

Compliance Status (October-2011 to March-2012) of Conditions stipulated in Environment Clearance by MoEF, GOI vide Letter No. J-11015/960/2007-IA.II (M) on 29.11.2010 for Production Capacity of 7.5 MTPA of Kasia Iron & Dolomite Mines, M/s Essel Mining & Industries Ltd, Barbil

SL NO.	SPECIFIC CONDITION	COMPLIANCE
i	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.	Consent to establish for production of 7.5 MTPA has been obtained from the State Pollution Control Board, Orissa on 24.12.2010 and Consent to operate for production of 7.5 MTPA has been obtained from the State Pollution Control Board, Orissa on 19.04.2011. All the conditions are being implemented as per Consent to Establish and Consent to Operate order.
ii	The environmental clearance is subject to approval of the State Land use Department, Government of Orissa for diversion of agricultural land for non-agricultural use.	We have been paying surface rent to State Government for entire leasehold area of 194.196 Ha. The land use plan is duly certified by the concerned Tahasildar.
iii	Environmental clearance is subject to grant of forestry clearance. Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 173.039ha forestland involved in the project shall be obtained before starting mining operation in that area. No mining shall be undertaken in the forest area without obtaining requisite prior forestry clearance.	Stage - II forest clearance from MoEF has been obtained under the forest conservation Act, 1980 vide letter No. F. No.8-95/1996-FC (pt) dated 18.11.2011 for an area of 173.039 ha. forestland involved in the project. The Mining operation is being carried out accordingly.
iv	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 Writ Petition (Civil) No. 460 of 2004, as may be applicable to this project.	It will be adhered to final order of the Hon'ble Supreme Court of India.
v	Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.	The site specific conservation plan has been approved by PCCF Wildlife, Odisha vide Memo. No. 4053/1WL(C) SSP-166/2011 dated 13.06.2011.
vi	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.	Presently we are working above the ground water table. Necessary permission will be obtained from CGWA and MoEF in case of working below the Ground water table.
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 seasonal nallah passing through the mine lease and also the first order and the second order streams, if any emanating/passing through the mine lease area during the course of mining operation.	No natural watercourse or water resource is being obstructed due to the mining operation. We have already undertaken measures for protection of the seasonal nallah.
viii	The top soil, if any shall temporarily be stored at	Since mining operation is being carried out at

	<p>earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.</p>	<p>present within broken-up area, there is no generation of top soil. However, in future while working in virgin area if top soil will be encountered, it will be stacked separately and used for greenbelt development, reclamation and rehabilitation of mined out area.</p>
ix	<p>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. Backfilling shall commence from the year 2020-2021 onwards. Proper terracing of the OB dumps shall be carried out so that the overall slope of the dumps shall be maintained to 27°. 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. Out of the total excavated area of 101.888ha, an area of 57.705ha shall be backfilled and reclaimed by plantation. 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.</p>	<p>During mining operation the generated overburden (OB) has been kept in the earmarked area and it is being maintained with proper terracing. It will be followed by plantation and Geotextile for the stabilization of the dump.</p> <p>The OB / Waste dumps are located away from the natural water course and in non-mineralized areas.</p> <p>The OB / waste dumps are being properly dressed which includes terracing. The ultimate slope of the dump is maintained at <math>27^{\circ}</math>.</p> <p>Backfilling, reclamation by plantation and Monitoring & management of rehabilitated areas will continue until the vegetation becomes self-sustaining. Plantation is being done in the slope of dumps to stabilize & to enhance the greenery.</p> <p>Compliance status has been submitting to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.</p>
x	<p>Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, OB and mineral dump(s) to prevent run off of water and flow of sediments directly into the agricultural fields, the seasonal nallah, the Karo 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.</p> <p>Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mine pit and OB and mineral dump(s) to prevent run off of water and flow of sediments directly into the agricultural fields, the seasonal nallah, the Karo 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.</p>	<p>Catch drains & siltation pond has been constructed around the OB and mineral dumps to prevent run off of water and flow of sediments directly into the agricultural fields, the seasonal nallah, the Karo River and other water bodies. The water so collected is utilized for watering the mine area, roads, green belt development etc. The drains are regularly desilted particularly after the monsoon and maintained properly.</p> <p>Garland drains, settling tanks and check dams of appropriate size, gradient and length are constructed around the mine pit and OB and mineral dump(s) to prevent run off of water and flow of sediments directly into the agricultural fields, the seasonal nallah, the Karo River and other water bodies.</p> <p>Sedimentation pits are constructed at the corners of the garland drains and desilted at regular intervals.</p>

