

BALCO/ENV/A-02(A)/2025/493

Date: 16.10.2025

To,  
The Integrated Regional Office (IRO),  
Ministry of Environment, Forest & Climate Change,  
Aranya Bhawan,  
North Block, Sector-19,  
Nava Raipur, Atal Nagar (CG) 492002.

**Sub:** Half Yearly Compliance Status Report (April 2025 to September 2025) of the expansion of Aluminum Smelter Plant (3.5 to 9.0 LTPA) and Captive Power Plant (300MW) at Korba, Chhattisgarh by BALCO

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Respected Sir,

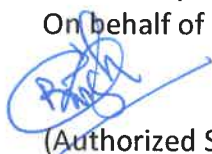
As per the Environmental Clearance (No. J- 11011/123/2007.IA-II (I) dated 16.09.2008 received for the Expansion of Smelter & Power Plant, M/s Bharat Aluminium Company Limited, Korba has set up the smelter plant, phase-1, (3.25 LTPA). Please find enclosed herewith the compliance report along with the necessary supporting documents.

We hope that the above is in line with the provisions stipulated in the Environmental Clearance. If you require any further information, we will be glad to provide the same.

Thanking you,

Yours Truly,

On behalf of Bharat Aluminum Company Ltd.



(Authorized Signatory)

Encl: a/a

Copy to: The Regional Officer, Chhattisgarh Environment Control Board, Korba.



**Compliance Status of Expansion of Aluminium Smelter Plant from 3.5 to 9.0 LTPA  
and Captive Power Plant 300 MW**

**AT-KORBA, CHHATTISGARH BY M/s BHARAT ALUMINIUM CO. LTD (BALCO)**

**No. J-11011/123/2007-IA-II (I) MoEF&CC dated 16.09.2008**

**Duration: April 2025 to September 2025**

**A. SPECIFIC CONDITION**

| Sl. No. | Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Compliance status                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| i       | The gaseous emissions (PM, SO <sub>2</sub> , NO <sub>x</sub> , PAH, HC, VOCs, and Fluoride) from various process units shall conform to the standard prescribed from time to time. The CECB may specify more stringent standards for the relevant parameters keeping in view the nature of the industry, its size and location. At no time the emission level should go beyond the prescribed standards, In the event of failure of any pollution control system adopted by the unit, the respective unit should not be restarted until the control; measures are rectified to achieve the desired efficiency. The particulate emissions from the bake oven plant shall not exceed 50 mg/Nm <sup>3</sup> . | <p>Pollution Control devices like bag filters, dry scrubbers and FTPs have been installed to ensure that emissions are well within the permissible limits, including the particulate emissions from bake oven plant.</p> <p>CEMS has been installed in the stacks of all units and the CEMS has been connected with CPCB/CECB servers for real-time continuous data monitoring.</p> <p>The monthly stack monitoring reports are submitted to CECB every month.</p> <p>Copy of monthly stack monitoring reports are attached as <b>Annexure-I</b>.</p>                                                                                                                                                                                                               |
| ii      | Electrostatic precipitator (ESP) shall be provided to Captive Power Plant (CPP) to control emissions below 50 mg/Nm <sup>3</sup> . The company shall provide bag-filters, dry scrubbing system and dust suppression system to control all the emissions including fluoride emissions from all melting and casting units. Tar, dust and fluoride in the fumes shall be controlled in baking furnace by providing dry scrubber. The emissions shall conform to the standards prescribed by the Ministry/CPCB/SPCB whichever is more stringent.                                                                                                                                                               | <p>300 MW power plant has not been set up as per EC approval hence the condition "Electrostatic precipitator (ESP) shall be provided to Captive Power Plant (CPP) to control emissions below 50 mg/Nm<sup>3</sup>" is not applicable.</p> <p>The company has installed bag-filters, dry scrubbing system and dust suppression system to control the emissions including Fluoride emissions from all units.</p> <p>Tar, dust and fluoride in the fumes are controlled in baking furnace by the dry scrubber.</p> <p>CEMS has been installed in the consented stacks of all units and the CEMS has been connected with CPCB/CECB servers for real-time continuous data monitoring.</p> <p>The monthly stack monitoring reports are submitted to CECB every month.</p> |

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|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Copy of monthly stack monitoring reports are attached as <b>Annexure – I</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| iii | The poly-aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) shall not exceed 2 mg/Nm <sup>3</sup> . The data on PAH shall be monitored quarterly and report submitted regularly to the Ministry/Regional Office at Bhopal and CECB.                                                                                                                                                                                                                                                  | Poly-aromatic hydrocarbons (PAH) from Bake oven plant are regularly monitored and reported to CECB every month which is well within limit.<br>Copy of monthly stack monitoring reports are attached as <b>Annexure – I</b> .                                                                                                                                                                                                                                                                                                                                                                                                      |
| iv  | Particulate fluoride emissions shall not be more than 0.65 mg/Nm <sup>3</sup> and fugitive Particulate fluoride emissions from pot room shall not be more than 1.85 mg/Nm <sup>3</sup> .                                                                                                                                                                                                                                                                                                              | State of the art technology, PFPB, has been installed in the smelters. Systems for covering the pots with properly designed hoods and fume treatment plant are in place to ensure particulate Fluoride emissions and fugitive Particulate Fluoride emissions are within the stipulated norms.<br>Copy of monthly fugitive emission monitoring reports are attached as <b>Annexure – II</b> .                                                                                                                                                                                                                                      |
| v   | Fluoride consumption shall be less than 10 kg/ton of Aluminium produced as specified in the CREP guidelines.                                                                                                                                                                                                                                                                                                                                                                                          | CREP (Corporate Responsibility for Environmental Protection) recommendation prescribing Specific Fluoride consumption less than 10 kg/ton of aluminium has been amended to specific AlF <sub>3</sub> consumption less than 20 kg/ton of aluminium as per the Gazette Notification dated 21st July 2025 under the Environment (Protection) Fifth Amendment Rules, 2025, issued by the Ministry of Environment, Forest and Climate Change, Government of India. The revised standard replaces the earlier entry under Serial No. 36 of Schedule I of the Environment (Protection) Rules, 1986 and we will be complying to the same. |
| vi  | In-plant control measures like fume extraction and dust extraction system for controlling fugitive emissions from all the material handling/transfer points shall be provided to control dust emissions. Fugitive fluoride emissions from the pot room and in the forage around the smelter complex shall be monitored and data submitted regularly to the Ministry's Regional Office at Bhopal and CECB. Further dry scrubbing system to control the emissions from the pot lines shall be provided. | State of the art technology, PFPB, has been installed in the smelters. System for covering the pots with properly designed hoods, fume treatment plant based on dry scrubbing and bag filter technology and dust suppression and dust extraction systems are in place to check fugitive emissions.<br>Fluoride emissions from pot rooms and forage Fluoride around the smelter complex are monitored regularly.<br>Copy of fugitive emission reports attached as <b>Annexure – II</b> and copy of forage Fluoride monitoring reports attached as <b>Annexure – III</b> .                                                          |
| vii | Total water requirement for the expansion from Hasdeo River shall not exceed 1253 m <sup>3</sup> /hr and prior permission for the existing and proposed expansion shall be obtained                                                                                                                                                                                                                                                                                                                   | Total water requirement for the expansion from Hasdeo River does not exceed 1253 m <sup>3</sup> /hr. Effluent Treatment Plant with RO system is in place and                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|      | from the concerned department before commissioning of the plant. All the effluent including from cooling tower and de-mineralization plant shall be treated in the effluent treatment plant and treated effluent shall be recycled / reutilized in the process in the smelter and CPP and also for fire protection, dust suppression, green belt development etc. Domestic effluent shall be treated in Sewage Treatment Plant (STP) and treated domestic wastewater will be used for green belt development.                                                                                                                                                                                                                                                                                    | treated effluent from ETP is being used in the process and horticulture purposes.<br>For treatment of domestic effluent, Sewage Treatment plant has been installed and treated water is being used for green belt development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| viii | No effluent shall be discharged outside the premises during the non-monsoon period and during the monsoon period water shall be discharged only after proper treatment and meeting the norms of the CECB/CPCB.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | The plant is designed for zero discharge and treated water is being used in plant activities. During monsoon season, under emergency situations storm water is discharged conforming to norms.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ix   | Regular ground water monitoring shall be carried out by installing Piezometers all around the secured landfill site in consultation with the Chhattisgarh Environment Conservation Board, Central Ground Water Authority and State Ground Water Board and data submitted to the Ministry's Regional Office and CECB.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Piezometers have been installed all around the secured landfill site and ground water monitoring is being carried out every month. The monthly monitoring reports are submitted to CECB every month.<br><br>Copy of ground water quality monitoring reports are attached as <b>Annexure-IV</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| x    | Anode butts generated from the pots shall be cleaned and recycled to the Anode Plant. The spent pot lining generated from the smelter shall be properly treated in spent pot lining treatment plant to remove fluoride and cyanide and disposed off to the Cement/Steel plants and as minimum as possible to secured landfill. The location and design of the landfill site shall be approved by the CECB as per Hazardous Wastes' (Management and Handling) Rules 1989 and amended in 2003. Leachate collection facilities shall be provided to the secured landfill facility (SLF). The dross shall be recycled in the cast house. STP sludge shall be utilized as manure for green belt development. All the used oil and batteries shall be sold to the authorized recyclers/ re-processors. | Anode butts generated from the smelter operations are recycled at Green Anode Plant within the plant premises.<br><br>For utilizing the Spent Pot Lining (SPL) generated from the Smelter, BALCO has entered into an agreement with following authorized co-processors: <ol style="list-style-type: none"> <li>1. M/s Greenmac Technologies, Raipur</li> <li>2. M/s Shubham Sales Co., Rohtak</li> <li>3. M/s Ambuja Cement Limited, Bhatapara</li> <li>4. M/s ACC Limited Jamul</li> <li>5. M/s Gati Greens India Private Limited</li> <li>6. M/s Raipur Grinding Corporation</li> </ol> for detoxification and further usage in cement/steel plants as per Central Pollution Control Board (CPCB) guidelines. The SPL is provided to the authorized co-processor only.<br><br>Additionally, SLF has been provided as per CPCB guidelines for disposal of Spent Pot linings and other HW after getting the location and design of the landfill site approved by the CECB as per Hazardous and Other |



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|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>Wastes' (Management and Transboundary Movement) Rules 2016.</p> <p>The approved design and the capping (closure) plan of captive SLF is attached as <b>Annexure-V (Colly) &amp; Annexure-VI.</b></p> <p>Dross generated is processed through Dross Processing Units / authorized recyclers having valid consent and authorization as per the guidelines of CECB.</p> <p>Used oil and batteries are being sold to the authorized recyclers/ re-processors.</p> |
| xi   | Integrated Ash Management Plan shall be prepared for the utilization of fly ash as per Fly Ash Notification, 1999 as amended in 2003 and implemented. A copy of the plan shall be submitted to the Ministry's Regional Office. Fly ash shall be collected pneumatically in silos and used by cement and brick manufacturers for further utilization. Bottom Ash shall be disposed off in ash pond using high concentrated slurry disposal method. | 300 MW Power Plant has not been set up and this clause is not applicable.                                                                                                                                                                                                                                                                                                                                                                                        |
| xii  | Green belt of adequate width and density around the project site shall be developed in 33 % area in consultation with the DFO as per the CPCB guidelines having density of 2,000 trees/ha.                                                                                                                                                                                                                                                        | Extensive tree plantation is being carried out all open spaces available in and around the plant premises. 48023 number of saplings have been planted around BALCO's premises including ash dykes, township and plant premises during FY 2024-25. Copy of greenbelt details attached as <b>Annexure-VII.</b>                                                                                                                                                     |
| xiii | Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.                                                                                                                                                                                                                                                                                                                | Occupational health surveillance of the employees is being carried out as per the Factories Act and the records are being submitted to the Department of Industrial Health & Safety (Govt. of Chhattisgarh) through the Online Portal (cglabour.nic.in) on regular basis.                                                                                                                                                                                        |
| xiv  | The company shall develop rainwater structures to harvest the run-off water for recharge of ground water in consultation with the Central Ground Water authority/ State Ground Water Board.                                                                                                                                                                                                                                                       | Complied.<br>Photographs of the same are attached as <b>Annexure-VIII.</b>                                                                                                                                                                                                                                                                                                                                                                                       |
| xv   | All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium sector shall be strictly implemented.                                                                                                                                                                                                                                                                                 | The compliance status of the recommendations made in the Charter on Corporate Responsibility for Environmental Protection (CREP) is attached as <b>Annexure-IX.</b>                                                                                                                                                                                                                                                                                              |
| xvi  | All the environmental conditions stipulated by the Ministry vide letter no. J-11011/34/2003-                                                                                                                                                                                                                                                                                                                                                      | Compliance status for the environmental conditions stipulated by the Ministry vide letter no. J-                                                                                                                                                                                                                                                                                                                                                                 |

|       |                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|       | 1A II (I) dated 5 <sup>th</sup> November 2003 for the Alumina Refinery and Aluminium Smelter Plant shall be complied and regular compliance report submitted to the Ministry's Regional Office at Bhopal.                                                                                                                                                                                             | 11011/34/2003-1A II (I) dated 5 <sup>th</sup> November 2003 for the Alumina Refinery and Aluminium Smelter Plant is submitted regularly to Ministry's Regional Office at Bhopal/Nagpur. Last report was submitted vide our letter no. BALCO/ENV/A-02(A)/2025/276 dated 27 <sup>th</sup> May 2025. Copy of the letter attached as <b>Annexure – X.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| xvii  | The company shall comply with all the commitments made during public hearing/public consultation held on 16th November 2007. The company shall prepare the action plan for implementation of the commitments and same shall be submitted to the Ministry and its Regional Office at Bhopal and Chhattisgarh Environmental Conservation Board Raipur.                                                  | The commitments made during the public hearing are being implemented and the status of the same is attached as <b>Annexure- XI.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| xviii | Prior permission from the State Forest Department shall be obtained due to the likely impact of transport of raw material and end product and gaseous emissions from the smelter on the surrounding reserve forests and wildlife. Recommendations regarding mitigative measures suggested by the State Forest department and Chief Wildlife Warden, Govt. of Chhattisgarh shall be strictly followed. | BALCO has the required transport infrastructure (Rail & Road) in place. A letter has been sent to the Principal Chief Conservator of Forest on 18.11.2015 vide Letter No. Balco / Sm3.25LTPA / Env / 01(A) / 2015 / 380 and is being followed up regularly. Further, the impact due to transportation and operations was evaluated in the EIA for expansion project and the Wildlife Conservation/ Management Plan was prepared. This has been discussed during the EC Appraisal process. The Wildlife Conservation/Management Plan has been approved by PCCF. The approval is attached as <b>Annexure- XII.</b> For the implementation of the Wildlife Conservation/ Management Plan, INR 1.53 Cr. has been deposited with the Forest Department for the mitigative measures as approved in the Wildlife Conservation/Management Plan. The copy of the letter from DFO in this regard is attached as <b>Annexure-XIII.</b> |
| xix   | Ministry of Environment and Forests shall regularly be informed about the source and quantity of Alumina procured from captive/indigenous/imported sources.                                                                                                                                                                                                                                           | The source and quantity of Alumina procurement from April 2025 to September 2025 is as follows: <ol style="list-style-type: none"> <li>1. Indigenous –<b>53725.80</b> (Vedanta Limited, Lanjigarh, Odisha)</li> <li>2. Indigenous –<b>115017.60</b> MT (Utkal Alumina, Odisha, Muri Alumina - Jharkhand)</li> <li>3. Imported –<b>440511.49</b> MT (Glencore - Switzerland, Trafigura - Singapore, Alcoa World Alumina - US, Grand Spread Development Trading - Hong Kong, PT Borneo-Indonesia)</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                  |

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| xx | Alumina shall be obtained only from those refineries, which have been accorded environmental clearance by the Ministry of Environment and Forests. | Complied with.<br>Alumina procured from the sister concern (Vedanta Limited, (Lanjigarh) has the required EC from MoEF&CC (No. J-11011/81/2003-IA-II dated 22.09.2004, No. J-11011/53/2014-IA.II dated 20.11.2015, No. J-11011/406/2011-IA.II(I) dated 06.08.2021). |
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## B. General Condition

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| i   | The Project authorities must strictly adhere to the stipulation made by the Chhattisgarh Environment Conservation Board and the State Government.                                                                                                                                                                                                                                                                                                                                                                            | Complied with.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| ii  | No expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.                                                                                                                                                                                                                                                                                                                                                                                           | Complied with.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| iii | Adequate ambient air quality-monitoring stations should be established in the downward direction as well as where maximum ground level concentration of SPM, SO <sub>2</sub> and NO <sub>x</sub> are anticipated in consultation with the State Pollution Control Board. Data on ambient air quality, fugitive emission and stack emissions should be regularly submitted to this ministry including its Regional Office at Bhopal and the State Pollution Control Board/Central Pollution Control Board once in six months. | AAQ stations have been set up both in upwind and downwind directions at locations approved by the State Pollution Control Board.<br>Copy of monthly stack emission monitoring reports attached as <b>Annexure – I</b> .<br>Copy of monthly fugitive emission monitoring reports attached as <b>Annexure –II</b> .<br>Copy of monthly ambient air quality monitoring reports attached as <b>Annexure – XIV</b> .                                                                                                                                     |
| iv  | Industrial wastewater should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December, 1993 or as amended form time to time. The treated wastewater should be recycled in the plant as well as utilization for plantation purposes.                                                                                                                                                                                      | Effluent Treatment Plant with RO system is in place and treated effluent from ETP is being used in the plant activities.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| v   | The project authorities shall with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules 2003. Authorization from the CECB must be obtained for collection, storage, treatment and disposal of hazardous wastes.                                                                                                                                                                                                        | Authorization in accordance with Hazardous and other Waste (Management, and Transboundary Movement) Rules 2016 has already been obtained from CECB vide letter No. 5255/HSMD/HO/CECB/2021 Raipur dated 22.10.2021, which was further amended vide letter No. 5394/HSMD/HO/CECB/2025 Nava Raipur Atal Nagar, Dated 07/08/2025 for generation, collection, storage, transport, reuse, recycling and disposal of hazardous wastes and the same is valid up to 23.10.2026.<br>Copy of Authorization and its amendment attached as <b>Annexure -XV</b> . |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                   |
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| vi   | The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measured including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under Rules, 1989 viz. 75 dBA (day time) and 70 dBA (Night time)                                                                                                                                                                                                                                                                                                                | Equipment designed to ensure that noise level at plant boundary area is within the stipulated level of 85 dB. Copy of noise monitoring reports attached as <b>Annexure – XVI.</b> |
| vii  | The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP/risk analysis and DMP report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Complied with.                                                                                                                                                                    |
| viii | As proposed in EIA/EMP Rs. 216.50 Crores earmarked toward the capital cost and recurring the expenditure/annum for environmental protection measures shall be used judiciously to implement the condition stipulated by the Ministry of Environment and Forests as well as the state Government. The funds so provided shall not be diverted for any other purposes.                                                                                                                                                                                                                                                                                                                     | Complied with.                                                                                                                                                                    |
| ix   | The Regional Office of this Ministry at Bhopal/Central pollution Control Board/CECB will monitor stipulated conditions. A six-monthly compliance report and the monitored data along with Statistical interpretation should be submitted to them regularly.                                                                                                                                                                                                                                                                                                                                                                                                                              | Complied with. EC Compliance was last submitted vide letter no BALCO/ENV/A-02(A)/2025/276 dated 27 <sup>th</sup> May 2025. Copy of the letter attached as <b>Annexure – X.</b>    |
| x    | The project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> . This should be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office. | Complied with. Copy of newspaper advertisements attached as <b>Annexure–XVII.</b>                                                                                                 |
| xi   | The project authorities should inform the regional office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | The expansion project of Aluminium smelter from 3.25 LTPA to 9.0 LTPA was approved by MoEFCC vide EC letter No. J-11011/123/2007-IA-II (I) MoEF dated                             |

|     |                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                       |
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|     | date of commencing the land development work.                                                                                                                                                                                                                                                                                                                                  | 16.09.2008 and Consent to Establish vide letter No. 4567/TS/CECB/2022 dated 12.11.2010.<br>We have commenced the land development work as per the Consent to Establish and final approval i.e. Consent to Operate vide letter No. 3747/TS/CECB/2013 dated 25.10.2013. |
| 6.0 | The Ministry may; revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.                                                                                                                                                                                                                                                       | Noted.                                                                                                                                                                                                                                                                |
| 7.0 | The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in at time bound manner will implement these conditions                                                                                                                                                                                                                     | Noted.                                                                                                                                                                                                                                                                |
| 8.0 | Any appeal against this environment 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 Act, 1997.                                                                                                                                             | Noted.                                                                                                                                                                                                                                                                |
| 9.0 | 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, Hazardous Wastes (Management and Handling) Rules, 1989/2003 and the Public Liability insurance Act, 1991 along with their amendments and rules. | Noted.                                                                                                                                                                                                                                                                |



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|------------------------------------------------------------------------------|-------------|------------------------|
| ISSUED TO:<br><b>M/s. Bharat Aluminium Company Limited<br/>KORBA ( C.G.)</b> | Report No:  | VLL/VLS/25-26/02532/BO |
|                                                                              | Issue Date: | 2025-05-05             |
|                                                                              | P.O No:     | 8500005780             |
|                                                                              | P.O Date:   | 2022-06-29             |

**Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT**

Analysis starting date :- 2025-04-21

Analysis Completion date :- 2025-05-02

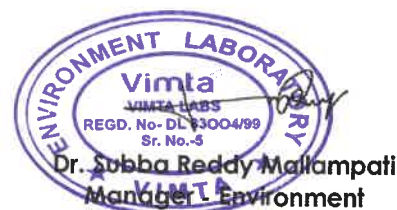
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO<sub>2</sub>, NO<sub>x</sub>, HC, VOC and PAH;**TEST RESULTS**

| BAKE OVEN PLANT |                       |                                                       |        |                     | Bake Oven<br>FTP - 1 | Bake Oven<br>FTP - 2 | Method                                         |
|-----------------|-----------------------|-------------------------------------------------------|--------|---------------------|----------------------|----------------------|------------------------------------------------|
| S No.           | Location              | Parameter                                             | Limits | Units               | 2025-04-19           | 2025-04-21           |                                                |
| 1               | BAKE<br>OVEN<br>PLANT | Height of the stack                                   | -      | m                   | 55                   | 55                   | -                                              |
| 2               |                       | Diameter                                              | -      | m                   | 1.2                  | 1.9                  | -                                              |
| 3               |                       | Area of Cross section                                 | -      | m <sup>2</sup>      | 1.131                | 2.836                | -                                              |
| 4               |                       | Stack Temperature                                     | -      | °C                  | 92                   | 90                   | -                                              |
| 5               |                       | Stack Pressure                                        | -      | mmHg                | 726                  | 728                  | -                                              |
| 6               |                       | Velocity                                              | -      | m/s                 | 17.0                 | 10.4                 | USEPA M-2                                      |
| 7               |                       | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr | 53983                | 83497                |                                                |
| 8               |                       | Particulate Matter (PM)                               | 50     | mg/Nm <sup>3</sup>  | 7.2                  | 8.4                  | USEPA M-5                                      |
| 9               |                       | Particulate Fluoride                                  | -      | mg/Nm <sup>3</sup>  | 0.068                | 0.102                | USEPA M-13B                                    |
| 10              |                       | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>  | 0.397                | 0.432                |                                                |
| 11              |                       | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>  | 323.4                | 280.3                | Measured by<br>Portable Combustion<br>Analyser |
| 12              |                       | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | 60.0                 | 59.5                 |                                                |
| 13              |                       | Hydrocarbon as HC                                     | -      | PPM                 | ND                   | ND                   |                                                |
| 14              |                       | VOC                                                   | -      | mg/Nm <sup>3</sup>  | <0.001               | <0.001               | USEPA M-30/31                                  |
| 15              |                       | PAH                                                   | 2      | mg/Nm <sup>3</sup>  | 0.015                | 0.018                | CARB 429                                       |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND – Not Deducted

\*USD – Unit Under Shut Down



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|----------------------------------------------------------------------|-------------|------------------------------------|--------|----------------------------------------|------------------------|--------------------------|------------------------------------------|
| ISSUED TO:<br>M/s. Bharat Aluminium Company Limited<br>KORBA ( C.G.) |             |                                    |        |                                        | Report No.:            | VLL/VLS/25-26/02532/PL-2 |                                          |
|                                                                      |             |                                    |        |                                        | Issue Date:            | 2025-05-05               |                                          |
|                                                                      |             |                                    |        |                                        | P.O No:                | 8500005780               |                                          |
|                                                                      |             |                                    |        |                                        | P.O Date:              | 2022-06-29               |                                          |
| Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2         |             |                                    |        |                                        |                        |                          |                                          |
| Analysis starting date :- 2025-04-17                                 |             |                                    |        | Analysis Completion date :- 2025-04-21 |                        |                          |                                          |
| Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO2;    |             |                                    |        |                                        |                        |                          |                                          |
| TEST RESULTS                                                         |             |                                    |        |                                        |                        |                          |                                          |
| POTLINE - 2                                                          |             |                                    |        |                                        | POTLINE - 2<br>FTP - 1 | POTLINE - 2<br>FTP - 2   | Method                                   |
| S No.                                                                | Location    | Parameter                          | Limits | Units                                  | 2025-04-16             | 2025-04-16               |                                          |
| 1                                                                    | POTLINE - 2 | Height of the stack                | -      | m                                      | 80                     | 80                       | -                                        |
| 2                                                                    |             | Diameter                           | -      | m                                      | 8.2                    | 8.2                      | -                                        |
| 3                                                                    |             | Area of Cross section              | -      | m <sup>2</sup>                         | 52.831                 | 52.831                   | -                                        |
| 4                                                                    |             | Stack Temperature                  | -      | °C                                     | 106                    | 108                      | -                                        |
| 5                                                                    |             | Stack Pressure                     | -      | mmHg                                   | 726                    | 729                      | -                                        |
| 6                                                                    |             | Velocity                           | -      | m/s                                    | 11.9                   | 11.7                     | USEPA M-2                                |
| 7                                                                    |             | Volumetric Flow Rate               | -      | Nm <sup>3</sup> /Hr                    | 1699959                | 1669485                  |                                          |
| 8                                                                    |             | Particulate Matter (PM)            | 50     | mg/Nm <sup>3</sup>                     | 3.58                   | 2.90                     | USEPA M-5                                |
| 9                                                                    |             | Particulate Fluoride               | -      | mg/Nm <sup>3</sup>                     | 0.072                  | 0.067                    | USEPA M-13B                              |
| 10                                                                   |             | Gaseous Fluoride                   | -      | mg/Nm <sup>3</sup>                     | 0.285                  | 0.271                    |                                          |
| 11                                                                   |             | Sulphur Dioxide as SO <sub>2</sub> | -      | mg/Nm <sup>3</sup>                     | 160                    | 172                      | Measured by Portable Combustion Analyser |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND – Not Deducted

\*USD – Unit Under Shut Down



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|                                                                                           | Issue Date: | 2025-05-05                |
|                                                                                           | P.O No:     | 8500005780                |
|                                                                                           | P.O Date:   | 2022-06-29                |

**Sample Particular:- STACK EMISSION MONITORING AT GAP - 2**

Analysis starting date :- 2025-04-11

Analysis Completion date :- 2025-04-22

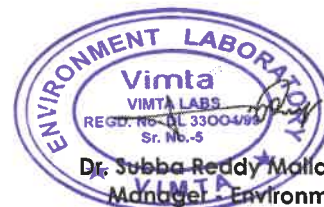
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO<sub>2</sub>, NO<sub>x</sub>, HC, VOC and PAH;**TEST RESULTS**

| GAP - 2 |          |                                                       |        |                     | GAP - 2<br>D 6 | GAP - 2<br>D 7 | GAP - 2<br>D 8 | GAP - 2<br>D 9 | Method                                         |
|---------|----------|-------------------------------------------------------|--------|---------------------|----------------|----------------|----------------|----------------|------------------------------------------------|
| S No.   | Location | Parameter                                             | Limits | Units               | 2025-04-10     | 2025-04-10     | 2025-04-10     | 2025-04-10     |                                                |
| 1       | GAP - 2  | Height of the stack                                   | -      | m                   | 60             | 60             | 60             | 60             | -                                              |
| 2       |          | Diameter                                              | -      | m                   | 1.8            | 0.36           | 0.36           | 1.8            | -                                              |
| 3       |          | Area of Cross section                                 | -      | m <sup>2</sup>      | 2.546          | 0.102          | 0.102          | 2.546          | -                                              |
| 4       |          | Stack Temperature                                     | -      | °C                  | 45             | 63             | 41             | 57             | -                                              |
| 5       |          | Stack Pressure                                        | -      | mmHg                | 731            | 728            | 728            | 727            | -                                              |
| 6       |          | Velocity                                              | -      | m/s                 | 8.7            | 8.9            | 7.3            | 8.1            | USEPA M-2                                      |
| 7       |          | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr | 71874          | 2776           | 2437           | 64131          |                                                |
| 8       |          | Particulate Matter (PM)                               | 50     | mg/Nm <sup>3</sup>  | 15.6           | 12.5           | 9.8            | 21.4           | USEPA M-5                                      |
| 10      |          | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>  | 0.073          | 0.069          | 0.049          | 0.038          | USEPA M-13B                                    |
| 11      |          | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>  | 20.0           | 42.9           | 22.9           | 20.0           | Measured by<br>Portable Combustion<br>Analyser |
| 12      |          | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | ND             | 2.1            | 4.1            | 2.1            |                                                |
| 13      |          | Hydrocarbon as HC                                     | -      | PPM                 | ND             | ND             | ND             | ND             |                                                |
| 14      |          | VOC                                                   | -      | mg/Nm <sup>3</sup>  | <0.001         | <0.001         | <0.001         | <0.001         | USEPA M-30/31                                  |
| 15      |          | PAH                                                   | 2      | mg/Nm <sup>3</sup>  | 0.015          | 0.018          | 0.013          | 0.015          | CARB 429                                       |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND - Not Deducted

