EXECUTIVE SUMMARY OF ENVIRONMENT IMPACT ASSESSMENT / ENVIRONMENTAL MANAGEMENT PLAN

(As per S.O.1533 (E) dated 14 September 2006)

Of

MARKI-MANGLI COAL BLOCK-III

Villages: Ardhwan, Bhendala, Ruikot, Mukutban,
Tehsil Zari-Jamni, District Yavatmal, Maharashtra
(Project Area 282 Ha, Proposed Production Capacity of Coal: 0.21 MTPA)
(Project Category 'A')

Prepared for Submission to

Maharashtra Pollution Control Board,

For Conduction of Public Hearing

Project Proponent

M/s B. S. ISPAT LTD

Village Salori Yensa, P. O. Chinora
Tehsil Warora, District Chandrapur, Maharashtra

EIA CONSULTANT

SRUSHTI SEVA PRIVATE LIMITED

Nagpur

NABET Accreditated EIA Consultant
Certificate No NABET/EIA/1518/RA027 Valid upto 02.12.2018

July 2018

EXECUTIVE SUMMARY

1 PROJECT DISCRIPTION

M/s B S Ispat Ltd (BSIL) a Private Limited Company has installed 2x100 TPD Sponge Iron Plant and 11 MW Power Plant situated at Warora, Tehsil Warora, District Chandrapur, Maharashtra. The company had applied through bidding process for allocation of a coal block to the Ministry of Coal to meet the coal demand of its Sponge Iron and Power Plants. Accordingly, the Marki – Mangli - III coal block at village Ardhwan, Bhendala, Ruikot, Mukutban Tehsil Zari-Jamni Dist Yavatmal was allocated to the company by the Ministry of Coal GOI. Mining of coal from this coal block is proposed by opencast method with a production rate of 0.21 MTPA.

The Marki-Mangli III Coal Block mine lease area is located within the Survey of India Toposheet No. 56 I/13 on a scale of 1:50,000 and is bounded by the latitude 19° 48' 17.14" N and longitude 78° 50' 13.21" E. The extractable reserves after considering coal block in barrier, safety zone, etc., are estimated to be 3.65 MT. With the proposed rated capacity of 0.21 MTPA, life of the mine is estimated to be 18 years.

Environmental clearance had been granted for this Marki- Mangli - III Coal Mine as a combined project along with Marki- Mangli - II & IV coal mining project vide MoEF Letter No. J11015/425/2007-IA. II(M) dated 27th January 2011 to M/s Shree Veerangana Steel Private Limited, the earlier project proponent. M/s BSIL applied for approval of the project as per the provisions stipulated in Vesting order for the transfer of all prior approvals of the prior allottee to the successful bidder. As regards to the environmental clearance also, M/s BSIL applied for transfer of environmental clearance to Ministry of Environment, Forest & Climate Chang (MoEF & CC). In reply to the application of M/s BSIL, the MoEF & CC vide letter no. MoEF & CC on 24.04.2015 No. J11015/425/2007-IA .II(M) dated 12th August 2015, the company was directed to apply for Environmental Clearance (EC) afresh. In compliance for the same Draft Environment Impact Assessment/ Environment Management Plan (EIA/EMP) is prepared.

This summary based on the Draft EIA/EMP report prepared for conduction of Public Hearing as per the provisions and procedure defined in EIA Notification 2006. For this purpose baseline environmental data monitored during March – May 2016 has been used. Additionally, environmental data was also collected from selected locations within the core and buffer zone in March-April 2018.

Land Requirement : The total land required for the mining under the proposal is 275 Ha for mining and additional 7 Ha for nala and road diversion. Out of the total 282 Ha land requirement 262.50 Ha land is private land and 19.50 Ha is Government Land. The private land will be acquired through negotiations with the land owners. There are 140 Land owners spread in four villages viz. Ardhwan, Bhendala, Ruikot & Mukutban covering 262.50 Ha land. The 19.50 Ha Government land will be acquired as per the procedure in vogue.

