COMPLIANCE STATUS OF CONDITIONS IMPOSED IN ENVIRONMENTAL CLEARANCE FOR 8.5 MTPA BAUXITE MINING VIDE LETTER NO J-11015/650/2007-IA.II (M), DTD.19.02.09.
PROJECT NAME: UTKAL ALUMINA INTERNATIOAL LIMITED.
Period: From 1st October, 2016 to 31st March, 2017.

Sl. No.	Imposed Condition	Compliance Status
A.	**Specific Condition**	
i	All the conditions stipulated by the State Pollution Control Board, Orissa in their consent to establish shall be effectively implemented.	All the conditions stipulated in NOC have been 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.	All the concerns raised in the public hearing are being implemented such as:- a) Health care by appointing doctors, paramedical staff with Medical Health Unit. b) Supply of drinking water by repairing and constructing tube wells, Promoting education by constructing new school building and renovation of old school building. c) Improving the livelihood by employing local people directly/ indirectly. d) Improvement in infrastructures like Development & repair of village roads, irrigation channels, bridges/culverts, avenue plantations etc.
iii	The project proponent shall develop fodder plots in the non-mineralized area in lieu of use of grazing land.	The entire plateau of the ML area consisting of Mineralized (M) & Non-Mineralized (NM) are capped with hard Khondalite which normally prevents the tree growth. So the NM area will be suitably dealt by removing hard surface to develop as grazing lands likely at the later period during implementation of Progressive Mine Closure Plan.
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.	Our Mining operation is restricted above the ground water table. Now the lowest working depth of our existing mine pit is around 1004 m RL, whereas the presence of ground water table has been estimated to be around 100-150 m RL. Therefore, there is no probability of any GW Intersection or exploitation of GW thereby.
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.	No natural watercourse or water resources are obstructed due to our mining operations. Necessary care is being taken during monsoon to divert /channelize run off rain water so that it does not carry any sediment to obstruct / affect the water bodies at the foot hill.
vi	The project proponent shall take adequate environmental safeguard measures for control of rolling down of silt and sediments and protection of the catchment area of upper Indrāvati Reservoir during the course of mining operation.	In addition to as stated in Sl. No. 5, numbers of check dams/siltation ponds is being constructed and the same will be continue as per the need during the course of running of the mines. **1.** Details of Check Dams and garland drains. Refer **Annexure-I** 2. All the protective structures are made up of hard Khondallite/laterite & cement punned over its surface & walls.

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		3. Encompassed drainage area controlled by these structures. The garland drains & Check dams of above dimensions are adequate to catch the run-offs & hold the siltation within the stipulated norms of surface water run-off discharge. The test reports at the outlet of the check dams are being carried out & the TSS levels are always within 100 mg/l. After this the water confluence with the nearby seasonal nallah & ultimately to River Indrāvati after moving a distance of 7 to 8 Kms & will have hardly any bearing on the water quality of Indrāvati.
vii	A 3 km stretch on the upstream and 3 Km in the downstream 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.	To arrest bank erosion and sediment flow into the nallah/river, plantation is being carried out since 2005 over the hill slopes and will be continued in the future also. In the year 2016-17 we have planted around 14000 nos. of saplings in an area of 7 Ha.
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.	Top soil generation in the mine is very less. Till Mar-17 around 2, 16,985 Mt of top soil has been generated, out of which 2000 Mt (approx.) has been utilized for plantation. Remaining top soil is being stored at earmarked site which will be utilized for afforestation at the mined out pit during mine reclamation period.
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.	▪ The Over Burden is being dumped as per plan and within the earmarked area. ▪ From 1.04.2016 onwards backfilling has been started to fill the Overburden as the backfilling material in the voids of the mined out area as per the proposal given in the Scheme of Mining ▪ Monitoring and management of rehabilitated areas will be continued until the vegetation become self-sustaining and its compliance status will 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	Garland drains, settling tanks and check dams of appropriate size, gradient and length has been constructed both around the mine pit and the over burden dump to prevent run off of water and flow of sediments directly into the Natural Nallah and other water bodies. The sump capacity has been designed keeping 50% safety margin over and above peak sudden rainfall. Sump capacity is having adequate retention period to allow proper settling of silt material. . The drains had been de-silted before the onset of monsoon & have been maintained properly. Further, the rain water collected in the mine pits during