\*USD - Unit Under Shut Down



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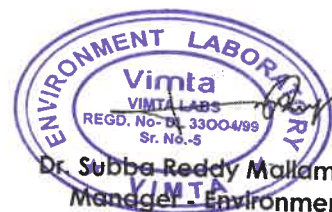
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|                                                                                                                   |                                |                                                       |               |                                        | Issue Date:                  | 2025-06-04                   |                                                |
|                                                                                                                   |                                |                                                       |               |                                        | P.O No:                      | 8500005780                   |                                                |
|                                                                                                                   |                                |                                                       |               |                                        | P.O Date:                    | 2022-06-29                   |                                                |
| <b>Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT</b>                                           |                                |                                                       |               |                                        |                              |                              |                                                |
| Analysis starting date :- 2025-05-27                                                                              |                                |                                                       |               | Analysis Completion date :- 2025-06-03 |                              |                              |                                                |
| Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO <sub>2</sub> , NO <sub>x</sub> , HC, VOC and PAH; |                                |                                                       |               |                                        |                              |                              |                                                |
| <b>TEST RESULTS</b>                                                                                               |                                |                                                       |               |                                        |                              |                              |                                                |
| <b>BAKE OVEN PLANT</b>                                                                                            |                                |                                                       |               |                                        | <b>Bake Oven<br/>FTP - 1</b> | <b>Bake Oven<br/>FTP - 2</b> | <b>Method</b>                                  |
| <b>S No.</b>                                                                                                      | <b>Location</b>                | <b>Parameter</b>                                      | <b>Limits</b> | <b>Units</b>                           | <b>2025-05-26</b>            | <b>2025-05-26</b>            |                                                |
| 1                                                                                                                 | <b>BAKE<br/>OVEN<br/>PLANT</b> | Height of the stack                                   | -             | m                                      | 55                           | 55                           | -                                              |
| 2                                                                                                                 |                                | Diameter                                              | -             | m                                      | 1.2                          | 1.9                          | -                                              |
| 3                                                                                                                 |                                | Area of Cross section                                 | -             | m <sup>2</sup>                         | 1.131                        | 2.836                        | -                                              |
| 4                                                                                                                 |                                | Stack Temperature                                     | -             | °C                                     | 90                           | 87                           | -                                              |
| 5                                                                                                                 |                                | Stack Pressure                                        | -             | mmHg                                   | 725                          | 724                          | -                                              |
| 6                                                                                                                 |                                | Velocity                                              | -             | m/s                                    | 16.5                         | 10.6                         | USEPA M-2                                      |
| 7                                                                                                                 |                                | Volumetric Flow Rate                                  | -             | Nm <sup>3</sup> /Hr                    | 52612                        | 85340                        |                                                |
| 8                                                                                                                 |                                | Particulate Matter (PM)                               | 50            | mg/Nm <sup>3</sup>                     | 11.3                         | 9.2                          | USEPA M-5                                      |
| 9                                                                                                                 |                                | Particulate Fluoride                                  | -             | mg/Nm <sup>3</sup>                     | 0.058                        | 0.071                        | USEPA M-13B                                    |
| 10                                                                                                                |                                | Gaseous Fluoride                                      | -             | mg/Nm <sup>3</sup>                     | 0.319                        | 0.356                        |                                                |
| 11                                                                                                                |                                | Sulphur Dioxide as SO <sub>2</sub>                    | -             | mg/Nm <sup>3</sup>                     | 266.0                        | 246.0                        | Measured by<br>Portable Combustion<br>Analyser |
| 12                                                                                                                |                                | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -             | mg/Nm <sup>3</sup>                     | 59.5                         | 51.3                         |                                                |
| 13                                                                                                                |                                | Hydrocarbon as HC                                     | -             | PPM                                    | ND                           | ND                           |                                                |
| 14                                                                                                                |                                | VOC                                                   | -             | mg/Nm <sup>3</sup>                     | <0.001                       | <0.001                       | USEPA M-30/31                                  |
| 15                                                                                                                |                                | PAH                                                   | 2             | mg/Nm <sup>3</sup>                     | 0.016                        | 0.015                        | CARB 429                                       |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND - Not Deducted

\*USD - Unit Under Shut Down



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|                                                                                           | Issue Date: | 2025-06-04               |
|                                                                                           | P.O No:     | 8500005780               |
|                                                                                           | P.O Date:   | 2022-06-29               |

**Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2**

Analysis starting date :- 2025-05-09

Analysis Completion date :- 2025-05-13

Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO<sub>2</sub>;

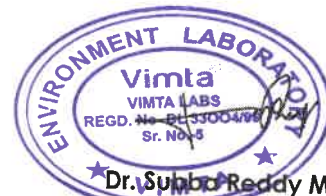
**TEST RESULTS**

| POTLINE - 2 |             |                                    |        |                     | POTLINE - 2<br>FTP - 1 | POTLINE - 2<br>FTP - 2 | Method                                   |
|-------------|-------------|------------------------------------|--------|---------------------|------------------------|------------------------|------------------------------------------|
| S No.       | Location    | Parameter                          | Limits | Units               | 2025-05-08             | 2025-05-08             |                                          |
| 1           | POTLINE - 2 | Height of the stack                | -      | m                   | 80                     | 80                     | -                                        |
| 2           |             | Diameter                           | -      | m                   | 8.2                    | 8.2                    | -                                        |
| 3           |             | Area of Cross section              | -      | m <sup>2</sup>      | 52.831                 | 52.831                 | -                                        |
| 4           |             | Stack Temperature                  | -      | °C                  | 112                    | 107                    | -                                        |
| 5           |             | Stack Pressure                     | -      | mmHg                | 727                    | 729                    | -                                        |
| 6           |             | Velocity                           | -      | m/s                 | 10.6                   | 10.7                   | USEPA M-2                                |
| 7           |             | Volumetric Flow Rate               | -      | Nm <sup>3</sup> /Hr | 1492703                | 1530811                |                                          |
| 8           |             | Particulate Matter (PM)            | 50     | mg/Nm <sup>3</sup>  | 2.56                   | 2.27                   | USEPA M-5                                |
| 9           |             | Particulate Fluoride               | -      | mg/Nm <sup>3</sup>  | 0.078                  | 0.091                  | USEPA M-13B                              |
| 10          |             | Gaseous Fluoride                   | -      | mg/Nm <sup>3</sup>  | 0.246                  | 0.272                  |                                          |
| 11          |             | Sulphur Dioxide as SO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | 149                    | 140                    | Measured by Portable Combustion Analyser |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND – Not Deducted

\*USD – Unit Under Shut Down



**Dr. Supra Reddy Mallampati**  
Manager - Environment



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|                                                                                                                   |          |                                                       |        |                     | Issue Date:                            | 2025-06-04                |                |                |                                                |
|                                                                                                                   |          |                                                       |        |                     | P.O No:                                | 8500005780                |                |                |                                                |
|                                                                                                                   |          |                                                       |        |                     | P.O Date:                              | 2022-06-29                |                |                |                                                |
| Sample Particular:- STACK EMISSION MONITORING AT GAP - 2                                                          |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| Analysis starting date :- 2025-05-12                                                                              |          |                                                       |        |                     | Analysis Completion date :- 2025-05-23 |                           |                |                |                                                |
| Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO <sub>2</sub> , NO <sub>x</sub> , HC, VOC and PAH; |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| TEST RESULTS                                                                                                      |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| GAP - 2                                                                                                           |          |                                                       |        |                     | GAP - 2<br>D 6                         | GAP - 2<br>D 7            | GAP - 2<br>D 8 | GAP - 2<br>D 9 | Method                                         |
| S No.                                                                                                             | Location | Parameter                                             | Limits | Units               | 2025-05-10                             | 2025-05-10                | 2025-05-10     | 2025-05-10     |                                                |
| 1                                                                                                                 | GAP - 2  | Height of the stack                                   | -      | m                   | 60                                     | 60                        | 60             | 60             | -                                              |
| 2                                                                                                                 |          | Diameter                                              | -      | m                   | 1.8                                    | 0.36                      | 0.36           | 1.8            | -                                              |
| 3                                                                                                                 |          | Area of Cross section                                 | -      | m <sup>2</sup>      | 2.546                                  | 0.102                     | 0.102          | 2.546          | -                                              |
| 4                                                                                                                 |          | Stack Temperature                                     | -      | °C                  | 48                                     | 65                        | 45             | 56             | -                                              |
| 5                                                                                                                 |          | Stack Pressure                                        | -      | mmHg                | 729                                    | 729                       | 728            | 727            | -                                              |
| 6                                                                                                                 |          | Velocity                                              | -      | m/s                 | 9.7                                    | 9.5                       | 8.6            | 9.0            | USEPA M-2                                      |
| 7                                                                                                                 |          | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr | 79169                                  | 2950                      | 2835           | 71473          |                                                |
| 8                                                                                                                 |          | Particulate Matter (PM)                               | 50     | mg/Nm <sup>3</sup>  | 10.3                                   | 9.6                       | 16.7           | 13.0           | USEPA M-5                                      |
| 10                                                                                                                |          | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>  | 0.042                                  | 0.059                     | 0.038          | 0.037          | USEPA M-13B                                    |
| 11                                                                                                                |          | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>  | 11.4                                   | 54.3                      | 20.2           | 25.7           | Measured by<br>Portable Combustion<br>Analyser |
| 12                                                                                                                |          | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | 2.1                                    | 4.1                       | 6.2            | 4.1            |                                                |
| 13                                                                                                                |          | Hydrocarbon as HC                                     | -      | PPM                 | ND                                     | ND                        | ND             | ND             |                                                |
| 14                                                                                                                |          | VOC                                                   | -      | mg/Nm <sup>3</sup>  | <0.001                                 | <0.001                    | <0.001         | <0.001         | USEPA M-30/31                                  |
| 15                                                                                                                |          | PAH                                                   | 2      | mg/Nm <sup>3</sup>  | 0.014                                  | 0.017                     | 0.015          | 0.016          | CARB 429                                       |

Instrument Used - Vanderghaen Stack S

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND - Not Deducted

\*USD - Unit Under Shut Down



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|                                                                                           | Issue Date: | 2025-07-04             |
|                                                                                           | P.O No:     | 8500005780             |
|                                                                                           | P.O Date:   | 2022-06-29             |

**Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT**

Analysis starting date :- 2025-06-26

Analysis Completion date :- 2025-07-03

Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO<sub>2</sub>, NO<sub>x</sub>, HC, VOC and PAH;

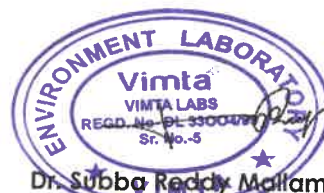
**TEST RESULTS**

| BAKE OVEN PLANT |                       |                                                       |        |                     | Bake Oven<br>FTP - 1 | Bake Oven<br>FTP - 2 | Method                                         |
|-----------------|-----------------------|-------------------------------------------------------|--------|---------------------|----------------------|----------------------|------------------------------------------------|
| S No.           | Location              | Parameter                                             | Limits | Units               | 2025-06-25           | 2025-06-25           |                                                |
| 1               | BAKE<br>OVEN<br>PLANT | Height of the stack                                   | -      | m                   | 55                   | 55                   | -                                              |
| 2               |                       | Diameter                                              | -      | m                   | 1.2                  | 1.9                  | -                                              |
| 3               |                       | Area of Cross section                                 | -      | m <sup>2</sup>      | 1.131                | 2.836                | -                                              |
| 4               |                       | Stack Temperature                                     | -      | °C                  | 102                  | 89                   | -                                              |
| 5               |                       | Stack Pressure                                        | -      | mmHg                | 725                  | 724                  | -                                              |
| 6               |                       | Velocity                                              | -      | m/s                 | 18.3                 | 10.3                 | USEPA M-2                                      |
| 7               |                       | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr | 56484                | 82467                |                                                |
| 8               |                       | Particulate Matter (PM)                               | 50     | mg/Nm <sup>3</sup>  | 7.4                  | 8.3                  | USEPA M-5                                      |
| 9               |                       | Particulate Fluoride                                  | -      | mg/Nm <sup>3</sup>  | 0.096                | 0.074                | USEPA M-13B                                    |
| 10              |                       | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>  | 0.377                | 0.310                |                                                |
| 11              |                       | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>  | 238.3                | 248.8                | Measured by<br>Portable Combustion<br>Analyser |
| 12              |                       | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | 55.4                 | 47.2                 |                                                |
| 13              |                       | Hydrocarbon as HC                                     | -      | PPM                 | ND                   | ND                   |                                                |
| 14              |                       | VOC                                                   | -      | mg/Nm <sup>3</sup>  | <0.001               | <0.001               | USEPA M-30/31                                  |
| 15              |                       | PAH                                                   | 2      | mg/Nm <sup>3</sup>  | 0.013                | 0.012                | CARB 429                                       |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND - Not Deducted

\*USD - Unit Under Shut Down



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|                                                                                           |             |                          |
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| <b>ISSUED TO:</b><br><b>M/s. Bharat Aluminium Company Limited</b><br><b>KORBA ( C.G.)</b> | Report No.: | VLL/VLS/25-26/06982/PL-2 |
|                                                                                           | Issue Date: | 2025-07-04               |
|                                                                                           | P.O No:     | 8500005780               |
|                                                                                           | P.O Date:   | 2022-06-29               |

**Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2**

Analysis starting date :- 2025-06-12

Analysis Completion date :- 2025-06-14

**Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO<sub>2</sub>;**

**TEST RESULTS**

| POTLINE - 2 |             |                                    |        |                     | POTLINE - 2<br>FTP - 1 | POTLINE - 2<br>FTP - 2 | Method                                   |
|-------------|-------------|------------------------------------|--------|---------------------|------------------------|------------------------|------------------------------------------|
| S No.       | Location    | Parameter                          | Limits | Units               | 2025-06-12             | 2025-06-11             |                                          |
| 1           | POTLINE - 2 | Height of the stack                | -      | m                   | 80                     | 80                     | -                                        |
| 2           |             | Diameter                           | -      | m                   | 8.2                    | 8.2                    | -                                        |
| 3           |             | Area of Cross section              | -      | m <sup>2</sup>      | 52.831                 | 52.831                 | -                                        |
| 4           |             | Stack Temperature                  | -      | °C                  | 109                    | 112                    | -                                        |
| 5           |             | Stack Pressure                     | -      | mmHg                | 726                    | 726                    | -                                        |
| 6           |             | Velocity                           | -      | m/s                 | 10.4                   | 11.5                   | USEPA M-2                                |
| 7           |             | Volumetric Flow Rate               | -      | Nm <sup>3</sup> /Hr | 1474011                | 1617215                |                                          |
| 8           |             | Particulate Matter (PM)            | 50     | mg/Nm <sup>3</sup>  | 3.87                   | 3.40                   | USEPA M-5                                |
| 9           |             | Particulate Fluoride               | -      | mg/Nm <sup>3</sup>  | 0.076                  | 0.095                  | USEPA M-13B                              |
| 10          |             | Gaseous Fluoride                   | -      | mg/Nm <sup>3</sup>  | 0.260                  | 0.277                  |                                          |
| 11          |             | Sulphur Dioxide as SO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | 157                    | 143                    | Measured by Portable Combustion Analyser |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND – Not Deducted

\*USD – Unit Under Shut Down



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|                                                                                                                   |          |                                                       |        |                     | Issue Date:                            | 2025-07-04                |                |                |                                                |
|                                                                                                                   |          |                                                       |        |                     | P.O No:                                | 8500005780                |                |                |                                                |
|                                                                                                                   |          |                                                       |        |                     | P.O Date:                              | 2022-06-29                |                |                |                                                |
| Sample Particular:- STACK EMISSION MONITORING AT GAP - 2                                                          |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| Analysis starting date :- 2025-06-16                                                                              |          |                                                       |        |                     | Analysis Completion date :- 2025-06-28 |                           |                |                |                                                |
| Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO <sub>2</sub> , NO <sub>x</sub> , HC, VOC and PAH; |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| TEST RESULTS                                                                                                      |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| GAP - 2                                                                                                           |          |                                                       |        |                     | GAP - 2<br>D 6                         | GAP - 2<br>D 7            | GAP - 2<br>D 8 | GAP - 2<br>D 9 | Method                                         |
| S No.                                                                                                             | Location | Parameter                                             | Limits | Units               | 2025-06-14                             | 2025-06-14                | 2025-06-14     | 2025-06-14     |                                                |
| 1                                                                                                                 | GAP - 2  | Height of the stack                                   | -      | m                   | 60                                     | 60                        | 60             | 60             | -                                              |
| 2                                                                                                                 |          | Diameter                                              | -      | m                   | 1.8                                    | 0.36                      | 0.36           | 1.8            | -                                              |
| 3                                                                                                                 |          | Area of Cross section                                 | -      | m <sup>2</sup>      | 2.546                                  | 0.102                     | 0.102          | 2.546          | -                                              |
| 4                                                                                                                 |          | Stack Temperature                                     | -      | °C                  | 60                                     | 66                        | 45             | 48             | -                                              |
| 5                                                                                                                 |          | Stack Pressure                                        | -      | mmHg                | 725                                    | 725                       | 724            | 724            | -                                              |
| 6                                                                                                                 |          | Velocity                                              | -      | m/s                 | 9.8                                    | 9.7                       | 7.6            | 9.7            | USEPA M-2                                      |
| 7                                                                                                                 |          | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr | 76680                                  | 2987                      | 2491           | 78626          |                                                |
| 8                                                                                                                 |          | Particulate Matter (PM)                               | 50     | mg/Nm <sup>3</sup>  | 11.2                                   | 17.9                      | 14.6           | 8.3            | USEPA M-5                                      |
| 10                                                                                                                |          | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>  | 0.031                                  | 0.046                     | 0.042          | 0.036          | USEPA M-13B                                    |
| 11                                                                                                                |          | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>  | 14.3                                   | 51.5                      | 20.0           | 22.9           | Measured by<br>Portable Combustion<br>Analyser |
| 12                                                                                                                |          | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | ND                                     | 2.1                       | 2.1            | ND             |                                                |
| 13                                                                                                                |          | Hydrocarbon as HC                                     | -      | PPM                 | ND                                     | ND                        | ND             | ND             |                                                |
| 14                                                                                                                |          | VOC                                                   | -      | mg/Nm <sup>3</sup>  | <0.001                                 | <0.001                    | <0.001         | <0.001         | USEPA M-30/31                                  |
| 15                                                                                                                |          | PAH                                                   | 2      | mg/Nm <sup>3</sup>  | 0.011                                  | 0.016                     | 0.014          | 0.012          | CARB 429                                       |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND – Not Deducted

\*USD – Unit Under Shut Down



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|                                                                                                                   |                       |                                                       |        |                     | Issue Date:                            | 2025-08-05             |                                                |
|                                                                                                                   |                       |                                                       |        |                     | P.O No:                                | 8500005780             |                                                |
|                                                                                                                   |                       |                                                       |        |                     | P.O Date:                              | 2022-06-29             |                                                |
| Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT                                                  |                       |                                                       |        |                     |                                        |                        |                                                |
| Analysis starting date :- 2025-07-23                                                                              |                       |                                                       |        |                     | Analysis Completion date :- 2025-07-30 |                        |                                                |
| Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO <sub>2</sub> , NO <sub>x</sub> , HC, VOC and PAH; |                       |                                                       |        |                     |                                        |                        |                                                |
| TEST RESULTS                                                                                                      |                       |                                                       |        |                     |                                        |                        |                                                |
| BAKE OVEN PLANT                                                                                                   |                       |                                                       |        |                     | Bake Oven<br>FTP - 1                   | Bake Oven<br>FTP - 2   | Method                                         |
| S No.                                                                                                             | Location              | Parameter                                             | Limits | Units               | 2025-07-22                             | 2025-07-22             |                                                |
| 1                                                                                                                 | BAKE<br>OVEN<br>PLANT | Height of the stack                                   | -      | m                   | 55                                     | 55                     | -                                              |
| 2                                                                                                                 |                       | Diameter                                              | -      | m                   | 1.2                                    | 1.9                    | -                                              |
| 3                                                                                                                 |                       | Area of Cross section                                 | -      | m <sup>2</sup>      | 1.131                                  | 2.836                  | -                                              |
| 4                                                                                                                 |                       | Stack Temperature                                     | -      | °C                  | 84                                     | 88                     | -                                              |
| 5                                                                                                                 |                       | Stack Pressure                                        | -      | mmHg                | 727                                    | 726                    | -                                              |
| 6                                                                                                                 |                       | Velocity                                              | -      | m/s                 | 15.1                                   | 10.3                   | USEPA M-2                                      |
| 7                                                                                                                 |                       | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr | 49092                                  | 82924                  |                                                |
| 8                                                                                                                 |                       | Particulate Matter (PM)                               | 30     | mg/Nm <sup>3</sup>  | 5.9                                    | 6.2                    | USEPA M-5                                      |
| 9                                                                                                                 |                       | Particulate Fluoride                                  | -      | mg/Nm <sup>3</sup>  | 0.087                                  | 0.079                  | USEPA M-13B                                    |
| 10                                                                                                                |                       | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>  | 0.361                                  | 0.311                  |                                                |
| 11                                                                                                                |                       | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>  | 323.2                                  | 237.4                  | Measured by<br>Portable Combustion<br>Analyser |
| 12                                                                                                                |                       | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | 49.2                                   | 55.4                   |                                                |
| 13                                                                                                                |                       | Hydrocarbon as HC                                     | -      | PPM                 | ND                                     | ND                     |                                                |
| 14                                                                                                                |                       | VOC                                                   | -      | mg/Nm <sup>3</sup>  | <0.001                                 | <0.001                 | USEPA M-30/31                                  |
| 15                                                                                                                |                       | PAH                                                   | 2      | mg/Nm <sup>3</sup>  | 0.012                                  | 0.016                  | CARB 429                                       |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND - Not Deducted

\*USD - Unit Under Shut Down

\*PM limit as per the CTE No. 2207/TS/CECB/2022





|                                                                      |             |                                    |        |                                        |                        |                          |                                          |
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|                                                                      |             |                                    |        |                                        | Issue Date:            | 2025-08-05               |                                          |
|                                                                      |             |                                    |        |                                        | P.O No:                | 8500005780               |                                          |
|                                                                      |             |                                    |        |                                        | P.O Date:              | 2022-06-29               |                                          |
| Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2         |             |                                    |        |                                        |                        |                          |                                          |
| Analysis starting date :- 2025-07-12                                 |             |                                    |        | Analysis Completion date :- 2025-07-15 |                        |                          |                                          |
| Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO2;    |             |                                    |        |                                        |                        |                          |                                          |
| TEST RESULTS                                                         |             |                                    |        |                                        |                        |                          |                                          |
| POTLINE - 2                                                          |             |                                    |        |                                        | POTLINE - 2<br>FTP - 1 | POTLINE - 2<br>FTP - 2   | Method                                   |
| S No.                                                                | Location    | Parameter                          | Limits | Units                                  | 2025-07-11             | 2025-07-11               |                                          |
| 1                                                                    | POTLINE - 2 | Height of the stack                | -      | m                                      | 80                     | 80                       | -                                        |
| 2                                                                    |             | Diameter                           | -      | m                                      | 8.2                    | 8.2                      | -                                        |
| 3                                                                    |             | Area of Cross section              | -      | m <sup>2</sup>                         | 52.831                 | 52.831                   | -                                        |
| 4                                                                    |             | Stack Temperature                  | -      | °C                                     | 111                    | 113                      | -                                        |
| 5                                                                    |             | Stack Pressure                     | -      | mmHg                                   | 723                    | 723                      | -                                        |
| 6                                                                    |             | Velocity                           | -      | m/s                                    | 10.6                   | 11.3                     | USEPA M-2                                |
| 7                                                                    |             | Volumetric Flow Rate               | -      | Nm <sup>3</sup> /Hr                    | 1488356                | 1578423                  |                                          |
| 8                                                                    |             | Particulate Matter (PM)            | 30     | mg/Nm <sup>3</sup>                     | 4.62                   | 2.48                     | USEPA M-5                                |
| 9                                                                    |             | Particulate Fluoride               | -      | mg/Nm <sup>3</sup>                     | 0.084                  | 0.087                    | USEPA M-13B                              |
| 10                                                                   |             | Gaseous Fluoride                   | -      | mg/Nm <sup>3</sup>                     | 0.287                  | 0.266                    |                                          |
| 11                                                                   |             | Sulphur Dioxide as SO <sub>2</sub> | -      | mg/Nm <sup>3</sup>                     | 146                    | 132                      |                                          |
|                                                                      |             |                                    |        |                                        |                        |                          | Measured by Portable Combustion Analyser |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND – Not Deducted

\*USD – Unit Under Shut Down

  
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REGD No- DL 33004/99  
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|----------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------|--------|---------------------|-----------------------------------------------|----------------|----------------|----------------|------------------------------------------------|
|                                                                                                                      |          |                                                       |        |                     | <b>Issue Date:</b> 2025-08-05                 |                |                |                |                                                |
|                                                                                                                      |          |                                                       |        |                     | <b>P.O No:</b> 8500005780                     |                |                |                |                                                |
|                                                                                                                      |          |                                                       |        |                     | <b>P.O Date:</b> 2022-06-29                   |                |                |                |                                                |
| <b>Sample Particular:- STACK EMISSION MONITORING AT GAP - 2</b>                                                      |          |                                                       |        |                     |                                               |                |                |                |                                                |
| <b>Analysis starting date :- 2025-07-25</b>                                                                          |          |                                                       |        |                     | <b>Analysis Completion date :- 2025-08-04</b> |                |                |                |                                                |
| <b>Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO<sub>2</sub>, NO<sub>x</sub>, HC, VOC and PAH;</b> |          |                                                       |        |                     |                                               |                |                |                |                                                |
| <b>TEST RESULTS</b>                                                                                                  |          |                                                       |        |                     |                                               |                |                |                |                                                |
| S No.                                                                                                                | Location | Parameter                                             | Limits | Units               | GAP - 2<br>D 6                                | GAP - 2<br>D 7 | GAP - 2<br>D 8 | GAP - 2<br>D 9 | Method                                         |
| 1                                                                                                                    | GAP - 2  | Height of the stack                                   | -      | m                   | 60                                            | 60             | 60             | 60             | -                                              |
| 2                                                                                                                    |          | Diameter                                              | -      | m                   | 1.8                                           | 0.36           | 0.36           | 1.8            | -                                              |
| 3                                                                                                                    |          | Area of Cross section                                 | -      | m <sup>2</sup>      | 2.546                                         | 0.102          | 0.102          | 2.546          | -                                              |
| 4                                                                                                                    |          | Stack Temperature                                     | -      | °C                  | 46                                            | 59             | 54             | 60             | -                                              |
| 5                                                                                                                    |          | Stack Pressure                                        | -      | mmHg                | 725                                           | 725            | 724            | 725            | -                                              |
| 6                                                                                                                    |          | Velocity                                              | -      | m/s                 | 8.9                                           | 7.6            | 7.5            | 8.4            | -                                              |
| 7                                                                                                                    |          | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr | 72694                                         | 2390           | 2391           | 65726          | USEPA M-2                                      |
| 8                                                                                                                    |          | Particulate Matter (PM)                               | 30     | mg/Nm <sup>3</sup>  | 9.5                                           | 8.9            | 10.4           | 13.7           | USEPA M-5                                      |
| 10                                                                                                                   |          | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>  | 0.043                                         | 0.039          | 0.037          | 0.045          | USEPA M-13B                                    |
| 11                                                                                                                   |          | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>  | 20.0                                          | 14.3           | 22.9           | 8.6            | Measured by<br>Portable Combustion<br>Analyser |
| 12                                                                                                                   |          | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | ND                                            | 4.1            | 6.2            | 2.1            |                                                |
| 13                                                                                                                   |          | Hydrocarbon as HC                                     | -      | PPM                 | ND                                            | ND             | ND             | ND             |                                                |
| 14                                                                                                                   |          | VOC                                                   | -      | mg/Nm <sup>3</sup>  | <0.001                                        | <0.001         | <0.001         | <0.001         | USEPA M-30/31                                  |
| 15                                                                                                                   |          | PAH                                                   | 2      | mg/Nm <sup>3</sup>  | 0.014                                         | 0.012          | 0.013          | 0.011          | CARB 429                                       |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND – Not Deducted

