

Mainpat Bauxite Mines

STATIC INFORMATION

Name of the Mine	Mainpat Bauxite Mines
Owner	Bharat Aluminium Company Ltd. (BALCO)
Mine Lease Area	639.169 Hectares
Name of Mineral	Bauxite
Location	Villages: Kesra, Kudaridih & Sapnadar Tehsil: Sitapur, District: Surguja, State: Chhattisgarh
Mining methodology	Semi-mechanized Opencast
Production Capacity	0.75 MTPA
Mine Lease Granted on	09.07.2015
Mine Lease Validity till	09.07.2012 to 08.07.2042 (30 Years from date of grant)

DYNAMIC INFORMATION

1. Ambient Air Quality Results

Date of Monitoring	Location	PM 2.5	PM 10	SO2	NO _x
1 -4 May 2016	Camp No2	33	55	12	11
	Kesara	28	49	09	08
	Balco Township	31	53	10	09
	Office	32	56	13	12
16 – 19 May 2016	Camp No2	34	56	11	10
	Kesara	29	51	10	7
	Balco Township	30	52	11	9
	Office	31	54	12	10
Limit (Industrial)		40 (Annual) 60 (24 Hours)	60 (Annual) 100 (24 Hours)	50 (Annual) & 80 (24 Hours)	40 (Annual) & 80 (24 Hours)
Unit		µg/m³	µg/m³	µg/m³	µg/m³

2. Quality of Discharged Water- Not Applicable

3. Plantation

Plantation Year wise	
YEAR	No. of Trees
2006-07	108500
2007-08	100000
2008-09	119000
2009-10	85000
2010-11	110000
2011-12	100000
2012-13	130000
2013-14	60000
2014-15	75000
2015-16	30000
TOTAL	1164214 (till date)

Compliance Status for Environmental Clearance No.J-11015/235/2007-IA.II (M)

Dated: 26th October 2010 And and extension received for Environmental Clearance vide letter dated 27/10/2015

Mainpat Bauxite Mines, Sarguja Dist., Chhattisgarh.

A. Specific Conditions:

S.No.	Condition	Compliance status
i	Maintenance of village roads through which transportation of ore is undertaken shall be carried out by the company regularly at its own expenses. The roads shall be black topped.	A village road through which ore transportation takes place is being maintained by BALCO. The main haul road has been black topped.
ii	Rain water harvesting shall be undertaken to recharge the ground water. Status of implementation shall be submitted to the Regional Office of the Ministry within six months and thereafter every year from the next consequent year.	Rain water harvesting systems have been adopted in Mines area and Township to recharge the ground water. Status of the same was submitted in the last compliance report submitted to MoEF. Mined out pits have been developed as Rain water harvesting structures in the Mining Area. Please refer to Annexure –I.
iii	Ground water in the core zone shall be regularly monitored for depletion and contamination due to mining activity and mitigation measures undertaken to prevent adverse affects.	Three Piezometric wells have been constructed and the water quality being monitored regularly for the depletion and contamination. Our mining is open cast mining and confined to 8-10 m bgl and thus does not intersect with the ground water level. Please find attached the Ground water monitoring report as Annexure –II.
iv	Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo-textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.	The mined out areas are concurrently backfilled and thus as such no dumps are kept for long period. Temporary dumps are protected by retaining walls.

v	Trenches / garland drains shall be constructed at foot of dumps and coco filters installed at regular intervals to arrest silt from being carried to water bodies. Adequate number of Check Dams and Gully Plugs shall be constructed across seasonal/perennial nallahs (if any) flowing through the ML area and silts arrested. De-silting at regular intervals shall be carried out. Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and for waste dump and sump capacity shall 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 shall 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 de-silted at regular intervals.	Total 66 no. of check dams have been constructed and catch pits /sedimentation pits have been provided at the end of the garland drains to arrest the silt. The catch pits/sedimentation pits are de-silted on regular basis.
vi	Water to be supplied for drinking purposes shall be treated to meet the prescribed standards. Monitoring of water quality for drinking shall be undertaken on daily basis especially for fluoride & arsenic and records maintained.	The drinking water is supplied from the nearby bore wells and water quality are regularly monitored for fluoride and arsenic and the records of the same is maintained. Please refer to Annexure –II
vii	Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health effects on exposure to mineral dust etc. shall be carried out. The company shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness programme for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be conducted followed by follow up action wherever required.	<p>Work related occupational health hazards have been identified and appropriate safety measures to mitigate these hazards are already being practiced.</p> <p>BALCO has organized various camps on waterborne diseases, HIV and health effects on exposure to mineral dust from time to time. The provision of qualified Doctor trained in Occupational Health is also made.</p> <p>Periodic monitoring and health check-ups are carried out and records are maintained. Onsite and off-site awareness trainings on work related aspects and use of personal protective equipments (PPEs) to employees and workers are given on regular basis.</p> <p>For the year 2015, total 8 persons have undergone Periodic Medical Examination.</p>
viii	Top soil and solid waste shall be stacked properly with proper slope and adequate safeguards and shall be utilized for backfilling (wherever applicable) for reclamation and rehabilitation of mined out area.	Top soil is stacked separately and for a period not more than six months, so that the soil could retain its nutrients value.

