

No.J-11015/355/2006-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
C.G.O. Complex, Lodi Road,
New Delhi -110003.

Dated: 20th July 2007

To
M/s The Madhya Pradesh State Mining Corp. Ltd.,
Paryavas Bhawan,
Block No. 1 (A), Second Floor,
Jail Road, Arera Hills,
BHOPAL - 462011.

Sub: Amelia (North) Coal Mine Project of M/s The Madhya Pradesh State Mining Corporation Ltd., located in village Majhauri, Tehsil Deosar, District Sidhi Madhya Pradesh - environmental clearance - reg.

Sir,

This is in continuation to this Ministry's earlier letter of even no. dated 15.01.2007 prescribing Terms of Reference to the above-mentioned project with reference to your application made vide your letter No./Geology/2006/192 dated 4th November 2006 and N. Geology/2006/290 dated 07.12.2006 and your subsequent letters dated 03.04.2007 and 01.06.2007 on the above-mentioned subject. The Ministry of Environment & Forests has considered your application. It has been noted that the project is for opening a new Amelia (North) Coal Mine Project for an annual production capacity of 2.8 MTPA over a total lease area of 728.75ha. The project is for supply of coal for Thermal Power Plant to be located at a distance of 50 km from the ML. The entire lease area falls within forestland which forms a part of the Mahanban Reserve Forest. A number of rare and endangered fauna are found in the study area. There are a number of Reserve forests such as the Vihar RF, Mohar RF and Chokra RF situated within the 10km of the core zone. Forestry clearance has been applied for. There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone. The project area is drained by the Kanchan Nala flowing through the lease along the northern side and by small rivulets and streams which outflow into the nala. Kanchan nala joins River Mayar flows at a distance of 6.5 km. Mahan River flows along the western side of the lease. The proposed mine project will disturb the drainage of the area. The project does not involve R&R. Mining will be both opencast (OC) using Continuous Surface Miners for production of 2.25 MTPA of coal and conventional shovel-dumper method for the balance OC mining and by using continuous miners for underground (UG) mining of 0.6 MTPA maxm. production. There would be no drilling and blasting with use of Surface Miners. Drilling and blasting are involved for removal of OB. Rated capacity of the mine is 2.80 million tonnes per annum (MTPA) of coal production. Maximum production through opencast mining would be 2.8 MTPA and by underground mining would be 0.6 MTPA. The total production at any given time would not exceed 2.8 MTPA. Underground operations will begin from the 19th year. Of the total lease area, area for quarry is 475 ha, OB dumps is 150.18 ha, topsoil dump is 11.82 ha, settling ponds is 10 ha, infrastructure and facility area is 15 ha, barrier zone is 11 ha, proposed road is 5.5.0 ha, area occupied by Kanchan nala is 7.50 ha, space for UG incline entry is 4 ha, and undisturbed area is 38.75 ha. The project does not include a Coal Washery. Mineral transportation to CHP is by road involving about 50-t vehicles at 12 trips/hour covering a distance of 750m and

from thereto Majhauri railway station covering a distance of 4.5 km. It is proposed to construct a dedicated railway siding from the ML to transport coal by rail to the nearest railway station at Majhauri at a distance of 4.5 km from the project site, when vehicular transportation of coal would cease. The dedicated railway siding corridor would cover an area of 6.75 ha. Ultimate working depth of the mine by opencast operations is 300m below ground level (bgl) and 550m bgl by UG mining. Water table is in the range of 3-15 m bgl in the pre-monsoon and 2-7m bgl in the post-monsoon. Mining will intersect water table during 2nd year. Peak water demand is 477 m³/d of water which will be met from mine sump/pit water for mining operations and from groundwater for drinking only (110 m³/d). The total topsoil generation from OC mining will be 2.38 Mm³ and an estimated 590.76 Mm³ of OB will be generated over the life of the mine of which 496.64 Mm³ will be backfilled. The balance 94.12 Mm³ OB will be stored in 2 external OB dumps of a max. height of 100m with 5 benches of 20m each in an area of 73.97 ha and 76.21 ha respectively. Partial backfilling will commence from the 4th year onwards and complete concurrent backfilling from the 8th year onwards. Life of the mine is 41 years of which opencast operations would be 29 years. Capital cost of the project is Rs. 330 crores. Mining Plan of the project was approved by the Ministry of Coal on 14.11.2006. The project proposal was prescribed Terms of Reference for preparation of EIA-EMP Report and for conduct of Public Hearing vide MOEF letter No. J-11015/355/2006-IA.II(M) dated 15.01.2007. Public Hearing was conducted on 20.03.2007 by the M.P. State Pollution Control Board.

2. The Ministry of Environment & Forests has examined the application in accordance with Section 12 of the EIA Notification 2006 and under the provisions thereof, hereby accords environmental clearance for the above-mentioned Amelia (North) Coal Mine Project of M/s The Madhya Pradesh State Mining Corporation Ltd. over a lease area of 728.75 ha for production of coal at 2.8 MTPA rated capacity under the provisions of the Environmental Impact Assessment Notification, 2006 subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions

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- (i) Maximum production by opencast mining shall not exceed 2.8 MTPA and that by underground mining shall not exceed 0.6 MTPA. The maximum combined production at any given time shall not exceed 2.8 MTPA from both opencast and underground mining.
 - (ii) No mining operations shall be undertaken in the lease area which consists of forestland until forestry clearance has been obtained under the provisions of FC Act, 1980. No mining operations shall begin until forestry clearance is obtained for the specific purpose of diversion of forestland for OB dumping, construction of roads, topsoil dumps, settling ponds, infrastructure and facility area including CHP and for construction of the proposed railway siding for transport of mineral coal from the lease. Metal topping of Kutchha road and creation of the Railway Siding Corridor covering an area of 6.75 ha shall be done with approval of the Forest Department/competent authority.
 - (iii) Mining shall be carried out as per statuette at a safe distance from Kanchan nala and the rivulets and streams flowing within the lease boundary. At the time of depillaring, protective bunds and garland drains shall be provided so that no water from the surface enters the subsidence area and the shaft.

