


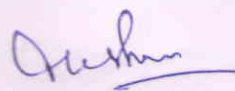
Status of compliance of conditions stipulated by MoEF
in Environment Clearance no.- J-11015/341/2006-IA.II (M) dated 03-07-2007
of Ispat Kaliapani Chromite Mine of M/s Balasore Alloys Ltd
as on 31-03-2012

A. Specific Conditions:


SI No	Conditions	Compliance
(i)	All the conditions stipulated by the State Pollution Control Board in their Consent to Establish should be effectively implemented.	Is being implemented.
(ii)	The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations.	As there is no natural watercourse in the project area, there is no obstruction due to mining operation.
(iii)	Top soil should be stacked properly with proper slope at earmarked site(s) with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	No topsoil generated from mines. Whatever produced initially has already been used for plantation.
(iv)	Over burden shall be stacked at earmarked dump site(s) only and should not be kept active for long period. The total height of the dump(s) should not exceed 40m in four stages of 10m each, keeping overall slope of the dumps below 28°. The over burden dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be taken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of	Over burden dumping is being done on the stipulated area providing terraces with the over all slope angle below 28°. The un-used dump slopes are vegetated with species like Chakunda, Bahada, Bamboo, Neem, Karanja, Babool, Sisoo etc. Garland drains with settling tanks have been provided to the dumps. Coir matting on the old dump slope has been done over an area of around 19000 sq. mtrs.


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	Environment & Forests and its Regional Office, Bhubaneswar on six month basis.	
(v)	Trace Metals such as Ni, Co, As, and Hg should be analyzed in dust fall and soil samples for at least one year during summer, monsoon and winter seasons. If concentrations of these metals are found below the standards then with prior approval of Ministry of Environment and Forests this specific monitoring could be discontinued.	Monitoring of the dust-fall for parameters Ni, Co, As and Hg is being done and the concentrations are below the standard limit (Please refer Annexure – I).
(vi)	Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from working pit, soil, over burden and mineral dumps. The water so collected should be utilized for watering the mine area, roads, plantation etc. The drains should be regularly desilted and maintained properly. Toe wall and garland drain (size, gradient and length) shall be constructed for both mine pit & waste dumps 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. Storm water return system should be provided. Storm water should not be allowed to go to the effluent treatment plant during high rainfall/super cyclone period. A separate storm water sump for this purpose should be created.	Catch drain and silt pit have been provided to over burden dump and regular cleaning of the same is in practice. Toe wall (435m x 0.3m x 1.2m) and 2200m length garland drain has been provided to over burden dumps. Two RCC sumps have been provided to collect the silt from the surface runoff water flowing from overburden dump.
(vii)	Dimension of retaining wall at the toe of over burden dumps and benches within the mine to check	A retaining wall of length 435meters, width 300mm and height 1.20meter



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	run-off and siltation should be based on the rainfall data.	above ground has been provided for the old over burden dumps.
(viii)	There shall be no discharge from the project.	No discharge of run-off from the lease area during non-monsoon seasons. Only during monsoon the surface run off water is allowed to go outside through the silt pit. Quarry discharge water is being sent outside after treatment in ETP.
(ix)	Effluents containing Cr^{6+} shall be treated to meet the prescribed standards before reuse/discharge. Effluent Treatment Plant should be provided for treatment of mine water discharge and wastewater generated from the workshop and mineral separation plant. Run off from OB dumps and other surface run off should be analyzed for Cr^{6+} and in case its concentration is found higher than the permissible limit the water should be treated before reuse/discharge.	For treatment of Cr^{6+} in mine discharge water an Effluent Treatment Plant has been established which is in operation. The water discharged to outside after treatment is meeting the prescribed standard (Please refer Annexure-II). The surface run off from the OB and other areas are being analyzed in rainy seasons and the concentrations are found to be below the prescribed limit (Please refer Annexure-III).
(x)	Separate impervious concrete pits for disposal of sludge shall be provided for the safe disposal of sludge generated from the mining operations.	No sludge is generated from the mines as mining is being done only in the dry areas only.
(xi)	The project proponent shall ensure that the quality of decanted effluents from the tailing pond conform to the prescribed standards before discharge.	Total water from the tailing pond is used in process in COB plant; hence no discharge of decanted effluents from the project.
(xii)	The project proponent shall explore the possibility to reduce concentration of Cr^{6+} in the tailing pond in consultation with an expert scientific institution like NEERI.	The tailing pond is made of concrete (RCC) walls and floor and we are ensuring total re-circulation of water for the COB Plant use.

