

**Compliance Status (October-2011 to March-2012) of Conditions stipulated in Environment Clearance by MoEF, GOI vide Letter No. J-11015/194/2005-IA.II (M) on 17.03.2006 for Production Capacity of 4.2 MTPA of Jilling Langalota Iron & Manganese Mines, M/s Essel Mining & Industries Ltd, Barbil.**

| Sr. No | Special Condition   | Compliance status   |
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| i      | No mining operations or developmental activity shall be taken up in the forestland until necessary forestry clearance/permission has been obtained for the same.              | Mining operations and developmental activities have been kept suspended till 24.02.2012 due to non availability of forest clearance from MoEF. Mining operations commenced w.e.f 25.02.2012 after obtaining Stage-I forest clearance from MoEF vide letter No 8-49/98-FC (pt.) dated 13.01.2012.                  |
| ii     | A specific clearance from the Chief Wildlife Warden, Orissa shall be obtained prior to the commencement of construction/operation.  | The Site Specific Wildlife Conservation Plan for Jilling-Langalota Iron & Manganese Mines has been approved by PCCF (Wildlife)-cum-Chief Wildlife Warden, Odisha vide letter no. 10895 dated 15/12/2010.  |
| iii    | Top soil should be stacked properly with adequate measures at earmarked sites. It should be used for greenbelt development, reclamation and Rehabilitation of mined out area. | Since mining operation is being carried out at present within broken-up area, there is no generation of top soil. However, in future while working in virgin area if top soil is encountered, it will be stacked separately and used for greenbelt development, reclamation and rehabilitation of mined out area. |
| iv     | No dumping of OB shall be carried out in those areas where natural slope is already exceeding 35° angle.  | No dumping is done where natural slope is exceeding 35° angle.  |

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| v  | <p>Overburden and mineral rejects should be stacked at earmarked sites(s)/storage dumps. Plantation should be taken up for soil stabilization along the slopes of the dump and terraced after every 5-6 m of height and overall slope shall not exceed 28°. Garland drains will be provided around the excavations to prevent storm water from catchment area to come in contact with freshly excavated areas. Toe drains will be provided all along the toe of the dump to arrest any soil erosion. Loose material slopes will be planted by making contour trenches at 2m intervals to check soil erosion.</p>                           | <p>During Mining Operations generated waste / Overburden is being kept in the earmarked waste dump yard in a retreating method and no mineral rejects generated in course of mining operation. Following measures are taken for dump stabilization.</p> <p>The OB / Waste dumps are located away from the natural water course.</p> <p>The OB / waste dumps are being properly dressed which includes terracing. The ultimate slope of the dump is maintained at &lt;28°.</p> <p>About 2800 mtrs. of Retaining walls / stone barriers are made along the toe of the waste dumps. Gully plugging is done to prevent the soil erosion during monsoon. Retaining walls have weep holes to allow water to flow down to toe drains.</p> <p>Total 3616 running meters of toe wall have been constructed all around waste dumps. Routing and terracing are being maintained in the overall slope in order to minimize run off distribution.</p> <p>The accumulated water in the garland drains is being passed through settling tanks / sedimentation ponds, which are constructed depending upon the contours to allow the silt to settle before final discharge.</p> <p>Small grasses are being planted in the drains to hold back the solid particles from being drained away. Plantation is being done in the slope of dumps to stabilize &amp; to enhance the greenery.</p> |
| vi | <p>Check dams and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from the mining operations. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted and maintained.</p> <p>Garland drain (size, gradient &amp; 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.</p> | <p>Check dams &amp; siltation ponds of required sizes are constructed to arrest silt &amp; sediments from mining operations.</p> <p>Due to porous lateritic formation water gets percolated in to the ground within a very short period of time.</p> <p>Settling ponds drains &amp; trenches are desilted as and when required &amp; maintained regularly to facilitate accommodating peak sudden rainfall and maximum discharge in the area.</p> <p>Garland drains &amp; sumps are designed to provide adequate retention period for settling of silt.</p>   |