Mining Details : Considering the scale of operation, geological setting and the nature of deposit, it is proposed to adopt fully Opencast Mechanized method using Shovel – Dumper combination involving ripping / dozing, drilling- blasting, manual sorting, sizing and stacking as well as mechanized loading and transportation. The production capacity of Marki – Mangli III coal mine (275 hectares) will be 0.21 MTPA.

The mine waste is in the form top soil and overburden will be initially stacked in the non-mineralized area of the lease. However from the fifth year of operations simultaneous backfilling will be undertaken. Out of a total of 25.19 Mm^3 of OB generated 22.01Mm^3 shall be backfilled in internal dumps and 2.61 Mm^3 shall be in OB dump and 0.57 mm^3 shall be in top soil dump. The internal back-filling is proposed to start in a phased manner from 5th yr of operations. About 87% of the total OB generated will be accommodated in internal dump for rest of the mine life. The void area of 59 ha of the excavated pit will ultimately become a water body. This void area will also be suitably sloped, bunded and fenced.

The plantation program will be taken up in the areas in a systematic manner. it is proposed to plant local tree species @ 2000 trees/ ha in consultation with the Forest Department. Thus, Plantation of more than 4 lakh local tree species will be undertaken in backfilled area, external dumps and other undisturbed area covering 204 Ha of land, Plantation will be carried out starting with soil binding grasses and shrubs followed by larger trees species. The mine will provide direct employment to nearly 288 additional workers besides creating many indirect employment opportunities.

The mining will be carried out as per the approved mining scheme. The Mining Plan and Mine Closure Plan was approved from Ministry of Mines vide letter dated 10.04.2018.

Rehabilitation & Resettlement Plan: As per the initial block allotment to M/s Virangana Steel Ltd, this block had ML area of 275 ha consisting of 255.50 ha of private land and 19.50 ha of government Land. There was no settlement in the above private land and as such only 64.42 ha in this block were acquired by the earlier proponent. Subsequently, the block has been deallocated and on reallocation to M/s BSIL the transfer of all earlier approvals and land acquired by earlier allotee were vested with M/s BSIL. In addition M/s BSIL has already acquired 62.4 ha of land and thus, need to purchase another 191.08 ha of land by acquiring this land based on negotiations with land losers. Adequate financial provision has been made by M/s BSIL for this purpose. It is further brought out that as per the approved mining plan in 2008-09, there were no settlements existing in the proposed 275 ha mining lease area and as such no resettlement was envisaged. The earlier environmental clearance envisaged rehabilitation and resettlement of around 389 PAFs in all the three blocks viz., Marki Mangli II, III & IV. Accordingly, certain provisions towards rehabilitation & resettlement were envisaged by the earlier allotee for all the three blocks.

In Marki Mangli Block III, it has been found that only about 108 PAF's exist in the mining lease area of 275 ha allotted for this block. Considering this, M/s BSIL has decided to acquire the land of these PAF's as per the provisions of the National R & R Policy/ Maharashtra State R & R Policy (whichever is more beneficial to the project affected people) for which necessary budgetary provision has been made. The purchase of agriculture land will be made by paying appropriate mutually and voluntarily compensation agreed between agriculturist land owner and applicant. Permission to purchase agriculture land has been granted by Directorate of Industries, Government of Maharashtra. Besides purchasing the land by paying the monetary compensation to the land owner, it is also proposed to provide following benefits to the land owner and his/her family.

1. Employment in the mining or allied activity for one member of the family depending on his/her eligibility.
2. Skill development training to enhance the employability and self-employment for the landless affected families
3. Technical Support through reputed NGO
4. Preference to procurement of support material or services
5. Involvement in plantation and allied activities
6. Support for non - farm activities for desiring persons
7. Special aid to students, disabled, senior citizens and widows
8. Medical checkups and appropriate support for medical facilities
9. Medical Insurance cover for initial 5 years period to the land looser families

Nala and Road Diversion : A nala called Upasa Nala, which is a seasonal nala flows across the North West corner of the block and is proposed to be diverted after 15th year of Quarry operation. The block is also traversed by all-weather pucca road connecting Mukutban- Ardhwan village, over the quarriable area of Central Quarry; while Ardhwan-Bhendala road passes in close proximity of the Central and West quarry. The Mukutban- Ardhwanroad is proposed to be diverted away from the quarriable area and over non-coal bearing area of the block and similarly the Ardhwan-Bhendala road shall also be diverted along the North-West boundary of the mine lease area.

