

No.J-11015/650/2007-IA.II(M)
Government of India
Ministry of Environment and Forests

Paryavaran Bhawan
CGO Complex, Lodi Road,
New Delhi-110 003

Dated the 19th February, 2009

To

M/s Utkal Alumina International Limited
Raniguda Farm,
Rayagada - 765 001
E-mail: hemenbhagawati@adityabirla.com

Subject: Baphlimali Bauxite Mining Project of M/s Utkal Alumina International Limited, located in Village(s) Paikkupakhal, Karanjakupakhal, Dhuturapas, Dandabad, Chandragiri, Durumusi, Suryagada and Kendumundi, Tehsil(s) Kashipur & Thuamul Rampur, District(s) Rayagada & Kalahandi, Orissa - environmental clearance regarding.

Sir,

This has reference to your letter No. UAIL/ENV/2253/2007 dated 25.06.2007 and subsequent letters dated 06.01.2008, 29.02.2008, 02.09.2008, 03.10.2008 and 24.11.2008 on the subject mentioned above. The proposal is for opening of a new mine for production of bauxite to 8.5million tonnes per annum (million TPA) to meet the captive requirement of their alumina plant located at a distance of about 17km. It may be mentioned that the environmental clearance earlier accorded to this project by the Ministry of Environment and Forests on 25.09.1995 for mining of 3.0million TPA of bauxite was lapsed since the proponent did not start work at this site within the validity period. The total mine lease area of the project is 1388.74ha, which is a waste land. No forest land is involved. Area proposed for mining is 850ha, an area of 11ha is kept for infrastructure, 10ha for roads & conveyors, 80ha for green belt, 0.5ha for explosive magazine and 437.24ha is others (undistributed land). The Kandabindh Nallah is flowing in the buffer zone of the mine at a distance of 0.5km towards North from the mine lease boundary. In addition, the San River and the Indravati River are flowing in the buffer zone of the mine at a distance of 5.9km and 7.5km respectively from the mine lease boundary. Pre-mining surface drainage pattern has been submitted. It has been stated that no spring exist on plateau top, however, a few springs originate from the foothills of the plateau at about 100m-150m below the plateau top and the mining will not interfere with these springs. There are two smaller rain fed runoff drains passes through the plateau. These runoff drains will be diverted through garland drain to connect the existing path of the drain so that the water does not enter into the mining pit and later while carrying out reclamation of mined out pits, the drains will be suitably re-instated. No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant

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reserve etc. is reported to be located in the core and buffer zone of the mine. The area also does not report to form corridor for Schedule-I fauna. In support of this, a letter dated 01.10.2008 along with a duly authenticated map from the Conservator of Forest (Wildlife) provided showing that no National Park / Sanctuary and no Wildlife Corridor exist within 10 km of the mine lease. Seven Reserve Forests namely the Dandabar RF(0.5km N), the Chirka RF (1.0km NW), the Udasil RF (2.4km N), the Sirigruha RF(7.6km SE), the Kanda the Bindha RF(8.3km E), the Udaygiri RF(8.6km NW) and the Porha Bandh RF (9.3km ESE) are located in the buffer zone of the mine. The mine working will be opencast by mechanized method involving drilling and blasting. The targetted production capacity of the mine is 8.5million TPA of bauxite and the life of mine is 27years. Approximately 24,650TPD of mineral will be transported through a 21km long covered conveyer. The Baphlimali Plateau forms a part of Eastern Ghat Hills and the topography of the area is a plateau top generally flat and the elevation above mean sea level ranging from 990m-1093m AMSL. It has been reported that the plateau top is devoid of vegetation in most part giving a bald look to the area (Khondalite exposures, however, support growth of trees and shrubs). The ultimate working depth of mine will be 1054m AMSL(40m from the plateau top of 1094m AMSL) and 960m AMSL(30m from plateau top of 990m AMSL). The ground water table is reported to vary from 890m AMSL (100m from the plateau top of 990m AMSL) to 944m AMSL(150m from the plateau top of 1094m AMSL). The mine working will not intersect the ground water table. The peak water requirement of the project is estimated as 2000m³ per day, which will be obtained from the surface water(San River or Kandabindha Nallah). It has been reported that there is no population in the core zone, therefore, displacement of population and R&R has not been envisaged. Approximately 2,43,573m³ per month of solid waste comprising 66,137m³ per month of topsoil (soil and murrum) and 1,77,436m³ per month of over burden (laterite) will be generated, which will be disposed off in the earmarked areas for backfilling and plantation. It is estimated that 2.92 million m³ of topsoil and OB will be handled annually. The temporary OB dumps will be maintained. It is estimated that 57.49million m³ of OB and 21.43million m³ of top soil will be generated during the mine life. After taking out the bauxite ore in the first three years, there will be adequate void available for commencement of backfilling operation. Backfilling will start from the 4th year onwards. The entire OB will be backfilled and there will be no external OB dump after the 8th year. The Top soil will be preserved separately as and when generated and used progressively for backfilling. Plantation will be raised in an area of 680ha at the end of the mine life and an area 250ha will be developed as water body during the post mining stage. The Consent to Establish from the State Pollution Control Board, Orissa was obtained on 16.06.2007 for enhancement of production of bauxite from 3MTPA to 8.5MTPA involving lease area of 1388.74ha falling in the districts of Rayagada and Kalahandi. As the total mine lease area of 1388.74ha spread into two Districts namely; (i) Rayagada and (ii) Kalahandi, the public hearing of the project was

held in both the districts therefore, for enhancement of production of bauxite from 3million TPA to 8.5million TPA. The public hearings for the Rayagada District was held on 17.10.2006 and for the Kalahandi District on 20.04.2009. The Indian Bureau of Mines had approved modified mining plan including progressive mine closure plan of the project on 01.02.2007 for lease area of 1388.74ha. The capital cost of the project is Rs.30,000Lakhs and the capital cost for the environmental protection measures is proposed as Rs.145.5Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs.1274.5Lakhs.

2. The Ministry of Environment and Forests has examined the application in accordance with Section 12 of the EIA Notification, 2006 read with para 2.2.1 (i) (a) of the Circular No. J-11013/41/2006-IA.II(I) dated 13.10.2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Baphlimali Bauxite Mining Project of M/s Utkal Alumina International Limited for an annual production capacity of 8.5million tonnes of bauxite by opencast mechanized method involving total mine lease area of 1388.74ha, subject to implementation of the following conditions and environmental safeguards.

A. Specific conditions

- (i) All the conditions stipulated by the State Pollution Control Board, Orissa in their consent to establish shall be effectively implemented.
- (ii) The project proponent shall effectively address the concerns raised by the locals in the public hearing as well as during consideration of the project while implementing the project.
- (iii) The project proponent shall develop fodder plots in the non-mineralised area in lieu of use of grazing land.
- (iv) The mining operations shall be restricted to above ground water table and it should not intersect groundwater table. In case of working below ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.
- (v) The project proponent shall ensure that no natural watercourse and/or water resources are obstructed due to any mining operations. Adequate measures shall be taken while diverting seasonal channels emanating from the mine lease, during the course of mining operation.
- (vi) The project proponent shall take adequate environmental safeguard measures for control of rolling down of silt and sediments and protection

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of the catchment area of upper Indravati Reservoir during the course of mining operation.

- (vii) A 3km stretch on the upstream and 3 Km in the down stream of the river passing through the project area should be taken up by the project authorities for plantation to arrest river bank erosion and sediment flow into the river.
- (viii) The top soil shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.
- (ix) The over burden (OB) generated during the initial years of the mining operation shall be temporarily stacked at the earmarked dump site(s) only for backfilling. Backfilling shall start from the 4th year onwards of the mining operation and the entire quantity of the waste to be generated shall be backfilled. There shall be no external over burden dumps after the 8th year of the mining operation. The entire backfilled area shall be afforested. Monitoring and management of rehabilitated areas should 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.
- (x) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and temporary OB dumps to prevent run off of water and flow of sediments directly into the Kandabindha Nallah, the San River, the Indravati River and other water bodies. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted, particularly after the monsoon, and maintained properly.

Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mine pit, topsoil dump, temporary over burden dumps and mineral dumps to prevent run off of water and flow of sediments directly into the Kandabindha Nallah, the San River, the Indravati River and other water bodies 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 desilted at regular intervals.
- (xi) Dimension of the retaining wall at the toe of temporary OB dump(s) and the over burden benches within the mine to check run-off and siltation shall be based on the rain fall data.

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- (xii) Plantation shall be raised in an area of 680ha including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around void, roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.
- (xiii) The void left unfilled in an area of 250ha shall be converted into the water body. The higher benches of the excavated void/mine pit shall be terraced and plantation done to stabilise the slopes. The slopes of higher benches shall be made gentler for easy accessibility by the local people to use the water body. Peripheral fencing shall be carried out all along the excavated area.
- (xiv) Regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as around crushing and screening plant, loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xv) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained.
- (xvi) Regular monitoring of water quality upstream and downstream of the Kandabindha Nallah shall be carried out and record of monitored data should be maintained and submitted to the Ministry of Environment and Forests, its Regional Office, Bhubneswar, the Central Groundwater Authority, the Regional Director, Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board.
- (xvii) The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (xviii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease 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 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.

- (xix) Appropriate mitigative measures shall be taken to prevent pollution of the San River and the Indravati River in consultation with the State Pollution Control Board.
- (xx) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water, if any) required for the project.
- (xxi) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xxii) 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 within the mine lease. The mineral transportation within the mine lease shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
- (xxiii) 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.
- (xxiv) Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxv) 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.
- (xxvi) Consent to operate shall be obtained from the State Pollution Control Board, Orissa prior to start of production from the mine.
- (xxvii) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- (xxviii) The project authorities shall undertake sample survey to generate data on pre-project community health status within a radius of 1 km from proposed mine.
- (xxix) 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.

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- (xxx) 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.
- (xxxi) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely; python, panther, sloth bear, wild dog etc. spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. 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. All the safeguard measures brought out in the Wildlife Conservation Plan so prepared specific to the project site shall be effectively implemented. A copy of action plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.
- (xxxii) Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment and Forests and its Regional Office, Bhubaneswar.
- (xxxiii) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

B. General conditions

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.
- (ii) No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.
- (iii) Atleast four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM, SPM, SO₂ & NO_x 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.
- (iv) Data on ambient air quality (RSPM, SPM, SO₂ & NO_x) should be regularly submitted to the Ministry of Environment and Forests 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.
- (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.
- (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 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.

- (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.
- (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 of Environment and Forests and its Regional Office located at 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.
- (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.

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- (xiii) The project proponent shall submit six monthly report 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. The proponent shall upload the status of compliance on their website and shall update the same periodically.
- (xiv) A copy of clearance letter shall be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
- (xv) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.
- (xvi) 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 7days 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.
3. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
5. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made thereunder and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Orissa and any other Court of Law relating to the subject matter.
6. Any appeal against this 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.



(SATISH C. GARKOTI)
Additional Director (S)

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Copy to:

- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Orissa, Secretariat, Bhubaneswar.
- (iii) The Secretary, Department of Mines and Geology, Government of Orissa, Secretariat, Bhubaneswar.
- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.
- (v) The Chief Wildlife Warden, Government of Orissa, Bhubaneswar.
- (vi) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vii) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharapur, Bhubaneswar-751023.
- (viii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (ix) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (x) The District Collector, Rayagada District, Government of Orissa.
- (xi) The District Collector, Kalahandi District, Government of Orissa.
- (xii) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xiii) Monitoring File.
- (xiv) Guard File.
- (xv) Record File.