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| vii  | Use of geo-textiles for dump stabilization shall be taken up in the critical areas.   | Geotextile over an area of 6.7 Ha covering waste dump, sub-grade dump has been made for stabilization and same practice shall continue in future as well.  |
| viii | Mine water discharge and/or any wastewater should be properly treated to conform to the prescribed standards before reuse/discharge. Run-off from OB dumps and other surface run-off should be treated to conform to prescribed standards before discharge/reuse.   | Mine water discharge, run off from the OB dumps and surface run off are channelized properly. It is passed through number of Siltation Pond and allowed to settle in the settling ponds. Rain water harvesting structures also constructed within the lease hold area.   |
| ix   | Drills should either be wet operated or fitted with dust extractors   | Drill machines are fitted with dust extractors & wet drilling arrangements. Eco-friendly drilling equipments are being used.   |
| x    | Controlled blasting shall be practiced.   | A controlled blasting technique is being practiced to control the noise vibration and dust generation.   |
| xi   | No wet Beneficiation of iron ore shall be undertaken within the mine site without prior approval of MoEF.   | Wet Beneficiation plant of iron ore will be established within the mine site with prior approval of MoEF which is under process.   |
| xii  | Mining shall not intersect groundwater. Prior approval of the MoEF and CGWA shall be obtained for mining below groundwater  | Till now ground water is not encountered in mining area. Necessary permission will be obtained from CGWA and MoEF in case Ground water is encountered.   |
| xiii | Water harvesting and water conservation measures such as construction of check dams, ponds, water holes, in and around the mining lease area shall be Undertaken.   | Water harvesting measures have been made for collecting rain water in the mining lease area such as construction of Rain water harvesting pond, check dams, settling pits had been completed. One comprehensive rain water harvesting and artificial ground water recharge report has been prepared in consultation with CGWB which will be implemented shortly. |
| xiv  | Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and construction new piezometers. The monitoring of ground water level should be done at least four times a year in pre-monsoon (April/May), monsoon (August), post-monsoon (November) and winter (January) seasons and for groundwater quality once (May). Data thus collected should be submitted to the Ministry of Environment & Forests and to Regional Office of the CGWB regularly. | Ground water level and quality being monitored on quarterly basis in all the four seasons. The above monitoring data is submitted to SPCB, MoEF, IBM & CGWB regularly.   |

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| xv        | A total area of 235.30 ha shall be afforested. This includes green belt (22.917 ha), plantation along the roads, dump sites (93.236 ha), all around the ML area, and in other areas and an area of 34.541 ha of excavated area to be reclaimed by planting native plant species in consultation with local DFO/Agriculture Dept. At least 2000 plant species/ha should be planted.  | The following areas are covered under plantation at present.<br>Green Belt: 39.148Ha<br>Other areas : 24.07 Ha<br>Over the dump: 4.722 Ha   |
| xvi       | A Progressive Mine Closure Plan shall be prepared and implemented in a time-bound manner.   | A Progressive Mine Closure Plan is prepared and duly approved by IBM, Nagpur and phase wise implementation is going on.   |
| xvii      | Conceptual Plan for post mining land use for restoration of land to original use to the extent possible shall be prepared and implemented.  | Conceptual Plan for post mining land use for restoration of land to original use to the extent possible has been prepared and duly approved by Indian Bureau Mines. It will be implementation programme is under progress.  |
|           | 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.   | A Final Mine Closure Plan along with details of Corpus Fund will be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.   |
| xvii<br>i | A plan for conservation of endangered fauna found within the lease area shall be prepared and implemented in consonance with the Regional Plan for Conservation prepared by the State Govt. for the area. Necessary allocation of funds for the specific activities/tasks in the Conservation Plan shall be made and the funds so allocated shall not be diverted for any other purpose.<br>Year-wise status of the implementation of the Plan and the expenditure thereon should be reported to the Ministry of Environment & Forests, RO, Bhubaneswar. These costs shall be included in the project cost. | A site specific Wildlife conservation plan for protection of endangered fauna found in the study area is being approved by PCCF (Wildlife)-cum-Chief Wildlife Warden vide letter no. 10895 on 15/12/2010. In the conservation plan it is projected to spend about Rs. 412.00 lakhs. An amount of Rs. 346.50 lakhs has been deposited with State Forest Department towards implementation of regional wildlife management plan. And an amount of Rs. 65.50 lakhs to be spent within the leasehold area in consultation with local forest department.<br>Year-wise status of the implementation of the Plan and the expenditure thereon will be reported to the Ministry of Environment & Forests, RO, Bhubaneswar and the cost incurred shall be included in the project cost. |
| xix       | Consent to Operate shall be obtained from the SPCB before expanding mining activities.  | Consent to operate for production of 4.2 MTPA has been obtained vide letter no. 4641/IND-I-CON-248 on 14.03.2012 from the State Pollution Control Board, Orissa.  |