xi	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.	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 have been prepared according to the rain fall data.
xii	The void left unfilled in an area of 44.183ha shall be converted into water body. The higher benches of excavated void/mining pit shall be terraced and plantation done to stabilize the slopes. The slope of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out along the excavated area.	As per the post mining land use plan, we will be carried out the necessary parameters in phase wise and to be completed at time of closure of mines.
xiii	The water recovery and spill way system shall be so designed that the natural water resources are not affected and that no spill water goes into the nearby Karo River and other water bodies.	Presently no spill water is going in to the nearby Karo river and other water bodies.
xiv	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.	Beneficiation project is yet to start.
xv	The effluent from the ore beneficiation plant shall be treated to conform to the prescribed standards and the tailings slurry shall be transported through a closed pipeline to the tailing dam.	Beneficiation project is yet to start.
xvi	The project proponent shall take necessary safeguard measures to ensure that there is no leaching from the tailing pond.	Beneficiation project is yet to start.
xvii	The decanted water from the tailing ponds shall be re-circulated and there should be zero discharge from the tailing ponds. Acid mine water, if any, shall be neutralized and reused within the plant.	Beneficiation project is yet to start.
xviii	Plantation shall be raised in an area of 140.003ha including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around reclaimed area, OB dumps, mine benches, around water body, around beneficiation plant and 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.	Plantation in the safety zone, reclaimed area, OB dumps and along the roads is being done in consultation with local forest department.
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.	Water sprinkling by static sprinklers is being carried out regularly 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 by static sprinklers and mobile water sprinklers is being carried out on haul roads. The Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
xx	The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the	Suitable conservation measures to augment ground water resources are being taken in the area in consultation with the Regional Director, Central

	Regional Director, Central Ground Water Board.	Ground Water Board.
xxi	Regular monitoring of ground water level and quality shall be carried out in and around the project area (mine lease, 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 Bhubaneswar, 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.	Regular monitoring of ground water level and quality is being carried out four times in a year by establishing a network of existing wells in & around the lease. The report is being sent to MOEF, Central Ground Water Authority and Regional Director Central Ground Water Board regularly.
xxii	Appropriate mitigative measures should be taken to prevent pollution of the Karo River in consultation with the State Pollution Control Board.	Mitigative measures to prevent pollution of the Karo river in consultation with the SPCB will be undertaken.
xxiii	The project proponent shall obtain necessary prior permission/NOC of the competent authorities for drawl of requisite quantity of water required for the project.	NOC from CGWA has been obtained for ground water for withdrawal of 2000 m3/ day vide letter No.21-4(18)/SER/CGWA/2007-1454 dated 06.12.2007.
xxiv	The groundwater and surface water in and around the mine including tailing ponds shall be regularly monitored at strategic locations for heavy metals. The monitoring stations shall be established in consultation with the Regional Director, Central Ground Water Board and the State Pollution Control Board.	The monitoring stations to monitor the groundwater and surface water in and around the mine are established as per the plan authenticated by SPCB and CGWB.
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, Bhubaneswar.	Suitable water conservation measures are already taken to recharge to the ground water resources in the area. We have engaged KRG Rain Water Foundation, Chennai, a reputed consultant for preparation of detailed Technical Feasibility Report on site-specific rain water harvesting techniques. It has also been planned to locate suitable recharge structures at the site. The detail information on withdrawal of ground water for mining uses and adopting rain water harvesting measures at Koira Iron Mines has submitted to Regional Director, Central Ground water Board, Bhubaneswar.
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. No transportation of ore outside the mine lease area shall be carried out after the sunset.	The transportation of minerals is being carried out through tarpaulin covered trucks with permissible load. Vehicular emissions are being kept under control and are regularly monitored.