The water requirement of the project is estimated to be 78 m^3/day. Out of this 65 m^3/day of the water is required dust suppression and plantation and the balance 13 m^3/day for drinking/domestic purpose. Water requirement for dust suppression & plantation will be met from mine water and from rainwater collected in mining pit. The requirement of drinking/domestic purpose shall be met from tube well. Necessary permissions are being obtained from the competent authorities. The power requirement will be met from State electricity board. The traffic on the roads passing from the mine area is likely to contribute towards increase in dust and gaseous pollutants concentration in the area. There will be an increase in traffic due to movement of 35-40 dumpers /day.

There will not be significant be impact on bio diversity of the area beyond what is already present due to traffic on the State Highway. A positive impact due to the plantation activities, which are proposed by management on areas surrounding surface infrastructure for the proposed OC mine is envisaged.

Village Ruikot is located in core zone, and here the impact of drilling and blasting needs special attention. The distance of habitation is more than 100 m frsom the proposed Quarries however strict monitoring on the drilling & blasting operations from the selection of proper blasting pattern, use of optimum quantity of explosive, broadcasting warning signals as per the statutory rules, use of delay detonators for controlled blasting, pre and post blast water spraying, creation of thick greenbelt as barrier for noise propagation will be implemented by BSIL to reduce the impact of drilling and blasting on Ruikot village habitation.

The impact on socio economic of surrounding area will be positive, as mine will directly employ about 288 additional workers. Preference will be given to the local resident of the area for employment. One person from each family of land looser will be given employment in the project. There will be employment generation of double this number in secondary and tertiary sectors. There is no displacement of any habitation or personnel.

A Corporate Social Responsibility Plan (CSR) plan is prepared for this project. The capital & recurring budget earmarked for the various CSR activities are estimated to be Rs 90.87 Lakhs & Rs 13.64 Lakhs respectively. The local persons will be given preference in employment for mine as per their eligibility. Necessary training will be given to train the unemployed youths of the nearby villages. The indirect employment opportunities will automatically created with the click of the coal mine in this region. Besides various CSR activities M/s BSIL also proposes to undertake Corporate Environment Responsibility (CER) activities as per the directives provided in Office Memorandum of MoEF & CC dated 01.05.2018. Separate budget for CER @ 2% of the capital investment will be earmarked and will be assessed through Yavatmal District Administration and shall be undertaken accordingly. M/s B S Ispat Ltd consider protection of workers' health and well- being as their prime concern and responsibility. The company accordingly proposes to adopt certain measures for providing proper occupational health services which will ensure optimal physical and mental health of employees & workers.

2 DESCRIPTION OF THE ENVIRONMENT

The baseline environmental quality data for various components of environment, viz. Air, Noise, Water, Land and Socio-economic was collected during March – May 2016 in the study area covering 10 km radius of the project area. With a view to update and revalidate the baseline environmental quality data collected in 2016, a short term field monitoring was carried out in March – April 2018 and primary data in respect of air, water, soil and noise was collected. In addition, data on flora and fauna, land-use pattern, forest etc. were also collected through field surveys and by way of secondary data from different State Govt. Departments and other agencies in the project region.

To assess the ambient air quality in the study area 9 monitoring stations comprising of 1 sampling station from Core Zone (mining Lease) and 8 sampling station from Buffer Zone (10 Km around core zone) were selected. Relevant air quality parameters viz. PM_{10}, $PM_{2.5}$, Sulphur dioxide (SO_2), Oxides of Nitrogen (NO_X), Ozone (O_3), Carbon Monoxide (CO), and Heavy Metals were monitored.

