



CHAPTER 4: ENVIRONMENTAL ISSUES



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4.1 Non-compliance of the Environmental conditions during transportation of Bauxite

The Company during submission of application for Environmental Clearance (EC) of South Block Mines proposed (October 2010) that there would be an in-pit crusher and conveyor system to crush the Bauxite to be produced from the South Block Mines within the working area and transport the crushed Bauxite to long distance/downhill cable belt conveyor, through a dedicated conveyor system. It was further clarified that in-pit transportation of overburden and Bauxite will be done by Dumpers, whereas the conveyor will transport crushed Bauxite from the in-pit crusher. In the above proposal the mining operation was to commence from the year 2019-20 with the removal of overburden, whereas excavation of Bauxite was to commence from the year 2021-22. Based on the proposal, EC was granted (February 2011) by the Ministry of Environment, Forest and Climate Change (MoEF & CC) the Company for operation of South Block Mines. In the meantime, Consent to Establish (CTE) was granted (October 2010) by Odisha State Pollution Control Board (OSPCB) for production of Bauxite from South Block Mines with a condition that the Bauxite would be transported by cable conveyor belt from South Block Mines to the Refinery. The condition of transportation of Bauxite by conveyor to the Refinery was again reiterated (December 2016) by the OSPCB while granting Consent to Operate (CTO) for South Block Mines. In this context it may be stated that use of Dumpers instead of Conveyor belt would increase pollution by emitting excess dust, smoke and sound in comparison to the Dumpers.

In the meantime, due to increase in silica content in the Bauxite the specific consumption of Bauxite for production of one tonnes of Alumina Hydrate had increased from 3 tonnes to 3.25 tonnes. This required excavation of additional 6 lakh tonnes of Bauxite per annum to meet the requirement of Alumina Refinery. The Company decided to prepone the excavation of Bauxite from the South Block Mines to the year 2016-17 instead of the planned timeline of 2021-22.

Audit, observed that this decision to prepone excavation from South Block mine compelled the Company to transport (December 2017) excavated Bauxite from the

mine faces to the adjoining Central and North Block Mines by Dumpers for crushing and onward transportation to the Alumina Refinery, as the conveyor was not ready. This was a non-compliance of the conditions of EC granted by MoEF & CC and CTE/CTO granted by OSPCB. Further, for transportation of Bauxite from South Block Mines, the Company awarded the contract of ₹3.90 crore for deployment of Dumpers for six months and the deployment is still continuing. Against the contract, the Company had already incurred an expenditure of ₹3.48 crore for the period January 2018 to June 2018.

The Management stated (April 2018) that although it was envisaged in Environment Impact Assessment (EIA) report to crush and transport excavated Bauxite from South Block to the crusher house of Central and North Block by a semi-mobile crusher and a dedicated conveyor system, transportation of Bauxite from Mines to Refinery through cable conveyor belt has only been mentioned in the EC, CTE and CTO granted for South Block mine, which has been approved by IBM. The Ministry also endorsed (July 2018) the views of the Management.

The reply of the Management/Ministry is not acceptable as the IBM is not the authority for waiver of the conditions specified in the EC, CTE and CTO clearances.