	prevent run off of water and flow of sediments directly into the KandabindhaNallah, 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.	monsoon is not pumped out. Rather, it is allowed to be collected in the lowest level to augment the ground water resources gradually. In addition to above, we have deputed NIT, Rourkela to conduct a scientific study on surface runoff management and the final report is awaited. The recommendation, if any for the improvement of surface runoff management will be implemented in future.
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	Retaining walls of dimension 1meter (height) x 0.8 meter (width) and running meterage of 1260 meter have been provided at the toe of over burden dumps to check run-off & siltation. This is being effective to meet the purpose even during peak rain fall. All the retaining walls are made up of hard Khondalite/laterite & cement punned over its surface & walls.
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.	The mining was commenced during 2013-14 and as per the approved Scheme of Mining, backfilling has been started on 1.04.2016 to fill the Overburden as the backfilling material in the voids of the mined out area. However plantation is being taken up in the Mine slope including a 7.5 meter safety zone since 2005-06.Till 2016-17, we have planted around 5, 07,500 saplings in an area of approx.202.53 Ha with a survival rate of 30%. The remaining area will be covered progressively in phase wise manner as per the Scheme of Mining. Nursery has been developed with shed net arrangement to develop, preserve and cater the saplings during the course of plantation period.
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 stabilize 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.	The void to be left unfilled after exhaust of ore in an area of 250ha, which will be converted into water body. The higher benches of the excavated void pit will be terraced / planted with Trees in consultation with the local DFO/Agriculture Department to stabilize the slopes. Provision will be made for easy accessibility by the local people to use the water body. Peripheral fencing shall be carried out all along the excavated area in due course incase required.
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.	Regular water sprinkling is done on haul roads, loading & unloading areas and material transfer points by deploying four dedicated water tankers of capacity 12 KL. In addition to this for effective dust suppression we are using dust suppressants in the sprinkling water i.e. Dust bloc chemical. Dust bloc is a stable emulsion of bitumen in water that is sprayed on the haul roads and stock piles. As the

		water is absorbed into the road, the micro spheres of bitumen contained within Dust bloc are released to bind together the fine materials in the road surface. This reduces dust emission and water is no longer required to act as the binding agent. Regular ambient air quality monitoring is being done in the Core Zone comprising of four locations i.e. Mining Pit, Near Crusher, Near Weigh Bridge and Near Office. The result of the monitored air quality data shows that all parameters are well within the prescribed limit and varies as mentioned below: ❖ Sulphur-dioxide level: 4.13 - 5.79 µg/m3. ❖ Nitrogen-dioxide level: 10.89 - 12.88 µg/m3. ❖ Particulate Matter< 10 micron (PM10): 43.11-70.11 µg/m3. ❖ Particulate Matter< 2.5 micron: (PM 2.5) 25.38 - 40.70 µg/m3. The result of monitored data for the period of OCT-16 to MAR-17 is enclosed in **ANNEXURE– II.**
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.	The flow rate of the small perennial nallah, which is flowing near the Baphlimali hill lock close to the lease boundary, is being monitored regularly and the records are maintained. The average data monitored during OCT-16 to MAR-17 are mentioned below :- 1. PaikupakhalaNala : - 1042.60 m^3/hr. 2. Near DandabadNala : - 3410.00 m^3/hr. 3. ChandragiriNala : - 1748.00 m^3/hr. 4. Mishripada : - 709.00 m^3/hr.
xvi	Regular monitoring of water quality upstream and downstream of the Khandabindha 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, Bhubaneswar, the Central Groundwater Authority, the Regional Director, Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board.	The same is being carried out and recorded. The results of surface water quality are enclosed in **Annexure-III.** The same is also being submitted to 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.	The following Conservation measures have been taken to augment ground water resources:- i. Rainwater harvesting is being carried out by collecting the precipitated water through a network of drainage system into the exhaust mining pit for storage and ground recharge. ii. Movement of mine faces is being carried out systematically as per mine plan following the contour lines such that the faces have self-draining slopes. Precipitated water of the adjacent area is being collected within the mined out area.