- **Air & Noise :** The results of analysis showed that particular matter PM_{10} and $PM_{2.5}$ as well as gaseous pollutants namely SO2, NOx and CO were within the permissible of MoEF & CC standards for industrial, residential, rural and other areas. Similarly the noise Levels in the Marki-Mangli Coal Block III lease and its buffer zone were observed in the range of 37.5-54.9 dB (A) covering all the 9 monitoring stations which were below the prescribed regulatory limits.

- **Water quality**: 5 ground water and 6 surface water sampling locations were selected in the study area for water quality monitoring and analysis. The results of analysis showed that the water sources of the area are not polluted except the surface water samples getting contamination from surface run-off. The coliforms count are exception otherwise all the water quality parameter are within the limits as per given in relevant Indian Standards (IS 10500:2012).

- **Soil samples**: Soil samples were collected from three selected locations representing waste land, agriculture land, forest land at three different depth viz. 0-30, 30-60 and 60-90 cm below the surface and homogenized in the study area to assess the existing soil conditions around the Marki- Mangli III lease area. The physic chemical characteristic of forest land soil has sufficient nutrients, whereas, the agricultural land soils are moderately suitable for cultivation of climatic crops and have good fertility.

- **Socio economic:** A socio economic survey in selected villages was carried out. As per census 2011 demographic characteristics of the study area are represented by a number of criteria, namely population composition, sex ratio, family structure, and age distribution pattern. Attempt has been made to compare the demographic features between the census data whenever corresponding data are available. The area selected for the study constitutes 64 inhabited villages. The details of survey and findings are provided in EIA/EMP report.

- **Level /Stage of Ground Water Development:** In the buffer zone, it is noticed that major ground water draft is through irrigation followed by domestic. The level/stage of ground water development has been computed in ground water balance study which shows 16.06%. This can be categorized under 'Safe'/'White' with less than 70% value. The State Government and C.G.W.B jointly computed snet groundwater availability which shows 12.27% the stage of ground water development in respect of Zari Jamani of Yavatmal district, where the proposed mine is located.

- **Land use of Study Area:** The land use pattern of the study area (10 km radius around the mine site) has been estimated by using NRSC satellite image. The total forest area is 19.88%, irrigated land is insignificant i.e. 2.41% whereas unirrigated land is 64.61%, culturable waste land is 4.20% and the land area not available for cultivation is 8.89%.

- **Flora and Fauna**

  Flora : The flora & fauna study was conducted in the study area covering a radial distance of 10 km from the lease area. Primary survey of the area was undertaken in the core and buffer zone. The flora comprised of 64 species including 28 trees, 8 shrubs, 24 herbs, 1 creeper and 3 grasses. No endemic, rare or endangered plant was found in the study area.

Fauna: The fauna consisted of 32 species including 7 mammals, 12 birds, 4 reptiles, 2 Amphibians and 7 fishes. No rare or endangered faunal species was found during the survey. No wildlife sanctuary or national park exists in this area. The Tipeshwar Wildlife Sanctuary and Eco Sensitive Zone is more than 30 Km in west direction. The details of floral and faunal assemblage in the study area are provided in the EIA/EMP report.

In general, there was no significant difference observed between these two sets of data. Details of data along with associated environmental impacts and mitigation measures are given in Chapter 3 and Chapter 4 respectively.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Based on the project details and the baseline environmental status, potential impact as a result of mining at the Marki-Mangli Coal Block –III have been identified. Key environmental impacts and mitigation measures are as follows.