\*USD – Unit Under Shut Down

\*PM limit as per the CTE No. 2207/TS/CECB/2022



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|                                                                                                                   |                       |                                                       |        |                                        | Issue Date:          | 2025-09-04             |                                                |
|                                                                                                                   |                       |                                                       |        |                                        | P.O No:              | 8500005780             |                                                |
|                                                                                                                   |                       |                                                       |        |                                        | P.O Date:            | 2022-06-29             |                                                |
| Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT                                                  |                       |                                                       |        |                                        |                      |                        |                                                |
| Analysis starting date :- 2025-08-30                                                                              |                       |                                                       |        | Analysis Completion date :- 2025-09-04 |                      |                        |                                                |
| Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO <sub>2</sub> , NO <sub>x</sub> , HC, VOC and PAH; |                       |                                                       |        |                                        |                      |                        |                                                |
| TEST RESULTS                                                                                                      |                       |                                                       |        |                                        |                      |                        |                                                |
| BAKE OVEN PLANT                                                                                                   |                       |                                                       |        |                                        | Bake Oven<br>FTP - 1 | Bake Oven<br>FTP - 2   | Method                                         |
| S No.                                                                                                             | Location              | Parameter                                             | Limits | Units                                  | 2025-08-29           | 2025-08-29             |                                                |
| 1                                                                                                                 | BAKE<br>OVEN<br>PLANT | Height of the stack                                   | -      | m                                      | 55                   | 55                     | -                                              |
| 2                                                                                                                 |                       | Diameter                                              | -      | m                                      | 1.2                  | 1.9                    | -                                              |
| 3                                                                                                                 |                       | Area of Cross section                                 | -      | m <sup>2</sup>                         | 1.131                | 2.836                  | -                                              |
| 4                                                                                                                 |                       | Stack Temperature                                     | -      | °C                                     | 90                   | 85                     | -                                              |
| 5                                                                                                                 |                       | Stack Pressure                                        | -      | mmHg                                   | 728                  | 727                    | -                                              |
| 6                                                                                                                 |                       | Velocity                                              | -      | m/s                                    | 13.7                 | 8.9                    | USEPA M-2                                      |
| 7                                                                                                                 |                       | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr                    | 43864                | 72352                  |                                                |
| 8                                                                                                                 |                       | Particulate Matter (PM)                               | 30     | mg/Nm <sup>3</sup>                     | 11.3                 | 7.5                    | USEPA M-5                                      |
| 9                                                                                                                 |                       | Particulate Fluoride                                  | -      | mg/Nm <sup>3</sup>                     | 0.096                | 0.071                  | USEPA M-13B                                    |
| 10                                                                                                                |                       | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>                     | 0.392                | 0.374                  |                                                |
| 11                                                                                                                |                       | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>                     | 223.1                | 257.4                  | Measured by<br>Portable Combustion<br>Analyser |
| 12                                                                                                                |                       | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>                     | 51.3                 | 61.5                   |                                                |
| 13                                                                                                                |                       | Hydrocarbon as HC                                     | -      | PPM                                    | ND                   | ND                     |                                                |
| 14                                                                                                                |                       | VOC                                                   | -      | mg/Nm <sup>3</sup>                     | <0.001               | <0.001                 | USEPA M-30/31                                  |
| 15                                                                                                                |                       | PAH                                                   | 2      | mg/Nm <sup>3</sup>                     | 0.014                | 0.013                  | CARB 429                                       |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND – Not Deducted

\*USD – Unit Under Shut Down

\*PM limit as per the CTE No. 2207/TS/CECB/2022



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|                                                                      |             |                                    |        |                                        | Issue Date:            | 2025-09-04               |                                             |
|                                                                      |             |                                    |        |                                        | P.O No:                | 8500005780               |                                             |
|                                                                      |             |                                    |        |                                        | P.O Date:              | 2022-06-29               |                                             |
| Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2         |             |                                    |        |                                        |                        |                          |                                             |
| Analysis starting date :- 2025-08-05                                 |             |                                    |        | Analysis Completion date :- 2025-08-12 |                        |                          |                                             |
| Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO2;    |             |                                    |        |                                        |                        |                          |                                             |
| TEST RESULTS                                                         |             |                                    |        |                                        |                        |                          |                                             |
| POTLINE - 2                                                          |             |                                    |        |                                        | POTLINE - 2<br>FTP - 1 | POTLINE - 2<br>FTP - 2   | Method                                      |
| S No.                                                                | Location    | Parameter                          | Limits | Units                                  | 2025-08-04             | 2025-08-06               |                                             |
| 1                                                                    | POTLINE - 2 | Height of the stack                | -      | m                                      | 80                     | 80                       | -                                           |
| 2                                                                    |             | Diameter                           | -      | m                                      | 8.2                    | 8.2                      | -                                           |
| 3                                                                    |             | Area of Cross section              | -      | m <sup>2</sup>                         | 52.831                 | 52.831                   | -                                           |
| 4                                                                    |             | Stack Temperature                  | -      | °C                                     | 108                    | 111                      | -                                           |
| 5                                                                    |             | Stack Pressure                     | -      | mmHg                                   | 726                    | 725                      | -                                           |
| 6                                                                    |             | Velocity                           | -      | m/s                                    | 11.3                   | 11.1                     | USEPA M-2                                   |
| 7                                                                    |             | Volumetric Flow Rate               | -      | Nm <sup>3</sup> /Hr                    | 1605773                | 1562873                  |                                             |
| 8                                                                    |             | Particulate Matter (PM)            | 30     | mg/Nm <sup>3</sup>                     | 4.71                   | 4.26                     | USEPA M-5                                   |
| 9                                                                    |             | Particulate Fluoride               | -      | mg/Nm <sup>3</sup>                     | 0.076                  | 0.092                    | USEPA M-13B                                 |
| 10                                                                   |             | Gaseous Fluoride                   | -      | mg/Nm <sup>3</sup>                     | 0.267                  | 0.281                    |                                             |
| 11                                                                   |             | Sulphur Dioxide as SO <sub>2</sub> | -      | mg/Nm <sup>3</sup>                     | 103                    | 146                      | Measured by Portable<br>Combustion Analyser |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND - Not Deducted

\*USD - Unit Under Shut Down

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|-------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------|--------|---------------------|----------------------------------------|---------------------------|----------------|----------------|------------------------------------------------|
| ISSUED TO:<br>M/s. Bharat Aluminium Company Limited<br>KORBA ( C.G.)                                              |          |                                                       |        |                     | Report No:                             | VLL/VLS/25-26/11867/GAP-2 |                |                |                                                |
|                                                                                                                   |          |                                                       |        |                     | Issue Date:                            | 2025-09-04                |                |                |                                                |
|                                                                                                                   |          |                                                       |        |                     | P.O No:                                | 8500005780                |                |                |                                                |
|                                                                                                                   |          |                                                       |        |                     | P.O Date:                              | 2022-06-29                |                |                |                                                |
| Sample Particular:- STACK EMISSION MONITORING AT GAP - 2                                                          |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| Analysis starting date :- 2025-08-25                                                                              |          |                                                       |        |                     | Analysis Completion date :- 2025-09-03 |                           |                |                |                                                |
| Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO <sub>2</sub> , NO <sub>x</sub> , HC, VOC and PAH; |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| TEST RESULTS                                                                                                      |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| GAP - 2                                                                                                           |          |                                                       |        |                     | GAP - 2<br>D 6                         | GAP - 2<br>D 7            | GAP - 2<br>D 8 | GAP - 2<br>D 9 | Method                                         |
| S No.                                                                                                             | Location | Parameter                                             | Limits | Units               | 2025-08-22                             | 2025-08-22                | 2025-08-22     | 2025-08-22     |                                                |
| 1                                                                                                                 | GAP - 2  | Height of the stack                                   | -      | m                   | 60                                     | 60                        | 60             | 60             | -                                              |
| 2                                                                                                                 |          | Diameter                                              | -      | m                   | 1.8                                    | 0.36                      | 0.36           | 1.8            | -                                              |
| 3                                                                                                                 |          | Area of Cross section                                 | -      | m <sup>2</sup>      | 2.546                                  | 0.102                     | 0.102          | 2.546          | -                                              |
| 4                                                                                                                 |          | Stack Temperature                                     | -      | °C                  | 57                                     | 69                        | 42             | 52             | -                                              |
| 5                                                                                                                 |          | Stack Pressure                                        | -      | mmHg                | 726                                    | 726                       | 725            | 724            | -                                              |
| 6                                                                                                                 |          | Velocity                                              | -      | m/s                 | 9.0                                    | 8.5                       | 6.6            | 7.9            | USEPA M-2                                      |
| 7                                                                                                                 |          | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr | 71159                                  | 2598                      | 2187           | 63248          |                                                |
| 8                                                                                                                 |          | Particulate Matter (PM)                               | 30     | mg/Nm <sup>3</sup>  | 10.4                                   | 19.8                      | 8.1            | 12.7           | USEPA M-5                                      |
| 10                                                                                                                |          | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>  | 0.057                                  | 0.043                     | 0.026          | 0.056          | USEPA M-13B                                    |
| 11                                                                                                                |          | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>  | 17.2                                   | 54.3                      | 14.3           | 8.6            | Measured by<br>Portable Combustion<br>Analyser |
| 12                                                                                                                |          | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | ND                                     | 2.1                       | 2.1            | ND             |                                                |
| 13                                                                                                                |          | Hydrocarbon as HC                                     | -      | PPM                 | ND                                     | ND                        | ND             | ND             |                                                |
| 14                                                                                                                |          | VOC                                                   | -      | mg/Nm <sup>3</sup>  | <0.001                                 | <0.001                    | <0.001         | <0.001         | USEPA M-30/31                                  |
| 15                                                                                                                |          | PAH                                                   | 2      | mg/Nm <sup>3</sup>  | 0.013                                  | 0.014                     | 0.012          | 0.015          | CARB 429                                       |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND - Not Deducted

\*USD - Unit Under Shut Down

\*PM limit as per the CTE No. 2207/TS/CECB/2022



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**ISSUED TO:****M/s. Bharat Aluminium Company Limited  
KORBA ( C.G.)**

Report No:

VLL/VLS/25-26/14073/BO

Issue Date:

2025-10-04

P.O No:

8500005780

P.O Date:

2022-06-29

**Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT**

Analysis starting date :- 2025-09-25

Analysis Completion date :- 2025-10-03

Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO<sub>2</sub>, NO<sub>x</sub>, HC, VOC and PAH;**TEST RESULTS**

| BAKE OVEN PLANT |                       |                                                       |        |                     | Bake Oven<br>FTP - 1 | Bake Oven<br>FTP - 2 | Method                                         |
|-----------------|-----------------------|-------------------------------------------------------|--------|---------------------|----------------------|----------------------|------------------------------------------------|
| S No.           | Location              | Parameter                                             | Limits | Units               | 2025-09-24           | 2025-09-24           |                                                |
| 1               | BAKE<br>OVEN<br>PLANT | Height of the stack                                   | -      | m                   | 55                   | 55                   | -                                              |
| 2               |                       | Diameter                                              | -      | m                   | 1.2                  | 1.9                  | -                                              |
| 3               |                       | Area of Cross section                                 | -      | m <sup>2</sup>      | 1.131                | 2.836                | -                                              |
| 4               |                       | Stack Temperature                                     | -      | °C                  | 101                  | 84                   | -                                              |
| 5               |                       | Stack Pressure                                        | -      | mmHg                | 727                  | 724                  | -                                              |
| 6               |                       | Velocity                                              | -      | m/s                 | 14.8                 | 8.1                  | USEPA M-2                                      |
| 7               |                       | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr | 45930                | 65761                |                                                |
| 8               |                       | Particulate Matter (PM)                               | 30     | mg/Nm <sup>3</sup>  | 6.6                  | 5.1                  | USEPA M-5                                      |
| 9               |                       | Particulate Fluoride                                  | -      | mg/Nm <sup>3</sup>  | 0.103                | 0.137                | USEPA M-13B                                    |
| 10              |                       | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>  | 0.303                | 0.380                |                                                |
| 11              |                       | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>  | 320                  | 215                  | Measured by<br>Portable Combustion<br>Analyser |
| 12              |                       | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | 47.2                 | 53.3                 |                                                |
| 13              |                       | Hydrocarbon as HC                                     | -      | PPM                 | ND                   | ND                   |                                                |
| 14              |                       | VOC                                                   | -      | mg/Nm <sup>3</sup>  | <0.001               | <0.001               | USEPA M-30/31                                  |
| 15              |                       | PAH                                                   | 2      | mg/Nm <sup>3</sup>  | 0.016                | 0.015                | CARB 429                                       |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND - Not Deducted

\*USD - Unit Under Shut Down

\*PM limit as per the CTE No. 2207/TS/CECB/2022

  
**Dr. Subba Reddy Mallampati**  
 Manager - Environment

Sensitivity: Internal (C3)

|                                                                                                                   |          |                                                       |        |                     |                                        |                           |                |                |                                                |
|-------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------|--------|---------------------|----------------------------------------|---------------------------|----------------|----------------|------------------------------------------------|
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|                                                                                                                   |          |                                                       |        |                     | Issue Date:                            | 2025-10-04                |                |                |                                                |
|                                                                                                                   |          |                                                       |        |                     | P.O No:                                | 8500005780                |                |                |                                                |
|                                                                                                                   |          |                                                       |        |                     | P.O Date:                              | 2022-06-29                |                |                |                                                |
| Sample Particular:- STACK EMISSION MONITORING AT GAP - 2                                                          |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| Analysis starting date :- 2025-09-22                                                                              |          |                                                       |        |                     | Analysis Completion date :- 2025-10-03 |                           |                |                |                                                |
| Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO <sub>2</sub> , NO <sub>x</sub> , HC, VOC and PAH; |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| TEST RESULTS                                                                                                      |          |                                                       |        |                     |                                        |                           |                |                |                                                |
| GAP - 2                                                                                                           |          |                                                       |        |                     | GAP - 2<br>D 6                         | GAP - 2<br>D 7            | GAP - 2<br>D 8 | GAP - 2<br>D 9 | Method                                         |
| S No.                                                                                                             | Location | Parameter                                             | Limits | Units               | 2025-09-20                             | 2025-09-20                | 2025-09-20     | 2025-09-20     |                                                |
| 1                                                                                                                 | GAP - 2  | Height of the stack                                   | -      | m                   | 60                                     | 60                        | 60             | 60             | -                                              |
| 2                                                                                                                 |          | Diameter                                              | -      | m                   | 1.8                                    | 0.36                      | 0.36           | 1.8            | -                                              |
| 3                                                                                                                 |          | Area of Cross section                                 | -      | m <sup>2</sup>      | 2.546                                  | 0.102                     | 0.102          | 2.546          | -                                              |
| 4                                                                                                                 |          | Stack Temperature                                     | -      | °C                  | 50                                     | 57                        | 40             | 54             | -                                              |
| 5                                                                                                                 |          | Stack Pressure                                        | -      | mmHg                | 727                                    | 728                       | 727            | 726            | -                                              |
| 6                                                                                                                 |          | Velocity                                              | -      | m/s                 | 7.5                                    | 9.0                       | 6.7            | 7.6            | USEPA M-2                                      |
| 7                                                                                                                 |          | Volumetric Flow Rate                                  | -      | Nm <sup>3</sup> /Hr | 60668                                  | 2859                      | 2241           | 60641          |                                                |
| 8                                                                                                                 |          | Particulate Matter (PM)                               | 30     | mg/Nm <sup>3</sup>  | 10.6                                   | 17.2                      | 11.7           | 8.3            | USEPA M-5                                      |
| 10                                                                                                                |          | Gaseous Fluoride                                      | -      | mg/Nm <sup>3</sup>  | 0.057                                  | 0.043                     | 0.026          | 0.056          | USEPA M-13B                                    |
| 11                                                                                                                |          | Sulphur Dioxide as SO <sub>2</sub>                    | -      | mg/Nm <sup>3</sup>  | 11.4                                   | 20.0                      | 5.7            | 5.7            | Measured by<br>Portable Combustion<br>Analyser |
| 12                                                                                                                |          | Oxides of Nitrogen NO <sub>x</sub> as NO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | ND                                     | 2.1                       | ND             | ND             |                                                |
| 13                                                                                                                |          | Hydrocarbon as HC                                     | -      | PPM                 | ND                                     | ND                        | ND             | ND             |                                                |
| 14                                                                                                                |          | VOC                                                   | -      | mg/Nm <sup>3</sup>  | <0.001                                 | <0.001                    | <0.001         | <0.001         | USEPA M-30/31                                  |
| 15                                                                                                                |          | PAH                                                   | 2      | mg/Nm <sup>3</sup>  | 0.015                                  | 0.017                     | 0.013          | 0.011          | CARB 429                                       |

Instrument Used - Vayubhedhan Stack Sample Kit

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND - Not Deducted

\*USD - Unit Under Shut Down

\*PM limit as per the CTE No. 2207/TS/CECB/2022



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KORBA ( C.G.)**

|             |                          |
|-------------|--------------------------|
| Report No.: | VLL/VLS/25-26/14073/PL-2 |
| Issue Date: | 2025-10-04               |
| P.O No:     | 8500005780               |
| P.O Date:   | 2022-06-29               |

**Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2**

Analysis starting date :- 2025-09-17

Analysis Completion date :- 2025-09-29

Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO<sub>2</sub>;**TEST RESULTS**

| POTLINE - 2 (INLET) |                        |                                    |        |                     | POTLINE - 2<br>FTP - 1 | POTLINE - 2<br>FTP - 2 | Method                                      |
|---------------------|------------------------|------------------------------------|--------|---------------------|------------------------|------------------------|---------------------------------------------|
| S No.               | Location               | Parameter                          | Limits | Units               | 2025-09-16             | 2025-09-25             |                                             |
| 1                   | POTLINE - 2<br>(INLET) | Height of the stack                | -      | m                   | 80                     | 80                     | -                                           |
| 2                   |                        | Diameter                           | -      | m                   | 4.924                  | 4.924                  | -                                           |
| 3                   |                        | Area of Cross section              | -      | m <sup>2</sup>      | 19.05                  | 19.05                  | -                                           |
| 4                   |                        | Stack Temperature                  | -      | °C                  | 127                    | 133                    | -                                           |
| 5                   |                        | Stack Pressure                     | -      | mmHg                | 725                    | 723                    | -                                           |
| 6                   |                        | Velocity                           | -      | m/s                 | 17.7                   | 16.2                   | USEPA M-2                                   |
| 7                   |                        | Volumetric Flow Rate               | -      | Nm <sup>3</sup> /Hr | 862683                 | 775760                 |                                             |
| 8                   |                        | Particulate Matter (PM)            | -      | mg/Nm <sup>3</sup>  | 1462.0                 | 1998.6                 | USEPA M-5                                   |
| 9                   |                        | Particulate Fluoride               | -      | mg/Nm <sup>3</sup>  | 14.2                   | 17.1                   | USEPA M-13B                                 |
| 10                  |                        | Gaseous Fluoride                   | -      | mg/Nm <sup>3</sup>  | 136.2                  | 144.5                  |                                             |
| 11                  |                        | Sulphur Dioxide as SO <sub>2</sub> | -      | mg/Nm <sup>3</sup>  | 220                    | 235                    | Measured by Portable<br>Combustion Analyser |

\*Instrument Used - Vayubodhan Stack Sampler Kit

\*ND - Not Deducted

\*USD - Unit Under Shut Down



Sensitivity: Internal (C3)

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|--------------------------------------------------------------------------------------------|-----------|--------------------------|---------------------------|------------|--------------------------|------------|
|                                                                                            |           |                          | Issue Date:               |            | 2025-05-05               |            |
|                                                                                            |           |                          | P.O.No:                   |            | 8500005780               |            |
|                                                                                            |           |                          | P.O. Date:                |            | 2022-06-29               |            |
| <b>FUGITIVE EMISSION MONITORING AT POT LINE - 2</b>                                        |           |                          |                           |            |                          |            |
| Registration Date: 2025-04-08                                                              |           |                          | Sampling Date:            |            | 2025-04-08               |            |
| Analysis starting date : 2025-04-08                                                        |           |                          | Analysis Completion date: |            | 2025-04-10               |            |
| <b>Test Required :- PM, Fluoride;</b>                                                      |           |                          |                           |            |                          |            |
| <b>TEST RESULTS</b>                                                                        |           |                          |                           |            |                          |            |
| S. No.                                                                                     | Parameter | Units                    | POT LINE -2               |            |                          |            |
|                                                                                            |           |                          | Section 1                 | Section 2  | Section 7                | Section 8  |
|                                                                                            |           |                          | 2025-04-08                | 2025-04-09 | 2025-04-09               | 2025-04-08 |
| 1                                                                                          | PM        | $\mu\text{g}/\text{m}^3$ | 461                       | 448        | 491                      | 478        |
| 2                                                                                          | Fluoride  | $\mu\text{g}/\text{m}^3$ | 367                       | 390        | 388                      | 374        |

Remarks: Instrument Used – Handy Sampler & APM 460 BL Respirable Dust Sampler.

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|------------------------------------------------------------------------------|-----------|--------------------------|---------------------------|--------------------------|------------|------------|--|
|                                                                              |           |                          | Issue Date:               | 2025-06-04               |            |            |  |
|                                                                              |           |                          | P.O.No:                   | 8500005780               |            |            |  |
|                                                                              |           |                          | P.O. Date:                | 2022-06-29               |            |            |  |
| <b>FUGITIVE EMISSION MONITORING AT POT LINE - 2</b>                          |           |                          |                           |                          |            |            |  |
| Registration Date: 2025-05-08                                                |           |                          | Sampling Date:            |                          | 2025-05-07 |            |  |
| Analysis starting date : 2025-05-08                                          |           |                          | Analysis Completion date: |                          | 2025-05-10 |            |  |
| Test Required :- PM, Fluoride;                                               |           |                          |                           |                          |            |            |  |
| <b>TEST RESULTS</b>                                                          |           |                          |                           |                          |            |            |  |
| S. No.                                                                       | Parameter | Units                    | POT LINE -2               |                          |            |            |  |
|                                                                              |           |                          | Section 1                 | Section 2                | Section 7  | Section 8  |  |
|                                                                              |           |                          | 2025-05-08                | 2025-05-07               | 2025-05-07 | 2025-05-08 |  |
| 1                                                                            | PM        | $\mu\text{g}/\text{m}^3$ | 423                       | 469                      | 478        | 443        |  |
| 2                                                                            | Fluoride  | $\mu\text{g}/\text{m}^3$ | 390                       | 391                      | 395        | 377        |  |

Remarks: Instrument Used – Handy Sampler & APM 460 BL Respirable Dust Sampler.



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|--------------------------------------------------------------------------------------------|-----------|--------------------------|---------------------------|------------|--------------------------|------------|
| <b>ISSUED TO:</b><br><b>M/s. Bharat Aluminium Company Limited,</b><br><b>KORBA ( C.G.)</b> |           |                          | Report No.:               |            | VLL/VLS/25-26/06982/PL-F |            |
|                                                                                            |           |                          | Issue Date:               |            | 2025-07-05               |            |
|                                                                                            |           |                          | P.O.No:                   |            | 8500005780               |            |
|                                                                                            |           |                          | P.O. Date:                |            | 2022-06-29               |            |
| <b>FUGITIVE EMISSION MONITORING AT POT LINE - 2</b>                                        |           |                          |                           |            |                          |            |
| Registration Date: 2025-06-14                                                              |           |                          | Sampling Date:            |            | 2025-06-13               |            |
| Analysis starting date : 2025-06-14                                                        |           |                          | Analysis Completion date: |            | 2025-06-16               |            |
| <b>Test Required :- PM, Fluoride;</b>                                                      |           |                          |                           |            |                          |            |
| <b>TEST RESULTS</b>                                                                        |           |                          |                           |            |                          |            |
| S. No.                                                                                     | Parameter | Units                    | POT LINE -2               |            |                          |            |
|                                                                                            |           |                          | Section 1                 | Section 2  | Section 7                | Section 8  |
|                                                                                            |           |                          | 2025-06-13                | 2025-06-14 | 2025-06-14               | 2025-06-13 |
| 1                                                                                          | PM        | $\mu\text{g}/\text{m}^3$ | 491                       | 434        | 474                      | 465        |
| 2                                                                                          | Fluoride  | $\mu\text{g}/\text{m}^3$ | 333                       | 327        | 356                      | 361        |

Remarks: Instrument Used – Handy Sampler & APM 460 BL Respirable Dust Sampler.

**Dr. Subba Reddy Mallampati**  
Manager - Environment

|                                                                       |           |                   |             |                           |            |            |
|-----------------------------------------------------------------------|-----------|-------------------|-------------|---------------------------|------------|------------|
| ISSUED TO:<br>M/s. Bharat Aluminium Company Limited,<br>KORBA ( C.G.) |           |                   | Report No.: | VLL/VLS/25-26/09740/PL-F  |            |            |
|                                                                       |           |                   | Issue Date: | 2025-08-05                |            |            |
|                                                                       |           |                   | P.O.No:     | 8500005780                |            |            |
|                                                                       |           |                   | P.O. Date:  | 2022-06-29                |            |            |
| FUGITIVE EMISSION MONITORING AT POT LINE - 2                          |           |                   |             |                           |            |            |
| Registration Date:                                                    |           | 2025-07-15        |             | Sampling Date:            |            | 2025-07-12 |
| Analysis starting date :                                              |           | 2025-07-15        |             | Analysis Completion date: |            | 2025-07-16 |
| Test Required :- PM, Fluoride;                                        |           |                   |             |                           |            |            |
| TEST RESULTS                                                          |           |                   |             |                           |            |            |
| S. No.                                                                | Parameter | Units             | POT LINE -2 |                           |            |            |
|                                                                       |           |                   | Section 1   | Section 2                 | Section 7  | Section 8  |
|                                                                       |           |                   | 2025-07-14  | 2025-07-12                | 2025-07-12 | 2025-07-14 |
| 1                                                                     | PM        | µg/m <sup>3</sup> | 476         | 472                       | 439        | 491        |
| 2                                                                     | Fluoride  | µg/m <sup>3</sup> | 403         | 442                       | 372        | 343        |

Remarks: Instrument Used – Handy Sampler & APM 460 BL Respirable Dust Sampler.

  
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|                                                                                            |           |                          | Issue Date:                          |            | 2025-09-04               |            |
|                                                                                            |           |                          | P.O.No:                              |            | 8500005780               |            |
|                                                                                            |           |                          | P.O. Date:                           |            | 2022-06-29               |            |
| <b>FUGITIVE EMISSION MONITORING AT POT LINE - 2</b>                                        |           |                          |                                      |            |                          |            |
| Registration Date: 2025-08-12                                                              |           |                          | Sampling Date: 2025-08-11            |            |                          |            |
| Analysis starting date : 2025-08-12                                                        |           |                          | Analysis Completion date: 2025-08-14 |            |                          |            |
| Test Required :- PM, Fluoride;                                                             |           |                          |                                      |            |                          |            |
| <b>TEST RESULTS</b>                                                                        |           |                          |                                      |            |                          |            |
| S. No.                                                                                     | Parameter | Units                    | POT LINE -2                          |            |                          |            |
|                                                                                            |           |                          | Section 1                            | Section 2  | Section 7                | Section 8  |
|                                                                                            |           |                          | 2025-08-11                           | 2025-08-12 | 2025-08-12               | 2025-08-11 |
| 1                                                                                          | PM        | $\mu\text{g}/\text{m}^3$ | 450                                  | 479        | 461                      | 452        |
| 2                                                                                          | Fluoride  | $\mu\text{g}/\text{m}^3$ | 314                                  | 363        | 394                      | 384        |

Remarks: Instrument Used – Handy Sampler &amp; APM 460 BL Respirable Dust Sampler.



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|                                                                              |           |                          | Issue Date:               |            | 2025-10-04               |            |
|                                                                              |           |                          | P.O.No:                   |            | 8500005780               |            |
|                                                                              |           |                          | P.O. Date:                |            | 2022-06-29               |            |
| <b>FUGITIVE EMISSION MONITORING AT POT LINE - 2</b>                          |           |                          |                           |            |                          |            |
| Registration Date: 2025-09-18                                                |           |                          | Sampling Date:            |            | 2025-09-17               |            |
| Analysis starting date : 2025-09-18                                          |           |                          | Analysis Completion date: |            | 2025-09-20               |            |
| Test Required :- PM, Fluoride;                                               |           |                          |                           |            |                          |            |
| TEST RESULTS                                                                 |           |                          |                           |            |                          |            |
| S. No.                                                                       | Parameter | Units                    | POT LINE -2               |            |                          |            |
|                                                                              |           |                          | Section 1                 | Section 2  | Section 7                | Section 8  |
|                                                                              |           |                          | 2025-09-17                | 2025-09-18 | 2025-09-18               | 2025-09-17 |
| 1                                                                            | PM        | $\mu\text{g}/\text{m}^3$ | 437                       | 451        | 485                      | 478        |
| 2                                                                            | Fluoride  | $\mu\text{g}/\text{m}^3$ | 276                       | 325        | 332                      | 281        |

Remarks: Instrument Used – Handy Sampler &amp; APM 460 BL Respirable Dust Sampler.

