

BY SPEEDPOST

CPCB/IPC-II/AI/OMS/2017-18

12255

16/10/2017

To

The Unit Head  
M/s Hindalco Industries Limited  
Belagavi Works, P.B No. 1,  
Belagavi- 590010, Karnataka

**Sub.: Modified Directions under Section-5 of the Environment (Protection) Act, 1986 regarding installation of on-line effluent and emission monitoring system- Directions thereof**

**Ref:** 1. CPCB's direction No. CPCB/PCI-II/AI/OMS/5150, dated 23/07/2015.  
2. CPCB's direction No. CPCB/PCI-II/AI/OMS/24363, dated 07/03/2017.

WHEREAS, the primary aluminium industries are identified as one of the 17 categories of highly polluting industries which have been discharging environmental pollutants directly or indirectly into the ambient air and water, having potential threat to cause adverse effect on the water and air quality; and

WHEREAS, there is need to inculcate habit of self-monitoring within the industries for complying with the prescribed standards and this can be achieved by the methods like installing online effluent and emission monitoring devices; and

WHEREAS, for strengthening the monitoring and compliance through self-regulatory mechanism, online source emission and effluent monitoring systems need to be installed and operated by the industries on 'polluter pays principle'; and

WHEREAS, a direction under section-18(1)(b) of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 was issued on February 05, 2014 to all the State Pollution Control Boards (SPCBs)/ Pollution Control Committees (PCCs) for installation of online emission monitoring system w.r.t. PM & fluoride parameters and online effluent monitoring system w.r.t. pH, BOD, COD & TSS in aluminium industries; and

WHEREAS it was clarified that flow meter & web camera be installed in case of units with zero liquid discharge (ZLD) by March 31, 2015 vide guidelines uploaded on website of CPCB dated November 7, 2014; and

WHEREAS, considering the requests/representations received from industries/industrial associations/SPCBs/PCCs, an extension of time up to June 30, 2015 for installation of online monitoring systems was granted vide direction dated March 02, 2015 under section-18(1)(b) of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981; and

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WHEREAS, a letter vide dated May 29, 2015 was issued by the Chairman CPCB to all the SPCBs/PCCs informing that no further extension of time will be given after June 30, 2015 and withdrawal of consent to operate along with forfeiture of bank guarantee of non-complying Units will be the only option; and

WHEREAS, concerned SPCB/PCC have issued directions under section-33A of the Water (Prevention & Control of Pollution) Act, 1974 and section-31A of the Air (Prevention & Control of Pollution) Act, 1981 to install the online monitoring system by June 30, 2015 and submit bank guarantee of 100% of the cost of online emission & effluent monitoring system; and

WHEREAS, CPCB has explored installation of Online Monitoring device in the other countries and has come to conclusion that online monitoring devices are essential for improving compliance as the conventional monitoring systems not able to capture violations on regular basis; and

WHEREAS, CPCB has held stakeholder consultations with industrial associations and SPCBs/PCCs on 06.08.2014, 19.09.2014, 29.09.2014, 08.10.2014, 16.10.2014, 09.01.2015, 08.04.2015 and 16.06.2015 regarding time bound implementation of installation of these devices; and

WHEREAS, the Ministry of Environment & Forests, Government of India, vide Notifications No. S. O. 157 (E) of 27.02.1996 and S. O. 730 (E) dated 10.07.2002, has delegated the powers vested under Section-5 of the Environment (Protection) Act, 1986 (29 of 1986) to the Chairman, Central Pollution Control Board, to issue directions to any industry or any local body or any other authority for violations of the standards and rules notified under the Environment (Protection) Rules, 1986 and amendment thereof.

WHEREAS to this effect and in exercise of powers vested under Section-5 of the Environment (Protection) Act, 1986, CPCB has served the above referred notice (CPCB/PCI-II/AI/OMS/5150) on July 23, 2015 directing the industry to comply with the following directions:

1. The Unit shall submit documentary evidence regarding status of installation of online emission & effluent monitoring system.
2. The Unit shall submit the status on connectivity for submission of online 24x7 monitoring data to SPCBs/PCCs and CPCB.
3. The Unit shall submit the details as per Annexure-I through
  - (a) E-mail id - cems.cpcb@nic.in
  - (b) uploading the data on the link provided on CPCB Website (www.cpcb.nic.in) and
  - (c) by speed post

to the Member Secretary, Central Pollution Control Board.