4.2 Discharge of Red Mud and Red Mud Pond Effluent beyond norms

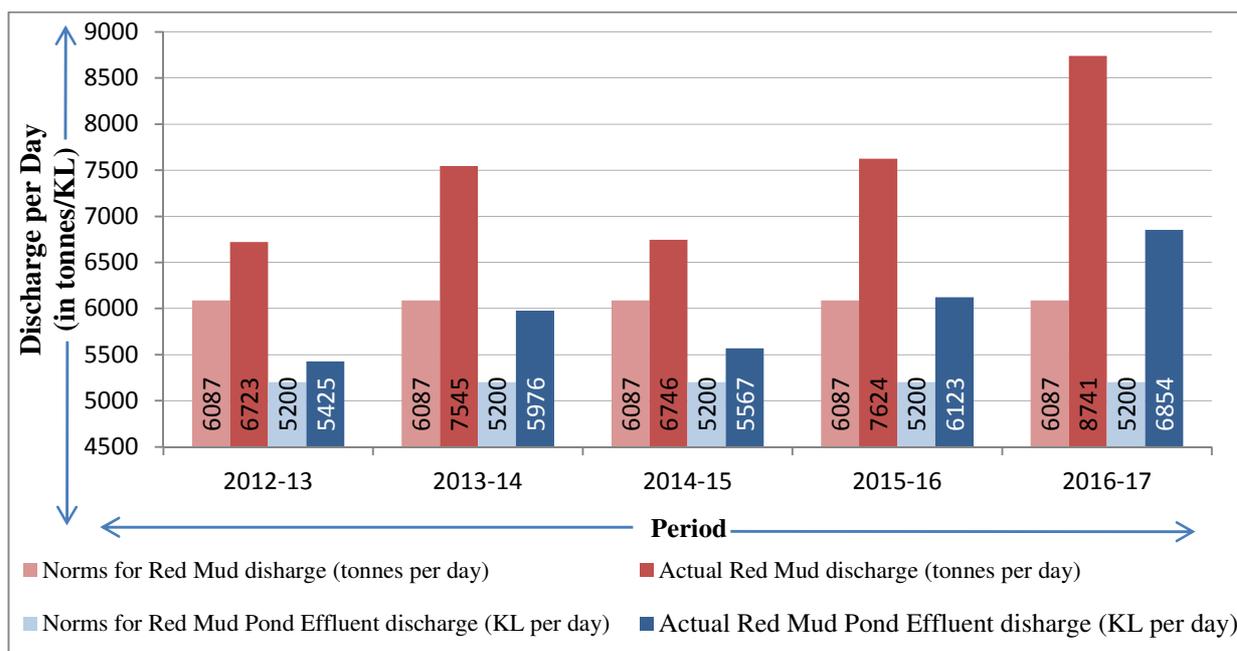
The Company was granted (May 2010) EC for enhancing the production capacity of the Refinery from 21 lakh tonnes per annum (TPA) to 22.75 lakh TPA of Alumina Hydrate. Bauxite (68.25 lakh TPA), Caustic Soda (1.62 lakh TPA), Coal (14.35 lakh TPA), Heavy Fuel Oil (1.84 lakh kilo litres per annum) and Lime (0.46 lakh TPA) was to be used as a raw material, as specified in the EC.

Audit, however, observed that during 2016-17 the Company had produced 21 lakh tonnes of Alumina Hydrate by processing 69.30 lakh tonnes of Bauxite against approved quantity of 68.25 lakh tonnes. Thus, the Company has violated the EC norms by utilising Bauxite more than the permitted level.

Audit also observed that during the period 2012-13 to 2016-17, OSPCB while granting CTO stipulated the limit of daily disposal of Red mud and Red mud pond effluent from the Refinery. As per CTO, the Company cannot change or alter either the quality or

quantity of the rate of discharge without the previous approval of the OSPCB. In case of non-compliance of any order/directive of the OSPCB and/or violation of the terms and conditions of the CTO, the Company would be liable for legal action as per the provisions of the Law/Act. Audit observed that during the period 2012-13 to 2016-17, the actual discharge of Red Mud ranged from 6,723 tonnes per day to 8,741 tonnes per day against the permitted limit of 6,087 tonnes per day. Similarly, the actual discharge of Red Mud Pond Effluent ranged from 5,425 kilo litres (KL) per day to 6,854 KL per day during the above period against the permitted limit of 5,200 KL per day. Year wise actual discharge of Red Mud and Red Mud Pond Effluent is presented the following Chart. Thus, the Company violated the conditions of CTO by consistently discharging Red Mud and Red Mud Pond Effluent higher than the limit specified by the OSPCB.

Chart 6: Red Mud Pond discharge



Source: CTO from OSPCB ad Monthly Progress Report of Company

The Management while accepting that the consumption of Bauxite was more than that permitted in EC during 2016-17 contended (April 2018) that the raw material quantity specified in the EC may vary due to change in quality but the production quantity and pollution parameters should not be breached.

The reply of the Management is not tenable as EC does not include any such provision regarding flexibility in increasing the permissible limit of usage of Bauxite. The Management was however, silent about higher discharge of red mud pond effluent.

While endorsing the view of the Management, the Ministry stated (July 2018) that the CTO conditions outlines the mode of disposal of red mud which were strictly adhered to. The Ministry further stated that the Company has been submitting the actual quantities of red mud disposed to the OSPCB by filing annual returns.