Parameters	Anticipated Impacts	Mitigation / Management Measures
Topography	• Change in topography Due to change in topography the surface runoff will decrease • OCP becoming slightly elevated due to backfilling of OB in decoaled area	• Creation of large water pond • The creation of large water body will make up losses by increase in seepage in to ground water • Efforts will be made to restore the land as per Mine Closure Plan
Drainage	• Reduction in surface runoff • Increase in ground water runoff (base flow)	• The increase in ground water runoff (base flow) will be gainfully used in mining activity and balance will contribute to local surface water quality
Air Quality	• Emission of particulate matter, dust and gaseous pollutants namely NOx, SO2 due to mining operations viz. drilling, blasting, crushing, loading and transportation and movement of HEMM.	• Wet drilling; • Controlled blasting; • Optimize charge per hole and charge per round; • Enclosures with ventilation and exhaust system at crushing plant; • Regular maintenance of vehicles and machinery; • Water sprinkling on haul roads within ML area; • Plantation in and around the proposed mine and green belt development; • Afforestation of completely mined out area, with minimum gap between excavation and afforestation;
Water Regime	• Mining induced increase in rate of infiltration and ground water recharge. • Mined area will function as rain water harvesting system	• Regular monitoring of water levels and quality of water in existing open well and bore wells to study the ground water in the project area.
Water Quality	**Surface Water**	• Water channels/drains carrying the rain

Parameters	Anticipated Impacts	Mitigation / Management Measures
	• Discharge of mine runoff during rains to surface water channels	water from the mine will be provided with baffles and settling pits to arrest the suspended solids;
	• Wash off from waste dumps and coal stock piles during rainy season	• Retaining walls will be provided at the toe of dumps and unstable OB benches within the mine to prevent wash off from dumps and sliding of material from benches.
	• Oil spillage from maintenance work shops •	• The workshop effluent will be routed through oil & grease trap and treated to the discharge standards and reused in the workshop.
	• Waste water discharge from office building etc.	• The domestic sewage from the canteen and toilets will be routed to septic tanks followed by soak pits. Adequate maintenance of the tanks will be carried out to avoid choking with sludge.
	Ground Water • Contamination due to discharge of waste water generated from workshop and offices.	• An Effluent Treatment Plant (ETP) will be provided and regular monitoring of water levels and quality of water in the existing open wells and bore wells around the mine both in the upstream and downstream of the project area and corrective measures as and when required will be undertaken.
Fluoride Concentration >1.5 mg/liter >3.0 mg/liter	• Mettled enamel of teeth • Skeletal fluorosis	Defluoridation of water at domestic/community level by installing suitable deflouridation system based on laboratory investigation and sound design
Noise / Vibrations	• Noise / Vibration generation due to drilling, blasting, operation of HEMM, coal handling plant (CHP), workshop and vehicular movement	• Drilling parameters like overburden, depth, diameter and spacing will be properly designed to give proper blast. • Systematic blasting with proper spacing, burden and stemming will be carried out; • Blasting will be carried out during favorable atmospheric conditions. • A safe distance of about 100 m will be maintained from blasting site. Minimum quantity of detonating fuse will be consumed by using non-electrical initiation system; • Secondary blasting will be minimized to the extent possible; • Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM;

Parameters	Anticipated Impacts	Mitigation / Management Measures
		• Provision of sound insulated chambers for the workers deployed on machines (HEMM) producing high levels of noise will be made; and Exposure time of workers to the higher noise levels would be minimized. • Prime movers/diesel engines will be properly maintained; • A buffer barrier of tree belt will be provided in phased manner along the periphery of the mine to attenuate noise; • Trees will be planted on both sides of haul roads.
Land/ Soil Environment	• Change in land use pattern due to excavation, overburden dumps, soil extraction etc. • Land degradation, soil erosion and visual impacts	• Concurrent back-filling and land reclamation is proposed to be carried out as soon as sufficient decoaled area is available. • The internal back-filling is proposed to start in a phased manner from 5th yr. of operations. About 87% of the total OB generated will be accommodated in internal dump for rest of the mine life. • • After back-filling, area shall be leveled & planted with local species in consultation with local forest officials. • • The void area of the excavated pit will ultimately become a water body. This void area will also be suitably sloped, bunded and fenced.
Flora and Fauna	• There are no endangered and endemic species in the study area. • No wildlife sanctuary or national park exists in the study area. • Mining operations are of comparatively low scale – only 700 TPD.	• As the forest of the buffer zone houses number of flora and fauna, though not endangered and endemic species, every attempt will be made to protect and conserve the forest ecosystem. Apart from this, appropriate measures would be taken for conservation and development of wildlife habitat.
Occupational / Public Health	• Health problems including respiratory disease due to air and noise pollution. • Health hazards in the workplace •	• Dust masks would be provided to the workers to prevent inhalation of RSPM thereby reducing the risk of lung diseases and other respiratory disorders. Earplugs will be provided to all the operators of HEMM. • Regular health checkups including lung function test and audiometry test of