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|                                                                                            | Issue Date: | 2025-05-05                 |
|                                                                                            | P.O.No:     | 8500005780                 |
|                                                                                            | P.O. Date:  | 2022-06-29                 |

**FORAGE FLUORIDE**

Registration Date: 2025-04-10

Sampling Date:

2025-04-08

Analysis starting date: 2025-04-10

Analysis Completion date:

2025-04-16

Test Required :- Fluoride;

**TEST RESULTS**

| S. No. | Location                | Unit | Norms | Results |
|--------|-------------------------|------|-------|---------|
| 1      | In Side of the plant    | PPM  | 80    | 36      |
| 2      | Near Parsabhata         | PPM  | 80    | 21      |
| 3      | Near Lal ghat           | PPM  | 80    | 28      |
| 4      | Near check post         | PPM  | 80    | 18      |
| 5      | Near Sharma petrol pump | PPM  | 80    | 16      |
| 6      | Bhadrapara              | PPM  | 80    | 12      |
| 7      | Risdi                   | PPM  | 80    | 14      |
| 8      | Rampur                  | PPM  | 80    | 11      |
| 9      | Manikpur                | PPM  | 80    | 13      |
| 10     | jambahar                | PPM  | 80    | 17      |
| 11     | Rumgarha                | PPM  | 80    | 20      |
| 12     | Gerwan                  | PPM  | 80    | 14      |

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|                                                                                            | Issue Date: | 2025-06-04                 |
|                                                                                            | P.O.No:     | 8500005780                 |
|                                                                                            | P.O. Date:  | 2022-06-29                 |

**FORAGE FLUORIDE**

Registration Date: 2025-05-09

Sampling Date:

2025-05-07

Analysis starting date: 2025-05-09

Analysis Completion date:

2025-05-16

Test Required :- Fluoride;

**TEST RESULTS**

| S. No. | Location                | Unit | Norms | Results |
|--------|-------------------------|------|-------|---------|
| 1      | In Side of the plant    | PPM  | 80    | 42      |
| 2      | Near Parsabhata         | PPM  | 80    | 27      |
| 3      | Near Lal ghat           | PPM  | 80    | 31      |
| 4      | Near check post         | PPM  | 80    | 22      |
| 5      | Near Sharma petrol pump | PPM  | 80    | 19      |
| 6      | Bhadrappara             | PPM  | 80    | 14      |
| 7      | Risdi                   | PPM  | 80    | 18      |
| 8      | Rampur                  | PPM  | 80    | 12      |
| 9      | Manikpur                | PPM  | 80    | 15      |
| 10     | jambahar                | PPM  | 80    | 11      |
| 11     | Rumgarha                | PPM  | 80    | 17      |
| 12     | Gerwan                  | PPM  | 80    | 16      |



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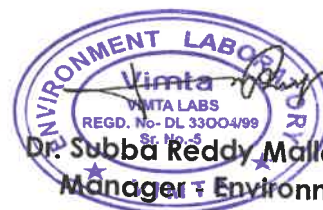
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|--------------------------------------------------------------------------------------------|-------------------------|--------------------------------------|----------------------------|---------|
|                                                                                            |                         | Issue Date:                          | 2025-07-05                 |         |
|                                                                                            |                         | P.O.No:                              | 8500005780                 |         |
|                                                                                            |                         | P.O. Date:                           | 2022-06-29                 |         |
| <b>FORAGE FLUORIDE</b>                                                                     |                         |                                      |                            |         |
| Registration Date: 2025-06-07                                                              |                         | Sampling Date: 2025-06-04            |                            |         |
| Analysis starting date: 2025-06-07                                                         |                         | Analysis Completion date: 2025-06-14 |                            |         |
| Test Required :- Fluoride;                                                                 |                         |                                      |                            |         |
| <b>TEST RESULTS</b>                                                                        |                         |                                      |                            |         |
| S. No.                                                                                     | Location                | Unit                                 | Norms                      | Results |
| 1                                                                                          | In Side of the plant    | PPM                                  | 80                         | 31      |
| 2                                                                                          | Near Parsabhata         | PPM                                  | 80                         | 16      |
| 3                                                                                          | Near Lal ghat           | PPM                                  | 80                         | 12      |
| 4                                                                                          | Near check post         | PPM                                  | 80                         | 14      |
| 5                                                                                          | Near Sharma petrol pump | PPM                                  | 80                         | 18      |
| 6                                                                                          | Bhadrapara              | PPM                                  | 80                         | 12      |
| 7                                                                                          | Risdi                   | PPM                                  | 80                         | 8       |
| 8                                                                                          | Rampur                  | PPM                                  | 80                         | 10      |
| 9                                                                                          | Manikpur                | PPM                                  | 80                         | 12      |
| 10                                                                                         | jambahar                | PPM                                  | 80                         | 6       |
| 11                                                                                         | Rumgarha                | PPM                                  | 80                         | 11      |
| 12                                                                                         | Gerwan                  | PPM                                  | 80                         | 12      |

**Dr. Subba Reddy Mallampati**  
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|                                                                                            |                         | Issue Date:                                 | 2025-08-05                 |                |
|                                                                                            |                         | P.O.No:                                     | 8500005780                 |                |
|                                                                                            |                         | P.O. Date:                                  | 2022-06-29                 |                |
| <b>FORAGE FLUORIDE</b>                                                                     |                         |                                             |                            |                |
| <b>Registration Date: 2025-07-05</b>                                                       |                         | <b>Sampling Date: 2025-07-02</b>            |                            |                |
| <b>Analysis starting date: 2025-07-05</b>                                                  |                         | <b>Analysis Completion date: 2025-07-11</b> |                            |                |
| <b>Test Required :- Fluoride;</b>                                                          |                         |                                             |                            |                |
| <b>TEST RESULTS</b>                                                                        |                         |                                             |                            |                |
| <b>S. No.</b>                                                                              | <b>Location</b>         | <b>Unit</b>                                 | <b>Norms</b>               | <b>Results</b> |
| 1                                                                                          | In Side of the plant    | PPM                                         | 80                         | 38             |
| 2                                                                                          | Near Parsabhata         | PPM                                         | 80                         | 11             |
| 3                                                                                          | Near Lal ghat           | PPM                                         | 80                         | 14             |
| 4                                                                                          | Near check post         | PPM                                         | 80                         | 13             |
| 5                                                                                          | Near Sharma petrol pump | PPM                                         | 80                         | 12             |
| 6                                                                                          | Bhadrapara              | PPM                                         | 80                         | 9              |
| 7                                                                                          | Risdi                   | PPM                                         | 80                         | 10             |
| 8                                                                                          | Rampur                  | PPM                                         | 80                         | 7              |
| 9                                                                                          | Manikpur                | PPM                                         | 80                         | 8              |
| 10                                                                                         | jambahar                | PPM                                         | 80                         | 6              |
| 11                                                                                         | Rumgarha                | PPM                                         | 80                         | 10             |
| 12                                                                                         | Gerwan                  | PPM                                         | 80                         | 11             |

  
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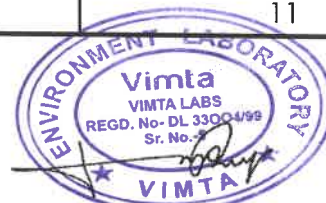
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|                                                                                            | P.O.No:     | 8500005780                 |
|                                                                                            | P.O. Date:  | 2022-06-29                 |

**FORAGE FLUORIDE****Registration Date: 2025-08-07****Sampling Date:****2025-08-05****Analysis starting date: 2025-08-07****Analysis Completion date:****2025-08-14****Test Required :- Fluoride;****TEST RESULTS**

| S. No. | Location                | Unit | Norms | Results |
|--------|-------------------------|------|-------|---------|
| 1      | In Side of the plant    | PPM  | 80    | 43      |
| 2      | Near Parsabhata         | PPM  | 80    | 25      |
| 3      | Near Lal ghat           | PPM  | 80    | 36      |
| 4      | Near check post         | PPM  | 80    | 25      |
| 5      | Near Sharma petrol pump | PPM  | 80    | 31      |
| 6      | Bhadrapara              | PPM  | 80    | 20      |
| 7      | Risdi                   | PPM  | 80    | 18      |
| 8      | Rampur                  | PPM  | 80    | 14      |
| 9      | Manikpur                | PPM  | 80    | 12      |
| 10     | jambahar                | PPM  | 80    | 10      |
| 11     | Rumgarha                | PPM  | 80    | 18      |
| 12     | Gerwan                  | PPM  | 80    | 11      |



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|                                                                                            | P.O. Date:  | 2022-06-29                 |

**FORAGE FLUORIDE**

Registration Date: 2025-09-11

Sampling Date: 2025-09-09

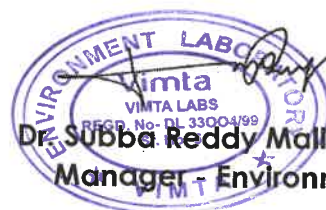
Analysis starting date: 2025-09-11

Analysis Completion date: 2025-09-17

Test Required :- Fluoride;

**TEST RESULTS**

| S. No. | Location                | Unit | Norms | Results |
|--------|-------------------------|------|-------|---------|
| 1      | In Side of the plant    | PPM  | 80    | 32      |
| 2      | Near Parsabhata         | PPM  | 80    | 21      |
| 3      | Near Lal ghat           | PPM  | 80    | 27      |
| 4      | Near check post         | PPM  | 80    | 23      |
| 5      | Near Sharma petrol pump | PPM  | 80    | 18      |
| 6      | Bhadrapara              | PPM  | 80    | 22      |
| 7      | Risdi                   | PPM  | 80    | 16      |
| 8      | Rampur                  | PPM  | 80    | 15      |
| 9      | Manikpur                | PPM  | 80    | 11      |
| 10     | jambahar                | PPM  | 80    | 13      |
| 11     | Rumgarha                | PPM  | 80    | 16      |
| 12     | Gerwan                  | PPM  | 80    | 12      |

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Sensitivity: Internal (C3)



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BALCO  
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**Report Number : VLL/VLS/25-26/02532/001**  
**Issued Date : 2025-05-05**  
**P.O. No. : 8500005780**  
**P.O. Date : 2022-06-29**

Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09  
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|----------------|----------------|---------------------|---------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 6.78           | 7.12           | 6.97                | 7.24                |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless      | Colorless      | Colorless           | Colorless           |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 1.1            | <1.0           | <1.0                | 1.2                 |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 168            | 245            | 361                 | 403                 |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 97             | 143            | 205                 | 258                 |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 75             | 110            | 165                 | 195.0               |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 24.8           | 38.4           | 69.2                | 65.5                |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 8.5            | 11.5           | 7.7                 | 22.8                |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.1           | <0.1           | <0.1                | <0.1                |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.024          | 0.019          | 0.014               | 0.16                |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 28.2           | 43.8           | 58.7                | 65.8                |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 13.6           | 16.3           | 23.2                | 22.6                |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.146          | 0.128          | 0.217               | 0.295               |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 1.9            | 2.1            | 3.2                 | 2.6                 |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001         | <0.001         | <0.001              | <0.001              |
| 18      | Cyanides                                               | mg/l  | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



**Dr. Subba Reddy Mallampati  
(Manager - Environment)**

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**ISSUED TO:**

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BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/02532/001  
Issued Date : 2025-05-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT) -**

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09  
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02          | <0.02          | <0.02               | <0.02               |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent         | Absent         | Absent              | Absent              |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003         | <0.003         | <0.003              | <0.003              |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01          | <0.01          | <0.01               | <0.01               |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01          | <0.01          | <0.01               | <0.01               |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | 0.021          | 0.005          | 0.007               | 0.036               |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | 0.006          | 0.005          | <0.01               | 0.007               |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.178          | 0.119          | 0.212               | 0.087               |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | 0.006          | <0.005         | 0.007               | <0.005              |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.013          | 0.014          | 0.009               | 0.034               |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.065          | 0.032          | 0.076               | 0.051               |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001         | <0.001         | <0.001              | <0.001              |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05          | <0.05          | <0.05               | <0.05               |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.054          | 0.063          | 0.032               | 0.055               |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
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M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/02532/001  
Issued Date : 2025-05-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09  
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|-----------------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent         | Absent         | Absent              | Absent              |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001 (NR)           | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 41      | Bromoform                               | mg/l | 0.1 (NR)              | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 42      | Dibromochloromethane                    | mg/l | 0.1 (NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 43      | Bromodichloromethane                    | mg/l | 0.06 (NR)             | <0.01          | <0.01          | <0.01               | <0.01               |
| 44      | Chloroform                              | mg/l | 0.2 (NR)              | <0.001         | <0.001         | <0.001              | <0.001              |
| (A)     | <b>Pesticides</b>                       |      |                       |                |                |                     |                     |
| 45      | Alachlor                                | µg/l | 20                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 46      | Atrazine                                | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 50      | Butachlor                               | µg/l | 125                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 54      | DDT                                     | µg/l | 1                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 56      | Ethion                                  | µg/l | 3                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/02532/001  
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P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 4 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09  
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS<br>10500 : 2012 | Rogbheri<br>(B/W) | Rogbheri<br>(D/W) | Bailgiri<br>Basti(B/W) | Bailgiri<br>Basti(D/W) |
|---------|--------------------|------------|--------------------------|-------------------|-------------------|------------------------|------------------------|
| 59      | Malathion          | µg/l       | 190                      | BDL               | BDL               | BDL                    | BDL                    |
| 60      | Methyl parathion   | µg/l       | 0.3                      | BDL               | BDL               | BDL                    | BDL                    |
| 61      | Monocrotophos      | µg/l       | 1                        | BDL               | BDL               | BDL                    | BDL                    |
| 62      | Phorate            | µg/l       | 2                        | BDL               | BDL               | BDL                    | BDL                    |
| 63      | E.coli             | Per 100 ml | Absent                   | Absent            | Absent            | Absent                 | Absent                 |
| 64      | Total Coliforms    | MPN/100ml  | Absent                   | Absent            | Absent            | Absent                 | Absent                 |
| (B)     | <b>Radioactive</b> |            |                          |                   |                   |                        |                        |
| 65      | Alpha emitters     | Bq/l       | 0.1 (NR)                 | BDL               | BDL               | BDL                    | BDL                    |
| 66      | Beta emitters      | Bq/l       | 1.0 (NR)                 | BDL               | BDL               | BDL                    | BDL                    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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P.O. Date : 2022-06-29**

Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09  
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrupada (D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|------------------|------------------|---------------------|------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 7.19             | 6.87             | 6.95                | 7.11             |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless        | Colorless        | Colorless           | Colorless        |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 5       | Turbidity                                              | NTU   | 1(5)                  | <1.0             | 1.3              | 1.2                 | 1.1              |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 322              | 390              | 196                 | 330              |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 211              | 231              | 114                 | 196              |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 180              | 210.0            | 95                  | 140              |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 52.3             | 48.5             | 21.7                | 57.5             |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 19.5             | 26.6             | 14.4                | 12.7             |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.1             | <0.1             | <0.1                | <0.1             |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.024            | 0.01             | 0.013               | 0.01             |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 36.7             | 46.3             | 33.5                | 67.4             |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 12.2             | 24               | 10.5                | 19.6             |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.231            | 0.264            | 0.228               | 0.186            |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 1.7              | 1.5              | 1.1                 | 2.3              |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001           | <0.001           | <0.001              | <0.001           |
| 18      | Cyanides as CN                                         | mg/l  | 0.05(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/02532/001  
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P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09  
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada D/W) |
|---------|--------------------------------|------|-----------------------|------------------|------------------|---------------------|-----------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02            | <0.02            | <0.02               | <0.02           |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent           | Absent           | Absent              | Absent          |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003           | <0.003           | <0.003              | <0.003          |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01            | <0.01            | <0.01               | <0.01           |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01            | <0.01            | <0.01               | <0.01           |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01            | <0.01            | <0.01               | <0.01           |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | 0.003            | 0.016            | 0.019               | 0.034           |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01            | <0.01            | <0.01               | <0.01           |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | 0.009            | 0.006            | 0.011               | 0.012           |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.045            | 0.064            | 0.034               | 0.027           |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | 0.005            | 0.008            | 0.006               | 0.011           |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01            | <0.01            | <0.01               | <0.01           |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.023            | 0.022            | 0.037               | 0.029           |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.018            | 0.014            | 0.031               | 0.026           |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001           | <0.001           | <0.001              | <0.001          |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05            | <0.05            | <0.05               | <0.05           |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05            | <0.05            | <0.05               | <0.05           |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05            | <0.05            | <0.05               | <0.05           |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.031            | 0.019            | 0.047               | 0.087           |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01            | <0.01            | <0.01               | <0.01           |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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**KORBA**  
**Chhattisgarh**

**Report Number** : VLL/VLS/25-26/02532/001  
**Issued Date** : 2025-05-05  
**P.O. No.** : 8500005780  
**P.O. Date** : 2022-06-29

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09  
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies(B/W) | Bhadrapada D/W) |
|---------|-----------------------------------------|------|-----------------------|------------------|------------------|--------------------|-----------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent           | Absent           | Absent             | Absent          |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001 (NR)           | <0.0001          | <0.0001          | <0.0001            | <0.0001         |
| 41      | Bromoform                               | mg/l | 0.1 (NR)              | <0.0001          | <0.0001          | <0.0001            | <0.0001         |
| 42      | Dibromochloromethane                    | mg/l | 0.1 (NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001           | <0.001           | <0.001             | <0.001          |
| (A)     | <b>Pesticides</b>                       |      |                       |                  |                  |                    |                 |
| 45      | Alachlor                                | µg/l | 20                    | <0.01            | <0.01            | <0.01              | <0.01           |
| 46      | Atrazine                                | µg/l | 2                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 50      | Butachlor                               | µg/l | 125                   | <0.01            | <0.01            | <0.01              | <0.01           |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01            | <0.01            | <0.01              | <0.01           |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01            | <0.01            | <0.01              | <0.01           |
| 54      | DDT                                     | µg/l | 1                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01            | <0.01            | <0.01              | <0.01           |
| 56      | Ethion                                  | µg/l | 3                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01            | <0.01            | <0.01              | <0.01           |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09  
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada (D/W) |
|---------|--------------------|------------|-----------------------|------------------|------------------|---------------------|------------------|
| 59      | Malathion          | µg/l       | 190                   | BDL              | BDL              | BDL                 | BDL              |
| 60      | Methyl parathion   | µg/l       | 0.3                   | BDL              | BDL              | BDL                 | BDL              |
| 61      | Monocrotophos      | µg/l       | 1                     | BDL              | BDL              | BDL                 | BDL              |
| 62      | Phorate            | µg/l       | 2                     | BDL              | BDL              | BDL                 | BDL              |
| 63      | E.coli             | Per 100 ml | Absent                | Absent           | Absent           | Absent              | Absent           |
| 64      | Total Coliforms    | MPN/100ml  | Absent                | Absent           | Absent           | Absent              | Absent           |
| (B)     | <b>Radioactive</b> |            |                       |                  |                  |                     |                  |
| 65      | Alpha emitters     | Bq/l       | 0.1 (NR)              | BDL              | BDL              | BDL                 | BDL              |
| 66      | Beta emitters      | Bq/l       | 1.0 (NR)              | BDL              | BDL              | BDL                 | BDL              |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

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Page 1 of 1

### SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09  
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-28  
Samples Details : SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti, SW3-Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco.

SAMPLE COLLECTED BY VIMTA LABS LTD.

### TEST REPORT

| Sr. No. | Parameters                            | Unit    | SW1    | SW2    | SW3    | SW4    |
|---------|---------------------------------------|---------|--------|--------|--------|--------|
| 1       | pH                                    | -       | 7.28   | 7.09   | 7.42   | 7.38   |
| 2       | Colour                                | Hazen   | 1      | 2      | 1      | 3      |
| 3       | Conductivity                          | µS/cm   | 135    | 275    | 190    | 240    |
| 4       | TDS                                   | mg/l    | 89     | 174    | 123    | 153    |
| 5       | DO                                    | mg/l    | 7.2    | 6.9    | 7.1    | 6.8    |
| 6       | BOD                                   | mg/l    | 1.2    | 2.7    | 1.9    | 2.8    |
| 7       | COD                                   | mg/l    | 4      | 10     | 8      | 12     |
| 8       | Turbidity                             | NTU     | 2.7    | 3.5    | 2.4    | 2.3    |
| 9       | Total Hardness as CaCO <sub>3</sub>   | mg/l    | 45     | 85     | 57     | 74     |
| 10      | Total Alkalinity as CaCO <sub>3</sub> | mg/l    | 40     | 70     | 60     | 65     |
| 11      | Calcium as Ca                         | mg/l    | 9.8    | 19.5   | 12.4   | 14.5   |
| 12      | Magnesium as Mg                       | mg/l    | 4.7    | 8.9    | 6.4    | 9.2    |
| 13      | Chlorides as Cl                       | mg/l    | 13.8   | 35.6   | 17.9   | 26.8   |
| 14      | Residual free chlorine                | mg/l    | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as PO <sub>4</sub>         | mg/l    | 0.03   | 0.06   | 0.02   | 0.05   |
| 16      | Sulphates as SO <sub>4</sub>          | mg/l    | 8.3    | 13.2   | 7.3    | 12.6   |
| 17      | Fluorides as F                        | mg/l    | 0.082  | 0.102  | 0.216  | 0.375  |
| 18      | Nitrates as NO <sub>3</sub>           | mg/l    | 0.8    | 1.3    | 1.1    | 2.4    |
| 19      | Sodium as Na                          | mg/l    | 11.3   | 23.5   | 16.4   | 19.8   |
| 20      | Potassium as K                        | mg/l    | 0.6    | 1.3    | 1.1    | 1.6    |
| 21      | Total Boron as B                      | mg/l    | 0.016  | 0.023  | 0.010  | 0.231  |
| 22      | Phenolic Compounds                    | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                          | mg/l    | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                         | mg/l    | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                         | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                          | mg/l    | <0.01  | 0.01   | 0.01   | 0.012  |
| 28      | Lead as Pb                            | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                            | mg/l    | 0.131  | 0.056  | 0.021  | 0.011  |
| 30      | Chromium as Cr <sup>6+</sup>          | mg/l    | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                            | mg/l    | 0.156  | 0.089  | 0.117  | 0.024  |
| 33      | Aluminum as Al                        | mg/l    | 0.036  | 0.024  | 0.019  | 0.016  |
| 34      | Mercury as Hg                         | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                   | -       | 0.74   | 1.11   | 0.94   | 1.00   |
| 36      | Insecticides                          | mg/l    | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS            | mg/l    | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                       | MPN/100 | 120    | 180    | 160    | 270    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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### ISSUED TO:

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/02532/002  
Issued Date : 2025-05-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 1 of 1

### SAMPLE PARTICULARS

### SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09  
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-28  
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.

SAMPLE COLLECTED BY VIMTA LABS LTD.

### TEST REPORT

| Sr. No. | Parameters                            | Unit    | SW5    | SW6    | SW7    | SW8    | SW9    |
|---------|---------------------------------------|---------|--------|--------|--------|--------|--------|
| 1       | pH                                    | -       | 7.34   | 7.48   | 7.56   | 7.52   | 7.28   |
| 2       | Colour                                | Hazen   | 1      | 3      | 2      | 1      | 1      |
| 3       | Conductivity                          | µS/cm   | 220    | 296    | 252    | 210    | 245    |
| 4       | TDS                                   | mg/l    | 143    | 190    | 160    | 135    | 156    |
| 5       | DO                                    | mg/l    | 7.4    | 7.2    | 7.3    | 6.8    | 6.7    |
| 6       | BOD                                   | mg/l    | 2.6    | 3.1    | 2.1    | 3.2    | 2.4    |
| 7       | COD                                   | mg/l    | 10     | 16     | 10     | 16     | 12     |
| 8       | Turbidity                             | NTU     | 2.2    | 2.8    | 1.9    | 3.7    | 4.2    |
| 9       | Total Hardness as CaCO <sub>3</sub>   | mg/l    | 62     | 72     | 70     | 72     | 77     |
| 10      | Total Alkalinity as CaCO <sub>3</sub> | mg/l    | 65     | 70     | 60     | 60     | 70     |
| 11      | Calcium as Ca                         | mg/l    | 11.5   | 13.6   | 15.7   | 16.7   | 14.8   |
| 12      | Magnesium as Mg                       | mg/l    | 8.1    | 9.2    | 8.4    | 7.4    | 9.7    |
| 13      | Chlorides as Cl                       | mg/l    | 25.3   | 41.7   | 34.3   | 21.6   | 25.4   |
| 14      | Residual free chlorine                | mg/l    | <0.2   | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as PO <sub>4</sub>         | mg/l    | 0.02   | 0.03   | 0.02   | 0.04   | 0.03   |
| 16      | Sulphates as SO <sub>4</sub>          | mg/l    | 8.5    | 16.8   | 14.6   | 12.2   | 13.5   |
| 17      | Fluorides as F                        | mg/l    | 0.218  | 0.265  | 0.309  | 0.294  | 0.312  |
| 18      | Nitrates as NO <sub>3</sub>           | mg/l    | 1.3    | 1.8    | 2.4    | 0.9    | 1.4    |
| 19      | Sodium as Na                          | mg/l    | 21.5   | 34.3   | 23.7   | 14.3   | 19.7   |
| 20      | Potassium as K                        | mg/l    | 1.8    | 1.6    | 0.9    | 1.1    | 1.6    |
| 21      | Total Boron as B                      | mg/l    | 0.013  | 0.008  | 0.026  | 0.017  | 0.012  |
| 22      | Phenolic Compounds                    | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                          | mg/l    | <1.0   | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                         | mg/l    | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                         | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                          | mg/l    | <0.01  | 0.01   | <0.01  | 0.01   | <0.01  |
| 28      | Lead as Pb                            | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                            | mg/l    | 0.027  | 0.043  | 0.098  | 0.036  | 0.022  |
| 30      | Chromium as Cr <sup>+6</sup>          | mg/l    | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                            | mg/l    | 0.097  | 0.078  | 0.137  | 0.067  | 0.084  |
| 33      | Aluminum as Al                        | mg/l    | 0.031  | 0.018  | 0.028  | 0.025  | 0.022  |
| 34      | Mercury as Hg                         | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                   | -       | 1.19   | 1.76   | 1.20   | 0.73   | 0.98   |
| 36      | Insecticides                          | mg/l    | Absent | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS            | mg/l    | Absent | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                       | MPN/100 | 180    | 240    | 220    | 230    | 220    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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**ISSUED TO:**

**M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh**

**Report Number : VLL/VLS/25-26/04458/001  
Issued Date : 2025-06-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29**

Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07  
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|----------------|----------------|---------------------|---------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 6.89           | 6.85           | 6.95                | 7.20                |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless      | Colorless      | Colorless           | Colorless           |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 1              | 1.2            | 1                   | 1.1                 |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 567            | 295            | 605                 | 330                 |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 263            | 167            | 300                 | 208                 |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 250            | 140            | 285                 | 180                 |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 64.8           | 42.2           | 72.6                | 54.5                |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 24.6           | 15             | 28.9                | 17.4                |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.1           | <0.1           | <0.1                | <0.1                |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.036          | 0.017          | 0.027               | 0.045               |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 98.3           | 52.6           | 91.5                | 39.7                |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 43.5           | 13.2           | 41.7                | 15.2                |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.254          | 0.419          | 0.371               | 0.486               |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 3.4            | 1.9            | 5.6                 | 2.3                 |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001         | <0.001         | <0.001              | <0.001              |
| 18      | Cyanides                                               | mg/l  | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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KORBA  
Chhattisgarh

**Report Number**

: VLL/VLS/25-26/04458/001

**Issued Date**

: 2025-06-04

**P.O. No.**

: 8500005780

**P.O. Date**

: 2022-06-29

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07  
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02          | <0.02          | <0.02               | <0.02               |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent         | Absent         | Absent              | Absent              |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003         | <0.003         | <0.003              | <0.003              |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01          | <0.01          | <0.01               | <0.01               |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01          | <0.01          | <0.01               | <0.01               |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | 0.012          | 0.006          | 0.009               | 0.028               |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | 0.008          | <0.005         | 0.006               | 0.005               |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.131          | 0.056          | 0.187               | 0.065               |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | <0.005         | <0.005         | 0.006               | <0.005              |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.021          | 0.012          | 0.017               | 0.028               |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.037          | 0.028          | 0.043               | 0.047               |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001         | <0.001         | <0.001              | <0.001              |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05          | <0.05          | <0.05               | <0.05               |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.047          | 0.058          | 0.029               | 0.063               |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) &amp; ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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Issued Date : 2025-06-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07  
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|-----------------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent         | Absent         | Absent              | Absent              |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001(NR)            | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 41      | Bromoform                               | mg/l | 0.1 (NR)              | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 42      | Dibromochloromethane                    | mg/l | 0.1 (NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001         | <0.001         | <0.001              | <0.001              |
| (A)     | <b>Pesticides</b>                       |      |                       |                |                |                     |                     |
| 45      | Alachlor                                | µg/l | 20                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 46      | Atrazine                                | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 50      | Butachlor                               | µg/l | 125                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 54      | DDT                                     | µg/l | 1                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 56      | Ethion                                  | µg/l | 3                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/04458/001  
Issued Date : 2025-06-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 4 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07  
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS<br>10500 : 2012 | Rogbheri<br>(B/W) | Rogbheri<br>(D/W) | Bailgiri<br>Basti(B/W) | Bailgiri<br>Basti(D/W) |
|---------|--------------------|------------|--------------------------|-------------------|-------------------|------------------------|------------------------|
| 59      | Malathion          | µg/l       | 190                      | BDL               | BDL               | BDL                    | BDL                    |
| 60      | Methyl parathion   | µg/l       | 0.3                      | BDL               | BDL               | BDL                    | BDL                    |
| 61      | Monocrotophos      | µg/l       | 1                        | BDL               | BDL               | BDL                    | BDL                    |
| 62      | Phorate            | µg/l       | 2                        | BDL               | BDL               | BDL                    | BDL                    |
| 63      | E.coli             | Per 100 ml | Absent                   | Absent            | Absent            | Absent                 | Absent                 |
| 64      | Total Coliforms    | MPN/100ml  | Absent                   | Absent            | Absent            | Absent                 | Absent                 |
| (B)     | <b>Radioactive</b> |            |                          |                   |                   |                        |                        |
| 65      | Alpha emitters     | Bq/l       | 0.1(NR)                  | BDL               | BDL               | BDL                    | BDL                    |
| 66      | Beta emitters      | Bq/l       | 1.0(NR)                  | BDL               | BDL               | BDL                    | BDL                    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

VIMTA LABS  
REGD. No- DL 33004/99  
Sr. No.-11  
Dr. Subba Reddy Mallampati  
(Manager - Environment)



