

**By Speed Post**

**No. J-11015/959/2007-IA.II(M)**  
Government of India  
Ministry of Environment & Forests

534, Paryavaran Bhavan,  
C.G.O. Complex, Lodi Road,  
New Delhi-110 003.

Dated the 7<sup>th</sup> June, 2012

To  
✓ M/s Essel Mining & Industries Ltd.  
PO: Jajang,  
District Keonjhar,  
Odisha-758 052  
E-mail: [emilbbl@adityabirla.com](mailto:emilbbl@adityabirla.com)

**Subject: Expansion of Jilling Langlota Iron and Manganese Ore Mining and Iron Ore Beneficiation Plant Project of M/s Essel Mining & Industries Ltd. located in Village Jajang, Tehsil Barbil, District Keonjhar, Odisha environmental clearance regarding.**

Sir,

This has reference to your letter No. JLIM/GEOL/-/2010-11 dated 24.09.2010 and subsequent letter dated 29.01.2011 on the subject mentioned above. The project was earlier prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 25.06.2008 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal is for enhancement of production of iron ore from 4.2million tonnes per annum (million TPA) to 6.28 million TPA and installation of iron ore beneficiation plant with a capacity of 3.4million TPA throughput. This project was earlier accorded environmental clearance by the Ministry vide letter No.J-11015/194/2005-IA.II(M) dated 17.03.2006 for enhancement of the production capacity of the mine from 0.75millionTPA to 4.2 million TPA.

2. The total mine lease area of the project is 456.1ha, out of which 369.592a is forestland, 1.372ha is surface water bodies and 85.136ha is others(41.26ha is private land and 43.876ha is non-forest Government land). Area proposed for mining is 202.753ha, an area is 42.98ha kept for OB dumps, 9.666ha for mineral storage, 5.997ha for infrastructure, 4.482ha for roads, 11.712ha for railway siding, 14ha for mineral beneficiation plant 33.531ha for township area, 0.069ha for magazine, 36.055ha is railway acquired area, 10.477ha for public use, 51.07ha reclaimed area and 33.308ha is for safety zone. The Baitarni River is located at a distance of 1km from the mine lease boundary. The Dalko nallah is passing through the mine lease. Modification/diversion in the existing natural drainage pattern at any stage has not been envisaged.

3. No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. are reported to be located in the core and buffer zone of the mine and that the area does not report to form corridor for Schedule-I fauna. In support of this, the proponent has submitted a letter No.1349/1WL(C)-167/2011 dated 23.02.2011 alongwith an authenticated map from the Conservator of Forest(Wildlife), Bhubaneswar. The Karo-Karampada Elephant corridor is reported to be located at a distance of 19.2km from the mine lease boundary. The Baitarni RF forms part of the mine lease area and buffer zone of the mine. In addition, the Chamakpur RF is located in the buffer zone of the mine at a

distance of 1.5km from the Eastern boundary of the Mine lease. About 27mines are reported to be located in the buffer zone of the mine.

4. The mine working will be opencast by mechanized method involving drilling and blasting. The targeted production capacity of the mine is 6.28million TPA and the life of mine is 12years. The transportation of mineral is by combination of road(4733TPD) and rail(6133TPD).Iron ore (ROM) processed in tandem by crushing and screening through the crushers and screening plants. The end products after processing are calibrated lumpy ore and iron ore fines. The 3.4million TPA throughput beneficiation plant will be set up within the lease for up-gradation of low grade material. It includes crushing, screening, grinding, washing, classifying jigging, cycloning in magnetic separator etc. The composite feed ore with size range -40mm will be scrubbed in water medium to break the agglomerates of fine particles. The beneficiation plant will produce coarse product of +8mm finished material of 63%Fe and to produce 2.2MTPA concentrate of -8mm material. The tailings obtained from the plant would be pumped and impounded in pond after dewatering. The topography of the area is undulated and hilly and reported to lies between  $21^{\circ}57'00''$  to  $21^{\circ}59'00''$  N Latitude and  $85^{\circ}25'20''$  to  $85^{\circ}27'00''$  E Longitude in Survey of India topo sheet No. 73 G/5, at an elevation above mean sea level ranging from 490m-620m.The ultimate working depth of mine will be 449m AMSL. The groundwater table is reported at 430m AMSL. Mine working will not intersect the groundwater table. The water requirement for the project is 6412 m<sup>3</sup> per day, which will be obtained from the groundwater and the surface water. The stage of groundwater development is shown to be 42%. It has been envisaged that displacement of population and R&R has not been involved. It is estimated that 10.79 million tones of waste will be generated during the mine life, out of which about 5.64 million tonnes of waste generated up to the year 2014 will be disposed in the waste dump and the waste generated thereafter will be backfilled in the mined out area. An area of 42.98 ha will be used for waste dump at the conceptual stage.. The maximum projected height of the dumps will be 30m. There will be two tailing ponds with a capacity of 1.5 million tonnes and 7.5 million tonnes, which will be used alternatively such that the tailings from the tailing pond-1 will be recovered in alternate year and used for backfilling in the mined out area of Langalota pit. About 5 million tonnes of tailings will be recovered for backfilling. It is proposed that the tailing pond will be lined with 0.5 mm thick HDEP lining. Plantation will be raised in an area of 295.499ha at the end of the mine life and there will be no water body left during the post mining stage.

