

Annexure - 1

Status Report on Compliance to EC conditions

A. SPECIFIC CONDITONS:

Sl.No	Environment Clearance Conditions	Compliance status
i	<p>The gaseous emissions from various process units should conform to the standards prescribed from time to time. The state Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry, its size and location. At no times the emissions levels should go beyond the prescribed standards. In the event of failure of the any pollution control system adapted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.</p> <p>Ambient air quality data should be regularly monitored and records and reports submitted to the Ministry / CPCB / Karnataka State Pollution Control Board once in six month.</p>	<p>Flue gas emissions from authorized stacks are monitored fortnightly and the emissions from the authorized stacks of existing facilities are in conformance with the standards as stipulated in Consent for Operation issued under Air (Prevention & Control of Pollution) Act1981. The stack monitoring results are submitted to KSPCB on monthly basis.</p> <p>An extract of the monitoring values for the period April-16 to September-16 is attached. Refer Annexure-3</p> <p>Ambient Air quality is monitored at four locations. The monitoring locations are jointly identified and are in agreement with KSPCB. The monitoring results are submitted to the State Pollution Control Board on monthly basis. CAAQMS station is installed in the month of May 2014.</p> <p>Refer Annexure- 4.</p>
ii	<p>There should be no discharge of process effluent as reflected in EIA / EMP report; the proposed expansion shall be designed for zero discharge. In addition efforts shall be made to re-use waste water from the existing plant.</p> <p>The domestic waste water after treatment in sewage treatment plant should be used for green belt development.</p>	<p>The process waste water generated from the existing facility is channelized and stored in the lined pond (Pond capacity 6.6 Lakh m3). The water from the pond is reused in process, sprinkling on bauxite residue dumps to suppress airborne dust. In rainy season as the water level in pond rises, the water is then treated in Effluent treatment plant and stored in lagoon. The water is discharged through treated water lagoon if need arises, with the water quality confirming to the discharge standards as per the Consent conditions.</p> <p>The unit has installed a HDPE lined Red Mud/ Bauxite residue Liquor holding pond and a Rain water/ treated effluent holding pond to ensure compliance to the EC at all times.</p> <p>The canteen effluent from plant after treatment in Bio filters is discharged into the process effluent drains, which then undergoes secondary treatment in ETP.</p> <p>The domestic effluent from the township after treatment in Biofilters is used for watering the green belt developed along the property boundary.</p>

Hindalco Industries Limited
Belagavi Works

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iii	<p>In plant control measures for checking fugitive emissions from spillage / raw materials handling should be provided.</p>	<p>Various control measures are installed to reduce fugitive dust emission in the plant to include:</p> <ol style="list-style-type: none"> a. All incoming Bauxite trucks are covered with tarpaulin to mitigate air borne dust during transportation b. Sprinkling of water is done on temporary transport roads within the premises using mobile tankers c. Regular sweeping and recovery of spilled Bauxite is done along the approach roads d. Maximized direct feed of bauxite into process equipment, as against storing and then reclaiming, is practiced during 8 months of non-monsoon season. e. Emergency stock of Bauxite is stored in covered sheds & Bauxite heaps are covered with tarpaulin sheets to avoid fugitive dust. f. Trees planted along the plant boundary to check fugitive dust
iv	<p>The particulate emissions from the new calciner shall be controlled by installation of electrostatic precipitator. The particulate emissions shall not exceed 50 mg/Nm³.</p> <p>All the boiler stacks shall be provided with stack height as per the CPCB guidelines. The boiler and calciner stacks should be equipped with continuous monitoring devices to check the SPM emissions level.</p>	<p>ESP's for the new calciner is already in place. However, retrofitting of this particular ESP with latest technology is being planned.</p> <p>Concrete chimney of height 91 meters for five Nos. of existing furnace oil fired boilers has been constructed and commissioned in Dec-2007. Also common Chimney of 84 Mts height has been installed for Calciner No 1, 2 &3. SPM level detector is installed for Common Chimney of Calciners.</p> <p>Continuous monitoring devices for SPM emission level has been planned with the new captive coal based cogeneration plant proposed in the project. The same will be commissioned along with the equipment.</p>
v	<p>The company should adapt dry disposal system for red mud disposal. The ground water quality should be monitored around the red mud ponds and lagoons by providing piezometric holes.</p>	<p>Dry mud stacking is practiced since 1985 and is in compliance with the CREP guidelines. The same practice will be continued for the expanded facility.</p> <p>Detailed study spanning over two years on ground water quality and surface water quality at 41 locations within 5 km radius of RMP was carried out by M/s National Geo-Physical Research Institute, Hyderabad to evaluate the pollutants movement from RMP. The study has concluded that except one open well (not in existence, submerged in express high way) in the vicinity of the RMP there has been no impacts over the past 37 years of operation and has predicted that for the next 30 years there is no threat to any ground water or surface water body due to RMP. Hence, piezometric holes are not proposed for monitoring ground water quality. However, the quality of the ground</p>