ix	Over burden (OB) shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 30 m, each stage shall preferably be of 10 m and overall slope of the dump shall not exceed 28°. The OB dump shall be backfilled. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. 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 on six monthly basis.	As of now sufficient mined out area is available, therefore, overburden excavated is directly dumped for backfilling and concurrent backfilling system is used. The reclaimed area is then covered with top soil followed by plantation, + 75% survival rate is being maintained.
x	Slope of the mining bench and ultimate pit limit shall be as per the mining scheme approved by Indian Bureau of Mines.	Being Complied with, however as we are concurrently backfilling the mined out area, and bench height is less than 10m., therefore, there is no risk of slope failure.
xi	Drilling (if any) shall be conducted by using dust extractors/wet drilling. Controlled blasting shall be undertaken.	Wet drilling method has been adopted to control the dust and controlled blasting is carried out during 1:00 PM -2:00 PM.
xii	Green belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO / Agriculture Department. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. The density of the trees shall be around 2500 plants per ha. The company shall involve local people with the help of self help group for plantation programme. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the Regional Office of the Ministry every year.	Green belt development is carried out every year in and around the Mines with the native trees and fruit bearing species with the involvement of local people. Refer to Annexure No. III for the year-wise plantation details (no. of saplings and area of plantation).
xiii	Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall 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 shall be regularly sent to MoEF, Central Ground Water Authority and Regional Director, Central Ground Water Board.	Regular monitoring of ground water and surface water is carried out and reports are submitted to CECB. Refer to Annexure no II for the Water monitoring reports for pre-monsoon & post-monsoon.
xiv	The waste water from the mine shall be treated to conform to the prescribe standards before discharging in to the natural stream. The discharged water from the Tailing Dam (if any) shall be regularly monitored and report submitted to the Ministry of Environment & Forests, Central Pollution Control Board and the State Pollution Control Board.	No waste water is generated from the mining operation as it is an opencast mining and is confined to a depth of 8-10 bgl. Only the rain water during rainy season is passed through garland drains, series of check dams and sedimentation pits
xv	Prior permission from the competent authority shall be obtained for extraction of ground water, if any.	Permission has been obtained. Please refer to Annexure – IV

xvi	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of ores and others shall have valid permissions as prescribed under Central Motor Vehicle Rules, 1989 and its amendments. Transportation of ore shall be done only during day time. The vehicles transporting ores shall be covered with a tarpaulin or other suitable enclosures so that no dust particles / fine matters escape during the course of transportation. No overloading of ores for transportation shall be committed.	Pollution under Control Certificate is verified for all the ore transporting vehicles and tarpaulin cover is ensured. Overloading of ores is not allowed.
xvii	Progressive reclamation of the mined out area shall be undertaken in conformity with the approved mine plan. 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.	Reclamation is carried out as per the approved Mine plan. A progressive Mine Closure Plan has already been submitted to MoEF. Presently we are having Mine plan & Progressive mine closure plan for next five year 9 th July 2012 to 2017 duly approved by IBM, further also processed for modification of w.r.t. change in mineral dressing process, working hours and reduction of cut off grade
xviii	The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e. PM10) and NOx 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 shall also be referred in this regard for its compliance.	The ambient Air Quality, peak particle velocity and water quality are monitored on regular basis .The reports for AAQ & water quality is uploaded to the company's website. Please refer to Annexure No. II & V for the monitoring reports.
xix	The project proponent shall obtain Consent to Establish and Consent to Operate from the Chhattisgarh Environment Conservation Board and effectively implement all the conditions stipulated therein.	Consent to operate under Air & water Act obtained & renewed vide letter no 4142 & 4144/TS/CECB/2015 dated 27/11/2015 valid upto 27/08/2016.
xx	The environmental clearance is subject to the condition, if any, stipulated by the IBM on the mining scheme submitted by the project proponent for its approval.	Being Complied with.