Parameters	Anticipated Impacts	Mitigation / Management Measures
		workers will be carried out. Ear Muffs will be provided to all workers. • Training on health and safety will be imparted to all the workers so that they develop habit of using the protective equipment. One resource person will be identified within the organization to impart the training regularly to all the employees. • Regular Medical Camps for villagers, labours, employees & their family members would be organized. • A Mobile Dispensary will be set up for the workers. • Various health awareness and family welfare programmes for the benefit of the general public in project region will be organized.
Socio-economic	• The main occupation of the people in the surrounding villages is agriculture and the proposed project might deprive them of this occupation necessitating alternate avenues for employment for their livelihood. However, the project will create positive impacts both direct on the economy of the region and generate employment potential.	• Local population will be made aware about the proposed project and shall be taken in to confidence prior to implementation of the project • As far as possible locally available workforce in skilled and unskilled category will be employed in the project. This will minimize the impact of unemployment prevalent and created due to reduced agricultural activities in the local population • The basic amenities/facilities viz. education, safe drinking water supply, sanitation, health care will be provided by the project proponent in the nearby villages for the welfare of the people. • Regular environmental awareness programs would be organized by the project proponent to bring forth the environmental management measures being undertaken and the beneficial aspects of the project for improving their quality of life.

The capital cost for the proposed for monitoring & control of pollution is estimated as Rs 800 Lacs while its recurring cost is estimated to be 40 Lakhs/annum.

4 ENVIRONMENTAL MONITORING PROGRAM

Monitoring is essential to ensure that the mitigating measures planned for environmental protection function effectively during the project operation period. A comprehensive

environmental monitoring programme as prescribed by MoEF & CC will be followed strictly for minimizing negative impacts and maximizing beneficial impacts of the project.

For effective implementation of the environmental monitoring, necessary facilities for sampling and analysis on permanent basis together with adequate instrumentation facilities and deployment of competent trained manpower will be ensured. BSIL will create a separate Environmental Monitoring Cell (EMC) to ensure effective monitoring on day to day basis. Further, internal quality control and assurance of the monitoring technique as well as analytical procedure together with periodic external audit will also be planned. EMC will be responsible for the reporting of various compliances of the project to the regulatory authorities i.e. SPCB & MoEF & CC.

5. ADDITIONAL STUDIES

Following additional studies were conducted in accordance with the generic structure of EIA/EMP document as prescribed by the MoEF & CC.

5.1 Occupational Health and Safety:

Operation phase: The problem of occupational health, during the operation phase is primarily due to dust and noise which could affect breath and hearing of the working personnel for which safety equipment viz Industrial safety helmet and crash helmets, earplug/ear muffs, Self-contained breathing apparatus, Acid/alkali proof rubberized hand gloves, Industrial safety shoes with steel toe will be provided to the workers. Also all working personnel including contractual workers will be medically examined as per provisions of the Mines Act.

All possible safety precautions during the mining operations will be taken. Safety officials with experience in disaster management shall be deployed and sufficient funds shall be provided for implementing all safety measures.

Statutory Rules: Deployment of HEMM for excavation of coal/ OB will be in confirmation with the prevailing statutory provisions as per Mines Act 1952, CMR 1957, various DGMS circulars & bye-law. Further, special precautions shall be taken if HEMM and workers are engaged for mining through outsourcing.

5.2 **Risk Assessment:** In any mining operation, whether opencast and/or underground. The risk to general public in the present case may arise from the following:

i) Failure of dumps created by stones dug from inclined cutting.
ii) Fly rocks during blasting operations
iii) Plying of trucks on public roads

However, there will be no risk to public from any of the factors listed above in the present Marki Mangli III coal mine case as there will not be any habitation in close proximity of the mine.