		iii. Concreted Weir has been constructed to arrest rain water resulting ground water recharge. Also the Surface water flow near the pit has been diverted towards the pit and this accumulation influences to recharge ground water table. iv. Arrangement has been made that the mining method and the peripheral barrier all around mining area does not allow the storm water to go outside valley areas. The water thus trapped, percolates down and recharges the ground water.
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 ground water is depleted due to mining activity, necessary corrective measures shall be carried out.	Regular monitoring of ground water level and quality is being carried out in each season of the open wells/ dug wells located around the nearby villages and the data is being submitted to Regional Office, MoEF and SPCB, Bhubaneswar once in every six month. ❖ The fluctuation of ground water level varies from 4.0 to 6.8 meter (approx.) during the period October-2016 – March-2017. The monitoring results of Ground water quality & level are enclosed as **Annexure – IV.** However monitoring report reveals that the parameters mostly conform to the within permissible values as per IS 10500. (Drinking water standard) and there is no significant impact on ground water table due to mining activity.
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.	The following measures are being implemented and will be implemented in course of time also. 1. Deep garland drains are under construction to check erratic flow of precipitated water. 2. Check dams are constructed around the slopes of valley to arrest silts and sediments if any. 3. Retaining wall of height 1.5 meter has been constructed at the edge of the valley. 4. The naked areas of the valley slopes have been covered by mass afforestation and the same will be continued till full cover. San River & Indrāvati are flowing at a distant location 12 Kms & 9 Kms respectively. The above protection measures written Sl No. 1 to 4 shall never create any untoward situation to affect the water quality of the above two rivers due to our contribution.

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.	There is no proposal to with draw ground water for the project and surface water is being used for mining purpose. To this effect, an agreement was made between M/s Utkal Alumina Int. Ltd & Water Resource Dept. Govt. of Odisha for drawl of 9.0 cusec or 7776000 cft/day of water from Govt. water source/ from San River upstream of Indravati River. A copy the same agreement is being submitted vide letter no UAIL/ENV/2014-15/04 dated 7-05-2014.
xxi	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.	As a step towards rain water harvesting, the following measures have been implemented - ❖ Rainwater harvesting is being carried out by collecting the precipitated water through a network of drainage system into the exhaust mining pit for storage, it is not used for the mining purpose. Rather, it is allowed to be collected in the lowest level to augment the ground water resources gradually. ❖ Movement of mine faces is being carried out systematically as per mine plan following the contour lines such that the faces have self-draining slopes. Precipitated water of the adjacent area is being collected within the mined out area. ❖ In addition to this four numbers of Concreted Weir have been constructed to arrest rain water resulting ground water recharge. Also the Surface water flow near the pit has been diverted towards the pit and this accumulation influences to recharge ground water table.
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.	Pollution testing certificate of all machinery is being verified regularly to check vehicular emission. Further emission level is kept under control by rigorous maintenance of all engines and changing of lubricants as per the recommendation of the manufacturer. All the transporting vehicles are being covered with tarpaulin and over loading are strictly avoided.
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.	Blasting is being carried out only during daytime. Controlled blasting is being practiced to reduce ground vibrations and to arrest fly rocks and boulders.
xxiv	Drills shall either be operated with dust extractors or equipped with water injection system.	Drilling machine with in-built vacuum cyclone dust collector & equipped with water spraying system is being used.
	Mineral handling area shall be provided with adequate number of high efficiency dust extraction	Water sprinkling is being carried by water tankers. Metal hoods are provided at transfer points in Crushing

xxv	system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	and Conveying System apart from provision of Covers all along the Conveyor System (18.2 km long) to restrict the dispersion of dust. In the Fixed crusher house, an efficient dry fog system is installed for suppression of dust at ROM hopper and Transfer points.
xxvi	Consent to operate shall be obtained from the State Pollution Control Board, Orissa prior to start of production from the mine.	Consent to Operate has been obtained from the State Pollution Control Board, Odisha vide letter No. 10769/IND-I-CON- 5450 dated 28.05.2012& renewed up to 31.03.2018 vide letter no. 2884 dated 1.03.2017.
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.	No residential colony is proposed within ML Area. Provision of ETP is not envisaged as no scope of generation of mine drainage water and deployment of mine machinery on contract basis. However, Modular STP of 75 KLD has been installed as an advance environmental measure.
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.	Already complied.
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.	Pre-placement medical examination and periodical medical examination of the workers engaged in the project are carried out regularly. Annual Schedule of PME is being made for all eligible employees as per DGMS requirement and necessary PME is carried out.
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.	Work shed have been provided to the workers at the mine site having all facilities such as fuel for cooking, permanent toilets followed with septic tanks & soak pits drinking water, medical health care. Since the mining operation has already been commenced, the regular employees & executives are coming from the integrated town ship adjacent to the alumina refinery. Domestic effluent generation is very less as no residential colony exist within the ML area. The small quantity of domestic effluent is treated in soak pits via septic tank. However, Modular STP of 75 KLD has been installed to reclaim the waste water generated within the service center facility area.
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	The Action Plan for conservation of wildlife has been approved by PCCF (WL) & Chief wildlife Warden, Odisha vide letter No. 8183/1 WL(C)SSP- 398/2013 dated 11.10.2013 with financial forecast of Rs. 1,23,57,852/- and an amount of Rs.17,17,57,852/- has been deposited in CAMPA FUND for implementation of the same. Further, as per the demand of Forest& Environment Department, Govt. of Odisha vide letter No. 6096 dated. 28.03.14, an amount of Rs. 41, 24,044/- has been deposited in CAMPA FUND for implementation of Regional Wildlife Management Plan.