- (iv) While extracting panels in the lower seam, all water bodies in the subsidence area shall be drained. Dewatering of the old goaves of the upper seam shall be continued as long as the lower seam is worked to prevent accumulation of large water bodies over working area.
- (v) Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.
- (vi) Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.
- (vii) No depillaring operation shall be carried out below the roads and habitation area found within the lease.
- (viii) Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings should be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures should be taken to avoid loss of life and material. Cracks should be effectively plugged with ballast and clayey soil/suitable material.
- (ix) Garland drains (size, gradient and length) around the safety areas such as mine shaft and low lying areas and sump capacity should be designed keeping 50% safety margin over an above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity should also be provided adequate retention period to allow proper settling of silt material.
- (x) OB should be stacked at the two earmarked external OB dumpsite(s) within ML area. The maximum height of the two dumps is 100m with five benches of 20m each. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional office located at Bhopal on a yearly basis.
- (xi) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected should be utilised for watering the mine area, roads, green belt development, etc. The drains should be regularly desilted and maintained properly.
 Garland drains (size, gradient and length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.
- (xii) Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.
- (xiii) Crushers at the CHP should be operated with high efficiency bag filters/water sprinkling system should be provided to check fugitive emissions from crushing

operations, conveyor system which shall be closed, haulage roads, transfer points, etc.

- (xiv) Railway siding proposed to be constructed shall be provided with sheds for ground bunkers which shall be fitted with bag filters/water sprinkling arrangements to ensure that no fugitive dust emissions are generated. Mineral transportation by road shall be discontinued immediately thereafter.
- (xv) Drills should be wet operated only.
- (xvi) Controlled blasting should be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders should be implemented.
- (xvii) No mineral processing unit such as a coal washery shall be installed in the ML without prior approval of this Ministry.
- (xviii) A progressive afforestation plan covering an area not less than 566.03 ha shall be implemented, which includes reclaimed external OB dump (150.18 ha), topsoil dump (12.25 ha), backfilled area (380.80 ha), along ML boundary, barrier zone (11 ha), along roads and infrastructure, undisturbed/vacant land (12.25 ha) by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.
- (xviii) Backfilling shall start by the 4th year of operations and concurrent backfilling from the 8th year. Of the total excavated area of 475 ha, an area of 461.74 ha shall be backfilled. Of this, an area of 380.88 ha which is completely backfilled shall be reclaimed with plantation/afforestation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha. The balance area of 94.12 ha of the decoaled area, partially backfilled/left as void and being converted into a water reservoir, shall be gently sloped and the upper benches of the reservoir shall be stabilised with plantation and the periphery of the reservoir fenced.
- (xix) A Programme for conservation of the wildlife particularly the rare and endangered species/Schedule-I fauna and flora shall be formulated and implemented in consultation with the concerned Forest and Wildlife Departments in the State Government. Separate funds shall be earmarked for implementation of the various activities there under and the status thereof shall be regularly reported to this Ministry and the MOEF Regional Office, Bhopal.
- (xix) The company shall obtain prior approval of CGWA/CGWB Regional Office for use of groundwater, if any, for mining operations. Further requirement of water, if any, will be from rainwater harvesting measures.
- (xx) Regular monitoring of groundwater level and quality should be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity should be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of

Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.

- (xxi) The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource. Any additional water requirement for mining operation shall be met from rainwater use only. The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine. It shall be ensured that if the river/nala discharge of mine water takes place, it shall be away from the recharging area of the mine.
- (xxii) ETP should also be provided for treatment of effluents from workshop, CHP. There shall be zero discharge from the coal washery.
- (xxiii) Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check up for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmedabad within a period of one year and the results reported to this Ministry and to DGMS.
- (xxiv) For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhopal.
- (xxv) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests five year before mine closure for approval.

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B. General Conditions

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and Forests.
- (ii) No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.
- (iii) Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for SPM, RPM, SO₂ and NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.
- (iv) Data on ambient air quality (SPM, RPM, SO₂ and NO_x) should be regularly submitted to the Ministry including its Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months.
- (v) Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading and unloading) points should be provided and properly maintained.

- (vi) Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc should be provided with ear plugs/muffs.
- (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap should be installed before discharge of workshop effluents.
- (viii) Vehicular emissions should be kept under control and regularly monitored. Vehicles used for transporting the mineral should be covered with tarpaulins and optimally loaded.
- (ix) Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.
- (x) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
Occupational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.
- (xi) A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the company.
- (xii) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year-wise expenditure should be reported to this Ministry and its Regional Office at Bhopal.
- (xiii) The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.
- (xiv) A copy of the will be marked to concerned Panchayat/ local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.
- (xv) State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.
- (xvi) The Project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is

available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>.

3. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.
5. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules.



(Dr.T.Chandini)
Director

Copy to:

1. Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Madhya Pradesh, Secretariat, Bhopal.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arera Colony, Bhopal - 462016.
4. Chairman, Madhya Pradesh State Pollution Control Board, Paryavaran Parisar, E-5, Arera Colony, Bhopal - 462016.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. District Collector, Sidhi, Government of Madhya Pradesh, New Delhi.
8. Monitoring File 9. Guard File 10. Record File