5.3 Major Areas of Hazards and Risks:

Most of the accidents from blasting occur due to the projectiles, as they may sometimes reach beyond the danger zone, mainly due to overcharging of the shot-holes as a result of certain special features of the local ground. Vibrations also lead to displacement of adjoining areas. Dust and noise are also problems commonly encountered during

blasting operations adequate safety measures will be taken during blasting operations in the quarry in accordance with the provisions of Mines Act, Rules and Regulations

5.4 Disaster Management Plan:

A disaster management plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in the order of priorities. For effective implementation of the disaster management plan, it will be widely circulated and training of personnel along with rehearsals/drills be organized.

A detailed account of risk assessment and disaster management plan is given in chapter 7 of EIA/EMP report

6 PROJECT BENEFITS

The mining project will have positive impacts in the project area and surrounding villages in terms of infrastructure facilities like roads and communication, transport, schools as well as basic amenities viz. drinking water, sanitation, hospitals, health care, and overall socio economic development M/s B S Ispat Ltd. will initiate necessary steps to create above facilities which will ultimately help in uplifting the living standards of local communities.

a. Some of the direct benefits accrued from the project include generation of employment for local people, vocational training for skill development to start house-hold and cottage industries and large scale plantation which will improve the local horticulture and agriculture.

b. The anticipated indirect benefits from the project would be boost in the local economy resulting in creation of new infrastructure facilities and establishment of additional commercial activities such as increased transportation, setting up of hotels, banks, hospitals, educational institutions, construction and development of allied industries and mechanical workshops etc., which will create more employment opportunities for the local people.

c. Development of coal block will direct employment to 288 persons and entailing indirect employment opportunities to many others will boost the local economy and bring in improvement in standard of living of the local people.

d. In addition, the services like security and canteen, transport, civil repair & maintenance which are proposed to be outsourced to the local contractors will generate additional job potential.

7 ENVIRONMENTAL MANAGEMENT PLAN

7.1 Greenbelt Development: New plantations are of paramount necessity of the area. In addition to augmenting the present vegetation, it will also check soil erosion, make the ecosystem more diverse and functionally more stable, make the climate more conducive and improve water balance. It can also be employed to bring areas with special problems under vegetal cover and prevent further deterioration of land. Based on nature of soil, performance of species and purpose of plantation, particular species have been suggested in plantation programme. Greenbelt acts as a barrier for air pollution and is important around the mine boundary to reduce the particulate matter and toxic gases and their spread beyond

mine site. The details of plantation/green belt development programme are given in EIA/EMP report.

7.2 Corporate Social Responsibility: Project authorities will aim at the improvement in the living standards of inhabitants of the project area by not only being a catalyst for development but also through infrastructure development of the area. The capital & recurring budget earmarked for the various CSR activities are estimated to be Rs 90.87 Lakhs & Rs 13.64 Lakhs respectively**.**

Corporate Social Responsibilities (CSR) activities proposed in neighboring villages will encompass the following Sectors.

- Education
- Health
- Drinking Water
- Sewerage and Sanitation
- Electricity
- Roads
- Agriculture and Animal Husbandry
- Livelihood Development
- Socio-Cultural

AN EPILOGUE

In compliance with the environmental procedure the environmental clearance application is made. Necessary scientific studies have been undertaken as per the guidelines set by the Ministry of Environment Forests & Climate Change (MoEF & CC). The suggestions/recommendations of all the experts, competent authorities, and government officials are being sought for the impacts of the proposed project. Views and guidance of the local residents, community based organizations, social organizations are extremely important in order to devise a full proof Environment Management Plan for the proposed mining project and also mitigate the damages caused due to the project. Allocation of necessary funds, manpower and machinery will be made to for the protection and conservation of all the components of environment. It is ensured that all mandatory clearances will be sought from respective competent authorities before operating the proposed **Marki Mangli Coal Mine by M/s B. S. Ispat Limited with a production capacity of 0.125 MTPA Coal.**. M/ B. S. Ispat is committed to implement the suggestions for the improvement of the environment and assure that every attempt will be made for the conservation and protection of the natural resources to the maximum extent.

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