

J-11015/169/2005- IA. II (M)
Government of India
Ministry of Environment & Forests

Telefax: 011-24367257
e-mail: w.bharat@nic.in
Paryavaran Bhavan, C.G.O. Complex,
Lodi Road, New Delhi-110003.
Dated: January 2, 2008

To

M/s Hiru Bombo Gauns
Post Box No. 257, Old Station Road
Margao
Goa— 403 601

Sub: Vichundrem Iron Ore Mine (ML Area 100 ha, and T.C No. 38/52) of M/s Hiru Bombo-Gauns, at villages Vichundrem, in Sanguem Taluk, in South Goa District, Goa - reg. Environmental Clearance.

Sir,

This has reference to the Ministry's earlier letter of even number dated 17.11.2005, granting environmental clearance for a period of two years to your above mentioned project with condition that a detailed hydro-geological study on impact of mining on hydro-geology of the mine lease area was required to be carried out and report submitted to the Ministry.

2. The Ministry of Environment & Forests has examined the hydro-geological report submitted by you. It has been noted that the radius of influence due to mine pit dewatering would extend upto 188 m around the mine pit. The stage of groundwater development is about 41.64 % which is well within the safe limits as per Central Ground Water Board Norms. It has also been noted that the results of chemical quality data of surface water and ground water as well as mine pit water indicate no contaminations due to mining activities.

3. In view of the above, it is informed that at Para No. 2 of the environmental clearance letter issued on 17.11.2005, the words '*for a period of two years only*' and the sentences under sub-para '**A**' **Specific Conditions** (ii) read as '*the proponent shall within two years conduct a detailed hydro-geology study (quality and quantity) on impact of mining on hydrogeology (pre-monsoon, monsoon and post monsoon) and furnish a detailed report to the Ministry. Based on the same, a decision regarding continuation of mining operation beyond 2 years or otherwise will be taken*', stands deleted.

Cont'd...

4. After Item (xx) under sub-para 'A. Specific Conditions' of Para No.2, the following items shall be added viz. (xxi). Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation vs Union of India in Civil Writ Petition No. 460 of 2004, as may be applicable to this project; (xviii) Adequate measures for soil erosion, prevention and control shall be undertaken. Details of implementation on the same shall be submitted to the Regional Office of the Ministry within 6 months; (xix) Harvesting of mine pit discharge and rain water to recharge the aquifers shall be undertaken. Implementation details on the same shall be submitted to the Regional Office of the Ministry within six months. The result of such harvesting scheme shall be periodically submitted to the Ministry.

5. All other conditions stipulated in the environmental clearance letter of even No. dated 17.11.2005 remains the same.

Yours faithfully,


(W. Bharat Singh)
Deputy Director

Copy to:

1. Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment, Government of Goa, Panaji.
3. Secretary, Department of Mines and Geology, Government of Goa, Panaji.
4. Secretary, Department of Forests, Government of Goa, Panaji.
5. Chief Wildlife Warden, Government of Goa, Panaji
6. Chief Conservator of Forests, Regional Office (SZ), Kendriya Sadan, 4th Floor E&F, Wings 17th Main Road, 1 Block, Bangalore-560 034.
7. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
8. Chairman, Goa State Pollution Control Board, Dempo Tower, EDC Plaza, 1st Floor, Panaji, Goa - 403 001
9. Member Secretary, Central Ground Water Authority, A2, W-3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
10. Controller General, Indian Bureau of Mines, Indira Bhawan, Civil Lines, Nagpur- 440 001.
11. District Collector, South Goa, Govt. of Goa.
12. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
13. Monitoring File.
14. Guard File.
15. Record File.


(W. Bharat Singh)
Deputy Director

No.J-11015/169/2005-IA.II(M)
Government of India
Ministry of Environment and Forests

Paryavaran Bhawan,
CGO Complex, Lodi Road,
New Delhi-110003.

Dated: 17th November 2005

To
M/s Hiru Bombo Gauns,
Mine Owner,
Post Box No. 453,
Near Maruti Temple,
Margoa - 403601,
GOA.

Sub: Expansion of Vichundrem Iron Ore Mine (0.1 MTPA) of M/s Hiru Bombo Gauns, located in village Vichundrem, Tehsil Sanguem, District South Goa, Goa - Environmental Clearance - reg.