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**P.O. Date : 2022-06-29**

Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07  
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada (D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|------------------|------------------|---------------------|------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 7.02             | 6.93             | 6.82                | 6.90             |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless        | Colorless        | Colorless           | Colorless        |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 1                | 1.3              | 1.2                 | 1                |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 335              | 155              | 190                 | 365              |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 205              | 85               | 109                 | 210              |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 175              | 80               | 90                  | 190              |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 51.5             | 20.5             | 23.3                | 61.4             |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 18.6             | 8.3              | 12.4                | 13.7             |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.1             | <0.1             | <0.1                | <0.1             |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.073            | 0.038            | 0.048               | 0.023            |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 41               | 17.7             | 29.8                | 48.4             |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 19.4             | 11.5             | 12.7                | 17.5             |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.307            | 0.404            | 0.224               | 0.166            |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 1.8              | 1.2              | 1.4                 | 1.1              |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001           | <0.001           | <0.001              | <0.001           |
| 18      | Cyanides as CN                                         | mg/l  | 0.05(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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Sr. No. 1  
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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/04458/001  
Issued Date : 2025-06-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

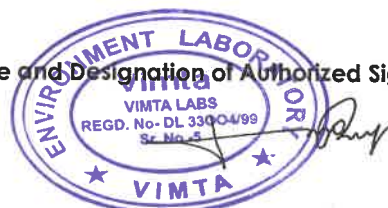
Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07  
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada (D/W) |
|---------|--------------------------------|------|-----------------------|------------------|------------------|---------------------|------------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02            | <0.02            | <0.02               | <0.02            |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent           | Absent           | Absent              | Absent           |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003           | <0.003           | <0.003              | <0.003           |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01            | <0.01            | <0.01               | <0.01            |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01            | <0.01            | <0.01               | <0.01            |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | 0.005            | 0.019            | 0.023               | 0.037            |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | 0.006            | <0.005           | 0.013               | <0.005           |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.038            | 0.078            | 0.041               | 0.018            |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | 0.005            | 0.007            | 0.016               | 0.009            |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.016            | 0.018            | 0.028               | 0.015            |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.022            | 0.018            | 0.025               | 0.031            |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001           | <0.001           | <0.001              | <0.001           |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05            | <0.05            | <0.05               | <0.05            |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05            | <0.05            | <0.05               | <0.05            |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05            | <0.05            | <0.05               | <0.05            |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.024            | 0.017            | 0.038               | 0.065            |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01            | <0.01            | <0.01               | <0.01            |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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CIN : L24110TG1990PLC011977

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Report Number : VLL/VLS/25-26/04458/001  
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P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07  
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada (D/W) |
|---------|-----------------------------------------|------|-----------------------|------------------|------------------|---------------------|------------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent           | Absent           | Absent              | Absent           |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001 (NR)           | <0.0001          | <0.0001          | <0.0001             | <0.0001          |
| 41      | Bromoform                               | mg/l | 0.1 (NR)              | <0.0001          | <0.0001          | <0.0001             | <0.0001          |
| 42      | Dibromochloromethane                    | mg/l | 0.1 (NR)              | <0.01            | <0.01            | <0.01               | <0.01            |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001           | <0.001           | <0.001              | <0.001           |
| (A)     | <b>Pesticides</b>                       |      |                       |                  |                  |                     |                  |
| 45      | Alachlor                                | µg/l | 20                    | <0.01            | <0.01            | <0.01               | <0.01            |
| 46      | Atrazine                                | µg/l | 2                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 50      | Butachlor                               | µg/l | 125                   | <0.01            | <0.01            | <0.01               | <0.01            |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01            | <0.01            | <0.01               | <0.01            |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01            | <0.01            | <0.01               | <0.01            |
| 54      | DDT                                     | µg/l | 1                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01            | <0.01            | <0.01               | <0.01            |
| 56      | Ethion                                  | µg/l | 3                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01            | <0.01            | <0.01               | <0.01            |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 4 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

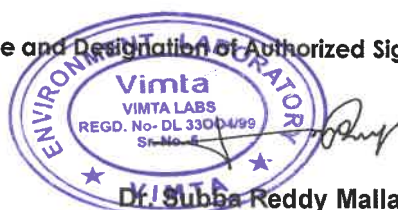
Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07  
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada D/W) |
|---------|--------------------|------------|-----------------------|------------------|------------------|---------------------|-----------------|
| 59      | Malathion          | µg/l       | 190                   | BDL              | BDL              | BDL                 | BDL             |
| 60      | Methyl parathion   | µg/l       | 0.3                   | BDL              | BDL              | BDL                 | BDL             |
| 61      | Monocrotophos      | µg/l       | 1                     | BDL              | BDL              | BDL                 | BDL             |
| 62      | Phorate            | µg/l       | 2                     | BDL              | BDL              | BDL                 | BDL             |
| 63      | E.coli             | Per 100 ml | Absent                | Absent           | Absent           | Absent              | Absent          |
| 64      | Total Coliforms    | MPN/100ml  | Absent                | Absent           | Absent           | Absent              | Absent          |
| (B)     | <b>Radioactive</b> |            |                       |                  |                  |                     |                 |
| 65      | Alpha emitters     | Bq/l       | 0.1(NR)               | BDL              | BDL              | BDL                 | BDL             |
| 66      | Beta emitters      | Bq/l       | 1.0(NR)               | BDL              | BDL              | BDL                 | BDL             |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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## ISSUED TO:

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/04458/002  
Issued Date : 2025-06-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 1 of 1

|                                     |   |                                                                                                                                                                                    |
|-------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SAMPLE PARTICULARS</b>           | : | <b>SURFACE WATER SAMPLE (BALCO PLANT)</b>                                                                                                                                          |
| Sample Registration Date            | : | 2025-05-12                                                                                                                                                                         |
| Analysis Starting Date              | : | 2025-05-12                                                                                                                                                                         |
| Samples Details                     | : | SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2. |
| SAMPLE COLLECTED BY VIMTA LABS LTD. |   |                                                                                                                                                                                    |

## TEST REPORT

| Sr. No. | Parameters                            | Unit    | SW5    | SW6    | SW7    | SW8    | SW9    |
|---------|---------------------------------------|---------|--------|--------|--------|--------|--------|
| 1       | pH                                    | -       | 7.47   | 7.52   | 7.53   | 7.31   | 7.35   |
| 2       | Colour                                | Hazen   | 1      | 2      | 1      | 2      | 2      |
| 3       | Conductivity                          | µS/cm   | 130    | 228    | 158    | 267    | 266    |
| 4       | TDS                                   | mg/l    | 91     | 157    | 122    | 158    | 172    |
| 5       | DO                                    | mg/l    | 7.3    | 7.1    | 7.2    | 6.9    | 7.1    |
| 6       | BOD                                   | mg/l    | 2.3    | 2.1    | 1.9    | 1.4    | 2.4    |
| 7       | COD                                   | mg/l    | 9.6    | 8.8    | 6.4    | 7.2    | 10     |
| 8       | Turbidity                             | NTU     | 2.2    | 2.8    | 1.9    | 3.7    | 4.2    |
| 9       | Total Hardness as CaCO <sub>3</sub>   | mg/l    | 37     | 55     | 46     | 86     | 86     |
| 10      | Total Alkalinity as CaCO <sub>3</sub> | mg/l    | 30     | 50     | 40     | 70     | 80     |
| 11      | Calcium as Ca                         | mg/l    | 9.5    | 12.7   | 11.4   | 20.5   | 18.6   |
| 12      | Magnesium as Mg                       | mg/l    | 3.2    | 5.6    | 4.3    | 8.4    | 9.7    |
| 13      | Chlorides as Cl                       | mg/l    | 25.3   | 41.7   | 34.3   | 21.6   | 25.4   |
| 14      | Residual free chlorine                | mg/l    | <0.2   | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as PO <sub>4</sub>         | mg/l    | 0.01   | 0.05   | 0.03   | 0.08   | 0.09   |
| 16      | Sulphates as SO <sub>4</sub>          | mg/l    | 8.5    | 16.8   | 14.6   | 12.2   | 13.5   |
| 17      | Fluorides as F                        | mg/l    | 0.218  | 0.265  | 0.324  | 0.294  | 0.312  |
| 18      | Nitrates as NO <sub>3</sub>           | mg/l    | 0.8    | 2.1    | 1.8    | 2.7    | 1.9    |
| 19      | Sodium as Na                          | mg/l    | 12.5   | 26.2   | 14.8   | 21     | 19.7   |
| 20      | Potassium as K                        | mg/l    | 0.7    | 1.5    | 0.3    | 1.6    | 2.3    |
| 21      | Total Boron as B                      | mg/l    | 0.011  | 0.028  | 0.031  | 0.025  | 0.018  |
| 22      | Phenolic Compounds                    | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                          | mg/l    | <1.0   | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                         | mg/l    | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                         | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                          | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 28      | Lead as Pb                            | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                            | mg/l    | 0.029  | 0.068  | 0.043  | 0.057  | 0.063  |
| 30      | Chromium as Cr <sup>+6</sup>          | mg/l    | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                            | mg/l    | 0.084  | 0.069  | 0.112  | 0.056  | 0.068  |
| 33      | Aluminum as Al                        | mg/l    | 0.026  | 0.037  | 0.022  | 0.018  | 0.035  |
| 34      | Mercury as Hg                         | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                   | -       | 0.90   | 1.54   | 0.95   | 0.99   | 0.92   |
| 36      | Insecticides                          | mg/l    | Absent | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS            | mg/l    | Absent | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                       | MPN/100 | 170    | 190    | 180    | 210    | 280    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Signature and Designation of Authorized Signatory  
  
Dr. Subba Reddy Mallampati  
(Manager – Environment)



## Vimta Labs Limited

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### ISSUED TO:

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/04458/001  
Issued Date : 2025-06-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 1 of 1

### SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07  
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30  
Samples Details : SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Baigiri Basti, SW3-Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco.

SAMPLE COLLECTED BY VIMTA LABS LTD.

### TEST REPORT

| Sr. No. | Parameters                            | Unit    | SW1    | SW2    | SW3    | SW4    |
|---------|---------------------------------------|---------|--------|--------|--------|--------|
| 1       | pH                                    | -       | 7.48   | 7.26   | 7.52   | 7.40   |
| 2       | Colour                                | Hazen   | <1.0   | 2      | 1      | 2      |
| 3       | Conductivity                          | µS/cm   | 120    | 365    | 150    | 210    |
| 4       | TDS                                   | mg/l    | 75     | 233    | 95     | 130    |
| 5       | DO                                    | mg/l    | 7.5    | 6.8    | 7.3    | 7.1    |
| 6       | BOD                                   | mg/l    | 1.4    | 2.7    | 1.7    | 2.3    |
| 7       | COD                                   | mg/l    | 16.4   | 24.8   | 16.0   | 23.6   |
| 8       | Turbidity                             | NTU     | 2.7    | 3.5    | 2.4    | 2.3    |
| 9       | Total Hardness as CaCO <sub>3</sub>   | mg/l    | 38     | 106    | 44     | 54     |
| 10      | Total Alkalinity as CaCO <sub>3</sub> | mg/l    | 30     | 110    | 40     | 45     |
| 11      | Calcium as Ca                         | mg/l    | 8.6    | 24.5   | 10     | 12.7   |
| 12      | Magnesium as Mg                       | mg/l    | 3.9    | 10.8   | 4.7    | 5.4    |
| 13      | Chlorides as Cl                       | mg/l    | 14.2   | 28.5   | 17.6   | 28.7   |
| 14      | Residual free chlorine                | mg/l    | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as PO <sub>4</sub>         | mg/l    | 0.02   | 0.08   | 0.03   | 0.07   |
| 16      | Sulphates as SO <sub>4</sub>          | mg/l    | 6.3    | 15.8   | 7.1    | 9.2    |
| 17      | Fluorides as F                        | mg/l    | 0.092  | 0.418  | 0.346  | 0.503  |
| 18      | Nitrates as NO <sub>3</sub>           | mg/l    | 0.3    | 1.1    | 0.7    | 1.6    |
| 19      | Sodium as Na                          | mg/l    | 10.2   | 34.3   | 13.2   | 21.8   |
| 20      | Potassium as K                        | mg/l    | 0.4    | 1.8    | 0.9    | 2.3    |
| 21      | Total Boron as B                      | mg/l    | 0.012  | 0.034  | 0.011  | 0.163  |
| 22      | Phenolic Compounds                    | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                          | mg/l    | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                         | mg/l    | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                         | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                          | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 28      | Lead as Pb                            | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                            | mg/l    | 0.072  | 0.097  | 0.018  | 0.023  |
| 30      | Chromium as Cr <sup>6+</sup>          | mg/l    | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                            | mg/l    | 0.076  | 0.098  | 0.095  | 0.065  |
| 33      | Aluminum as Al                        | mg/l    | 0.017  | 0.035  | 0.012  | 0.034  |
| 34      | Mercury as Hg                         | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                   | -       | 0.72   | 1.45   | 0.86   | 1.29   |
| 36      | Insecticides                          | mg/l    | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS            | mg/l    | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                       | MPN/100 | 90     | 160    | 140    | 240    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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CIN : L24110TG1990PLC011977



**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/06982/001  
Issued Date : 2025-07-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03  
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada (D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|------------------|------------------|---------------------|------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 7.49             | 6.95             | 6.93                | 6.84             |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless        | Colorless        | Colorless           | Colorless        |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 5                | 2                | 2                   | 1                |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 272              | 175              | 245                 | 286              |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 167              | 103              | 145                 | 160              |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 140              | 90               | 125                 | 150              |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 41.6             | 23.2             | 35.5                | 43.8             |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 15.3             | 11               | 13.5                | 12.2             |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.1             | <0.1             | <0.1                | <0.1             |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.054            | 0.041            | 0.033               | 0.021            |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 36.4             | 23.3             | 33.2                | 37.1             |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 15.3             | 10.2             | 14.7                | 13.1             |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.243            | 0.189            | 0.185               | 0.147            |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 2.5              | 1.6              | 1.8                 | 2.4              |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001           | <0.001           | <0.001              | <0.001           |
| 18      | Cyanides as CN                                         | mg/l  | 0.05(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
VIMTA LABS  
REGD. No. DL 3100456  
Sr. No. 3  
Dr. Subba Reddy Mallampati  
(Manager - Environment)

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KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/06982/001  
Issued Date : 2025-07-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03  
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada D/W |
|---------|--------------------------------|------|-----------------------|------------------|------------------|---------------------|----------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02            | <0.02            | <0.02               | <0.02          |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent           | Absent           | Absent              | Absent         |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003           | <0.003           | <0.003              | <0.003         |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01            | <0.01            | <0.01               | <0.01          |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01            | <0.01            | 0.01                | <0.01          |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01            | <0.01            | <0.01               | <0.01          |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | <0.005           | 0.013            | 0.021               | 0.035          |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01            | <0.01            | <0.01               | <0.01          |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | 0.005            | <0.005           | 0.009               | <0.005         |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.049            | 0.084            | 0.036               | 0.023          |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | 0.007            | 0.005            | 0.011               | 0.007          |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01            | <0.01            | <0.01               | <0.01          |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.013            | 0.021            | 0.034               | 0.019          |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.027            | 0.015            | 0.037               | 0.028          |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001           | <0.001           | <0.001              | <0.001         |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05            | <0.05            | <0.05               | <0.05          |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05            | <0.05            | <0.05               | <0.05          |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05            | <0.05            | <0.05               | <0.05          |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.013            | 0.021            | 0.032               | 0.048          |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01            | <0.01            | <0.01               | <0.01          |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/06982/001  
Issued Date : 2025-07-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03  
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada (D/W) |
|---------|-----------------------------------------|------|-----------------------|------------------|------------------|---------------------|------------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent           | Absent           | Absent              | Absent           |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001(NR)            | <0.0001          | <0.0001          | <0.0001             | <0.0001          |
| 41      | Bromoform                               | mg/l | 0.1(NR)               | <0.0001          | <0.0001          | <0.0001             | <0.0001          |
| 42      | Dibromochloromethane                    | mg/l | 0.1(NR)               | <0.01            | <0.01            | <0.01               | <0.01            |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001           | <0.001           | <0.001              | <0.001           |
| (A)     | <b>Pesticides</b>                       |      |                       |                  |                  |                     |                  |
| 45      | Alachlor                                | µg/l | 20                    | <0.01            | <0.01            | <0.01               | <0.01            |
| 46      | Atrazine                                | µg/l | 2                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 50      | Butachlor                               | µg/l | 125                   | <0.01            | <0.01            | <0.01               | <0.01            |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01            | <0.01            | <0.01               | <0.01            |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01            | <0.01            | <0.01               | <0.01            |
| 54      | DDT                                     | µg/l | 1                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01            | <0.01            | <0.01               | <0.01            |
| 56      | Ethion                                  | µg/l | 3                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01            | <0.01            | <0.01               | <0.01            |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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Issued Date : 2025-07-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 4 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03  
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada D/W) |
|---------|--------------------|------------|-----------------------|------------------|------------------|---------------------|-----------------|
| 59      | Malathion          | µg/l       | 190                   | BDL              | BDL              | BDL                 | BDL             |
| 60      | Methyl parathion   | µg/l       | 0.3                   | BDL              | BDL              | BDL                 | BDL             |
| 61      | Monocrotophos      | µg/l       | 1                     | BDL              | BDL              | BDL                 | BDL             |
| 62      | Phorate            | µg/l       | 2                     | BDL              | BDL              | BDL                 | BDL             |
| 63      | E.coli             | Per 100 ml | Absent                | Absent           | Absent           | Absent              | Absent          |
| 64      | Total Coliforms    | MPN/100ml  | Absent                | Absent           | Absent           | Absent              | Absent          |
| (B)     | <b>Radioactive</b> |            |                       |                  |                  |                     |                 |
| 65      | Alpha emitters     | Bq/l       | 0.1(NR)               | BDL              | BDL              | BDL                 | BDL             |
| 66      | Beta emitters      | Bq/l       | 1.0(NR)               | BDL              | BDL              | BDL                 | BDL             |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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P.O. No. : 8500005780  
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Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

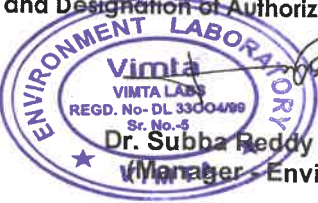
Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03  
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|----------------|----------------|---------------------|---------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 6.98           | 6.75           | 6.62                | 7.18                |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless      | Colorless      | Colorless           | Colorless           |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 1              | 1              | 3                   | 2                   |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 482            | 265            | 495                 | 296                 |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 225            | 148            | 220                 | 175                 |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 240            | 130            | 250                 | 160                 |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 54.3           | 37.5           | 58.2                | 45.5                |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 21.6           | 13.2           | 18.7                | 14.6                |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.1           | <0.1           | <0.1                | <0.1                |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.028          | 0.013          | 0.019               | 0.034               |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 69.6           | 38.8           | 65.3                | 33.4                |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 25.8           | 17.1           | 27.4                | 13.7                |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.147          | 0.160          | 0.352               | 0.321               |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 2.9            | 1.7            | 3.2                 | 2.1                 |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001         | <0.001         | <0.001              | <0.001              |
| 18      | Cyanides                                               | mg/l  | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
VIMTA LABS  
REGD. No- DL 3300498  
Sr. No.-5  
Dr. Subba Reddy Mallampati  
(Manager - Environment)



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**M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh**

**Report Number : VLL/VLS/25-26/06982/001**  
**Issued Date : 2025-07-05**  
**P.O. No. : 8500005780**  
**P.O. Date : 2022-06-29**

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03  
 Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30  
 Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02          | <0.02          | <0.02               | <0.02               |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent         | Absent         | Absent              | Absent              |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003         | <0.003         | <0.003              | <0.003              |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01          | <0.01          | <0.01               | <0.01               |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01          | <0.01          | <0.01               | <0.01               |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | 0.011          | 0.005          | 0.007               | 0.019               |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | 0.006          | <0.005         | <0.005              | 0.005               |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.127          | 0.048          | 0.154               | 0.074               |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | <0.005         | <0.005         | 0.005               | <0.005              |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.019          | 0.010          | 0.015               | 0.023               |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.029          | 0.017          | 0.035               | 0.038               |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001         | <0.001         | <0.001              | <0.001              |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05          | <0.05          | <0.05               | <0.05               |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.024          | 0.036          | 0.018               | 0.047               |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) &amp; ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



**Dr. Subba Reddy Mallampati**  
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P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03  
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|-----------------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent         | Absent         | Absent              | Absent              |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001(NR)            | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 41      | Bromoform                               | mg/l | 0.1(NR)               | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 42      | Dibromochloromethane                    | mg/l | 0.1(NR)               | <0.01          | <0.01          | <0.01               | <0.01               |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001         | <0.001         | <0.001              | <0.001              |
| (A)     | <b>Pesticides</b>                       |      |                       |                |                |                     |                     |
| 45      | Alachlor                                | µg/l | 20                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 46      | Atrazine                                | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 50      | Butachlor                               | µg/l | 125                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 54      | DDT                                     | µg/l | 1                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 56      | Ethion                                  | µg/l | 3                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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Page 4 of 4

**SAMPLE PARTICULARS****GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03  
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS<br>10500 : 2012 | Rogbheri<br>(B/W) | Rogbheri<br>(D/W) | Bailgiri<br>Basti(B/W) | Bailgiri<br>Basti(D/W) |
|---------|--------------------|------------|--------------------------|-------------------|-------------------|------------------------|------------------------|
| 59      | Malathion          | µg/l       | 190                      | BDL               | BDL               | BDL                    | BDL                    |
| 60      | Methyl parathion   | µg/l       | 0.3                      | BDL               | BDL               | BDL                    | BDL                    |
| 61      | Monocrotophos      | µg/l       | 1                        | BDL               | BDL               | BDL                    | BDL                    |
| 62      | Phorate            | µg/l       | 2                        | BDL               | BDL               | BDL                    | BDL                    |
| 63      | E.coli             | Per 100 ml | Absent                   | Absent            | Absent            | Absent                 | Absent                 |
| 64      | Total Coliforms    | MPN/100ml  | Absent                   | Absent            | Absent            | Absent                 | Absent                 |
| (B)     | <b>Radioactive</b> |            |                          |                   |                   |                        |                        |
| 65      | Alpha emitters     | Bq/l       | 0.1 (NR)                 | BDL               | BDL               | BDL                    | BDL                    |
| 66      | Beta emitters      | Bq/l       | 1.0(NR)                  | BDL               | BDL               | BDL                    | BDL                    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

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P.O. Date : 2022-06-29

Page 1 of 1

### SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03  
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-24  
Samples Details : SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti, SW3-Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco.

SAMPLE COLLECTED BY VIMTA LABS LTD.

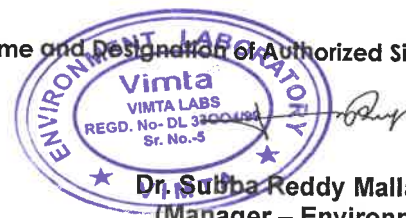
### TEST REPORT

| Sr. No. | Parameters                            | Unit    | SW1    | SW2    | SW3    | SW4    |
|---------|---------------------------------------|---------|--------|--------|--------|--------|
| 1       | pH                                    | -       | 7.23   | 7.25   | 7.23   | 7.24   |
| 2       | Colour                                | Hazen   | 1      | 2      | 1      | 2      |
| 3       | Conductivity                          | µS/cm   | 157    | 204    | 184    | 290    |
| 4       | TDS                                   | mg/l    | 98     | 124    | 117    | 182    |
| 5       | DO                                    | mg/l    | 6.3    | 6.1    | 6.4    | 5.9    |
| 6       | BOD                                   | mg/l    | 1.2    | 2.7    | 1.9    | 2.8    |
| 7       | COD                                   | mg/l    | 5      | 12     | 6      | 10     |
| 8       | Turbidity                             | NTU     | 15.0   | 8.0    | 20.0   | 9.0    |
| 9       | Total Hardness as CaCO <sub>3</sub>   | mg/l    | 44     | 87     | 63     | 74     |
| 10      | Total Alkalinity as CaCO <sub>3</sub> | mg/l    | 40     | 75     | 50     | 60     |
| 11      | Calcium as Ca                         | mg/l    | 10.0   | 21     | 13.5   | 15     |
| 12      | Magnesium as Mg                       | mg/l    | 4.7    | 8.4    | 7.2    | 8.9    |
| 13      | Chlorides as Cl                       | mg/l    | 20.5   | 35.1   | 22.3   | 43.7   |
| 14      | Residual free chlorine                | mg/l    | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as PO <sub>4</sub>         | mg/l    | 0.03   | 0.06   | 0.02   | 0.04   |
| 16      | Sulphates as SO <sub>4</sub>          | mg/l    | 7.4    | 14.3   | 8.4    | 18.2   |
| 17      | Fluorides as F                        | mg/l    | 0.218  | 0.353  | 0.252  | 0.306  |
| 18      | Nitrates as NO <sub>3</sub>           | mg/l    | 0.7    | 1.4    | 1.3    | 1.6    |
| 19      | Sodium as Na                          | mg/l    | 14.8   | 29.2   | 12.7   | 31.5   |
| 20      | Potassium as K                        | mg/l    | 1.1    | 1.6    | 0.9    | 1.7    |
| 21      | Total Boron as B                      | mg/l    | 0.007  | 0.019  | 0.010  | 0.141  |
| 22      | Phenolic Compounds                    | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                          | mg/l    | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                         | mg/l    | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                         | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                          | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 28      | Lead as Pb                            | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                            | mg/l    | 0.023  | 0.098  | 0.037  | 0.016  |
| 30      | Chromium as Cr <sup>6+</sup>          | mg/l    | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                            | mg/l    | 0.065  | 0.143  | 0.097  | 0.129  |
| 33      | Aluminum as Al                        | mg/l    | 0.010  | 0.017  | 0.010  | 0.035  |
| 34      | Mercury as Hg                         | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                   | -       | 0.97   | 1.36   | 0.69   | 1.59   |
| 36      | Insecticides                          | mg/l    | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS            | mg/l    | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                       | MPN/100 | 70     | 140    | 90     | 160    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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Page 1 of 1

### SAMPLE PARTICULARS

### SURFACE WATER SAMPLE (BALCO PLANT)

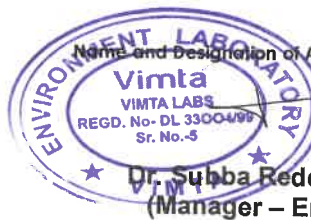
Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03  
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-24  
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.  
SAMPLE COLLECTED BY VIMTA LABS LTD.