The contention of the Ministry is not tenable because the CTO conditions not only outlined the mode of disposal of red mud, but the quantity of effluent to be discharged was also specified, which the Company could not comply with. Moreover, submission of annual returns to OSPCB does not absolve the Company from the responsibilities of complying with the pollution control norms.

4.3 Excess consumption of Fluoride in the Smelter Plant

Under Corporate Responsibility for Environment Protection (CREP), the MoEF & CC, in order to reduce the emission of Fluoride, fixed (December 2005) the target of consumption of Fluoride²⁴ for Smelter Plant as 10 kg per tonne of Aluminium produced. Test check of half yearly reports of the Company, during the period 2012-13 to 2016-17, revealed that consumption of Fluoride ranged between 12 kg per tonne and 12.9 kg per tonne which was more than the CREP target of 10 kg per tonne. Thus, the Company continuously failed to achieve the target of Fluoride consumption.

Also as required under CREP, forage Fluoride²⁵ content was to be maintained within 40 ppm²⁶ (annual average) and 60 ppm (average for two consecutive months). It was, however, observed that the Company was taking and analyzing the samples for forage Fluoride only on quarterly basis. The reports of such quarterly samples showed that the results ranged from 42.83 ppm to 72.33 ppm, which were above the norms for annual average. Moreover, it could not be appreciated how the bi-monthly averages could be worked out if the Company was only taking the readings on quarterly basis. The reasons for not taking monthly samples were not found on record.

²⁴ Fluoride as elementary Fluorine (F)

²⁵ Forage and grasses growing near industrial areas are often contaminated by fluoride-rich industrial effluents or by windblown or rain-splashed soil having a high fluoride concentration.

²⁶ ppm stands for parts per million

The Management in its reply (April 2018) stated that achievement of Fluoride consumption target was not technically feasible with their present setup. Since April 2004, sampling of forage Fluoride is being done on quarterly basis by Smelter Plant and reports of the same are submitted regularly to the OSPCB who did not object.

The Ministry while endorsing the view of the Management further added (July 2018) that monthly sample analysis of forage Fluoride has been started from April 2018.

4.4 Under-utilisation of fly ash in the Captive Power Plant

As per the notification of November 2009 issued by MoEF & CC, the target of utilisation of fly ash generated by the CPP of the Company was fixed so as to



Picture 8: Ash Pond of Captive Power Plant at Angul

progressively²⁷ increase from 50 per cent to 100 per cent within a period of the five years from the date of the notification, i.e. by October 2014. The notification further stipulated that the unutilised fly ash in relation to the target during a year, if any, shall be utilised within next two years in addition to the targets stipulated for

those years and the balance unutilised fly ash which accumulated during first five years (the difference between the generation and the utilisation target) shall be utilised progressively over the next five years in addition to 100 per cent utilisation of current generation of fly ash.

Audit, however, observed that the actual utilisation of fly ash generated during the period 2012-13 to 2016-17 was lower than the target and ranged between 24 per cent and 72 per cent. The OSPCB charged water cess at a higher rate due under utilisation of fly ash and the Company incurred additional expenditure of ₹0.82 crore during the above period towards payment of such higher water cess.

²⁷ First year- At least 50 per cent, Second year – at least 60 per cent, Third Year at least 75 per cent, Fourth year – at least 90 per cent and Fifth year – 100 per cent.

The Management while accepting the audit observation stated (April 2018) that various steps had been taken to maximize ash utilisation. The Ministry also endorsed (July 2018) the views of the Management.

Audit Summation

The transportation of excavated Bauxite in South Block Mines by dumpers to the crushers in Central and North Block Mines, instead of transporting the same through the conveyor belt was not in conformity with the conditions of Environmental Clearance granted for operation of South Block Mines.

The discharge of Red Mud and Red Mud Pond Effluent at the Alumina Refinery were consistently higher than the corresponding limits specified by the Odisha State Pollution Control Board during the period 2012-13 to 2016-17.

The Company continuously failed to achieve the Corporate Responsibility for Environment Protection (CREP) target of Fluoride consumption of 10 kg per tonne at the Aluminium Smelter.

The actual utilisation of fly ash generated during the period 2012-13 to 2016-17, at the Captive Power Plant was lower than the target and ranged between 24 *per cent* and 72 *per cent*.