### Status of General Conditions

| Sr. No  | General Condition   | Compliance  |               |              |               |  |        |  |              |               |              |               |         |                             |        |         |   |   |                             |         |           |
|---------|---|---|---------------|--------------|---------------|--|--------|--|--------------|---------------|--------------|---------------|---------|-----------------------------|--------|---------|---|---|-----------------------------|---------|-----------|
| i       | No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.   | Prior approval will be taken from MoEF in case of any changes in mining technology and scope of working during mining operation.  |               |              |               |  |        |  |              |               |              |               |         |                             |        |         |   |   |                             |         |           |
| ii      | No change in the calendar plan including excavation, quantum of mineral and waste should be made.   | <p>As per approved Mining Plan excavation schedule is as follows.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Year</th> <th rowspan="2">Period</th> <th colspan="2">Proposed</th> <th colspan="2">Actual</th> </tr> <tr> <th>Waste (Cu.M)</th> <th>Iron Ore (MT)</th> <th>Waste (Cu.M)</th> <th>Iron Ore (MT)</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">2011-12</td> <td style="text-align: center;">1<sup>st</sup> six monthly</td> <td rowspan="2" style="text-align: center;">335482</td> <td rowspan="2" style="text-align: center;">4680074</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: center;">2<sup>nd</sup> six monthly</td> <td style="text-align: center;">5857.05</td> <td style="text-align: center;">172557.53</td> </tr> </tbody> </table> <p>Due to non availability of forest clearance in the period from 01.04.2011 to 24.02.2012 the proposed quantity of production could not be achieved.</p> | Year          | Period       | Proposed      |  | Actual |  | Waste (Cu.M) | Iron Ore (MT) | Waste (Cu.M) | Iron Ore (MT) | 2011-12 | 1 <sup>st</sup> six monthly | 335482 | 4680074 | 0 | 0 | 2 <sup>nd</sup> six monthly | 5857.05 | 172557.53 |
| Year    | Period  | Proposed  |               |              | Actual        |  |        |  |              |               |              |               |         |                             |        |         |   |   |                             |         |           |
|         |   | Waste (Cu.M)  | Iron Ore (MT) | Waste (Cu.M) | Iron Ore (MT) |  |        |  |              |               |              |               |         |                             |        |         |   |   |                             |         |           |
| 2011-12 | 1 <sup>st</sup> six monthly   | 335482  | 4680074       | 0            | 0             |  |        |  |              |               |              |               |         |                             |        |         |   |   |                             |         |           |
|         | 2 <sup>nd</sup> six monthly   |   |               | 5857.05      | 172557.53     |  |        |  |              |               |              |               |         |                             |        |         |   |   |                             |         |           |
| iii     | <p>Ambient air quality monitoring should be carried out in the core zone as well as in the buffer zone for RPM, SPM, SO<sub>2</sub> and NO<sub>x</sub> monitoring.</p> <p>Location of the monitoring 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.</p> <p>Data so collected should be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board/Central Pollution Control Board once in six months.</p> | <p>Ambient air quality monitoring is being carried out in core &amp; buffer zone for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> in consultation with SPCB.</p> <p>Location of the monitoring stations is being decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.</p> <p>Collected data is being submitted to the Ministry regularly including its Regional Office at Bhubaneswar and to the State Pollution Control Board/Central Pollution Control Board once in six months.</p>  |               |              |               |  |        |  |              |               |              |               |         |                             |        |         |   |   |                             |         |           |