	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.	Moreover, this proposal was for the Conveyor Corridor. Further, We have developed one more proposal exclusively for Mining lease, which has been forwarded from the concerned DFO's & RCCF to PCCF Office-Bhubaneswar for their examination and approval. Once approved by the PCCF (Wildlife) & Chief Wildlife Warden, plan shall be executed and fees shall be deposited upon receipt of the demand notice. By the way there are certain areas which are common for both the ML and Conveyor Corridor falling within 10 Kms radius.
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.	Digital processing of the entire lease area using the remote sensing technique by the authorized agency from Orissa Remote Space Application Center (ORSAC), Bhubaneswar has been engaged to assess the changes in land use pattern and report is awaited. The same will be submitted immediate after receipt.
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 closure for approval.	The same will be submitted to the Ministry of Environment & Forests 5 years in advance of final 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.	No change in mining technology and scope of working will 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.	There shall be no change in the calendar plan including excavation, quantum of mineral bauxite and waste/OB generation of work without prior approval from competent authority.
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, SPM, SO2 &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.	Four ambient air quality monitoring stations have been established in both Core & Buffer Zone in consultation with the State Pollution Control Board, Odisha. Monitoring reports are attached in **ANNEXURE –II.**
iv	Data on ambient air quality (RSPM, SPM, SO2&NOx) 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.	The monitored AAQ data is being submitted to the concerned authorities along with the half yearly compliance report once in six month.
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.	Water spraying on haul roads is being practiced through water tankers at an interval of two hours, for which, provision is made to deploy 4 nos. of 12 KL capacity tankers to spray water at dust generating points such as haul roads, loading & unloading areas and material transfer points. The haulage roads are being maintained to avoid rut and pot holes. In addition to this we are using dust suppressan

		chemical (Dust bloc) to control fugitive dust emission. (Dust bloc is a stable emulsion of bitumen in wate which binds the micro dust particles.)
vi	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.	The following measures are taken to control nois levels below 85 dB (A) in the work environment. • Maintenance of all machines includin checking of silencers regularly, • Controlled blasting using delay detonators installing immovable machinery o foundations and in closed rooms • Provision of earplugs/muffs to worker engaged in noise prone areas. • Regular vehicular checkup for pollutio control certificates • The HEMM operators are provided with AC close cabinets which itself is acoustic i nature.
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.	All the mining machineries are being deployed o contractual basis and the repair and maintenance i being done at outside workshop. However Oil & Grease Trap facility is in place and will b operationalized after the commissioning of Full fledge Mechanical workshop.
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 t all workers respective to the nature of the job. Initia and periodical awareness training is being imparted t all workers in the Company's Vocational Training Center located within the lease area on Safety and Health Aspects. Pre-placement medical examination and periodica medical examination as per DGMS guideline of the workers engaged in the project is being carried out and records maintained for corrective measures.
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.	A separate environmental management cell with suitable qualified personnel has been set up under the control of the Agent of Mines, who reports the Head of the Organization directly.
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.	Separate fund provision has been earmarked for environmental protection measures and it is not diverted for any other purpose. The expenditure incurred during the year 2016-17 is enclosed as **Annexure-V.**
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.	Complied.
	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the	We are abide by the condition and shall extend full cooperation to the officer(s) of regional office by

xii	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.	furnishing the requisite data / information/monitoring reports during their monitoring of compliance of the stipulated conditions.
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.	Six monthly compliance report is being submitted on the status of compliance of the stipulated environmental clearance conditions including results of monitored data 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 status of compliance of the environmental clearance conditions, including results of monitored data is uploaded on company website 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.	Complied No complain has been received so far.
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.	Complied.
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.	Complied.