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.	Controlled blasting is followed to mitigate the ground vibration and fly rocks.
xxviii	Drills shall either be operated with the dust extractors or equipped with water injection system.	Wet drilling is being carried out.
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.	The Mineral handling areas and transfer points are provided with dry fog system for effective dust suppression. Extensive water sprinkling by static sprinklers and mobile water sprinklers is also being carried out in loading and unloading areas and at transfer points.
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.	Complied with.
xxxii	Effective safeguard measures should be taken to control fugitive emissions so as to ensure that RSPM (PM10) levels are within prescribed limits.	Extensive water sprinkling in haul roads, loading and unloading points and at transfer points is being carried out to ensure that RSPM (PM10) levels are within prescribed limits.
xxxiii	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.	Pre-placement medical examination and periodical medical examination of the workers engaged in the mines is being carried out regularly and records are also maintained.
xxxiv	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant, Indian wolf, leopard, pangolin, python etc. in the study area fauna found in the study area. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the Wildlife Conservation Plan prepared specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.	A site specific wild life conservation plan has been prepared for the conservation of flora and fauna in consultation with the State Forest and Wildlife Department. Approval is obtained vide Memo. No. 4053/1WL(C) SSP-166/2011 dated 13.06.2011.
xxxv	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.	Housing in the form of temporary structures for the construction labor 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 has been provided.
xxxvi	The critical parameters such as RSPM (Particulate matter with size less than 10 micron i.e., PM10) and NOX in the ambient air within the impact zone, peak particle velocity at 300m distance or	Ambient air quality monitoring is being carried out in core & buffer zone. The report is being submitted to the Ministry's Regional Office at Bhubaneswar and to the State Pollution Control

	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 shall also be referred in this regard for its compliance.	Board/Central Pollution Control Board once in quarter. The quality of discharged water is also being monitored as per guideline. The monitored data is being uploaded in the website of the company as well as being displayed on the main gate of the company in public domain.
xxvi	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.	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.
SL NO.	GENERALCONDITION	COMPLIANCE
i	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Necessary permission will be taken from MoEF if any changes in mining technology during mining operation.
ii	No change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.	As per approved Mining Plan excavation schedule is being followed.
iii	At least 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., PM10) and NOX 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.	For the monitoring of Ambient air quality 6 stations in the core zone and 4 stations in the buffer zone has been installed in consultation with SPCB.
iv	Data on ambient air quality [(RSPM(Particulate matter with size less than 10micron i.e., PM10) and NOX] 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.	Ambient air quality [(RSPM(Particulate matter with size less than 10micron i.e., PM10) and NOX] is being regularly monitored and 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
v	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.	Fugitive dust has been controlled by sprinkling water on haul roads. Dry fog system with high jet water sprinkler is installed at all transfer point, loading/unloading point to control fugitive dust.
vi	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.	Personal Protective Equipments are being provided to workers. Audiometric test is being done once in a year. Metallic parts are replaced by rubber in the plant in possible areas.
vii	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	The central workshop is located at Jilling Mine of Essel Mining & Industries limited. Minor repairing were done in nearby garage outside the leasehold area.

	to time. Oil and grease trap should be installed before discharge of workshop effluents.	
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 program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Personal Protective Equipments are being provided to workers. Time to time training is given on safety and health aspect. Periodically Occupational Health Surveillance programmes are undertaken by our own medical team as per the guidelines of 10th Safety conference of the ILO.
ix	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.	The environment monitoring is being conducted by M/S B.S. Envitech Private limited, Hyderabad in 24 hrs basis under our supervision. The company is duly certified by NABET and QCI.
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 the Ministry and its Regional Office located at Bhubaneswar.	Account of expenditure for Environmental protection is maintained separately and is spent only for environment related purposes. Year wise expenditure is being submitted to MoEF's Regional Office, Bhubaneswar.
xi	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.	Presently not applicable.
xii	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.
xiii	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, Bhubaneswar, 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, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.	Half Yearly environmental compliance status report including environmental monitoring report is being submitted to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. We have also uploaded the status of compliance of the environmental clearance conditions, including results of monitored data on our company website.
xiv	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.	Copy of environment clearance letter has been submitted to the Sarpanch, Jaroli & Jalahuri Panchayat and local NGOs for information.
xv	The State Pollution Control Board should display a copy of the clearance letter at the Regional office,	Environment clearance letter has been displayed by State Pollution Control Board for 30 days at the

	District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days	Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office.
xvi	The environmental statement for each financial year ending 31st 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, Bhubaneswar by e-mail.	We have submitted the Environmental statement for the FY 2010-11 on dated 30.09.2011.
xvii	The project authorities should advertise at least in two local newspapers 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.	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 04.12.2010.