B. General Conditions:

S.No.	Condition	Compliance
i.	No change in mining technology and scope of working shall be made without prior approval of the	Complied with.

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	Ministry of Environment & Forests.	
ii.	No change in the calendar plan including excavation, quantum of bauxite and waste shall be made.	Noted.
iii.	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ and NO _x monitoring. Location and number 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.	Four ambient air quality monitoring stations have been established in the core zone as well as buffer zone for monitoring of RPM, SPM, SO ₂ and NO _x . in consultation with State Pollution Control Board.
iv.	Data on ambient air quality RSPM (Particulate matter with size less than 10micron i.e., PM10) & NO _x should be regularly submitted to the Ministry of Environment and Forests including its Regional office located at Lucknow and the State Pollution Control Board / Central Pollution Control Board once in six months.	Being Complied with. We are regularly submitting the Ambient Air Quality monitoring reports. Please refer to Annexure No. V for the AAQ reports for the period of October-2015 to March - 2016 .
v.	Fugitive dust emission from all the sources shall be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.	The dust generated from haul roads, loading and unloading and at transfer points etc., is controlled by regular water sprinkling. Fugitive dust emissions are regularly monitored and data are maintained. Water sprinkling system over fixed structure will be installed of adequate capacity, over crusher screening plant and mineral transfer points.
vi.	Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc, shall be provided with ear plugs / muffs.	Proper maintenance of equipments are regularly carried for keeping the noise within permissible limit. Operator cabins have been provided. Controlled blasting and other measures are taken for control of noise levels below 85 dBA in the work environment. Ear plugs and muffs are provided to the workers engaged in noisy operation. Equipment with inbuilt enclosures are now purchased, like DG sets.
vii.	Industrial waste water (workshop and waste water from mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.	Oil and grease trap has been constructed for the waste water generated from the workshop and the clear water is used in gardening. No waste water is generated from mines operation.
viii.	Personnel working in dusty areas shall be provided with protective respiratory devices and they shall also be imparted adequate training and information on safety and health aspects.	Protective respiratory devices have been provided to the personnel working in dusty areas and training and information on safety and health aspects is imparted on monthly basis.
ix.	A separate Environmental Management Cell with	Environmental Management Cell is in

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	suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.	place headed by Senior Executive, directly reporting to the CEO. The environment management cell is enabled by trained professionals in respective fields of environment, safety and occupational health. The team is also assisted by environmental laboratory having trained manpower for carrying out monitoring and analysis of various samples collected in and around project sites.
x.	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 Bhopal, the respective Zonal Office of Central Pollution Control Board 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, Bhopal, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Boar	The six monthly compliance report is submitted regularly to the Regional office of MoEF last submitted vide our no. BALCO/ENV/A-02(A)/2015/386 November 21, 2015 Also, the reports are being uploaded to the Company's website.
xi.	The project authorities shall inform to the Regional Office of the Ministry located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Being complied with
xii.	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the Ministry and its Regional Office located at Bhopal.	Being complied with. For year 2015-16 total expenditure on environment protection measures was Rs 11.20 Lakhs (Plantation, check dams, environment monitoring etc)
xiii.	The project authorities shall inform to the Regional Office located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Will be complied
xiv.	The Regional Office of the Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	We are extending full cooperation to the officer(s) of the Statutory bodies.
xv.	A copy of this extension of validity of environmental clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied.
xvi.	State Pollution Control Board shall display a copy of	

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	this extension of validity of environmental clearance letter at the Regional office, District Industry Centre and Collector's office / Tehsildar s Office for 30 days.	Complied.
xvii	The project authorities shall 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 this extension of validity of environmental clearance letter informing that the validity of environmental clearance has been extended up to 8th July,2012 and a copy of this extension 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 shall be forwarded to the Regional Office of the Ministry located in Bhopal.	Complied with. Refer to Annexure -VI for copy of the advertisement published in the local newspapers.
5.	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.	Noted.
6.	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Noted.
7.	Any appeal against this extension of validity of environmental clearance shall lie with the National Environment Appellate Authority, if preferred, within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act,1997.	Noted.
8.	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.	Noted.
9.	This issues with the approval of the Competent Authority in the Ministry.	Noted.