DETAILS OF GARLAND DRAINS, RETAINING WALL & SETTLING POND

ANNEXURE-I

SL NO	TYPE OF WORKS	DETAILS OF WORKS			
		LENGTH	WIDTH (avg)	DEPTH (avg)	HEIGHT (avg)
1	Retaining Wall along the OB dump	700 meter	0.8 meter		1 meter
2	Garland Drain along the OB dump	290 meter	2.8 meter	1 meter	
3	Garland Drain along the ore stock yard	253 meter	2.7 meter	1 meter	
4	Garland Drain along the top soil dump	362 meter	3 meter	1 meter	
5	Garland Drain along the haul road towards OB dump	700 meter	2 meter	0.6 meter	
6	Retaining Wall along top soil storage yard	400 meter	0.8meter		1 meter
7	Retaining Wall beside the cave	330 meter	0.8meter		1meter
8	Three settling pond on backside of the OB dump	10 meter	8 meter	2.2 meter	
9	Parapet wall along the service center facility to mine entrance.	1501 meter	0.8 meter		1 meter
10	Check dam across the valley near mine entrance	35 meter	0.8 meter		1 meter
11	Garland Drain work around the crusher	306 meter	2 meter	1 meter	
12	Hume pipe culvert in the natural stream flowing nearby Kalahandi pit.	5meter	15 meter		
13	Concreted drain near fixed crusher.	50 meter	1.5 meter		
14	Settling pond connected to concreted drain near fixed crusher.	15 meter	10 meter	5 meter	
15	Parapet wall along the safety zone area of the kalahandi pit	500 meter	1.5 meter		2 meter
16	Three numbers of Concreted weir across the natural seasonal nallah	135 meter	1.2 meter		2.5 meter
17	Implementation of Gabion along the OB dump	60 meter	1 meter		1 meter

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NAAQ Standards: **PM10**- 100 µg/m3, **PM2.5**- 60 µg/m3, **SOx** -80 µg/m3 ,**NOx** -80 µg/m3 ,**CO** - 4.0 mg/m3 (1 hour)

CORE ZONE:-

MINING PIT	PM-10 µg/m³	PM-2.5 µg/m³	SO2 µg/m³	NOx µg/m³	CO mg/m³
October-16	48.33	27.77	4.39	11.36	0.17
November-16	53.11	30.33	4.48	11.69	0.17
December-16	56.44	31.89	4.83	11.98	0.20
January-17	54.78	31.26	4.37	11.78	0.18
February-17	54.22	31.02	4.49	11.74	0.18
March-17	51.44	29.56	4.42	11.70	0.17
Average	53.06	30.30	4.50	11.71	0.18

CRUSHER	PM-10 µg/m³	PM-2.5 µg/m³	SO2 µg/m³	NOx µg/m³	CO mg/m³
October-16	61.89	35.77	5.03	12.49	0.24
November-16	63.89	36.27	5.10	12.69	0.24
December-16	70.11	40.70	5.79	13.26	0.29
January-17	64.11	35.86	5.06	12.67	0.25
February-17	66.44	37.49	5.31	12.88	0.25
March-17	64.78	36.44	5.20	12.82	0.24
Average	65.20	37.09	5.25	12.80	0.25

WEIGH BRIDGE	PM-10 µg/m³	PM-2.5 µg/m³	SO2 µg/m³	NOx µg/m³	CO mg/m³
October-16	54.44	31.53	4.63	11.84	0.20
November-16	58.00	32.56	4.82	12.26	0.20
December-16	61.11	34.41	5.28	12.54	0.24
January-17	59.11	33.59	4.67	12.26	0.21
February-17	58.67	33.19	4.82	12.33	0.21
March-17	56.78	32.28	4.74	12.26	0.20
Average	58.02	32.93	4.83	12.25	0.21

NEAR OFFICE	PM-10 µg/m³	PM-2.5 µg/m³	SO2 µg/m³	NOx µg/m³	CO mg/m³
October-16	43.11	25.38	4.21	10.89	0.15
November-16	48.00	27.79	4.28	11.11	0.14
December-16	50.89	29.40	4.51	11.51	0.17
January-17	49.67	28.70	4.13	11.34	0.16
February-17	49.11	28.59	4.21	11.28	0.15
March-17	46.11	26.87	4.17	11.20	0.14
Average	47.81	27.79	4.25	11.22	0.15