Sir,

This has reference to your letter dated 22.02.2005 submitting the application on the aforesaid subject and subsequent letter dated 11.05.2005, 11.06.2005, 06.09.2005 13.09.2005 and 07.10.2005 in regard to the above-mentioned subject. The Ministry of Environment and Forests has examined the application. It has been noted that the proposal is for expansion in production of **Vichundrem Iron Ore Mine** in a total lease area of **100 ha**. Of the total lease area, 8.25 ha is agricultural land, 81.40 ha is forestland and 10.35 ha is wasteland. Forestry clearance was obtained on 23.05.2001 for 15.41 ha. The Netravali Wildlife Sanctuary is located at a distance of 1.5 km from the core zone. The mine is situated 0.75 km from the Highest Flood Level of Salauli Submergence Zone. It is not proposed to modify the existing natural drainage. Of the total lease area, area to be excavated is 5.62 ha, 3.86 ha is for OB dumps, 0.152 ha is for infrastructure, 1.856 ha is for roads, and 88.50 ha is undisturbed. **Annual rated capacity of the mine is 0.1 million tonnes per annum (MTPA) of iron ore production.** Mining is by opencast mechanised method. Blasting is to be replaced by ripper-dozer. No beneficiation at mine site using Mobile Processing Plant for 1 lakh tonnes per annum or ore. Water for mineral beneficiation is drawn from Curpem Mine. Mineral transportation of 500 TPD is by road. Ultimate working depth is 42 m below ground level (bgl). Present working depth is 5 m bgl and groundwater level is 40-50m bgl. Mining will intersect water table. Peak water requirement of 121 m³/day is to be met from groundwater (1 m³/d) and from mine pit water (120 m³/d). About 0.005 mill. m³ of OB has been accumulated and 0.316 mill. m³ will be generated over the balance life of mine. Backfilling is proposed when pit is exhausted. Life of the mine at the rated capacity is 11 years. Approval of IBM for Scheme of Mining has been obtained on 08.06.2005. NOC from Goa State Pollution Control Board has been obtained on 26.10.2004. Public Hearing was conducted on 03.03.2004. Capital cost of the Project is **Rs. 75 lakhs.**

2.0 The Ministry of Environment and Forests hereby accords environmental clearance to **Vichundrem Iron Ore Mine** of **M/s Hiru Bombo Gauns** involving a lease area of **100 ha** for production of iron ore of a rated capacity from **0.1 MTPA** for a period of two years only under the provisions of the Environment Impact Assessment Notification, 1994 and subsequent amendments thereto subject to terms and conditions mentioned below:

A. Specific Conditions

- (i) Mining shall not be undertaken in forestland within the lease area for which forestry clearance/permission has not been obtained.

- (ii) The proponent shall within 2 years conduct a detailed hydrogeological study (quality and quantity) on impact of mining on hydrogeology (pre-monsoon, monsoon and post-monsoon) and furnish a detailed report on the same to the Ministry. Based on the same, a decision regarding continuation of mining beyond 2 years or otherwise will be taken.
- (iii) Prior approval of the Chief Wildlife Warden shall be obtained for mining at a distance of 1.5 km from the Neteravali Wildlife Sanctuary.
- (iv) A Plan for conservation of endangered flora and fauna found within the mine lease area shall be prepared and implemented in consultation with identified agencies/institutions and with the State Forest Department. The Plan should be dovetailed with that prepared/under implementation/proposed for the endangered fauna found in the buffer zone of the mine site. The costs for the specific activities/tasks should be earmarked in the Conservation Plan and shall not be diverted for any other purpose. Year-wise status of the implementation of the Plan and the expenditure thereon should be reported to the Ministry of Environment & Forests, RO, Bangalore.
- (v) Prior approval of the State Government shall be obtained for mining at a distance of 0.75 km from the Highest Flood Level of Salauli Submergence Zone.
- (vi) No dumping of OB where natural slope is already exceeding 28° angle.
- (vii) Top soil should be stacked properly with adequate measures at earmarked sites. It should be used for reclamation and rehabilitation of the mined out areas.
- (viii) OB and other wastes should be stacked at earmarked sites only and should not be kept active for long periods of time.

Plantation should be taken up for soil stabilisation along the slopes of the dump and terraced after every 5-6 m of height and overall slope angle shall be maintained at 25-26°. Sedimentation pits shall be constructed at the corners of the garland drains. Retention/Toe walls shall be provided at the base of the dumps.
- (ix) Use of geotextiles for dump stabilisation shall be taken up in the critical areas.
- (x) Catch drains, and siltation ponds of appropriate size, gully plugs and check dams should be constructed to arrest silt and sediment flows from the mining operations. Desilting operations shall be undertaken regularly and particularly after very monsoon.

Garland drain (size, gradient & length) shall be constructed for both mine pit and for the waste dump. 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. Sedimentation pits should be constructed at the corners of the garland drains. Desilting operations shall be undertaken after very monsoon.
- (xi) Drills should be wet operated or with dust extractors.
- (xii) No ancillary operations such as crushing, beneficiation shall be undertaken at the mine site without prior approval of this Ministry
- (xiii) Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral ore. The vehicles should be covered with tarpaulin and should not be overloaded.