WHEREAS in response to the CPCB's Directions your industry sent the above referred letters dated 17/08/2015 and dated 30/09/2015 indicating that you have installed the Online Continuous Emission and Effluent Monitoring Systems (OCEMS) and hooked up the data to the CPCB servers; and

*Log*

WHEREAS, the SMS alerts are supposed to be generated and sent to concerned dealing officer in CPCB as well as in plant whenever concentration of any pollutant exceeds the limit as prescribed. However, in case of M/s HIL, Belgavi Works, Karanataka large number of SMS alerts have been generated in last three months; and

WHEREAS, in order to verify the compliance and find out the status of online monitoring system, a team from CPCB, Bengaluru carried out an inspection of M/s HIL, Belgavi Works, Karanataka on 27-28/12/2016; and

WHEREAS, based on the observations made by the CPCB inspection team and all material facts available with CPCB and in exercise of powers vested under Section-5 of the Environment (Protection) Act, 1986, CPCB served directions no. CPCB/PCI-II/AI/OMS/24363 dated 07/03/2017 directing M/s Hindalco Industries Limited, Belgavi Works, Belgavi, Karanataka to comply with the following direction/s by 31/03/2017:

- To install Flow meter at the inlet of the Red Mud Pond-3 to quantify the effluent generated and water meter for quantification of the wastewater reused in the process. The records of effluent generated and reused shall maintain.
- To install OEMS for PM at the stack attached to Klin-IV and hydrate precalciner and provide connectivity to CPCB server.
- To carryout calibration and servicing of the online continuous emission and effluent monitoring systems, periodically and as per the schedule.
- To provide garland drains with adequate depth and concrete lining around Red MUD Pond- 1 & 2 and collect and divert the leachate to Red Mud Pond 3. Desilted of the drains shall be carried out regular frequency.
- To update the CPCB registration details (Latitude, Longitude, Web Link, Contact details and Serial number & Model number of the OCEMS instruments as these details are not matching/absent in the CPCB registration portal)

WHEREAS, the observations/findings given in the inspection report as refereed above and conditions of Consent Order under the Water (Prevention & Control of Pollution) Act, 1974 as issued to industry by Karnataka State Pollution Control Board, the matter was further discussed in a high level meeting at CPCB and it is realised that following additional issues needs to be addressed appropriately by the industry & KSPCB:

- i. As per the Consent Order issued by KSPCB, the products manufactured include Alumina, Sodium Vanadate, Rolling Ingots, Carbon Blocks, Carbon paste and Aluminium metals. However, at present only Alumina and Carbon paste are currently being produced. Following points be clarified:
  - a. Whether the industry has facilities to manufacture all the products mentioned in the consent order?
  - b. If 'Yes', whether all the pollution control measures including OCEMS are in place & working condition?

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- c. If 'No', why not the consent order be modified to mention only the products being manufactured presently?
- ii. As per Consent conditions , the quantity of wastewater discharge is 2400 KLD which is to be treated in ETP and the treated effluent needs to be recycled back for cooling purpose & sprinkling of dry exposed area of red mud pond. During wet weather flow, any discharge from the pond shall conform to the standards. During inspection, it was observed that the untreated effluent stored in RMP-3 is reused in the process, road washing and sprinkling. This is in violation of the consent condition as only treated effluent is permitted to be reused and the excess quantity to be discharged in wet weather / rainy period.
- iii. The Sensor of OCEMS installed at the outlet of ETP is showing the status as 'Offline' due to non operation of ETP for last more than six months. It is obvious that ETP is not operated for more than six months and entire untreated waste-water from the industry is used for sprinkling on the red-mud pond / cooling purposes / road washing etc which is violation of the Consent Conditions. Under such circumstances , possibility of discharge of untreated waste-water outside the premises cannot be ruled out.
- iv. Even the web-cameras at discharge points are also not installed to confirm / verify the actual wastewater discharge status at any given point of time.
- v. It is observed that the effluent is let into a lagoon for storage and then the lagoon-overflow is discharged outside the factory premises to nearby pond through natural drain. It will be appropriate to install an additional online effluent monitoring probes in the lagoon nearer to the lagoon-overflow discharge point. The quality of the effluent at Secondary Clarifier outlet and the quality of the lagoon-overflow (discharged outside factory premises) are expected to differ. It is worth to mention here that the quality of effluent stored in the lagoon (e.g. Sulphide -8.7 mg/l; Vanadium -0.39 mg/l) is not meeting the prescribed discharge standards.
- vi. The flow measuring devices are required to be installed at inlet and outlet points of Red Mud pond -3, treated wastewater storage lagoon and other suitable places so as to measure / keep record of quantity of wastewater generated, reused, recycled or discharged outside factory premises. Presently flow meters are not provided at required points.
- vii. The raw effluent and treated effluent storage ponds and lagoons are to be provided with suitable lining so as to prevent any seepage of stored wastewater into the surrounding environment and contamination of groundwater/surface water resources.