ULTRATECH ALUMINA INTERNATIONAL LTD. DORAGUDA

BUFFER ZONE:-

ADRI	PM-10 µg/m³	PM-2.5 µg/m³	SO2 µg/m³	NOx µg/m³	CO mg/m³
October-16	41.88	24.65	4.00	10.49	0.13
November-16	49.22	28.30	4.38	11.41	0.17
December-16	51.13	29.55	4.23	11.40	0.17
January-17	47.78	27.64	4.21	11.38	0.16
February-17	48.38	27.90	4.03	11.06	0.15
March-17	52.22	29.92	4.27	11.41	0.16
Average	48.43	27.99	4.18	11.19	0.16

CHANDRAGIRI	PM-10 µg/m³	PM-2.5 µg/m³	SO2 µg/m³	NOx µg/m³	CO mg/m³
October-16	36.13	21.39	4.00	10.06	0.12
November-16	44.33	25.59	4.20	10.88	0.15
December-16	44.63	26.01	4.09	10.91	0.14
January-17	42.44	24.74	4.11	10.82	0.14
February-17	42.50	24.61	4.00	10.56	0.13
March-17	46.89	27.29	4.07	10.87	0.13
Average	42.82	24.94	4.08	10.68	0.13

PAIKUPAKHAL	PM-10 µg/m³	PM-2.5 µg/m³	SO2 µg/m³	NOx µg/m³	CO mg/m³
October-16	50.75	27.25	4.18	11.44	0.17
November-16	61.89	34.92	4.97	12.47	0.23
December-16	60.25	34.06	4.76	12.29	0.22
January-17	59.11	33.42	4.66	12.28	0.21
February-17	59.88	33.63	4.45	12.29	0.22
March-17	62.67	35.07	4.97	12.56	0.24
Average	59.09	33.06	4.66	12.22	0.21

ANDHIRAKANCH	PM-10 µg/m3	PM-2.5 µg/m3	SO2 µg/m3	NOx µg/m3	CO mg/m3
October-16	45.75	26.35	4.10	11.03	0.14
November-16	53.89	30.64	4.61	11.87	0.20
December-16	54.88	31.34	4.43	11.78	0.19
January-17	51.67	29.76	4.39	11.79	0.18
February-17	52.75	30.54	4.15	11.63	0.18
March-17	56.33	32.03	4.62	11.98	0.19
Average	52.54	30.11	4.38	11.68	0.18

UTKAL ALUMINA INTERNATIONAL LTD. * DORAGUDA

FUGITIVE DUST EMISSION REPORT

Sl. No.	Name of the Location	PARTICULATE MATTER µg/ m³						
		Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Average
1	CRUSHER POINT	317	257	395	277	320	296	310.33
2	DRILLING POINT	239	203	326	224	258	246	249.33
3	NEAR LDC	257	228	289	253	277	269	262.17
4	Near OVER BURDEN TRANSPORT POINT	289	183	357	206	243	225	250.50

UTKAL ALUMINA INTERNATIONAL LTD. DORAGUDA

ANNEXURE-III

SURFACE WATER QUALITY ANALYSIS REPORT

SANA RIVER UPSTREAM:-

Sl. No.	Parameter	Unit	Standards as per IS-2296 Class – 'C'	Oct-16	Nov'16	Dec'16	Jan'17	Feb'17	Mar'17	AVERAGE
1	Colour & Odour	--	300 & $	2 & U/O	CL & U/O	CL & U/O	CL & U/O	CL & U/O	CL & U/O	**CL & U/O**
2	Suspended Solids	Mg/l	$	81	74	31	27	22	31	**44.33**
3	Particular Size of S.S.	µ(micron)	$	<850	<850	<850	<850	<850	<850	**<850**
4	Dissolved Solids	Mg/l	1500	166	154	126	138	121	136	**140.17**
5	PH	--	6.5-8.5	7.2	7.3	7.3	7.2	7.3	7.2	**7.25**
6	Temperature	0C	$	25	25	25	25	25	25	**25.00**
7	Oil & Grease	Mg/l	0.1	ND	ND	ND	ND	ND	ND	**ND**
8	Total Residual Chlorine	Mg/l	$	ND	ND	ND	ND	ND	ND	**ND**
9	Amm. Nitrogen as N	Mg/l	$	0.65	0.52	0.34	0.29	0.68	0.83	**0.55**
10	Total Kjeldal Nitrogen as N	Mg/l	$	1.58	1.39	1.21	1.12	1.31	1.45	**1.34**
11	Free Ammonia as NH3	Mg/l	$	0.004	0.003	0.003	0.003	0.003	0.004	**ND**
12	Dissolved Oxygen	Mg/l	4	7.4	7.3	7.5	7.4	7.4	7.4	**7.40**
13	BOD (3) days at 270C	Mg/l	3	1.43	1.34	1.11	1.05	1.11	1.19	**1.21**
14	COD	Mg/l	$	4.3	4.1	3.2	3.14	3.38	3.54	**3.61**
15	Arsenic as As	Mg/l	0.2	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**