5. The public hearing of the project was held on 17.06.2010 for expansion of iron production from 4.2MTPA to 6.28MTPA(ROM)and proposed 3.4MTPA iron ore beneficiation plant over an area of 456.1ha. The Indian Bureau of Mines had approved scheme of mining alongwith PMCP of the project on 17.04.2009 over an area of 456.1ha. The Chief Conservator of Forests(WL) and CWLW, Orissa approved site specific wildlife conservation plan of the project on 15.12.2010, with financial outlay of Rs.412.0Lakhs. Permission for drawl of groundwater to the extent of 1564 m<sup>3</sup> per day has been obtained from Central Ground Water Authority on 10.03.2008. An agreement has been signed with the State Government for use of surface water to the extent of 5715 m<sup>3</sup> per day. The capital cost of the project is Rs.44891Lakhs and the capital cost for the environmental protection measures is proposed as Rs.448Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs.148Lakhs.

6: It has been noted that the mine has continued to operate after it fell due for renewal in 2007 without obtaining requisite prior environmental clearance. Office of the Collector and District Magistrate, Keonjhar dated 24.4.2012 informed that the prosecution report has been filed in the Court of Civil Judge (Jr. Division) - cum - JMFC, Barbil on

18.04.2012 vide Cr. Case No. 2(c) C.C. 26/2012 to take cognizance of offence by the said court under Section 15 of Environment (Protection) Act, which has been committed by the offending project which has been taken on record.

7. The Ministry of Environment and Forests has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Jilling Langlota Iron and Manganese Ore Mining and Iron Ore Beneficiation Plant Project of M/s Essel Mining & Industries Ltd. for an annual production capacity of 6.28 million tonnes of iron ore(ROM) by the opencast mechanized method involving total mine lease area of 456.100ha and setting up of a iron ore beneficiation plant with a capacity of 3.4million TPA throughput, within the mine lease, subject to implementation of the following conditions and environmental safeguards.

#### **A. Specific Conditions**

- (i) The Environment Clearance is co-terminus with the mine lease.
- (ii) No mining shall be carried out in the forestland without obtaining requisite prior forestry clearance under the Forest (Conservation) Act, 1980 for forestland involved in the project. The environmental clearance is subject to grant of forestry clearance.
- (iii) The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.
- (iv) The mining operations shall be restricted to above ground water table and it should not intersect the groundwater table. In case of working below the ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.
- (v) Adequate safety zone as per the guidelines of DGMS on both sides of Dalco nallah passing through the lease area shall be left as no mining zone and no waste shall be dumped within this safety zone.
- (vi) The Company shall submit within 3 months their policy towards Corporate Environment Responsibility which should inter-alia provide for (i) Standard operating process / process to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions, (ii) Hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and (iii) System of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders.
- (vii) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the 1<sup>st</sup> and 2<sup>nd</sup> order streams, if any emanating or passing through the mine lease during the course of mining operation.
- (viii) The top soil, if any shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land

reclamation and plantation.

- (ix) The project proponent shall carry out conditioning of the ore with water to mitigate fugitive dust emission, without affecting flow of ore in the ore processing and handling areas.
- (x) The effluent from the ore beneficiation plant shall be treated in the tailing thickener and the tailings slurry shall be transported through a closed pipeline to the tailing dam.
- (xi) The tailing dam shall be lined on all the sides as well as in the bottom with 0.5 mm thick HDEP lining.
- (xii) The decanted water from the tailing dam shall be re-circulated and there should be zero discharge from the tailing dam.
- (xiii) Appropriate technology shall be used for maximum recovery of ore in order to reduce slurry discharge and to increase the life of the tailing dam.
- (xiv) The project proponent shall constitute an emergency management team under the control of project incharge to deal with the emergency situation pertaining to the tailing dam for the timely and effective control of emergency situation. It shall be ensured that training programme & mock drills shall be organized for the employees.
- (xv) The over burden generated during the mining operation shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and its phase-wise stabilization shall be carried out. The maximum projected height of dump shall be 30m. Proper terracing of the OB dumps shall be carried out so that the overall slope of the dump shall be maintained to 28°. The over burden dump shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.
- (xvi) Catch drains and siltation ponds of appropriate size shall be constructed around the tailing ponds, mine working, soil, OB and mineral dump(s) to prevent run off of water and flow of sediments directly into the Dalko nallah, the Baitarni river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after the monsoon and maintained properly.

Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the tailing ponds, mine pit, soil, OB and mineral dump(s) to prevent run off of water and flow of sediments directly into the Dalko nallah, the Baitarni river and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) 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 shall be constructed at the corners of the garland drains and desilted at regular intervals.

- (xvii) Dimension of the retaining wall at the toe of the over burden dumps and the OB benches within the mine to check run-off and siltation shall be based on the rain fall data.
- (xviii) Plantation shall be raised in an area of 295.499ha including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around reclaimed area, mine benches, tailing ponds, along the roads etc. in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
- (xix) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xx) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease area shall be carried out and records maintained.
- (xxi) The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (xxii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease, including beneficiation plant and tailing ponds by establishing a network of existing wells and installing new piezometers during the operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.
- (xxiii) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water(surface water and ground water), if any, required for the project.
- (xxiv) Appropriate mitigative measures shall be taken to prevent pollution of the Baitarni River in consultation with the State Pollution Control Board.
- (xxv) The project proponent shall practice suitable rainwater harvesting measures on long term basis and work out a detailed scheme for rainwater harvesting in consultation with the Central Groundwater Authority and submit a copy of the same to the Ministry of Environment and Forests and its Regional Office, Bhubneswar.
- (xxvi) Vehicular emissions shall be kept under control and regularly monitored. Measures

shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.

- (xxvii) No blasting shall be carried out after the sunset. Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.
- (xxviii) Drills shall either be operated with the dust extractors or equipped with water injection system.
- (xxix) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
- (xxx) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- (xxxi) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xxxii) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xxxiii) Digital processing of the entire lease area using remote sensing technique should be done regularly once in three years for monitoring land use pattern and report submitted to MOEF and its Regional Office.
- (xxxiv) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant etc. spotted in the study area. All the safeguard measures brought out in the approved Wildlife Conservation Plan prepared specific to the project site shall be effectively implemented in consultation with the State Forest and Wildlife Department. A copy of approved wildlife conservation plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.
- (xxxv) The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e., PM<sub>10</sub>) and NO<sub>x</sub> in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II(M)

dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry [www.envfor.nic.in](http://www.envfor.nic.in) shall also be referred in this regard for its compliance.

(xxxvi) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

**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 further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.
- (iii) No change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.
- (iv) Atleast four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron i.e., PM<sub>10</sub>) and NO<sub>x</sub> monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
- (v) Data on ambient air quality [(RSPM(Particulate matter with size less than 10micron i.e., PM<sub>10</sub>) and NO<sub>x</sub>) should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (vi) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
- (vii) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
- (viii) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (ix) 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 program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

- (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 Organization.
- (xi) 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 the Ministry and its Regional Office located at Bhubaneswar.
- (xii) The project authorities should inform to the Regional Office located at Bhubaneswar 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 Bhubaneswar shall monitor compliance of the stipulated 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) The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.
- (xv) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xvi) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.
- (xvii) The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubneswar by e-mail.
- (xviii) The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue 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 also at web site of the Ministry of Environment

and Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.

8. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

9. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

10. 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 made thereunder and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Orissa and any other Court of Law relating to the subject matter.

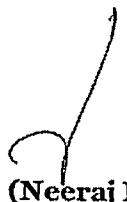
11. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

  
(Neeraj Khatri)  
Deputy Director

**Copy to:**

- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Orissa, Secretariat, Bhubaneswar.
- (iii) The Secretary, Department of Mines and Geology, Government of Orissa, Secretariat, Bhubaneswar.
- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.
- (v) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vi) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekhpur, Bhubaneshwar-751023.
- (vii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneshwar-751012.
- (viii) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (ix) The District Collector, District Keonjhar, Government of Orissa.

- (x) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xi) Monitoring File.
- (xii) Guard File.
- (xiii) Record File.



(Neeraj Khatri)  
Deputy Director