In order to keep the air borne dust pollution under control, the User Agency has to transport wet coal within the lease area up to coal washer/coal dump yard. The washed coal can be transported from the lease area to the Patratu Railway Staton through covered trucks. The trucks will be loaded with 80% of the allowed capacity so as to reduce partial combustion of carbon-monoxide and suspended particulate matter (SPM) form the exhaust. Further, the coal transportation vehicles employed shall confine to the Euro-IV norms. The User Agency has undertaken to install water sprinklers at mines site to reduce dust pollution.

**DGPS Map**
The DGPS map of the mining area has now been counter signed by the concerned DFO, Hizaribagh West Division n and is enclosed

**Biodiversity Survey:**
As agreed by the User Agency and an undertaking has been submitted that Biodiversity survey would be conducted by the Ranchi University faculty members, which is in progress.

**Study on Shale Utilization:**
The User Agency has agreed/given undertaking to provide funds, in case the study on Shale utilization is conducted by the Govt./ reputed Govt. Institution like CMPDI, ISM, Dhanbad, CMFRI.

**Study on Methane and Pyrite Content**
The User Agency has agreed/given undertaking that an extensive study will be conducted through CMFRI, Dhanbad and will provide Data for Pyrite and Methane content seam-wise before stage-II CLEARANCE. Further, they have also agreed to follow the guide lines and suggestions given by CFRI, Dhanbad.

**Pot Mining Land Use Plan**

User Agency has agreed/given undertaking that the land on completion of mining suitable for habitation and relocation will handed over to respective owners for optimal productivity. The User Agency has also given an undertaking that they will submit the Post Mining Land Use Plan before stage II clearance.

**Preservation of Soil:**

The top soil of open cast mining area upto the depth of 30 cm. can be stored separately within the lease area to conserve the Biological diversity fo the top soil. The soil cap be planted with grasses and periodically irrigated. The height of the top soil dumped should not exceed 1 m. After back-filling the top soil can be spread over the opened up area, so as to reestablishes the original composition of micro flora and fauna. The user agency should meet the cost of preservation of top soil.

**Greenlining of non-mineralized zone:**

User Agency has agreed/given undertaking that the top soil excavated from the mining area will be utilized concurrently for plantation over the overburden dumps, avenue plantation and plantation over non-mineralized zones. If it is required to be stacked, the same will be done for a shorter period and its productivity will eb protected biologically. We will also incorporate Vermicomposting/Composting in our Greening Plan so that sufficient nutrients are available to the seeding during plantation.

**Water Pollution:**

User Agency has agreed/given undertaking that necessary measures will be taken to avoid water pollution.

**Environmental Awareness**

User Agency has agreed/given undertaking that necessary measures will be taken to avoid water pollution.

**CSR Activities**
User Agency has agreed/given undertaking that necessary measures will be taken to avoid water pollution.

The State Government has also informed that there is no CBI enquiry against this particular project. Actions will be applicable on the basis of facts.

In view of the above facts related to the proposal, if approved, the proposal may be submitted to the FAC for its consideration in its next meeting.