16	Mercury as Hg	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
17	Lead as Pb	Mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
18	Cadmium as Cd	Mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
19	Hexa Chromium as Cr +6	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
20	Total Chromium as Cr	Mg/l	$	0.09	0.07	0.13	0.18	0.24	0.19	**0.15**
21	Copper as Cu	Mg/l	1.5	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
22	Zinc as Zn	Mg/l	15	0.27	0.22	0.21	0.27	0.2	0.28	**0.24**
23	Selenium as Se	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
24	Nickel as Ni	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
25	Cyanide as CN	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
26	Fluoride as F	Mg/l	1.5	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
27	Diss. Phosphate as P	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
28	Sulphide as S	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
29	Phenolic Compounds as C_6H_5OH	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
30	Bio-assay Test	--	$	98%	98%	98%	98%	98%	98%	**98%**
31	Manganese as Mn	Mg/l	$	0.025	0.017	0.014	0.011	0.019	0.027	**0.02**
32	Iron as Fe	Mg/l	50	0.56	0.48	0.23	0.19	0.28	0.37	**0.35**
33	Vanadium as V	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
34	Nitrate as NO3	Mg/l	50	0.24	0.19	0.16	0.25	0.19	0.28	**0.22**

ANNEXURE-III

SANA RIVER DOWNSTREAM:-

Sl. No.	Parameter	Unit	Standards as per IS-2296 Class – 'C'	Oct-16	Nov'16	Dec'16	Jan'17	Feb'17	Mar'17	AVERAGE
1	Colour & Odour	--	300 & $	2 & U/O	CL & U/O	3 & U/O	3 & U/O	3 & U/O	3 & U/O	**CL& U/O**
2	Suspended Solids	Mg/l	$	94	82	43	35	28	38	**53.33**
3	Particular Size of S.S.	µ(micron)	$	<850	<850	<850	<850	<850	<850	**<850**
4	Dissolved Solids	Mg/l	1500	178	169	134	146	133	148	**151.33**
5	PH	--	6.5-8.5	7.2	7.2	7.2	7.2	7.2	7.2	**7.20**
6	Temperature	0C	$	25	25	25	25	25	25	**25.00**
7	Oil & Grease	Mg/l	0.1	ND	ND	ND	ND	ND	ND	**ND**
8	Total Residual Chlorine	Mg/l	$	ND	ND	ND	ND	ND	ND	**ND**
9	Amm. Nitrogen as N	Mg/l	$	0.83	0.74	0.42	0.36	0.71	0.93	**0.67**
10	Total Kjeldal Nitrogen as N	Mg/l	$	1.61	1.46	1.29	1.18	1.33	1.52	**1.40**
11	Free Ammonia as NH3	Mg/l	$	0.004	0.003	0.004	0.003	0.004	0.004	**ND**
12	Dissolved Oxygen	Mg/l	4	7.3	7.3	7.4	7.3	7.4	7.3	**7.33**
13	BOD (3) days at 270C	Mg/l	3	1.51	1.42	1.19	1.1	1.21	1.33	**1.29**
14	COD	Mg/l	$	4.5	4.3	3.36	3.27	3.42	3.68	**3.76**
15	Arsenic as As	Mg/l	0.2	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
16	Mercury as Hg	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**

17	Lead as Pb	Mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
18	Cadmium as Cd	Mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
19	Hexa Chromium as Cr +6	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
20	Total Chromium as Cr	Mg/l	$	0.11	0.1	0.15	0.22	0.31	0.28	**0.20**
21	Copper as Cu	Mg/l	1.5	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
22	Zinc as Zn	Mg/l	15	0.34	0.29	0.28	0.31	0.26	0.34	**0.30**
23	Selenium as Se	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
24	Nickel as Ni	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
25	Cyanide as CN	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
26	Fluoride as F	Mg/l	1.5	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
27	Diss. Phosphate as P	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
28	Sulphide as S	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
29	Phenolic Compounds as C_6H_5OH	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
30	Bio-assay Test	--	$	98%	98%	98%	98%	98%	98%	**97.9%**
31	Manganese as Mn	Mg/l	$	0.032	0.029	0.019	0.015	0.023	0.034	**0.03**
32	Iron as Fe	Mg/l	50	0.64	0.56	0.27	0.24	0.33	0.42	**0.41**
33	Vanadium as V	Mg/l	$	BDL	BDL	BDL	BDL	BDL	BDL	**BDL**
34	Nitrate as NO3	Mg/l	50	0.29	0.26	0.13	0.29	0.26	0.33	**0.26**