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| iv   | <p>Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dumpers/trucks, crushing and screening area, loading &amp; unloading points should be provided and properly maintained.</p> <p>Crushers and conveyors shall be enclosed and provided with dust extraction systems near the sources of generation.</p> | <p>To control the air pollution in the core zone, dedicated static water sprinkling system have been installed for water sprinkling on the haul roads which minimize a significant amount of the fugitive dust emissions during vehicular movement. Apart from the above we have engaged mobile water tanker having capacity 10 KL &amp; 28 KL for water sprinkling.</p> <p>Dust suppression is also done at various points within the crusher by dry fog (high pressure nozzles), dust encapsulation have been provided in the screens. All the belt conveyors are covered (canopy) to arrest dust considerably, and also dry fog on the feed bunkers, hoppers, discharge chutes of crusher &amp; screening to make it effective.</p> <p>Stationary Sprinklers have been installed along about 3.5 KM of transportation road at a distance of 25-30 mtr each.</p> <p>Haulage Roads are being maintained by grader. Main Transportation road near OCU office to Gate -3 and Gate -3 to store has been concreted &amp; colony road has been black topped</p> |
| v    | <p>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. Workers in noise generating areas and engaged with noise generating machinery should be subjected to audiometric tests annually.</p>   | <p>Earplugs are being provided to workers who are exposed to high noise levels, in areas like HEMM, drilling operations and blasting areas. Audiometric test is being done once in a year for the workers working at high noise generating areas.</p>   |
| vi   | <p>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 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap and retention ponds should be installed before discharge of workshop effluents.</p>   | <p>HEMM wash water is passed through oil &amp; grease separation system. Cleaned water is being reused for water sprinkling.</p>  |
| vii  | <p>The data on environmental quality should be collected and analyzed either through an in-house environmental laboratory established with adequate number and type of pollution monitoring and analysis equipment or got analyzed through an approved laboratory under the Environment (Protection) Rules, 1986 in consultation with the State Pollution Control Board.</p>  | <p>The data on environmental Quality is collected &amp; analyzed by M/s. B. S. Envitech Pvt. Ltd, Hyderabad.</p>  |
| viii | <p>Personnel working in dusty areas should wear</p>   | <p>Dust masks are being provided to workers as</p>  |

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|      | protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.   | and when required & time to time training is given on safety and health aspect at our Group Vocational Training centre.   |
| ix   | 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. Audiometric tests shall be taken annually for workers in noise generating areas and corrective measures undertaken if required.   | Periodically Occupational Health Surveillance programmes are being undertaken in mines as per the norms.<br>Audiometric test is done annually for workers in noise generating areas and corrective measures taken as called for.  |
| x    | 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's Regional Office located at Bhubaneswar  | Accounts of expenditure for Environmental protection are maintained separately and are spent only for environment related purposes. Year wise expenditure is being submitted to MoEF's Regional Office located at Bhubaneswar.  |
| xi   | 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.  | We are extending full co-operation during mining inspection by MoEF officers of Regional Office, Bhubaneswar by furnishing the requisite data/ information/ monitoring reports.   |
| xii  | A copy of clearance letter will be marked to concern Panchayat/local NGO, if any, from whom and suggestion/representation has been received while processing the proposal.   | Copy of environment clearance letter has been submitted to the Sarpanch, Jaroli & Jalahuri Panchayat and local NGOs for suggestion.   |
| xiii | 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.  | Environment clearance letter has been displayed by State Pollution Control Board for 30 days at the Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office  |
| xiv  | 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 the issue of 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 & Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar. | The copy of same is forwarded to the Regional Office MoEF, Bhubaneswar. Information regarding obtaining the advertisement of EC along with the availability of clearance under with SPCB and MOEF website have been duly published in two widely circulated Oriya daily The Samaj and Sambad on dated 29.03.2006. |