### TEST REPORT

| Sr. No. | Parameters                            | Unit    | SW5    | SW6    | SW7    | SW8    | SW9    |
|---------|---------------------------------------|---------|--------|--------|--------|--------|--------|
| 1       | pH                                    | -       | 7.33   | 7.88   | 7.56   | 7.40   | 7.70   |
| 2       | Colour                                | Hazen   | 1      | 2      | 1      | 3      | 3      |
| 3       | Conductivity                          | µS/cm   | 175    | 316    | 254    | 295    | 214    |
| 4       | TDS                                   | mg/l    | 82     | 142    | 95     | 170    | 168    |
| 5       | DO                                    | mg/l    | 7.2    | 7.1    | 7.3    | 7.4    | 7.2    |
| 6       | BOD                                   | mg/l    | 2.6    | 3.1    | 2.4    | 2.8    | 2.4    |
| 7       | COD                                   | mg/l    | 6.6    | 7.2    | 7.4    | 7.9    | 7.7    |
| 8       | Turbidity                             | NTU     | 3      | 2      | 2      | 2      | 3      |
| 9       | Total Hardness as CaCO <sub>3</sub>   | mg/l    | 37     | 55     | 46     | 86     | 80     |
| 10      | Total Alkalinity as CaCO <sub>3</sub> | mg/l    | 30     | 40     | 35     | 65     | 75     |
| 11      | Calcium as Ca                         | mg/l    | 9.5    | 12.7   | 11.4   | 20.5   | 18.6   |
| 12      | Magnesium as Mg                       | mg/l    | 3.2    | 5.6    | 4.3    | 8.4    | 9.7    |
| 13      | Chlorides as Cl                       | mg/l    | 19.7   | 38.6   | 22.5   | 32.1   | 26.4   |
| 14      | Residual free chlorine                | mg/l    | <0.2   | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as PO <sub>4</sub>         | mg/l    | 0.02   | 0.06   | 0.04   | 0.07   | 0.08   |
| 16      | Sulphates as SO <sub>4</sub>          | mg/l    | 5.2    | 14.2   | 9.5    | 16.3   | 14.4   |
| 17      | Fluorides as F                        | mg/l    | 0.415  | 0.421  | 0.408  | 0.432  | 0.426  |
| 18      | Nitrates as NO <sub>3</sub>           | mg/l    | 0.75   | 2.2    | 1.2    | 3.2    | 1.9    |
| 19      | Sodium as Na                          | mg/l    | 12.5   | 26.2   | 14.8   | 21     | 19.7   |
| 20      | Potassium as K                        | mg/l    | 0.7    | 1.5    | 0.3    | 1.6    | 2.3    |
| 21      | Total Boron as B                      | mg/l    | 0.01   | 0.015  | 0.021  | 0.026  | 0.017  |
| 22      | Phenolic Compounds                    | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                          | mg/l    | <1.0   | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                         | mg/l    | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                         | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                          | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 28      | Lead as Pb                            | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                            | mg/l    | 0.015  | 0.064  | 0.042  | 0.025  | 0.061  |
| 30      | Chromium as Cr <sup>+6</sup>          | mg/l    | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                            | mg/l    | 0.087  | 0.043  | 0.087  | 0.052  | 0.094  |
| 33      | Aluminum as Al                        | mg/l    | 0.014  | 0.019  | 0.016  | 0.022  | 0.021  |
| 34      | Mercury as Hg                         | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                   | -       | 0.90   | 1.54   | 0.95   | 0.99   | 0.92   |
| 36      | Insecticides                          | mg/l    | Absent | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS            | mg/l    | Absent | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                       | MPN/100 | 90     | 110    | 110    | 130    | 120    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

- END OF THE REPORTS -

Signature and Designation of Authorized Signatory  
  
REGD. No- DL 3300499  
Sr. No.-5  
Dr. Subba Reddy Mallampati  
(Manager – Environment)



**ISSUED TO:**

**M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh**

**Report Number : VLL/VLS/25-26/09740/001  
Issued Date : 2025-08-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29**

Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

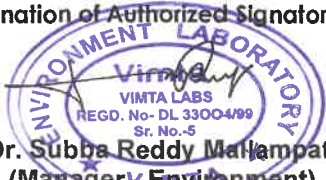
Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01  
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|----------------|----------------|---------------------|---------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 6.82           | 6.95           | 6.93                | 7.04                |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless      | Colorless      | Colorless           | Colorless           |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 2              | 2              | 1                   | 1                   |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 458            | 242            | 455                 | 277                 |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 216            | 133            | 214                 | 159                 |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 227            | 118            | 233                 | 147                 |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 41.6           | 28.4           | 51.7                | 41.3                |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 18.7           | 11.9           | 15.3                | 12.4                |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.1           | <0.1           | <0.1                | <0.1                |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.021          | 0.011          | 0.016               | 0.027               |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 54.8           | 34.1           | 59.3                | 27.4                |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 24.1           | 15.3           | 22.2                | 11.6                |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.128          | 0.114          | 0.286               | 0.247               |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 2.4            | 1.6            | 2.7                 | 1.8                 |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001         | <0.001         | <0.001              | <0.001              |
| 18      | Cyanides                                               | mg/l  | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

**Name and Designation of Authorized Signatory**

  
**Dr. Subba Reddy Mallampati**  
(Manager, Environment)

**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/09740/001  
Issued Date : 2025-08-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01  
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25  
Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02          | <0.02          | <0.02               | <0.02               |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent         | Absent         | Absent              | Absent              |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003         | <0.003         | <0.003              | <0.003              |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01          | <0.01          | <0.01               | <0.01               |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01          | <0.01          | <0.01               | <0.01               |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | 0.008          | 0.002          | 0.005               | 0.012               |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | 0.004          | <0.005         | <0.005              | 0.003               |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.114          | 0.032          | 0.106               | 0.069               |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | <0.005         | <0.005         | <0.005              | <0.005              |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.014          | 0.018          | 0.019               | 0.021               |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.018          | 0.015          | 0.018               | 0.022               |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001         | <0.001         | <0.001              | <0.001              |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05          | <0.05          | <0.05               | <0.05               |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.018          | 0.031          | 0.015               | 0.037               |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

**Dr. Subba Reddy Mallampati**  
(Manager - Environment)

**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/09740/001  
Issued Date : 2025-08-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01  
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|-----------------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent         | Absent         | Absent              | Absent              |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001(NR)            | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 41      | Bromoform                               | mg/l | 0.1(NR)               | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 42      | Dibromochloromethane                    | mg/l | 0.1(NR)               | <0.01          | <0.01          | <0.01               | <0.01               |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001         | <0.001         | <0.001              | <0.001              |
| (A)     | <b>Pesticides</b>                       |      |                       |                |                |                     |                     |
| 45      | Alachlor                                | µg/l | 20                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 46      | Atrazine                                | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 50      | Butachlor                               | µg/l | 125                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 54      | DDT                                     | µg/l | 1                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 56      | Ethion                                  | µg/l | 3                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
Dr. Subba Reddy Mallampati  
(Manager - Environment)

**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/09740/001  
Issued Date : 2025-08-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 4 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01  
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS<br>10500 : 2012 | Rogbheri<br>(B/W) | Rogbheri<br>(D/W) | Bailgiri<br>Basti(B/W) | Bailgiri<br>Basti(D/W) |
|---------|--------------------|------------|--------------------------|-------------------|-------------------|------------------------|------------------------|
| 59      | Malathion          | µg/l       | 190                      | BDL               | BDL               | BDL                    | BDL                    |
| 60      | Methyl parathion   | µg/l       | 0.3                      | BDL               | BDL               | BDL                    | BDL                    |
| 61      | Monocrotophos      | µg/l       | 1                        | BDL               | BDL               | BDL                    | BDL                    |
| 62      | Phorate            | µg/l       | 2                        | BDL               | BDL               | BDL                    | BDL                    |
| 63      | E.coli             | Per 100 ml | Absent                   | Absent            | Absent            | Absent                 | Absent                 |
| 64      | Total Coliforms    | MPN/100ml  | Absent                   | Absent            | Absent            | Absent                 | Absent                 |
| (B)     | <b>Radioactive</b> |            |                          |                   |                   |                        |                        |
| 65      | Alpha emitters     | Bq/l       | 0.1(NR)                  | BDL               | BDL               | BDL                    | BDL                    |
| 66      | Beta emitters      | Bq/l       | 1.0(NR)                  | BDL               | BDL               | BDL                    | BDL                    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati  
(Manager - Environment)





**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/09740/001  
Issued Date : 2025-08-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

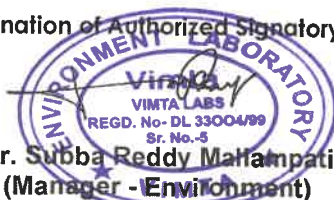
Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01  
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada (D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|------------------|------------------|---------------------|------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 7.31             | 6.94             | 6.97                | 6.96             |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless        | Colorless        | Colorless           | Colorless        |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 3                | 2                | 1                   | 2                |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 259              | 162              | 221                 | 248              |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 152              | 89               | 133                 | 143              |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 127              | 72.4             | 117                 | 137              |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 35.7             | 19.3             | 31.2                | 35.4             |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 13.6             | 9.3              | 10.2                | 11.8             |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.1             | <0.1             | <0.1                | <0.1             |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.043            | 0.034            | 0.031               | 0.019            |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 31.5             | 20.4             | 30.4                | 36.8             |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 13.7             | 8.9              | 12.4                | 11.8             |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.393            | 0.168            | 0.172               | 0.124            |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 2.2              | 1.4              | 1.9                 | 2.1              |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001           | <0.001           | <0.001              | <0.001           |
| 18      | Cyanides as CN                                         | mg/l  | 0.05(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS. (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
Dr. Subba Reddy Mallampati  
(Manager - Environment)

**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/09740/001  
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P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01  
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies(B/W) | Bhadrapada D/W) |
|---------|--------------------------------|------|-----------------------|------------------|------------------|--------------------|-----------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02            | <0.02            | <0.02              | <0.02           |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent           | Absent           | Absent             | Absent          |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003           | <0.003           | <0.003             | <0.003          |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01            | <0.01            | <0.01              | <0.01           |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01            | <0.01            | 0.01               | <0.01           |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | 0.002            | 0.009            | 0.016              | 0.028           |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | 0.002            | 0.004            | 0.007              | <0.005          |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.037            | 0.061            | 0.029              | 0.018           |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | 0.003            | 0.004            | 0.009              | 0.006           |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.011            | 0.018            | 0.029              | 0.02            |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.021            | 0.019            | 0.021              | 0.022           |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001           | <0.001           | <0.001             | <0.001          |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05            | <0.05            | <0.05              | <0.05           |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05            | <0.05            | <0.05              | <0.05           |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05            | <0.05            | <0.05              | <0.05           |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.015            | 0.016            | 0.027              | 0.042           |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01            | <0.01            | <0.01              | <0.01           |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
Dr. Subba Reddy Mallampati  
(Manager - Environment)

**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/09740/001  
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P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

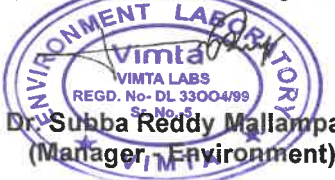
Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01  
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies(B/W) | Bhadrapada D/W) |
|---------|-----------------------------------------|------|-----------------------|------------------|------------------|--------------------|-----------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent           | Absent           | Absent             | Absent          |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001(NR)            | <0.0001          | <0.0001          | <0.0001            | <0.0001         |
| 41      | Bromoform                               | mg/l | 0.1(NR)               | <0.0001          | <0.0001          | <0.0001            | <0.0001         |
| 42      | Dibromochloromethane                    | mg/l | 0.1(NR)               | <0.01            | <0.01            | <0.01              | <0.01           |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001           | <0.001           | <0.001             | <0.001          |
| (A)     | <b>Pesticides</b>                       |      |                       |                  |                  |                    |                 |
| 45      | Alachlor                                | µg/l | 20                    | <0.01            | <0.01            | <0.01              | <0.01           |
| 46      | Atrazine                                | µg/l | 2                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 50      | Butachlor                               | µg/l | 125                   | <0.01            | <0.01            | <0.01              | <0.01           |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01            | <0.01            | <0.01              | <0.01           |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01            | <0.01            | <0.01              | <0.01           |
| 54      | DDT                                     | µg/l | 1                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01            | <0.01            | <0.01              | <0.01           |
| 56      | Ethion                                  | µg/l | 3                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01            | <0.01            | <0.01              | <0.01           |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
Dr. Subba Reddy Mallampati  
(Manager, Environment)

**ISSUED TO:**

**M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh**

**Report Number : VLL/VLS/25-26/09740/001  
Issued Date : 2025-08-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29**

Page 4 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01  
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies(B/W) | Bhadrapada D/W) |
|---------|--------------------|------------|-----------------------|------------------|------------------|--------------------|-----------------|
| 59      | Malathion          | µg/l       | 190                   | BDL              | BDL              | BDL                | BDL             |
| 60      | Methyl parathion   | µg/l       | 0.3                   | BDL              | BDL              | BDL                | BDL             |
| 61      | Monocrotophos      | µg/l       | 1                     | BDL              | BDL              | BDL                | BDL             |
| 62      | Phorate            | µg/l       | 2                     | BDL              | BDL              | BDL                | BDL             |
| 63      | E.coli             | Per 100 ml | Absent                | Absent           | Absent           | Absent             | Absent          |
| 64      | Total Coliforms    | MPN/100ml  | Absent                | Absent           | Absent           | Absent             | Absent          |
| (B)     | <b>Radioactive</b> |            |                       |                  |                  |                    |                 |
| 65      | Alpha emitters     | Bq/l       | 0.1(NR)               | BDL              | BDL              | BDL                | BDL             |
| 66      | Beta emitters      | Bq/l       | 1.0(NR)               | BDL              | BDL              | BDL                | BDL             |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
**Dr. Subha Reddy Mallampati**  
(Manager - Environment)



**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/09740/001  
Issued Date : 2025-08-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 1 of 1

**SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)**

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01  
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-22  
Samples Details : SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Baigiri Basti, SW3-Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco.

SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                            | Unit    | SW1    | SW2    | SW3    | SW4    |
|---------|---------------------------------------|---------|--------|--------|--------|--------|
| 1       | pH                                    | -       | 7.14   | 7.18   | 7.22   | 7.18   |
| 2       | Colour                                | Hazen   | 1      | 2      | 2      | 3      |
| 3       | Conductivity                          | µS/cm   | 144    | 284    | 181    | 271    |
| 4       | TDS                                   | mg/l    | 89     | 176    | 93     | 166    |
| 5       | DO                                    | mg/l    | 7.1    | 6.5    | 6.9    | 7.1    |
| 6       | BOD                                   | mg/l    | 1.1    | 1.8    | 1.3    | 1.4    |
| 7       | COD                                   | mg/l    | 6      | 10     | 8      | 9      |
| 8       | Turbidity                             | NTU     | 18.0   | 10.0   | 24.0   | 12.0   |
| 9       | Total Hardness as CaCO <sub>3</sub>   | mg/l    | 37     | 78     | 53     | 64     |
| 10      | Total Alkalinity as CaCO <sub>3</sub> | mg/l    | 36     | 65     | 44     | 51     |
| 11      | Calcium as Ca                         | mg/l    | 8.1    | 17     | 10.1   | 11     |
| 12      | Magnesium as Mg                       | mg/l    | 4.2    | 7.8    | 6.4    | 7.2    |
| 13      | Chlorides as Cl                       | mg/l    | 17.4   | 31.4   | 18.4   | 38.6   |
| 14      | Residual free chlorine                | mg/l    | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as PO <sub>4</sub>         | mg/l    | 0.02   | 0.04   | 0.03   | 0.02   |
| 16      | Sulphates as SO <sub>4</sub>          | mg/l    | 6.9    | 10.2   | 8.1    | 15.2   |
| 17      | Fluorides as F                        | mg/l    | 0.254  | 0.384  | 0.318  | 0.342  |
| 18      | Nitrates as NO <sub>3</sub>           | mg/l    | 0.9    | 1.1    | 1.0    | 1.3    |
| 19      | Sodium as Na                          | mg/l    | 12.3   | 25.3   | 10     | 26.7   |
| 20      | Potassium as K                        | mg/l    | 1.2    | 1.4    | 0.8    | 1.5    |
| 21      | Total Boron as B                      | mg/l    | 0.006  | 0.014  | 0.009  | 0.120  |
| 22      | Phenolic Compounds                    | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                          | mg/l    | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                         | mg/l    | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                         | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                          | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 28      | Lead as Pb                            | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                            | mg/l    | 0.021  | 0.084  | 0.028  | 0.011  |
| 30      | Chromium as Cr <sup>6+</sup>          | mg/l    | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                            | mg/l    | 0.057  | 0.127  | 0.087  | 0.114  |
| 33      | Aluminum as Al                        | mg/l    | 0.009  | 0.015  | 0.008  | 0.027  |
| 34      | Mercury as Hg                         | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                   | -       | 0.91   | 1.21   | 0.57   | 1.44   |
| 36      | Insecticides                          | mg/l    | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS            | mg/l    | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                       | MPN/100 | 90     | 110    | 175    | 336    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

  
Dr. Subba Reddy Mallampati  
(Manager - Environment)

**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/09740/002  
Issued Date : 2025-08-05  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

**SAMPLE PARTICULARS**

**SURFACE WATER SAMPLE (BALCO PLANT)**

Page 1 of 1

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01  
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-22  
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                            | Unit    | SW5    | SW6    | SW7    | SW8    | SW9    |
|---------|---------------------------------------|---------|--------|--------|--------|--------|--------|
| 1       | pH                                    | -       | 7.18   | 7.64   | 7.47   | 7.18   | 7.54   |
| 2       | Colour                                | Hazen   | 2      | 2      | 2      | 2      | 1      |
| 3       | Conductivity                          | µS/cm   | 266    | 294    | 237    | 284    | 198    |
| 4       | TDS                                   | mg/l    | 127    | 132    | 82     | 158    | 147    |
| 5       | DO                                    | mg/l    | 6.8    | 6.7    | 7.2    | 6.8    | 6.6    |
| 6       | BOD                                   | mg/l    | 1.4    | 1.8    | 1.4    | 1.8    | 1.6    |
| 7       | COD                                   | mg/l    | 4.3    | 4.8    | 3.6    | 3.8    | 3.4    |
| 8       | Turbidity                             | NTU     | 11     | 10     | 10     | 11     | 11     |
| 9       | Total Hardness as CaCO <sub>3</sub>   | mg/l    | 31     | 47     | 38     | 74     | 69     |
| 10      | Total Alkalinity as CaCO <sub>3</sub> | mg/l    | 24     | 32     | 29     | 5.8    | 67     |
| 11      | Calcium as Ca                         | mg/l    | 8.4    | 9.4    | 8.9    | 16.7   | 14.3   |
| 12      | Magnesium as Mg                       | mg/l    | 3.1    | 4.7    | 3.7    | 7.4    | 8.4    |
| 13      | Chlorides as Cl                       | mg/l    | 15.6   | 32.4   | 16.9   | 28.1   | 19.7   |
| 14      | Residual free chlorine                | mg/l    | <0.2   | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as PO <sub>4</sub>         | mg/l    | 0.03   | 0.04   | 0.05   | 0.06   | 0.05   |
| 16      | Sulphates as SO <sub>4</sub>          | mg/l    | 4.5    | 9.8    | 8.6    | 14.3   | 10.2   |
| 17      | Fluorides as F                        | mg/l    | 0.378  | 0.409  | 0.329  | 0.427  | 0.414  |
| 18      | Nitrates as NO <sub>3</sub>           | mg/l    | 0.62   | 1.7    | 1.1    | 2.7    | 1.8    |
| 19      | Sodium as Na                          | mg/l    | 10.1   | 21.3   | 11.7   | 19.1   | 16.4   |
| 20      | Potassium as K                        | mg/l    | 0.8    | 1.3    | 0.4    | 1.4    | 2.1    |
| 21      | Total Boron as B                      | mg/l    | 0.02   | 0.019  | 0.024  | 0.018  | 0.014  |
| 22      | Phenolic Compounds                    | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                          | mg/l    | <1.0   | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                         | mg/l    | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                         | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                          | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 28      | Lead as Pb                            | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                            | mg/l    | 0.029  | 0.051  | 0.038  | 0.019  | 0.052  |
| 30      | Chromium as Cr <sup>6+</sup>          | mg/l    | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                            | mg/l    | 0.063  | 0.052  | 0.074  | 0.043  | 0.079  |
| 33      | Aluminum as Al                        | mg/l    | 0.011  | 0.021  | 0.014  | 0.017  | 0.022  |
| 34      | Mercury as Hg                         | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                   | -       | 0.81   | 1.33   | 0.88   | 0.94   | 0.89   |
| 36      | Insecticides                          | mg/l    | Absent | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS            | mg/l    | Absent | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                       | MPN/100 | 495    | 525    | 480    | 510    | 490    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025.  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

**Vimta**  
VIMTA LABS  
Dr. Subba Reddy Mallampati  
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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/11867/001  
Issued Date : 2025-09-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07  
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|----------------|----------------|---------------------|---------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 6.96           | 6.91           | 6.84                | 6.98                |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless      | Colorless      | Colorless           | Colorless           |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 2              | 1              | 2                   | 2                   |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 181            | 270            | 357                 | 287                 |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 106            | 174            | 205                 | 183                 |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 50             | 65             | 110                 | 104                 |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 25.6           | 44.8           | 52.4                | 50.8                |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 10.2           | 15.1           | 18.0                | 13.5                |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.2           | <0.2           | <0.2                | <0.2                |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.017          | 0.023          | 0.016               | 0.021               |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 45.3           | 81.1           | 93.5                | 62.8                |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 29.4           | 38.5           | 39.1                | 29.9                |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.174          | 0.166          | 0.387               | 0.318               |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 1.8            | 2.3            | 3.7                 | 1.9                 |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001         | <0.001         | <0.001              | <0.001              |
| 18      | Cyanides                                               | mg/l  | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) &amp; ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

VIMTA LABS  
REGD. No.- DL 33004/99  
Sr. No.-5  
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BALCO  
KORBA  
Chhattisgarh**

**Report Number : VLL/VLS/25-26/11867/001**  
**Issued Date : 2025-09-04**  
**P.O. No. : 8500005780**  
**P.O. Date : 2022-06-29**

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07  
 Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30  
 Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02          | <0.02          | <0.02               | <0.02               |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent         | Absent         | Absent              | Absent              |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003         | <0.003         | <0.003              | <0.003              |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01          | <0.01          | <0.01               | <0.01               |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01          | <0.01          | <0.01               | <0.01               |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | 0.008          | <0.01          | 0.012               | 0.011               |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | <0.005         | <0.005         | <0.005              | <0.005              |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.095          | 0.037          | 0.076               | 0.054               |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | <0.005         | <0.005         | <0.005              | <0.005              |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.008          | 0.024          | 0.011               | 0.006               |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.017          | 0.012          | 0.028               | 0.024               |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001         | <0.001         | <0.001              | <0.001              |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05          | <0.05          | <0.05               | <0.05               |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.021          | 0.028          | 0.009               | 0.034               |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) &amp; ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

**Dr. Subba Reddy Mallampati**  
 (Manager - Environment)

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CIN : L24110TG1990PLC011977



**ISSUED TO:**

**M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh**

**Report Number : VLL/VLS/25-26/11867/001**  
**Issued Date : 2025-09-04**  
**P.O. No. : 8500005780**  
**P.O. Date : 2022-06-29**

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07  
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|-----------------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent         | Absent         | Absent              | Absent              |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001(NR)            | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 41      | Bromoform                               | mg/l | 0.1(NR)               | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 42      | Dibromochloromethane                    | mg/l | 0.1(NR)               | <0.01          | <0.01          | <0.01               | <0.01               |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001         | <0.001         | <0.001              | <0.001              |
| (A)     | <b>Pesticides</b>                       |      |                       |                |                |                     |                     |
| 45      | Alachlor                                | µg/l | 20                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 46      | Atrazine                                | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 50      | Butachlor                               | µg/l | 125                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 54      | DDT                                     | µg/l | 1                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 56      | Ethion                                  | µg/l | 3                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

**Name and Designation of Authorized Signatory**

**Dr. Subba Reddy Mallampati**  
(Manager - Environment)

**Vimta Labs Limited**

Registered Office

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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/11867/001  
Issued Date : 2025-09-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 4 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07  
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS<br>10500 : 2012 | Rogbheri<br>(B/W) | Rogbheri<br>(D/W) | Bailgiri<br>Basti(B/W) | Bailgiri<br>Basti(D/W) |
|---------|--------------------|------------|--------------------------|-------------------|-------------------|------------------------|------------------------|
| 59      | Malathion          | µg/l       | 190                      | BDL               | BDL               | BDL                    | BDL                    |
| 60      | Methyl parathion   | µg/l       | 0.3                      | BDL               | BDL               | BDL                    | BDL                    |
| 61      | Monocrotophos      | µg/l       | 1                        | BDL               | BDL               | BDL                    | BDL                    |
| 62      | Phorate            | µg/l       | 2                        | BDL               | BDL               | BDL                    | BDL                    |
| 63      | E.coli             | Per 100 ml | Absent                   | Absent            | Absent            | Absent                 | Absent                 |
| 64      | Total Coliforms    | MPN/100ml  | Absent                   | Absent            | Absent            | Absent                 | Absent                 |
| (B)     | <b>Radioactive</b> |            |                          |                   |                   |                        |                        |
| 65      | Alpha emitters     | Bq/l       | 0.1 (NR)                 | BDL               | BDL               | BDL                    | BDL                    |
| 66      | Beta emitters      | Bq/l       | 1.0 (NR)                 | BDL               | BDL               | BDL                    | BDL                    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

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**P.O. Date** : **2022-06-29**

Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07  
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

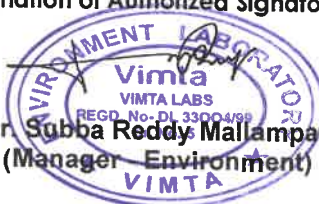
| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada (D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|------------------|------------------|---------------------|------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 7.36             | 6.86             | 6.85                | 6.84             |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless        | Colorless        | Colorless           | Colorless        |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 2                | 2                | 2                   | 1                |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 268              | 160              | 240                 | 254              |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 162              | 102              | 158                 | 164              |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 95               | 45               | 70                  | 60               |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 37.6             | 25.0             | 43.2                | 41.5             |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 16.5             | 9.5              | 12.2                | 14.6             |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.2             | <0.2             | <0.2                | <0.2             |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.036            | 0.028            | 0.022               | 0.018            |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 59.7             | 43.0             | 65.8                | 89.5             |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 27.5             | 21.2             | 29.1                | 21.1             |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.362            | 0.219            | 0.201               | 0.106            |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 5.6              | 1.2              | 2.3                 | 3.5              |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001           | <0.001           | <0.001              | <0.001           |
| 18      | Cyanides as CN                                         | mg/l  | 0.05(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) &amp; ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
**Dr. Subba Reddy Mallampati**  
(Manager - Environment)

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P.O. Date : 2022-06-29

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07  
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30  
Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada D/W |
|---------|--------------------------------|------|-----------------------|------------------|------------------|---------------------|----------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02            | <0.02            | <0.02               | <0.02          |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent           | Absent           | Absent              | Absent         |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003           | <0.003           | <0.003              | <0.003         |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01            | <0.01            | <0.01               | <0.01          |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01            | <0.01            | 0.01                | <0.01          |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01            | <0.01            | <0.01               | <0.01          |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | <0.01            | 0.012            | 0.016               | 0.035          |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01            | <0.01            | <0.01               | <0.01          |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | <0.005           | <0.005           | <0.005              | <0.005         |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.032            | 0.035            | 0.024               | 0.019          |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | <0.005           | <0.005           | <0.005              | <0.005         |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01            | <0.01            | <0.01               | <0.01          |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.017            | 0.013            | 0.023               | 0.011          |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.016            | 0.011            | 0.026               | 0.015          |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001           | <0.001           | <0.001              | <0.001         |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05            | <0.05            | <0.05               | <0.05          |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05            | <0.05            | <0.05               | <0.05          |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05            | <0.05            | <0.05               | <0.05          |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.007            | 0.015            | 0.028               | 0.031          |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01            | <0.01            | <0.01               | <0.01          |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) &amp; ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
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VIMTA LABS  
REGD. No. DL 3304/2023  
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P.O. Date : 2022-06-29**

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07  
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada (D/W) |
|---------|-----------------------------------------|------|-----------------------|------------------|------------------|---------------------|------------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent           | Absent           | Absent              | Absent           |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001 (NR)           | <0.0001          | <0.0001          | <0.0001             | <0.0001          |
| 41      | Bromoform                               | mg/l | 0.1 (NR)              | <0.0001          | <0.0001          | <0.0001             | <0.0001          |
| 42      | Dibromochloromethane                    | mg/l | 0.1 (NR)              | <0.01            | <0.01            | <0.01               | <0.01            |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001           | <0.001           | <0.001              | <0.001           |
| (A)     | <b>Pesticides</b>                       |      |                       |                  |                  |                     |                  |
| 45      | Alachlor                                | µg/l | 20                    | <0.01            | <0.01            | <0.01               | <0.01            |
| 46      | Atrazine                                | µg/l | 2                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 50      | Butachlor                               | µg/l | 125                   | <0.01            | <0.01            | <0.01               | <0.01            |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01            | <0.01            | <0.01               | <0.01            |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01            | <0.01            | <0.01               | <0.01            |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01            | <0.01            | <0.01               | <0.01            |
| 54      | DDT                                     | µg/l | 1                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01            | <0.01            | <0.01               | <0.01            |
| 56      | Ethion                                  | µg/l | 3                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01            | <0.01            | <0.01               | <0.01            |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01            | <0.01            | <0.01               | <0.01            |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

**Name and Designation of Authorized Signatory**

**Dr. Subba Reddy Mallampati**  
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P.O. Date : 2022-06-29

Page 4 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07  
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30  
Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada D/W) |
|---------|--------------------|------------|-----------------------|------------------|------------------|---------------------|-----------------|
| 59      | Malathion          | µg/l       | 190                   | BDL              | BDL              | BDL                 | BDL             |
| 60      | Methyl parathion   | µg/l       | 0.3                   | BDL              | BDL              | BDL                 | BDL             |
| 61      | Monocrotophos      | µg/l       | 1                     | BDL              | BDL              | BDL                 | BDL             |
| 62      | Phorate            | µg/l       | 2                     | BDL              | BDL              | BDL                 | BDL             |
| 63      | E.coli             | Per 100 ml | Absent                | Absent           | Absent           | Absent              | Absent          |
| 64      | Total Coliforms    | MPN/100ml  | Absent                | Absent           | Absent           | Absent              | Absent          |
| (B)     | <b>Radioactive</b> |            |                       |                  |                  |                     |                 |
| 65      | Alpha emitters     | Bq/l       | 0.1 (NR)              | BDL              | BDL              | BDL                 | BDL             |
| 66      | Beta emitters      | Bq/l       | 1.0 (NR)              | BDL              | BDL              | BDL                 | BDL             |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) &amp; ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
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CIN : L24110TG1990PLC011977

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Page 1 of 1

### SAMPLE PARTICULARS

### SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07  
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-26  
Samples Details : SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti,  
SW3- Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco

SAMPLE COLLECTED BY VIMTA LABS LTD.