ALUMINA INTERNATIONAL LTD DORAGUDA

ANNEXURE-IV

BAPHLIMALI BAUXITE MINES
GROUND WATER ANALYSIS REPORT AS PER IS: 10500
PERIOD: Oct-2016 TO Mar-2017

Sl.No	Parameters	Unit	IS-10500 Standards	Average Reading			
				Paikupakhal	Andrakanch	Maligaon	Kandukhan
l	Colour	Hazen	5.0	CL	CL	CL	CL
2	Odour	-	Unobjectable	Unobjectable	Unobjectable	Unobjectable	Unobjectabl
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	1.0	<1	<1	<1	<1
5	pH	-	6.5-8.5	7.20	7.20	7.05	7.20
6	Temperature	^0C	-	25.00	25.00	25.00	25.00
7	Total Dissolved Solids	mg/l	500	125.00	114.00	134.50	125.50
8	Total Hardness	mg/l	300	47.50	40.00	45.50	57.50
9	Calcium as Ca	mg/l	75	10.00	9.15	9.75	9.30
10	Magnesium (as Mg)	mg/l	-	7.15	7.70	8.20	7.45
11	Residual Free Chlorine	mg/l	0.2	ND	ND	ND	ND
12	Free CO_2	mg/l	-	0.87	0.51	0.67	0.59
13	Sulphates (as SO_4)	mg/l	200	13.95	15.50	17.10	15.45
14	Chlorides (as Cl)	mg/l	250	9.80	9.35	10.60	9.85
15	Fluorides (as F)	mg/l	1.0	0.050	0.050	0.075	0.055
16	Acidity	mg/l	-	4.60	4.05	4.55	4.90
17	Alkalinity	mg/l	200	27.50	32.50	36.50	33.50
18	Iron (as Fe)	mg/l	0.3	0.12	0.10	0.11	0.10
19	Mineral Oil	mg/l	0.01	BDL	BDL	BDL	BDL
20	Manganese (as Mn)	mg/l	0.1	BDL	BDL	BDL	BDL
21	Total Coliform	MPN/100ml	<2	NIL	NIL	NIL	NIL
22	Mercury (as Hg)	mg/l	0.001	BDL	BDL	BDL	BDL
23	Arsenic (as As)	mg/l	0.05	BDL	BDL	BDL	BDL
24	Zinc (as Zn)	mg/l	5.0	0.25	0.21	0.29	0.20
25	Cadmium (as Cd)	mg/l	0.01	BDL	BDL	BDL	BDL
26	Selenium (as Se)	mg/l	0.01	BDL	BDL	BDL	BDL
27	Cyanide (as CN)	mg/l	0.05	BDL	BDL	BDL	BDL
28	Copper (as Cu)	mg/l	0.5	BDL	BDL	BDL	BDL
29	Phenolic Compound (as C_6H_5OH)	mg/l	0.001	BDL	BDL	BDL	BDL
30	Lead (as Pb)	mg/l	0.05	BDL	BDL	BDL	BDL
31	Pesticide	mg/l	NIL	NIL	NIL	NIL	NIL

UTKAL ALUMINA INTERNATIONAL LTD. DORAGUDA

MONITORING DATA OF GROUND WATER LEVEL

Sl. No.	Location of Well	Nov-2016	Feb-2017
1.	Paikupakhal .	4.3	6.8
2.	Andirakanch	5.1	6.1
3.	Maligaon	5.2	6.3
4.	Kandukhani	4.0	5.0

UTKAL ALUMINA INTERNATIONAL LTD. DORAGUDA

ANNEXURE-V

EXPENDITURE INCURRED ON ENVIRONMENT AND POLLUTION CONTROL IN BAPHLIMALI BAUXITE MINES FOR THE YEAR 2016-17

Sl.NO	ITEM EXPENDITURE	RS (in rupees)
1.	Water Pollution Control Measures (like garland drain, retaining wall, parapet wall etc.)	5,00,000
2.	Plantation and horticulture	21,79,339
3.	Environmental Monitoring	44,34,864
4.	Water Sprinkling For Dust Suppression	72,37,229
Total		**1,43,51,432**

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