WHEREAS, keeping the observations/recommendation mentioned in the inspection report and points as mentioned above, M/s Hindalco Industries Limited, Belagavi Works, Karnataka was directed to close down its all operations with immediate effect failing which legal action as per the National Green Tribunal Act, 2010 shall be launched vide CPCB letter No. CPCB/IPC-II/AI/OMS/2017-18 dated 22/05/2017; and



WHEREAS, industry replied vide their letter dated 29/05/2017 wherein M/s HIL, Belagavi informed that ETP operation is resumed as per the consent conditions and CPCB guidelines. In addition, the other non-compliance reported in CPCB inspections is rectified and full compliance is ensured at their level; and

WHEREAS, based on the industry reply, CPCB IT report and facts available with CPCB, the closure directions issued to M/s Hindalco Industries Limited, Belagavi Works, Karnataka were revoked vide CPCB Order No. CPCB/IPC-II/Al/OMS/2017-18/6855 dated 13/06/2017 wherein a request was made to CPCB Regional Directorate-South to re-inspect the unit for field verification of facts and compliance report submitted by the industry; and

WHEREAS, CPCB Regional Directorate (South) re-inspected the industry on 25-26/07/2017 and submitted the re-inspection report to CPCB Head Office vide their letter dated 23/08/2017; and

WHEREAS, CPCB re-inspection team observed some observations/shortcomings, which are as follow:

- i. The unit manufactures Alumina (587000 TPA), Carbon Paste (70000 TPA) and Sodium vanadate (120 TPA) and submitted letter to SPCB to delete the other products namely Aluminium metal, carbon blocks and rolling ingots from consent order as they stopped manufacturing the same. In addition, the unit also requested SPCB to drop Sodium vanadate from the list of products and grant authorization for handling Vanadium sludge as HW.
- ii. CTO is valid upto 30.6.2021 and authorization is valid upto 30.6.2020.
- iii. The main raw materials are bauxite and caustic soda for Alumina and calcined petroleum coke, ECA Coal, cathode butts for Carbon paste.
- iv. Water source is from Hidkal reservoir and 4.09 KL of water is consumed per ton of Alumina produced.
- v. ETP with a capacity of 400 m<sup>3</sup>/hr is provided and the treated effluent is stored in a lagoon and reused. Sample collected from ETP outlet was analysed for pH (7.6), SS (4 mg/l), BOD (9.2 mg/l), COD (100 mg/l), O&G (0.2 mg/l), PO<sub>4</sub> (0.01 mg/l), Sulphide (BDL) and Vanadium (2.7 mg/l). All parameters are meeting the discharge standards except Vanadium. However, discharge standards are not applicable here as the industry is reusing the treated effluent in the process. Five ground water samples around the industry were collected and analysed and the results found within the permissible limit for drinking water.
- vi. Emission monitoring was carried out at Calciner Kiln II for PM (54.4 mg/Nm<sup>3</sup>) and CO (57.3 mg/Nm<sup>3</sup>) and for SO<sub>2</sub> in common boilers stack (BDL) and Carbon paste plant stack (934 mg/Nm<sup>3</sup>). The values are meeting the consent limits. Ambient Air Quality was monitored at 3 locations and the results are meeting the standards.
- vii. The unit installed OCEMS for emission/effluent monitoring and connected to the CPCB server as per guidelines and updated CPCB registration portal.