### TEST REPORT

| Sr. No. | Parameters                          | Unit                    | SW1    | SW2    | SW3    | SW4    |
|---------|-------------------------------------|-------------------------|--------|--------|--------|--------|
| 1       | pH                                  | -                       | 7.21   | 7.26   | 7.22   | 7.28   |
| 2       | Colour                              | Hazen                   | 2      | 3      | 2      | 3      |
| 3       | Conductivity                        | $\mu\text{S}/\text{cm}$ | 125    | 268    | 140    | 196    |
| 4       | TDS                                 | mg/l                    | 80     | 170    | 88     | 120    |
| 5       | DO                                  | mg/l                    | 6.2    | 5.8    | 6.3    | 5.9    |
| 6       | BOD                                 | mg/l                    | 1.0    | 2.2    | 1.4    | 2.1    |
| 7       | COD                                 | mg/l                    | 3.2    | 7.8    | 5.6    | 6.4    |
| 8       | Turbidity                           | NTU                     | 7.0    | 11.0   | 8.0    | 12.0   |
| 9       | Total Hardness as $\text{CaCO}_3$   | mg/l                    | 36     | 70     | 48     | 68     |
| 10      | Total Alkalinity as $\text{CaCO}_3$ | mg/l                    | 35.0   | 68.0   | 40     | 45.0   |
| 11      | Calcium as Ca                       | mg/l                    | 8.5    | 17.8   | 10     | 12.5   |
| 12      | Magnesium as Mg                     | mg/l                    | 3.6    | 6.2    | 5.6    | 8.9    |
| 13      | Chlorides as Cl                     | mg/l                    | 14.4   | 32.2   | 16.2   | 26.9   |
| 14      | Residual free chlorine              | mg/l                    | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as $\text{PO}_4$         | mg/l                    | 0.04   | 0.05   | 0.03   | 0.06   |
| 16      | Sulphates as $\text{SO}_4$          | mg/l                    | 6.2    | 12.4   | 5.3    | 10.5   |
| 17      | Fluorides as F                      | mg/l                    | 0.163  | 0.258  | 0.229  | 0.217  |
| 18      | Nitrates as $\text{NO}_3$           | mg/l                    | 0.3    | 0.8    | 0.7    | 1.3    |
| 19      | Sodium as Na                        | mg/l                    | 12.2   | 28.7   | 9.6    | 13.5   |
| 20      | Potassium as K                      | mg/l                    | 0.7    | 1.2    | 0.5    | 0.5    |
| 21      | Total Boron as B                    | mg/l                    | 0.012  | 0.021  | 0.013  | 0.087  |
| 22      | Phenolic Compounds                  | mg/l                    | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                      | mg/l                    | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                        | mg/l                    | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                       | mg/l                    | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                       | mg/l                    | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                        | mg/l                    | <0.01  | <0.01  | <0.01  | <0.01  |
| 28      | Lead as Pb                          | mg/l                    | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                          | mg/l                    | 0.019  | 0.078  | 0.045  | 0.012  |
| 30      | Chromium as $\text{Cr}^{+6}$        | mg/l                    | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                      | mg/l                    | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                          | mg/l                    | 0.047  | 0.121  | 0.079  | 0.098  |
| 33      | Aluminum as Al                      | mg/l                    | 0.023  | 0.011  | 0.010  | 0.023  |
| 34      | Mercury as Hg                       | mg/l                    | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                 | -                       | 0.88   | 1.49   | 0.60   | 0.71   |
| 36      | Insecticides                        | mg/l                    | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS          | mg/l                    | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                     | MPN/100                 | 180    | 340    | 220    | 380    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

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## ISSUED TO:

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/11867/002  
Issued Date : 2025-09-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 1 of 1

## SAMPLE PARTICULARS

: SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date

: 2025-08-13

Sampling Date

: 2025-08-07

Analysis Starting Date

: 2025-08-13

Analysis Completion Date

: 2025-08-26

Samples Details

: SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.

SAMPLE COLLECTED BY VIMTA LABS LTD.

## TEST REPORT

| Sr. No. | Parameters                          | Unit                    | SW5    | SW6    | SW7    | SW8    | SW9    |
|---------|-------------------------------------|-------------------------|--------|--------|--------|--------|--------|
| 1       | pH                                  | -                       | 7.49   | 7.64   | 7.26   | 7.42   | 7.68   |
| 2       | Colour                              | Hazen                   | 2      | 3      | 2      | 3      | 3      |
| 3       | Conductivity                        | $\mu\text{S}/\text{cm}$ | 129    | 178    | 135    | 184    | 168    |
| 4       | TDS                                 | mg/l                    | 83     | 112    | 85     | 122    | 110    |
| 5       | DO                                  | mg/l                    | 7.2    | 7.4    | 7.6    | 7.7    | 7.5    |
| 6       | BOD                                 | mg/l                    | 2.7    | 2.1    | 2.5    | 2.9    | 3.2    |
| 7       | COD                                 | mg/l                    | 9.6    | 11.2   | 10.4   | 11.2   | 12     |
| 8       | Turbidity                           | NTU                     | 11.0   | 9.0    | 11.0   | 10.0   | 9.0    |
| 9       | Total Hardness as $\text{CaCO}_3$   | mg/l                    | 44     | 55     | 50     | 66     | 57     |
| 10      | Total Alkalinity as $\text{CaCO}_3$ | mg/l                    | 35     | 40     | 30     | 55     | 50     |
| 11      | Calcium as Ca                       | mg/l                    | 11.5   | 13.3   | 12.5   | 16.7   | 15.8   |
| 12      | Magnesium as Mg                     | mg/l                    | 3.7    | 5.4    | 4.6    | 5.8    | 4.4    |
| 13      | Chlorides as Cl                     | mg/l                    | 16.8   | 24.8   | 19.4   | 21.2   | 18.7   |
| 14      | Residual free chlorine              | mg/l                    | <0.2   | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as $\text{PO}_4$         | mg/l                    | 0.04   | 0.08   | 0.03   | 0.06   | 0.05   |
| 16      | Sulphates as $\text{SO}_4$          | mg/l                    | 4.3    | 9.6    | 8.2    | 6.3    | 5.1    |
| 17      | Fluorides as F                      | mg/l                    | 0.436  | 0.452  | 0.418  | 0.563  | 0.528  |
| 18      | Nitrates as $\text{NO}_3$           | mg/l                    | 1.1    | 1.6    | 0.9    | 1.8    | 0.8    |
| 19      | Sodium as Na                        | mg/l                    | 9.4    | 14.6   | 8.3    | 12.8   | 11.3   |
| 20      | Potassium as K                      | mg/l                    | 0.7    | 1.5    | 0.3    | 1.6    | 2.3    |
| 21      | Total Boron as B                    | mg/l                    | <0.01  | 0.011  | 0.034  | 0.019  | 0.013  |
| 22      | Phenolic Compounds                  | mg/l                    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                      | mg/l                    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                        | mg/l                    | <1.0   | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                       | mg/l                    | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                       | mg/l                    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                        | mg/l                    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 28      | Lead as Pb                          | mg/l                    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                          | mg/l                    | 0.011  | 0.058  | 0.036  | 0.019  | 0.034  |
| 30      | Chromium as $\text{Cr}^{+6}$        | mg/l                    | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                      | mg/l                    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                          | mg/l                    | 0.154  | 0.082  | 0.076  | 0.087  | 0.114  |
| 33      | Aluminum as Al                      | mg/l                    | 0.011  | 0.023  | 0.019  | 0.018  | 0.024  |
| 34      | Mercury as Hg                       | mg/l                    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                 | -                       | 0.62   | 0.85   | 0.51   | 0.69   | 0.65   |
| 36      | Insecticides                        | mg/l                    | Absent | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS          | mg/l                    | Absent | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                     | MPN/100                 | 260    | 340    | 320    | 490    | 480    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

- END OF THE REPORTS -

Name and Designation of Authorized Signatory

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**ISSUED TO:****M/s. Bharat Aluminum Company Limited,****BALCO****KORBA****Chhattisgarh****Report Number****Issued Date****P.O. No.****P.O. Date****VLL/VLS/25-26/14073/001****2025-10-04****8500005780****2022-06-29****SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Page 1 of 4

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09  
 Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30  
 Test Required : Water Analysis as per IS 10500 : 2012  
 SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|----------------|----------------|---------------------|---------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 6.89           | 6.82           | 6.82                | 7.02                |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless      | Colorless      | Colorless           | Colorless           |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable      | Agreeable      | Agreeable           | Agreeable           |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 2              | 2              | 2                   | 3                   |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 195            | 220            | 331                 | 290                 |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 128            | 145            | 221                 | 193                 |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 55             | 60             | 90                  | 95                  |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 31.2           | 42.0           | 65.2                | 55.0                |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 12.1           | 9.7            | 14.2                | 13.5                |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.1           | <0.1           | <0.1                | <0.1                |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.021          | 0.019          | 0.015               | 0.037               |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 48.2           | 55.0           | 89.4                | 74.0                |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 31.4           | 37.2           | 46.8                | 29.3                |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.186          | 0.149          | 0.394               | 0.263               |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 2.1            | 1.7            | 2.9                 | 1.7                 |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001         | <0.001         | <0.001              | <0.001              |
| 18      | Cyanides                                               | mg/l  | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) &amp; ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/14073/001  
Issued Date : 2025-10-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09  
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02          | <0.02          | <0.02               | <0.02               |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent         | Absent         | Absent              | Absent              |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003         | <0.003         | <0.003              | <0.003              |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01          | <0.01          | <0.01               | <0.01               |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01          | <0.01          | <0.01               | <0.01               |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | 0.01           | 0.013          | 0.009               | 0.021               |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | <0.005         | <0.005         | <0.005              | <0.005              |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.056          | 0.033          | 0.064               | 0.038               |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | <0.005         | <0.005         | <0.005              | <0.005              |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.012          | 0.018          | 0.026               | 0.009               |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.013          | 0.021          | 0.017               | 0.028               |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001         | <0.001         | <0.001              | <0.001              |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05          | <0.05          | <0.05               | <0.05               |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05          | <0.05          | <0.05               | <0.05               |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.017          | 0.021          | 0.015               | 0.026               |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01          | <0.01          | <0.01               | <0.01               |

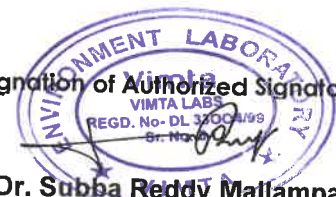
Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati  
(Manager - Environment)



**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/14073/001  
Issued Date : 2025-10-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

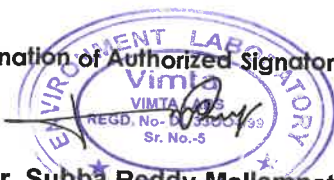
Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09  
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|-----------------------------------------|------|-----------------------|----------------|----------------|---------------------|---------------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent         | Absent         | Absent              | Absent              |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001(NR)            | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 41      | Bromoform                               | mg/l | 0.1(NR)               | <0.0001        | <0.0001        | <0.0001             | <0.0001             |
| 42      | Dibromochloromethane                    | mg/l | 0.1(NR)               | <0.01          | <0.01          | <0.01               | <0.01               |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01          | <0.01          | <0.01               | <0.01               |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001         | <0.001         | <0.001              | <0.001              |
| (A)     | <b>Pesticides</b>                       |      |                       |                |                |                     |                     |
| 45      | Alachlor                                | µg/l | 20                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 46      | Atrazine                                | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 50      | Butachlor                               | µg/l | 125                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01          | <0.01          | <0.01               | <0.01               |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01          | <0.01          | <0.01               | <0.01               |
| 54      | DDT                                     | µg/l | 1                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01          | <0.01          | <0.01               | <0.01               |
| 56      | Ethion                                  | µg/l | 3                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01          | <0.01          | <0.01               | <0.01               |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01          | <0.01          | <0.01               | <0.01               |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
Dr. Subba Reddy Mallampati  
(Manager - Environment)



**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/14073/001  
Issued Date : 2025-10-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 4 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09  
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30  
Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

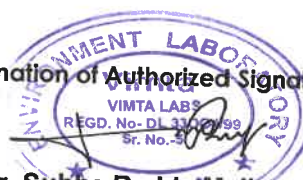
**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS 10500 : 2012 | Rogbheri (B/W) | Rogbheri (D/W) | Bailgiri Basti(B/W) | Bailgiri Basti(D/W) |
|---------|--------------------|------------|-----------------------|----------------|----------------|---------------------|---------------------|
| 59      | Malathion          | µg/l       | 190                   | BDL            | BDL            | BDL                 | BDL                 |
| 60      | Methyl parathion   | µg/l       | 0.3                   | BDL            | BDL            | BDL                 | BDL                 |
| 61      | Monocrotophos      | µg/l       | 1                     | BDL            | BDL            | BDL                 | BDL                 |
| 62      | Phorate            | µg/l       | 2                     | BDL            | BDL            | BDL                 | BDL                 |
| 63      | E.coli             | Per 100 ml | Absent                | Absent         | Absent         | Absent              | Absent              |
| 64      | Total Coliforms    | MPN/100ml  | Absent                | Absent         | Absent         | Absent              | Absent              |
| (B)     | <b>Radioactive</b> |            |                       |                |                |                     |                     |
| 65      | Alpha emitters     | Bq/l       | 0.1(NR)               | BDL            | BDL            | BDL                 | BDL                 |
| 66      | Beta emitters      | Bq/l       | 1.0(NR)               | BDL            | BDL            | BDL                 | BDL                 |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

  
VIMTA LABS  
REGD. No- DL 31/07/99  
Sr. No. 3  
Dr. Subba Reddy Mallampati  
(Manager - Environment)



**ISSUED TO:**

**M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh**

**Report Number : VLL/VLS/25-26/14073/001**  
**Issued Date : 2025-10-04**  
**P.O. No. : 8500005780**  
**P.O. Date : 2022-06-29**

Page 1 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09  
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                                             | UOM   | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies (B/W) | Bhadrapada (D/W) |
|---------|--------------------------------------------------------|-------|-----------------------|------------------|------------------|---------------------|------------------|
| 1       | pH value                                               | -     | 6.5-8.5 (NR)          | 7.38             | 6.94             | 6.89                | 6.96             |
| 2       | Color                                                  | Hazen | 5(15)                 | Colorless        | Colorless        | Colorless           | Colorless        |
| 3       | Taste                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 4       | Odour                                                  | -     | Agreeable             | Agreeable        | Agreeable        | Agreeable           | Agreeable        |
| 5       | Turbidity                                              | NTU   | 1(5)                  | 3                | 2                | 1                   | 2                |
| 6       | Total dissolved solids at 180°C                        | mg/l  | 500(2000)             | 310              | 198              | 268                 | 243              |
| 7       | Total Hardness as CaCO <sub>3</sub>                    | mg/l  | 200(600)              | 186              | 130              | 190                 | 180              |
| 8       | Total Alkalinity as CaCO <sub>3</sub>                  | mg/l  | 200(600)              | 110              | 60               | 85                  | 60               |
| 9       | Calcium as Ca                                          | mg/l  | 75(200)               | 50.4             | 33.6             | 53.7                | 46.8             |
| 10      | Magnesium as Mg                                        | mg/l  | 30(100)               | 14.6             | 11.0             | 13.2                | 15.1             |
| 11      | Free Residual chlorine                                 | mg/l  | 0.2(1.0)              | <0.1             | <0.1             | <0.1                | <0.1             |
| 12      | Boron as B                                             | mg/l  | 0.5(1.0)              | 0.043            | 0.016            | 0.056               | 0.031            |
| 13      | Chlorides as Cl                                        | mg/l  | 250(1000)             | 70.0             | 51.0             | 69.7                | 84.5             |
| 14      | Sulphate as SO <sub>4</sub>                            | mg/l  | 200(400)              | 33.6             | 25.9             | 29.7                | 22.5             |
| 15      | Fluorides as F                                         | mg/l  | 1.0(1.5)              | 0.482            | 0.238            | 0.187               | 0.112            |
| 16      | Nitrates as NO <sub>3</sub>                            | mg/l  | 45(NR)                | 3.6              | 1.4              | 2.8                 | 1.7              |
| 17      | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | mg/l  | 0.001(0.002)          | <0.001           | <0.001           | <0.001              | <0.001           |
| 18      | Cyanides as CN                                         | mg/l  | 0.05(NR)              | <0.01            | <0.01            | <0.01               | <0.01            |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

  
**Dr. Subba Reddy Mallampati**  
(Manager - Environment)

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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/14073/001  
Issued Date : 2025-10-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 2 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09  
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                     | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies(B/W) | Bhadrapada D/W) |
|---------|--------------------------------|------|-----------------------|------------------|------------------|--------------------|-----------------|
| 19      | Anionic detergents as MBAS     | mg/l | 0.2(1.0)              | <0.02            | <0.02            | <0.02              | <0.02           |
| 20      | Mineral oil                    | mg/l | 0.5(NR)               | Absent           | Absent           | Absent             | Absent          |
| 21      | Cadmium as Cd                  | mg/l | 0.003(NR)             | <0.003           | <0.003           | <0.003             | <0.003          |
| 22      | Total Arsenic as As            | mg/l | 0.01(0.05)            | <0.01            | <0.01            | <0.01              | <0.01           |
| 23      | Copper as Cu                   | mg/l | 0.05(1.5)             | <0.01            | <0.01            | 0.01               | <0.01           |
| 24      | Lead as Pb                     | mg/l | 0.01(NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 25      | Manganese as Mn                | mg/l | 0.1(0.3)              | <0.01            | 0.016            | 0.021              | 0.011           |
| 26      | Molybdenum as Mo               | mg/l | 0.07(NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 27      | Nickel as Ni                   | mg/l | 0.02(NR)              | <0.005           | <0.005           | <0.005             | <0.005          |
| 28      | Iron as Fe                     | mg/l | 0.3(NR)               | 0.026            | 0.041            | 0.037              | 0.023           |
| 29      | Total Chromium as Cr           | mg/l | 0.05(NR)              | <0.005           | <0.005           | <0.005             | <0.005          |
| 30      | Selenium as Se                 | mg/l | 0.05(NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 31      | Zinc as Zn                     | mg/l | 5.0(15)               | 0.022            | 0.015            | 0.028              | 0.013           |
| 32      | Aluminum as Al                 | mg/l | 0.03(0.2)             | 0.013            | 0.021            | 0.019              | 0.011           |
| 33      | Mercury as Hg                  | mg/l | 0.001(NR)             | <0.001           | <0.001           | <0.001             | <0.001          |
| 34      | Sulphide as H <sub>2</sub> S   | mg/l | 0.05(NR)              | <0.05            | <0.05            | <0.05              | <0.05           |
| 35      | Chloramines as Cl <sub>2</sub> | mg/l | 4.0(NR)               | <0.05            | <0.05            | <0.05              | <0.05           |
| 36      | Ammonia (as total ammonia-N)   | mg/l | 0.5(NR)               | <0.05            | <0.05            | <0.05              | <0.05           |
| 37      | Barium as Ba                   | mg/l | 0.7(NR)               | 0.009            | 0.021            | 0.018              | 0.025           |
| 38      | Silver as Ag                   | mg/l | 0.1(NR)               | <0.01            | <0.01            | <0.01              | <0.01           |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati  
(Manager - Environment)

**ISSUED TO:**

**M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh**

**Report Number : VLL/VLS/25-26/14073/001**  
**Issued Date : 2025-10-04**  
**P.O. No. : 8500005780**  
**P.O. Date : 2022-06-29**

Page 3 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09  
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30  
Test Required : Water Analysis as per IS 10500 : 2012  
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                              | UOM  | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies(B/W) | Bhadrapada D/W) |
|---------|-----------------------------------------|------|-----------------------|------------------|------------------|--------------------|-----------------|
| 39      | Polychlorinated biphenyls               | mg/l | 0.0005(NR)            | Absent           | Absent           | Absent             | Absent          |
| 40      | Polynuclear aromatic hydrocarbon as PAH | mg/l | 0.0001 (NR)           | <0.0001          | <0.0001          | <0.0001            | <0.0001         |
| 41      | Bromoform                               | mg/l | 0.1 (NR)              | <0.0001          | <0.0001          | <0.0001            | <0.0001         |
| 42      | Dibromochloromethane                    | mg/l | 0.1 (NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 43      | Bromodichloromethane                    | mg/l | 0.06(NR)              | <0.01            | <0.01            | <0.01              | <0.01           |
| 44      | Chloroform                              | mg/l | 0.2(NR)               | <0.001           | <0.001           | <0.001             | <0.001          |
| (A)     | <b>Pesticides</b>                       |      |                       |                  |                  |                    |                 |
| 45      | Alachlor                                | µg/l | 20                    | <0.01            | <0.01            | <0.01              | <0.01           |
| 46      | Atrazine                                | µg/l | 2                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 47      | Aldrin                                  | µg/l | 0.03                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 48      | Alpha HCH                               | µg/l | 0.01                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 49      | Beta HCH                                | µg/l | 0.04                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 50      | Butachlor                               | µg/l | 125                   | <0.01            | <0.01            | <0.01              | <0.01           |
| 51      | Chlorpyrifos                            | µg/l | 30                    | <0.01            | <0.01            | <0.01              | <0.01           |
| 52      | Delta HCH                               | µg/l | 0.04                  | <0.01            | <0.01            | <0.01              | <0.01           |
| 53      | 2,4-Dichlorophenoxyacetic acid          | µg/l | 30                    | <0.01            | <0.01            | <0.01              | <0.01           |
| 54      | DDT                                     | µg/l | 1                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 55      | Endosulfan (alpha, beta and Sulphate)   | µg/l | 0.4                   | <0.01            | <0.01            | <0.01              | <0.01           |
| 56      | Ethion                                  | µg/l | 3                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 57      | Gamma HCH                               | µg/l | 2                     | <0.01            | <0.01            | <0.01              | <0.01           |
| 58      | Isoproturon                             | µg/l | 9                     | <0.01            | <0.01            | <0.01              | <0.01           |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



**Dr. Subba Reddy Mallampati**  
(Manager - Environment)



**ISSUED TO:**

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KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/14073/001  
Issued Date : 2025-10-04  
P.O. No. : 8500005780  
P.O. Date : 2022-06-29

Page 4 of 4

**SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09  
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30  
Test Required : Water Analysis as per IS 10500 : 2012

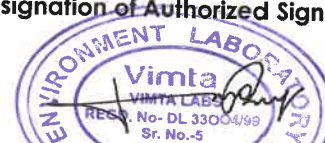
SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters         | UOM        | Limit IS 10500 : 2012 | Parsabhata (B/W) | Parsabhata (D/W) | Karma Talkies(B/W) | Bhadrapada D/W) |
|---------|--------------------|------------|-----------------------|------------------|------------------|--------------------|-----------------|
| 59      | Malathion          | µg/l       | 190                   | BDL              | BDL              | BDL                | BDL             |
| 60      | Methyl parathion   | µg/l       | 0.3                   | BDL              | BDL              | BDL                | BDL             |
| 61      | Monocrotophos      | µg/l       | 1                     | BDL              | BDL              | BDL                | BDL             |
| 62      | Phorate            | µg/l       | 2                     | BDL              | BDL              | BDL                | BDL             |
| 63      | E.coli             | Per 100 ml | Absent                | Absent           | Absent           | Absent             | Absent          |
| 64      | Total Coliforms    | MPN/100ml  | Absent                | Absent           | Absent           | Absent             | Absent          |
| (B)     | <b>Radioactive</b> |            |                       |                  |                  |                    |                 |
| 65      | Alpha emitters     | Bq/l       | 0.1(NR)               | BDL              | BDL              | BDL                | BDL             |
| 66      | Beta emitters      | Bq/l       | 1.0(NR)               | BDL              | BDL              | BDL                | BDL             |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)  
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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VLL/VLS/25-26/14073/001

Report Number

Issued Date

P.O. No.

P.O. Date

2025-10-04

8500005780

2022-06-29

Page 1 of 1

**SAMPLE PARTICULARS****: SURFACE WATER SAMPLE (BALCO PLANT)**

Sample Registration Date

: 2025-09-15

Sampling Date

: 2025-09-09

Analysis Starting Date

: 2025-09-15

Analysis Completion Date

: 2025-09-30

Samples Details

: SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti, SW3- Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco

SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                            | Unit    | SW1    | SW2    | SW3    | SW4    |
|---------|---------------------------------------|---------|--------|--------|--------|--------|
| 1       | pH                                    | -       | 7.34   | 7.21   | 7.25   | 7.31   |
| 2       | Colour                                | Hazen   | 1      | 2      | 1      | 4      |
| 3       | Conductivity                          | µS/cm   | 150    | 273    | 180    | 230    |
| 4       | TDS                                   | mg/l    | 99     | 173    | 113    | 144    |
| 5       | DO                                    | mg/l    | 6.4    | 6.3    | 6.8    | 6.4    |
| 6       | BOD                                   | mg/l    | 0.7    | 2.4    | 1.2    | 2.6    |
| 7       | COD                                   | mg/l    | 2.4    | 8.8    | 4.8    | 11.2   |
| 8       | Turbidity                             | NTU     | 8      | 7.0    | 16.0   | 13     |
| 9       | Total Hardness as CaCO <sub>3</sub>   | mg/l    | 45     | 82     | 64     | 82     |
| 10      | Total Alkalinity as CaCO <sub>3</sub> | mg/l    | 40     | 65.0   | 50     | 55     |
| 11      | Calcium as Ca                         | mg/l    | 11.5   | 22.4   | 13     | 18.2   |
| 12      | Magnesium as Mg                       | mg/l    | 3.87   | 6.32   | 7.76   | 8.78   |
| 13      | Chlorides as Cl                       | mg/l    | 18.3   | 36.5   | 21.8   | 32.3   |
| 14      | Residual free chlorine                | mg/l    | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as PO <sub>4</sub>         | mg/l    | 0.03   | 0.04   | 0.04   | 0.05   |
| 16      | Sulphates as SO <sub>4</sub>          | mg/l    | 9.8    | 13.7   | 7.4    | 10.8   |
| 17      | Fluorides as F                        | mg/l    | 0.105  | 0.168  | 0.174  | 0.209  |
| 18      | Nitrates as NO <sub>3</sub>           | mg/l    | 0.6    | 1.3    | 0.9    | 1.8    |
| 19      | Sodium as Na                          | mg/l    | 14.6   | 24.4   | 11.3   | 15.5   |
| 20      | Potassium as K                        | mg/l    | 0.5    | 1.1    | 0.5    | 0.7    |
| 21      | Total Boron as B                      | mg/l    | 0.010  | 0.018  | 0.011  | 0.065  |
| 22      | Phenolic Compounds                    | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                          | mg/l    | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                         | mg/l    | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                         | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                          | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 28      | Lead as Pb                            | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                            | mg/l    | 0.008  | 0.081  | 0.064  | 0.024  |
| 30      | Chromium as Cr <sup>+6</sup>          | mg/l    | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                            | mg/l    | 0.037  | 0.098  | 0.098  | 0.087  |
| 33      | Aluminum as Al                        | mg/l    | 0.031  | 0.024  | 0.017  | 0.028  |
| 34      | Mercury as Hg                         | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                   | -       | 0.95   | 1.17   | 0.61   | 0.75   |
| 36      | Insecticides                          | mg/l    | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS            | mg/l    | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                       | MPN/100 | 140    | 170    | 150    | 210    |

Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) &amp; ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,  
BALCO  
KORBA  
Chhattisgarh

Report Number : VLL/VLS/25-26/14073/002  
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Page 1 of 1

**SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)**

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09  
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30  
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.

SAMPLE COLLECTED BY VIMTA LABS LTD.