Hindalco Industries Limited
Belagavi Works

		water bodies in the vicinity of red mud pond jointly identified by NGRI, SPCB and Hindalco are monitored on monthly basis. The extract of the same is reported to the Board. Refer <i>Annexure 5</i> .
	The company should rehabilitate the abandoned red mud pond areas with development of green cover.	Phase wise rehabilitation of abandoned portions of red mud pond is in progress. So far 28.4 acres of abandoned surface has been brought under green cover.
vi	As and when the new pond for red mud disposal is to be constructed, it should be lined with geo lining to prevent leaching of effluent into the ground water.	New effluent holding pond has been covered with 0.90 m compacted clay lining and 1 mm thick HDPE lining as per the design by Indian Institute of Science, Bangalore (IISc). The lining is intact.
vii	A green belt of adequate width and density should be developed in an area of 50 acre in additions to 293 acres of area within and around the plant premises as per the CPCB guidelines.	The total area covered under green belt is 486.015 Acres as of March 2016. The percentage area under green belt is 42.5%. During the year 2015-16, 8500 saplings were planted. Refer <i>Annexure 6</i> .
viii	Occupational health surveillance of the worker should be done on a regular basis and records maintained as per the factories act.	The unit is certified for OHSAS 18001:2007, Occupational Health and Safety Management. The occupational health survey for the permanent and the contract employees is done regularly. (every year for employees above 45 years and alternate years for others)
ix	All the recommendations of the charter for Corporate Responsibility for Environment Protection(CREP) for the aluminum sector should be strictly implemented.	Complied with respect to the dry mud stacking of red mud, which is the only recommendation for Alumina plants.

B. GENERAL CONDITIONS

i	The project authorities must strictly adhere to the stipulations made by the KSPCB and the State Government.	Being adhered to.
ii	Adequate ambient air quality monitoring stations should be established in the down ward direction as well as where maximum ground level concentration of SPM, SO ₂ & NO _x are anticipated in consultation with State Pollution Control Board. Data on ambient air quality, fugitive emissions and stack emissions should be regularly submitted to the ministry including its regional office at Bangalore and the State Pollution Control Board / Central Pollution Control Board once in six month.	Four Ambient air quality-monitoring stations have been established at different locations in consultation with local authorities of State Pollution Control Board. As per the CFE obtained for construction of ETP, new lagoon and red mud pond, a fourth monitoring station have been established towards Muttanatti village/ Basvankol village. Quality of ambient air and flue gas emissions from the existing authorised stacks is monitored and reported to the Board on monthly basis. A summary of same is enclosed as <i>Annexure 3</i> .

Sl.No	Environment Clearance Conditions	Compliance status
iii	No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forests.	Will be complied.