- viii. Installed flow meter at the inlet of the Red Mud Pond-3 and the flow readings at the time of inspection varied from 49.05-49.82 m<sup>3</sup>/hr.
- ix. Flow meter installed at the intake line from new lagoon to measure the quantity of the treated effluent reused in the process.
- x. Installed OCEMS for PM at the stack attached to Kiln – IV and connected to CPCB server. Hydrate precalciner is not working for the last 6 years and hence data not displayed even though connected with CPCB website.
- xi. Press mud of about 45000 MT per month is generated (65% solid content) from the processing of bauxite ore and the same is collected, transported and stored in RMP-2 presently. About 205380 MT was sold during 2016-17 for cement manufactures and others. A new filter press is being installed to increase the solid content from 65% to 72% for better management of red mud and train run is going on in this regard.
- xii. Desilting of garland drain around red-mud pond area was carried out and leachate is channelized into RMP-3. Concrete lining has been laid for about 10 mts on trial basis to study the stability and sustainability. Concrete lining (about 1.5 km in length) will be carried out all around the RMPs and same will take time in view of the on-going monsoon and trial study.
- xiii. Products such as Aluminium Metal, Carbon Blocks and Rolling ingots are not manufactured and no facility available for the same. Request made to SPCB to delete these products from the CTO and to issue amendment.
- xiv. ETP is operated continuously from 28.4.2017 onwards and the treated effluent stored in lagoon is recycled. Installed web camera at the discharge point (i.e. lagoon overflow outlet) and provided connectivity. At the time of inspection, no overflow/discharge was noticed.
- xv. Flow meters are installed at RMP-3 Inlet, ETP Inlet, ETP outlet and at lagoon overflow discharge point.



WHEREAS, based on the observations made by the CPCB re-inspection team and all material facts available with CPCB and in exercise of powers vested under Section-5 of the Environment (Protection) Act, 1986, M/s Hindalco Industries Limited, Belagavi Works, Karnataka is hereby directed to comply with the following direction/s within 01 month :

- (i) The unit shall complete the strengthening of garland drains/Gabian walls/RMPs in consultation with IIT – Bombay or any other reputed agency and submit time-bound action plan in this regard to complete the work within 06 months and monthly status/progress report to CPCB in this regard.
- (ii) The unit shall collect, store and dispose the ETP sludge in an approved TSDF sites as per the HOW (M&T) Rules 2016 instead of storing along with red-mud ponds.
- (iii) The unit shall segregate Vanadium bearing effluent, make suitable modification in ETP so as to meet the Standards for Vanadium level in the

final treated effluent and utilize 100% of this treated effluent in the process without mixing with storm water / other treated effluents. The unit shall ensure maximum precipitation and separation of Vanadium sludge from Bayer's liquor so as to minimise the unrecovered vanadium in the residue.

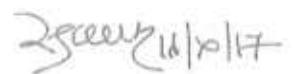
- (iv) The unit shall provide piezometric wells (test bore-wells) all around red-mud ponds to monitor and assess the ground water quality.

You are hereby directed to comply with above directions and submit your compliance status along with necessary and supporting documents to this office within 15 days of the receipt of this notice. In case of failure to comply with the said directions necessary action as deemed fit under the provision of the Environment (Protection) Act 1986 will be taken by CPCB.

  
17/10/17  
(S.P. Singh Parihar)  
Chairman  


Copy to:

1. The Chairman  
Karnataka Pollution Control Board,  
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Church Street, Bangalore - 560 001
2. The Joint Secretary-CP Division  
Ministry of Environment, Forest and Climate Change  
Indira Paryavaran Bhawan, Jorbagh Road  
New Delhi - 110003
3. The Regional Director- South  
Central Pollution Control Board  
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4. Divisional Head IT division  
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5. Divisional Head IPC-VI division  
CPCB, Delhi

  
(A. Sudhakar)  
Member Secretary  