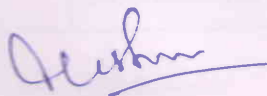


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(xiii)	Plantation shall be raised in an area of 31.883ha including green belt of adequate width by planting native species around ML area, OB dumps, roads, around worked out area etc. in consultation with local DFO/ Agriculture Department. The density of the trees should be around 2000 plant species per hectare.	9975 native species of saplings were planted during July' 11- Sep'11 period over an area of 2 hectares on the slope of dumps. Apart from the above, 1970 fruit bearing saplings were distributed in the nearby villages. As on date 88620 samplings have been planted inside the mining lease area, over all survival rates being around 70%.
(xiv)	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezo meters during the mining operation. The monitoring should be carried out four times in a year, pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment and Forests, Central Ground Water Authority and Regional Director, Central Ground Water Board.	Regular monitoring of ground water levels are being done in the core zone and buffer zone from the piezo meter holes and open wells respectively. Monitoring of the ground water quality is also being carried out four times in a year in different seasons (please refer Annexure-IV).
(xv)	The project proponent shall carry out regular monitoring of groundwater quality around the tailing pond by constructing observation wells for leachates, if any.	There are 3 no tube wells around the tailing pond area. The samples from the tube wells are tested for Cr ⁶⁺ content and all are below detectable limit (please refer Annexure-V).
(xvi)	Sludge from the tailing pond (dry tailing) shall be stacked properly so as to ensure that it does not get into the environment either through air, water or soil.	Sludge from the tailing pond after being dried, are taken to the top of the over burden dump where these are dumped in a separate place, 6 meters above the ground surrounded


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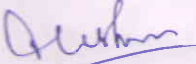
		by overburden barrier. There is no possibility of flowing of the said materials out side.
(xvii)	The project authorities should meet water requirement of the peripheral village(s), especially, if the village wells go dry due to mine de-watering.	The management has provided 18 nos. of tube wells in the peripheral villages for drinking and other purposes (please refer Annexure-VI).
(xviii)	Permission from the competent authority should be obtained for drawal of water from Damsal Nallah and ground water, if any, required for the project.	Permission of drawal of ground water has been obtained from Central Ground Water Authority. No: 21-4(44)/SER/CGWA/2008-793.
(xix)	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with Regional Director, Central Ground Water Board.	Action plan has already been submitted to CGWA through Regional Director, CGWB, Bhubaneswar.
(xx)	Drills should be wet operated or operated with dust extractors.	Drilling is being done through drill machines fitted with water spraying arrangements.
(xxi)	Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigating measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	Controlled blasting is in practice and blasting is being done during day time only.
(xxii)	The void left unfilled in an area of 22.02ha 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. Peripheral fencing shall be carried out along the excavated area.	Presently only one quarry is in operation, hence all measures as per the condition will be undertaken at the cessation of the quarry operations.
(xxiii)	Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining	Periodical maintenance of the vehicles is being ensured. Testing for pollution under control for all


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	operations and in transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.	vehicles & machineries used in the mines is being done. The transporting trucks are being covered with tarpaulin and are allowed to take only the prescribed load i.e. below 10.5 Ton.
(xxiv)	Consent to operate should be obtained from SPCB before starting enhanced production from the mine.	Consent to operate has been obtained from the State Pollution Control Board.
(xxv)	Sewage treatment plant should be installed for the colony.	We have no colony within the lease area as such and hence STP doesn't exist.
(xxvi)	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.	Final Mine Closure Plan will be submitted to the ministry 5 years before the anticipated final mine closure.