Hindalco Industries Limited
Belagavi Works

iv	Industrial waste water should be properly collected treated so as to conform to the standards prescribed under GSR (E) dated 19 th May – 1993 and 31 st December 1993 or as amended from time to time. The treated wastewater should be utilised for plantation purpose.	Please refer to the details attached against the condition A (ii).
v	The over all noise level in and around the plant area should be kept well within the standards (85 dba) by providing noise control measures including acoustic hoods, silencers, enclosures etc on all sources of noise generation. The ambient noise level should conform to the standards prescribed under EPA rules, 1989 viz 75 dba (daytime) and 70 dba (night time)	Adequate Noise control measures have been taken up by providing enclosed buildings. These noise generating areas are generally unmanned. However, people required to work in such areas are strictly adhering to use of PPE's. The ambient noise level monitored at the boundary of the factory premises is found to be well within the standards as prescribed under EP Rules 1986. Refer Annexure 7.
vi	The project proponent shall comply with all the environmental protection measures and safe guard recommended in the EIA / EMP report. Further the company must under take socio –economic development activities in the surrounding villages like community development programs, educational programs, drinking water supply and health care etc.	Several socio-economic development activities are taken up under Community development programmes. A report for the period April-2016 to September-2016 for Community Development activities is enclosed. Refer Annexure 8.
vii	The project authorities will provide adequate funds both recurring and non recurring to implement the conditions stipulated by the ministry of environment and forest as well as the state government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Funds are provided to implement the proposals as part of the annual capital / operating expenditure plans.
viii	The regional office of this ministry at Bangalore / Central Pollution Control Board / State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with the statistical interpretation should be submitted to them regularly.	Six monthly extract of air and water quality report for the period April 2016– September 2016 is enclosed.
ix	The project authority should inform the regional office as well as the ministry, the date of financial closure and the final approval of the project by the concerned authorities and the date of commencing the land development work.	Implementation of the expansion project is delayed as management is evaluating various options for optimising proposals for capacity expansion. However some of the facilities have been installed and commissioned through bottle necking projects. With these facilities, the alumina production capability has reached approximately to 400 KTPA.

Status report on compliance to EC conditions (Revised)

Sl.No	Environment Clearance Conditions	Compliance status
i	The particulate matter from co-generation power plant should not exceed 50 mg/Nm ³ . NOx burners should be installed to control NOx emissions, At no times the emissions levels of SPM, SO ₂ , NOx, HF Fluorine and poly aromatic hydrocarbon shall go beyond the prescribed standards. Interlocking facility shall be provided so that process can be automatically stopped in case emissions levels exceeds the limits.	<p>ESP's with particulate emission norms of 50 mg/Nm³ and on-line emission monitoring instrumentation have been planned for the proposed calciner and stacks attached to coal based power plant. The stated norms will be adhered to after installing of the same.</p> <p>We endeavor to adapt the best available technology for high resource efficiency and reduced environmental impacts.</p> <p>Please note that we do not have Aluminum smelter in our unit and coal based power plants are not likely to generate the HF, fluorine and poly aromatic hydrocarbons.</p>
ii	Data on ambient air quality, stack emission and fugitive emissions shall be uploaded on company's website and also regularly submitted online to the Ministry's regional office at Bangalore, Karnataka State pollution Control Board, and Central Pollution Control Board as well as hard copy once in six months. Data on SPM, SO ₂ , NOx, HF and poly aromatic hydrocarbon shall also be displayed prominently outside the premises at the appropriate place for the information of general public.	<p>Six monthly compliance reports are being submitted to the concerned authorities regularly.</p> <p>SPM, SO₂ & NOx data is displayed regularly at a prominent place near gate.</p> <p>Please note that we have discontinued our smelting operations. Hence there is discharge of HF, Fluorine and poly aromatic hydrocarbons, hence not monitored.</p>
iii	Proper utilization of fly ash shall be ensured as per fly ash notification, 1999 and subsequent amendment in 2003. All the fly ash shall be provided to the cement and brick manufacture for further utilization.	Will be strictly adhered to as and when the coal based power plant is commissioned.
iv	All the fly ash should be stored in silos of adequate capacity. Pneumatic transfer of fly ash to silos should be ensured. Adequate pollution control measures should be adapted to control dust emissions.	Shall be adhered to.
v	Total capacity of alumina hydrate /alumina, vanadium and coal based co-generation plant should not exceed 587 KTPA, 120 TPA and 18 MW (2*9 MW) respectively.	Shall be adhered to
vi	No further expansion and modification in the plant should be carried out without prior approval of Ministry of Environment and Forests.	Will be complied.