- (xiv) Plantation shall be done which includes a green belt of adequate width around the ML area, along roads, around crushing and screening plant, OB dumps and non-mineralised areas identified for plantation by planting suitable native species in consultation with the local DFO/Agriculture Department. The density of trees should be around 2500 plants per hectare.
- (xv) A Progressive Mine closure plan clearly indicating the year of backfilling, area to be backfilled, quantum of OB to be backfilled and area to be reclaimed with plantation shall be prepared and implemented. The water reservoir of 6.6 ha created at end of mine life shall be gently sloped, terraced, and stabilised and afforested and shall be provided with peripheral fencing.
- (xvi) Water harvesting measures should be taken up in and around mine site. Further, desiltation shall be carried out every year before the onset of monsoon.
- (xvii) No groundwater shall be used for mining operations. Prior approval of the MOEF and CGWA shall be obtained for using groundwater for mining operations. Additional water requirement, if any, shall be met from recycling of water from mining operations and from water harvesting measures.
- (xviii) Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers at suitable locations in project area. The frequency of monitoring should be minimum four times a year - January, pre-monsoon (April/May), monsoon (August), post-monsoon (November), and winter (January) seasons for groundwater level and in May for quality, particularly for heavy metals. Data generated from groundwater regime monitoring will be submitted to CGWB, Regional Office on an annual basis. The monitoring shall include levels of heavy metals including iron.
- (xix) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.
- (xx) A Consent to Operate shall be obtained from the SPCB for expansion of mining operations.

B. General Conditions

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.
- (ii) No change in the calendar plan including excavation, quantum of iron ore, waste dumps 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 monitoring RPM, SPM, NOX and SO₂. Location of the ambient air quality stations should be decided based on meteorological data, topographical features and environmentally and ecologically sensitive targets and the frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
- (iv) Data on environmental quality should be regularly submitted to the Ministry including its Regional Office at Bangalore and the State Pollution Control Board/Central Pollution Control Board once in six months.
- (v) Adequate measures for control of fugitive emissions should be taken during drilling & blasting operations, loading and transportation of mineral, etc. Fugitive dust emissions should be regularly monitored and data recorded properly. Water spraying arrangements on haul

- roads, loading and unloading points, and transportation of minerals, etc. 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, operations of HEMM, etc., should be provided with ear plugs/muffs.
 - (vii) Industrial waste water (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. Oil and grease trap should be installed in the mine for treatment before discharge of effluents from the Workshop. There shall be no discharge of wastewater from the mine site even during peak monsoon season.
 - (viii) 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 and corrective measures taken, if required.
 - (ix) The data on environmental quality should be collected and analysed either through an in-house environmental laboratory established with adequate number and type of pollution monitoring and analysis equipment or got analysed through an approved laboratory under the Environment (Protection) Rules, 1986 in consultation with the State Pollution Control Board.
 - (x) 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 organisation.
 - (xi) The funds earmarked for environmental protection measures should be kept in separate account and not diverted for any other purpose. Year-wise expenditure should be reported to the Ministry of Environment & Forests.
 - (xii) The project authorities should inform to the Regional Office located at Bangalore regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
 - (xiii) The Regional Office of this Ministry located at Bangalore shall monitor compliance of the stipulated environmental conditions. The project authorities should extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.
 - (xiv) A copy of the clearance letter should be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.
 - (xv) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the collector's/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 7 days of issuance 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 web site of the Ministry of Environment and forests at <http://envfor.nic.in>.
3. The Ministry or any other competent authority may stipulate any further additional condition for environmental protection.

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance.

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 alongwith their amendments and rules.



(Dr. T. Chandini)
Additional Director

Copy to:

1. Secretary, Environment, Department of Environment, Government of Goa, Panaji, Goa.
2. Chief Wildlife Warden, Government of Goa, Panaji, Goa.
3. Secretary, Department of Mines & Geology, Government of Goa, Secretariat, Panaji, Goa
4. Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office (SZ), E-3/240, Kendriya Sadan, IV Floor, E&F Wings, 17th Main Road, II Block, Koramangala, Bangalore-560034.
5. Secretary, Ministry of Mines, Shastri Bhawan, New Delhi.
6. The Controller General of Mines, Indian Bureau of Mines, 'Indira Bhawan', Civil Lines, NAGPUR- 440 001.
7. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi-110032.
8. Chairman, Goa State Pollution Control Board, Dempo Towers, EDC Plaza, Patto, Panaji - 403001, Goa
9. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, A-2, W-3, K.G. Marg, New Delhi-110001.
10. District Collector, South Goa, Government of Goa.
11. E.I. Division, Ministry of Environment & Forests, New Delhi.
12. Guard File. 13. Monitoring File. 14. Record File.