B. General Conditions:


SI No	Conditions	Compliance
(i)	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Mining method practiced in the project is Opencast mechanized and there is no change in mining technology and scope of working.
(ii)	No change in the calendar plan including excavation, quantum of mineral Chromite and waste should be made.	No change in the plan including excavation, quantum of mineral and waste during the period under reference.
(iii)	Conservation measures for protection of flora and fauna in the core & buffer zone should be drawn up in consultation with the local forest and wildlife department.	As per the norms fixed by local forest department we are extending funds on annual basis for protection of flora & fauna.


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(iv)	Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ & NO _x monitoring. Location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.	Air quality monitoring is being done by establishing 6 ambient air monitoring stations.(in core zone 3 and buffer zone 3).
(v)	Data on ambient air quality (RPM, SPM, SO ₂ & NO _x) should be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.	AAQ is being regularly monitored and the data is submitted to MoEF. Monitoring data for the period Sept'11 to Mar'12 is enclosed as Annexure-VII .
(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.	Regular water spraying is being done on haul roads, ore transfer points, over burden dumping areas and stack yards by deploying 2 no water tankers of 18 KL and 12 KL capacity to control the fugitive dust.
(vii)	Measures should be taken for control of noise levels below 85 dB (A) in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.	Regular monitoring is being carried out for noise level in the work environment (please refer Annexure-VIII). Ear-muffs have been provided to all workers who are deployed in the noise generated areas.
(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 th May,	There is no work shop in the lease area. All the machines deployed are out sourced and are doing their maintenance out side the lease area.


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	1993 and 31 st 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.	Personnel protective equipments are provided to all workers respective to the nature of job. Initial and periodical training is being imparted to all workers in the company's Vocational Training Center located within the lease area on safety & health aspects. Periodical medical check ups are undertaken to all workers.
(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.	A separate environmental cell under the control of Vice President (Mines) has been set up.
(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.	This is an on going project since Sept' 2000. The financial closure date is 31 st March of every year.
(xii)	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.	A separate account is maintained for environmental protection and periphery development. Details of expenditure for the year 2010-11 are enclosed as Annexure -IX .
(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	-


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	Regional Office by furnishing the requisite data / information / monitoring reports	
(xiv)	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, Central Pollution Control Board and State Pollution Control Board.	Being complied regularly
(xv)	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation was received while processing the proposal.	Already given to local panchayat
(xvi)	The 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.	--
(xvii)	The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the 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 & 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.	Already done.


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Ministry of Environment, Forest and Climate Change, Government of India
in pursuance of Clause (c) of Section 25 of the Environmental Protection Act, 1986 dated 21.07.2012
of Kalijapani Chromite Mines, M/s Balasore Alloys Pvt. Ltd.

SIX MONTHLY COMPLIANCE REPORT

Sl. No.	Conditions	Compliance
(iv)	All the conditions stipulated for the State Pollution Control Board in their Consent to <u>ON</u> the effluent discharge.	It has been implemented.
(v)	The project proponent shall submit half yearly report to the State Pollution Control Board.	It has been implemented.
(vi)	The project proponent shall submit quarterly report to the State Pollution Control Board.	It has been implemented.
(vii)	The project proponent shall submit annual report to the State Pollution Control Board.	It has been implemented.
(viii)	The project proponent shall submit quarterly report to the State Pollution Control Board.	It has been implemented.
(ix)	The project proponent shall submit annual report to the State Pollution Control Board.	It has been implemented.
(x)	The project proponent shall submit quarterly report to the State Pollution Control Board.	It has been implemented.

MoEF ENVIRONMENTAL CONDITIONS

FOR THE PERIOD
Oct'11 to Mar' 12

OF

KALIAPANI CHROMITE MINES
M/s BALASORE ALLOYS LTD.

11/11/11