**TEST REPORT**

| Sr. No. | Parameters                            | Unit    | SW5    | SW6    | SW7    | SW8    | SW9    |
|---------|---------------------------------------|---------|--------|--------|--------|--------|--------|
| 1       | pH                                    | -       | 7.46   | 7.53   | 7.28   | 7.38   | 7.51   |
| 2       | Colour                                | Hazen   | 2      | 2      | 3      | 4      | 3      |
| 3       | Conductivity                          | µS/cm   | 115    | 160    | 141    | 155    | 173    |
| 4       | TDS                                   | mg/l    | 73     | 100    | 90     | 101    | 110    |
| 5       | DO                                    | mg/l    | 7.6    | 7.3    | 7.8    | 7.5    | 7.6    |
| 6       | BOD                                   | mg/l    | 2.5    | 1.8    | 1.7    | 2.7    | 2.6    |
| 7       | COD                                   | mg/l    | 8.8    | 9.6    | 7.2    | 10.4   | 9.6    |
| 8       | Turbidity                             | NTU     | 12.0   | 8.0    | 11.0   | 10.0   | 9.0    |
| 9       | Total Hardness as CaCO <sub>3</sub>   | mg/l    | 38     | 50     | 49     | 55     | 57     |
| 10      | Total Alkalinity as CaCO <sub>3</sub> | mg/l    | 30     | 38     | 35     | 50     | 55     |
| 11      | Calcium as Ca                         | mg/l    | 10.2   | 12.5   | 13.5   | 14.3   | 16.2   |
| 12      | Magnesium as Mg                       | mg/l    | 3.1    | 4.3    | 3.8    | 4.6    | 3.9    |
| 13      | Chlorides as Cl                       | mg/l    | 15.2   | 22.3   | 18.4   | 15.4   | 17.3   |
| 14      | Residual free chlorine                | mg/l    | <0.2   | <0.2   | <0.2   | <0.2   | <0.2   |
| 15      | Phosphates as PO <sub>4</sub>         | mg/l    | 0.03   | 0.06   | 0.02   | 0.05   | 0.03   |
| 16      | Sulphates as SO <sub>4</sub>          | mg/l    | 3.7    | 6.8    | 7.3    | 4.2    | 4.9    |
| 17      | Fluorides as F                        | mg/l    | 0.429  | 0.418  | 0.473  | 0.494  | 0.417  |
| 18      | Nitrates as NO <sub>3</sub>           | mg/l    | 0.9    | 1.1    | 1.2    | 0.6    | 0.7    |
| 19      | Sodium as Na                          | mg/l    | 8.5    | 13.4   | 9.7    | 10.2   | 12.7   |
| 20      | Potassium as K                        | mg/l    | 0.6    | 1.1    | 0.5    | 1.3    | 1.9    |
| 21      | Total Boron as B                      | mg/l    | <0.01  | 0.025  | 0.041  | 0.023  | 0.018  |
| 22      | Phenolic Compounds                    | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 23      | Cyanides as CN                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Oil & grease                          | mg/l    | <1.0   | <1.0   | <1.0   | <1.0   | <1.0   |
| 25      | Cadmium as Cd                         | mg/l    | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 |
| 26      | Arsenic as As                         | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Copper as Cu                          | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 28      | Lead as Pb                            | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 29      | Iron as Fe                            | mg/l    | 0.016  | 0.046  | 0.031  | 0.022  | 0.029  |
| 30      | Chromium as Cr <sup>+6</sup>          | mg/l    | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| 31      | Selenium as Se                        | mg/l    | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 32      | Zinc as Zn                            | mg/l    | 0.121  | 0.063  | 0.054  | 0.075  | 0.098  |
| 33      | Aluminum as Al                        | mg/l    | 0.013  | 0.037  | 0.015  | 0.021  | 0.031  |
| 34      | Mercury as Hg                         | mg/l    | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | SAR                                   | -       | 0.60   | 0.83   | 0.60   | 0.60   | 0.74   |
| 36      | Insecticides                          | mg/l    | Absent | Absent | Absent | Absent | Absent |
| 37      | Anionic detergents as MBAS            | mg/l    | Absent | Absent | Absent | Absent | Absent |
| 38      | Total Coliforms                       | MPN/100 | 230    | 330    | 410    | 450    | 490    |

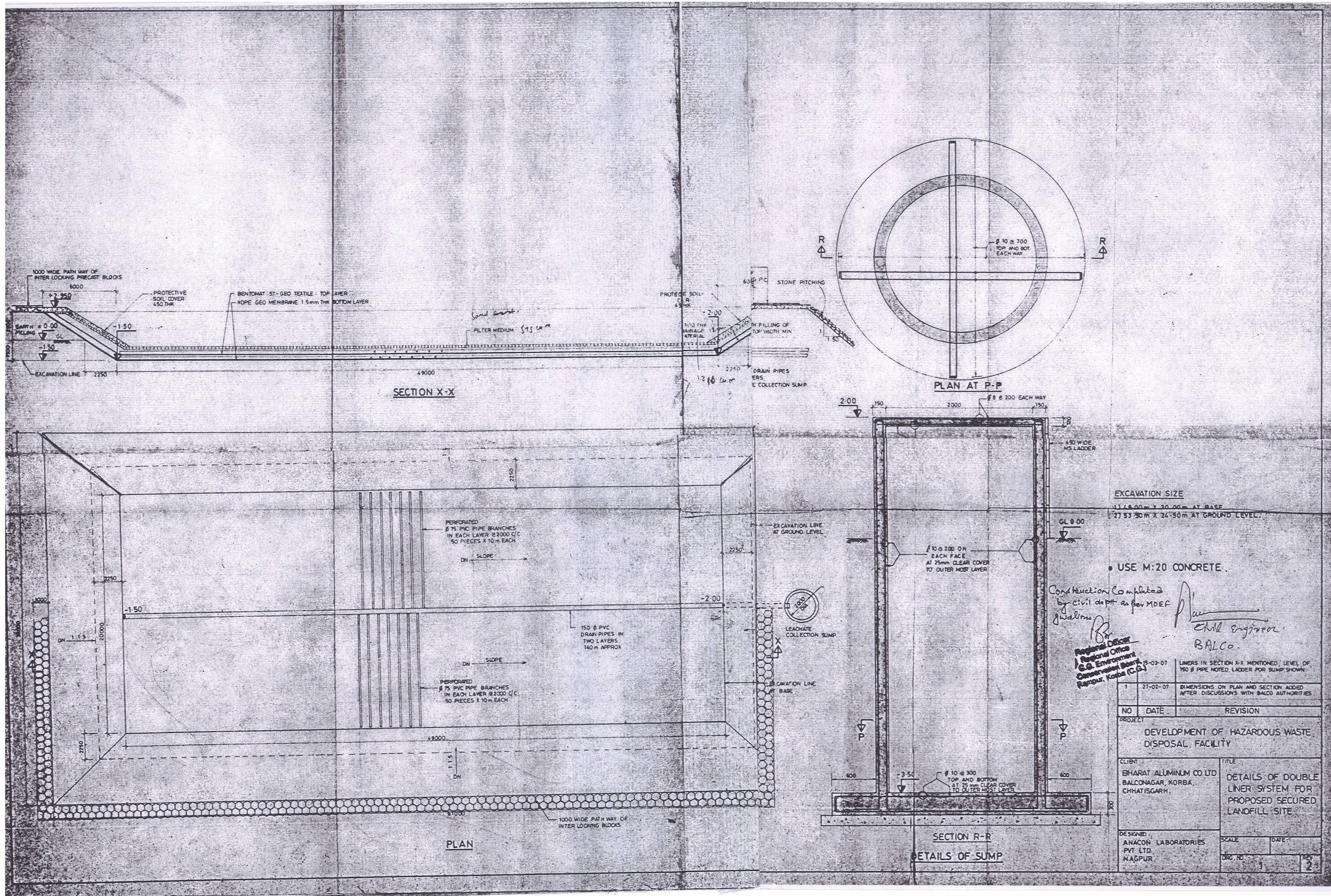
Method of Testing: As per APHA 23<sup>rd</sup> edition and IS: 3025  
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

**-END OF THE REPORTS-**

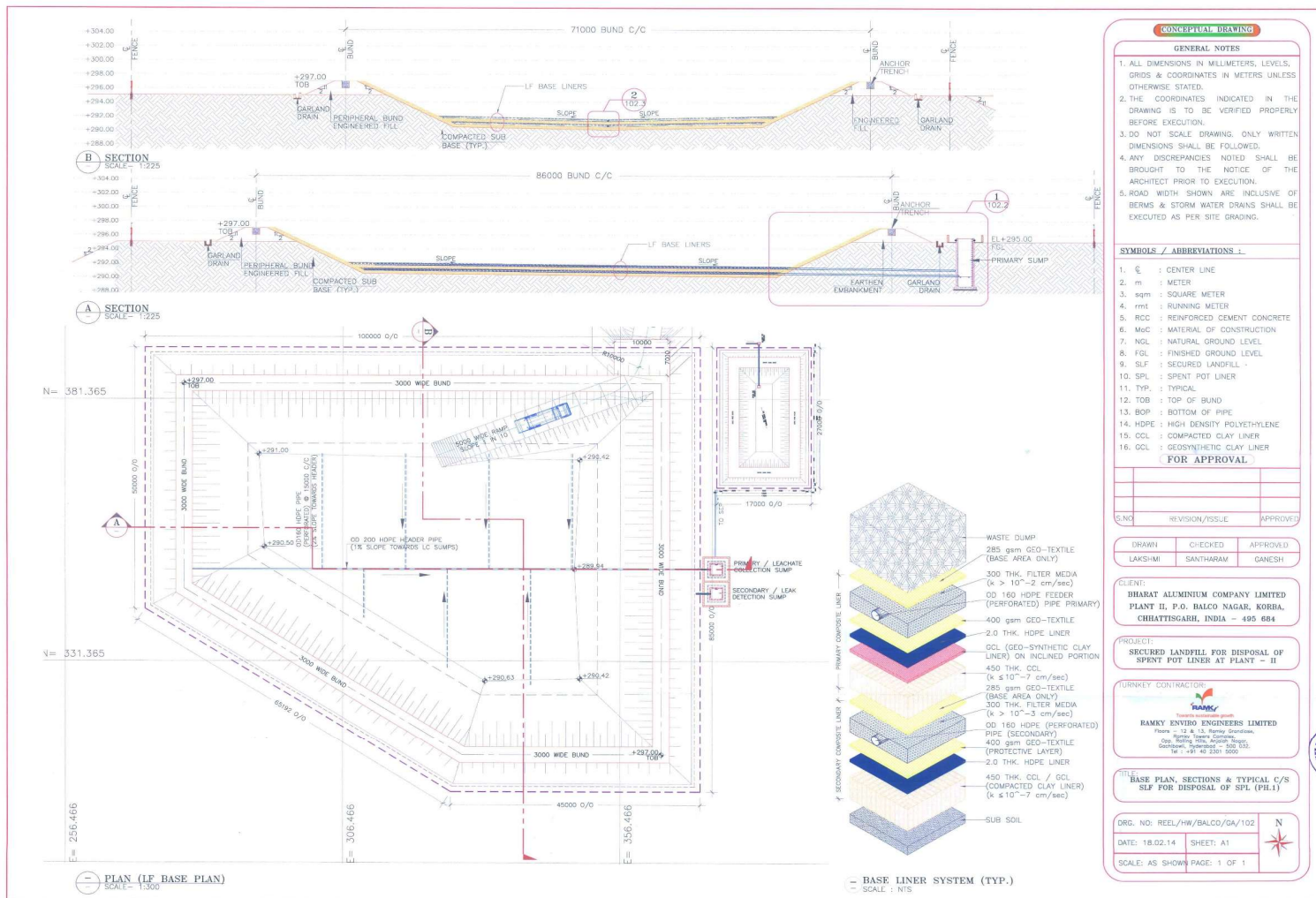
Name and Designation of Authorized Signatory

  
REGD. No- DL 33004/99  
Sr. No.-5  
**Dr. Subba Reddy Mallampati**  
(Manager – Environment)









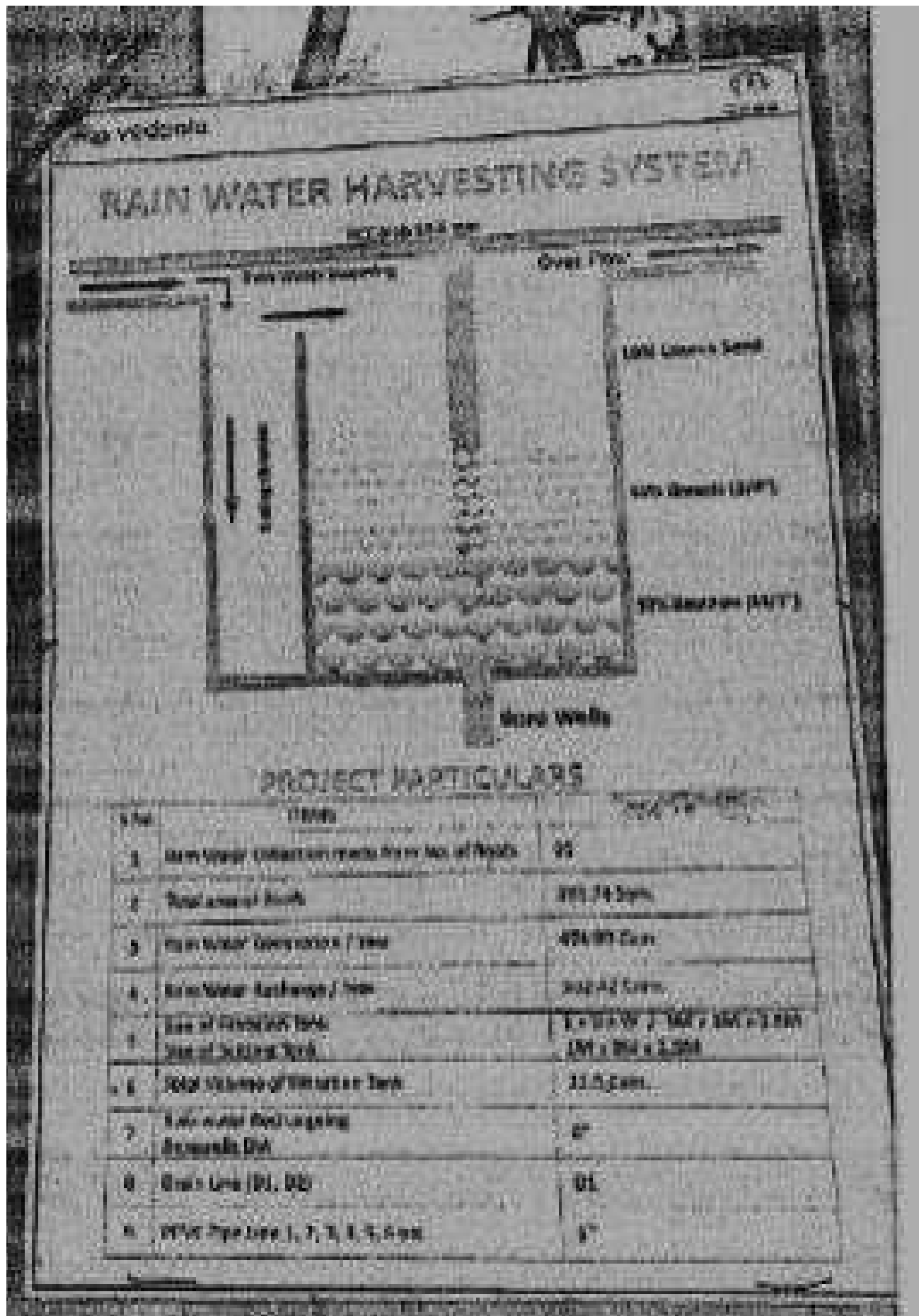


# GREEN BELT DEVELOPMENT

## Name of the Species Planted

Dalbergia latifolia (**sheeshm**), Mangifera Indica (**Mango**), Jamarindus Indica, Dehonix Regia(**Gulmohar**), Madhuca Indica (**Mahuwa**), Emblica Officinalis (**Amala**), Syzygium Cumini (**Jamun**), Azadirachta Indica (**Neem**), Grevillea Rebusta (**Silver oak**) **Karanj**, (**Amaltash**), Ficus Religiosa (**Pipal**), Leucaena Leucoophala (**Subabul**) etc.

| YEAR    | BALCO                |                      | BCPP                 |                      | Total                |                      |
|---------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|         | <i>No of sapling</i> | <i>Area in Acres</i> | <i>No of sapling</i> | <i>Area in Acres</i> | <i>No of sapling</i> | <i>Area in Acres</i> |
| 2002-03 | 55000                | 54                   | 10000                | 10                   | 65000                | 64                   |
| 2003-04 | 30000                | 29                   | 10000                | 10                   | 40000                | 39                   |
| 2004-05 | 11000                | 10                   | 21000                | 21                   | 32000                | 31                   |
| 2005-06 | 57000                | 56                   | 10000                | 10                   | 67000                | 66                   |
| 2006-07 | 130000               | 128                  | 5000                 | 5                    | 135000               | 134                  |
| 2007-08 | 35000                | 32                   | 5000                 | 5                    | 40000                | 37                   |
| 2008-09 | 13000                | 12                   | 1000                 | 1                    | 14000                | 13                   |
| 2009-10 | 53500                | 52.5                 | 1500                 | 1                    | 55000                | 53.5                 |
| 2010-11 | 54850                | 54                   | 150                  | 0                    | 55000                | 54                   |
| 2011-12 | 20000                | 20                   | -                    | -                    | 20000                | 20                   |
| 2012-13 | 5600                 | 5                    | -                    | -                    | 5600                 | 5                    |
| 2013-14 | 4150                 | 4                    | 650                  | 0.65                 | 4800                 | 4.65                 |
| 2014-15 | 35700                | 35.6                 | -                    | -                    | 35700                | 35.6                 |
| 2015-16 | 30000                | 28                   | -                    | -                    | 30000                | 28                   |
| 2016-17 | 30000                | 28                   |                      |                      | 30000                | 28                   |
| 2017-18 | 5000                 | 4                    | -                    | -                    | 5000                 | 4                    |
| 2018-19 | 5000                 | 4                    | -                    | -                    | 5000                 | 4                    |
| 2019-20 | 15000                | 13                   |                      |                      | 15000                | 13                   |
| 2020-21 | 10000                | 9                    | -                    | -                    | 10000                | 9                    |
| 2021-22 | 14700                | 10                   | -                    | -                    | 14700                | 10                   |
| 2022-23 | 88887                | 96                   | 34675                | 37                   | 123562               | 133                  |
| 2023-24 | 53936                | 53                   | 31175                | 30                   | 85111                | 83                   |
| 2024-25 | 48023                | 2.5                  | -                    | -                    | 48023                | 2.5                  |









### Aluminium Smelter Plant

#### Status of Action Points CREP Guidelines recommended for Aluminium Smelter

| Sl. No. | Issues               | Action Point                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compliance Status                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Technology           | Allowing Pot lines only with Pre-baked Technology. Environment clearance new pot lines to be given by MoEF, after June 2003, only with prebaked technology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Old Soderberg type of Smelter has been phased out during the year 2009.<br>BALCO has adopted Pre-baked GAMI technology for Aluminium Smelting in its new pot lines operating at present                                                                                                                                                                                                                                                                       |
| 2       | Fluoride Emissions   | <p>Prescribing maximum size of the plant.<br/>Maximum size of the plant shall be decided based on the assimilative capacity of each plant location.</p> <p>Revision of fluoride emission standard.<br/>For Soderberg Technology 2.8 kg/t by December 2005 [1.0kg/t (VCS) &amp; 1.30 kg/t 9HSS) by December 2010]</p> <p>Phasing out Wet Scrubbing System for Fluoride.<br/>For Pre-baked Technology 0.8 kg/T by December 2006</p> <p>Allowing new Pot lines only with Dry Scrubbing System<br/>Environmental clearance for new pot lines shall be given by MoEF, after June 2003, only with Dry Scrubbing System.</p> <p>Monitoring of fugitive emissions from pot rooms<br/>To start with Indal or any other better method &amp; submit data from January 2004, regularly to SPCBs &amp; CPCB</p> | <p>-</p> <p>BALCO is operating pre-baked Aluminium smelter.</p> <p>FTPs with dry scrubbing systems have been installed in smelter &amp; the total fluoride emission from the smelter is within the range of 0.8 Kg/T of Al. produced.</p> <p>BALCO has installed FTPs with dry scrubbing system in Pot lines.</p> <p>Fugitive fluoride is being monitored and reports being submitted to CECB monthly and to Ministry with half Yearly compliance report.</p> |
| 3       | Fluoride Consumption | Fluoride consumption tonne of aluminum produced (as F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | CREP (Corporate Responsibility for Environmental                                                                                                                                                                                                                                                                                                                                                                                                              |



|   |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                        | <p>[For Soderberg Technology 15 kg/t by December 2005<br/>For Pre-baked technology 10kg/t by December 2005]</p>                                                                                                                                                                                                                                                                                                                                     | <p>Protection) recommendation prescribing Specific Fluoride consumption less than 10 kg/ton of aluminium has been amended to specific AlF<sub>3</sub> consumption less than 20 kg/ton of aluminium as per the Gazette Notification dated 21st July 2025 under the Environment (Protection) Fifth Amendment Rules, 2025, issued by the Ministry of Environment, Forest and Climate Change, Government of India. The revised standard replaces the earlier entry under Serial No. 36 of Schedule I of the Environment (Protection) Rules, 1986 and we will be complying to the same.</p> |
| 4 | Ambient Fluoride       | <p>Forage fluoride standards (Dry weight basis)</p> <ul style="list-style-type: none"> <li>* Twelve consecutive months average-40 ppm</li> <li>* Two consecutive months Average- 60 ppm</li> <li>* One month – 80 ppm</li> </ul> <p>Measurement of forage Fluoride<br/>To start monitoring and submit data from January 2004, regularly to SPCBs &amp; CPCB. The locations of monitoring may be selected in collaboration with SPCBs &amp; CPCB</p> | <p>Forage fluoride in the surrounding areas /villages is being measured and analyzed by a third party NABL accredited Lab. Reports are submitted to CECB monthly and to Ministry with half yearly compliance report.</p>                                                                                                                                                                                                                                                                                                                                                               |
| 5 | Spent Pot Lining (SPL) | <p>Setting up a centralized SPL treatment &amp; disposal facility with aluminum fluoride recovery and utilization of SPL in steel/ cement industries</p> <p>Limit for pot life, (for new pots installed after December 31, 2003 2500 day (average)</p>                                                                                                                                                                                              | <p>As per CPCB approved SOP, treatment and detoxification of SPL-Carbon through authorized co-processors is being carried out. The authorized co-processor supplies the SPL Carbon to cement /steel plant after detoxification as per SOP.</p> <p>BALCO has adopted Pre-baked technology with 320/340 KA line current. We are trying to maximize the lining life to an average of 2500 days.</p>                                                                                                                                                                                       |

|   |                   |                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                   | SPL (Carbon & Refractory) to be disposed in Secured Landfill                                                                                                                                                         | <p>The SPL-Carbon portion generated from smelt <b>Annexure-A (Contd....)</b> authorized <del>COPROCESSOR</del> M/s. Greenmac Technology at Raipur, M/s Shubham Sales Co., Rohtak, M/s Ambuja Cement Limited, Bhatapara, M/s ACC Limited Jamul, M/s Gati Greens India Private Limited and M/s Raipur Grinding Corporation for detoxification which in turn is sending the detoxified material for further utilization in various industries including cement and steel.</p> <p>The SPL refractory stored in covered sheds with concrete floor as currently there is no approved SOP by CPCB for utilization of SPL refractory. However, we have requested CPCB to share with us the SOP, if and as and when available, vide our letter dated 31.01.2024, 22.03.2024, 23.09.2024 ,09.01.2025, 05.05.2025 and 26.09.2025 to comply with the given condition. We will be diluting the legacy SPL refractory within 18 months after the issue of the approved SOP from CPCB.</p> |
| 6 | Red Mud           | <p>Phasing Wet disposal Red Mud utilization</p> <p>To achieve minimum 50% solids in red mud by Dec. 2005 A proposal for practical utilization to be prepared by Aluminium Association of India within six months</p> | Not Applicable for BALCO at present.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 7 | Anode Baking Oven | Achieving particulate matter limit of 50 mg/Nm <sup>3</sup> by Dec. 2005                                                                                                                                             | Particulate emission from Anode Bake Oven is within 50 mg/Nm <sup>3</sup> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

### **Thermal Power Plant**

#### **Status of Action Points CREP Guidelines recommended for Thermal Power Plant**

| <b>Sl. No.</b> | <b>Action Point</b>                                                                                                                                                                                                                                                                                                                                                                               | <b>Compliance Status</b>                                                                                                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1              | <p>Implementation of Environmental Standards (emission &amp; effluent) in non-compliant Power Plants (31 &amp; 27)</p> <ul style="list-style-type: none"> <li>• Submission of action plan : June 30, 2003</li> <li>• Placement of order for Pollution of control equipment : September, 2003</li> <li>• Installation &amp; commission: December 31, 2005.</li> </ul>                              | Not applicable                                                                                                                                                                                                                   |
| 2              | For existing thermal power plants, a feasibility study shall be carried out by Central Electricity Authority (CEA) to examine possibility to reduce the particulate matter emissions to 100 mg/Nm <sup>3</sup> . The studies shall also suggest the road map to meet 100 mg/Nm <sup>3</sup> wherever found feasible. CEA shall submit the report by March 2004.                                   | Not applicable                                                                                                                                                                                                                   |
| 3              | New / expansion power projects to be accorded environmental clearance on or after 1.1.2003 shall meet the limit of 100 mg/Nm <sup>3</sup> for particulate matter.                                                                                                                                                                                                                                 | Hybrid ESP's have been commissioned and emissions are maintained below the stipulated standards of 50 mg/NM <sup>3</sup> .                                                                                                       |
| 4              | <p>Development of SO<sub>2</sub> &amp; NO<sub>x</sub> emission standards for coal based plants by December 2003.</p> <ul style="list-style-type: none"> <li>• New/ expansion power projects shall meet the limit of SO<sub>2</sub> &amp; NO<sub>x</sub> w.e.f. 1.1.2005.</li> <li>• Existing power plants shall meet the limit of SO<sub>2</sub> &amp; NO<sub>x</sub> w.e.f. 1.1.2006.</li> </ul> | <p>The timeline for SO<sub>2</sub> has been extended for 3 years and for BALCO, it has been extended up to 31 December 2028 vide MoEF&amp;CC gazette notification dated 30 December 2024.</p> <p>Complied with Nox emission.</p> |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                              |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5  | Install/activate opacity meters/ continuous monitoring system in all the units by December 31, 2004 with proper calibration system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Continuous online monitors have already been installed in all the units. Proper calibration schedules are being followed for calibration of the instruments. |
| 6  | Development of guidelines/ standards for mercury and other toxic heavy metals emissions by December 2003.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Complied.                                                                                                                                                    |
| 7  | Review of stack height requirement and guidelines for power plants based on micro meteorological data by June 2003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Complied.                                                                                                                                                    |
| 8  | <p>Implementation of use of beneficiated coal as per GOI Notification:<br/> Power plants will sign fuel supply agreement (FSA) to meet the requirement as per the matrix prepared by CEA for compliance of the notification as short term measure.<br/> Options/mechanism for setting up of coal washeries as a long term measure</p> <ul style="list-style-type: none"> <li>• Coal India will up its own washery</li> <li>• State Electricity Board to set up its own washery</li> <li>• Coal India to ask private entrepreneurs to set up washeries for CIL and taking washing charges</li> <li>• SEBs to select a private entrepreneur to set up a washery near pit- head installation of coal beneficiation plant</li> </ul> | Not applicable                                                                                                                                               |
| 9  | Power plants will indicate their requirement of abandoned coal mines for ash disposal & Coal India/ MOC shall provide the list of abandoned mines by June 2003 to CEA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Complied.                                                                                                                                                    |
| 10 | Power plants will provide dry ash to the users outside the premises or uninterrupted access to the users within six months.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | We are utilizing fly ash in different avenues like Road Construction, NHAI, Cement Industry, Brick Manufacturing Units and Mine void filling.                |
| 11 | Power Plants should provide dry fly ash free of cost to the users                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | We have provision of supplying dry fly ash free of cost for other users.                                                                                     |
| 12 | State P.W.Ds/ construction & development agencies shall also adhere to the specifications/Schedules of CPWD for ash based products utilization MoEF will take up the matter with State Governments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Not applicable                                                                                                                                               |
| 13 | (i) New plants to be accorded environmental clearance on or after                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The unit has adopted High Concentration Slurry Disposal (HCSD) method for ash                                                                                |



|    |                                                                                                                                                                                                                                                                                                                                                                  |                                                       |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
|    | <p>1.04.2003 shall adopt dry fly ash extraction or dry disposal system or Medium (35-40%) ash concentration slurry disposal system or Lean phase with hundred percent ash water re-circulation system depending upon site specific environmental situation.</p> <p>(ii) Existing plants shall adopt any of the systems mentioned in 13 (i) by December 2004.</p> | disposal. The consistency of 60% solid is maintained. |
| 14 | Fly ash Mission shall prepare guidelines/manuals for fly ash utilization by March 2004.                                                                                                                                                                                                                                                                          | Noted.                                                |
| 15 | New plants shall promote adoption of clean coal and clean power generation technologies                                                                                                                                                                                                                                                                          | Noted.                                                |

BALCO/ENV/A-02(A)/2025/276

Date: 27.05.2025

To,  
The Integrated Regional Office (IRO),  
Ministry of Environment, Forest & Climate Change,  
Aranya Bhawan,  
North Block, Sector-19,  
Nava Raipur, Atal Nagar (CG) 492002.

**Sub:** Half Yearly Compliance Status Report (October 2024 to March 2025) of the expansion of Aluminum Smelter Plant (3.5 to 9.0 LTPA) and Captive Power Plant (300MW) at Korba, Chhattisgarh by BALCO

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Respected Sir,

As per the Environmental Clearance (No. J- 11011/123/2007.IA-II (I) dated 16.09.2008 received for the Expansion of Smelter & Power Plant, M/s Bharat Aluminium Company Limited, Korba has set up the smelter plant, phase-1, (3.25 LTPA). Please find enclosed herewith the compliance report along with the necessary supporting documents.

We hope that the above is in line with the provisions stipulated in the Environmental Clearance. If you require any further information, we will be glad to provide the same.

Thanking you,

Yours Truly,

On behalf of Bharat Aluminum Company Ltd.

(Authorized Signatory)

Encl: a/a

Copy to: The Regional Officer, Chhattisgarh Environment Control Board, Korba.

30k.

**Implementation Status of Public Hearing Commitments held in 2007**

| # | Statement of main issues raised by the public                          | Comments of the PP                                                                                                                                                                                                                                                                 | Implementation Status                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Polluted air and ash emitted from industry will affect the nearby area | High efficiency pollution control equipment's will be provided and the fly ash generated shall be utilized as per the Fly ash notification amended from time to time.                                                                                                              | High efficiency FTPs with dry scrubbing systems have been implemented in Smelter Pot Line and Bake Oven Plant. Further dust collection & Dust Extraction systems have been implemented. Closed circuit conveying systems have been adopted. Hybrid ESP (ESP followed with bag filters) have been implemented in Power Plants. High Concentration Slurry Disposal system (HCSD) has been implemented for disposal of ash in slurry form to dykes.<br>Fly ash being utilized as per Fly ash notification, accordingly 100 % fly ash utilization has been achieved for power plants 540 MW and 1200 MW from last 4 years. |
| 2 | Establishment of industry will pollute the nearby area                 | Environment friendly techniques like high efficiency ESPs, High density slurry disposal system, fume treatment plant and dry scrubbing system shall be adopted. Further, zero effluent discharge system shall be adopted which will help in keeping the pollution below the norms. | Hybrid ESP's (ESP followed with bag filters), HCSD System, FTP with dry scrubbing system at Smelter plant, ETP with RO has been provided. CEMs & CAAQMS have been provided for online and real time monitoring.                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3 | Employment should be provide to the local people                       | Employment to the 60% of the local people have been provided. In future, also employment shall be provided to the local people as per their qualification and ability.                                                                                                             | Following is the detail for employment provided:<br><br>Executives: 64% from Chhattisgarh and 36 % from other states.<br><br>Workman: 99% from Chhattisgarh and 1 % from other states.                                                                                                                                                                                                                                                                                                                                                                                                                                 |

### **Implementation Status of Public Hearing Commitments held in 2007**

|   |                                                                                                      |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                        |
|---|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                                                                                      |                                                                                                                                                                                                                                                               | Contract Employees: 88 % from Chhattisgarh and 12 % from other states.                                                                                                                                                                                                 |
| 4 | Extensive and massive plantation should be carried out surrounding the industrial premises           | So far adequate green cover has been developed by planting lakhs of trees in and around the plant premises by the industry. Further, extensive and massive plantation shall be carried out in and around the industrial premises in available open areas.     | Plantation target as per statutory requirement has been achieved.                                                                                                                                                                                                      |
| 5 | Medical facilities to the nearby villages should be provided                                         | Nearby villages around plant premises have already been provided medical facilities regularly. Time to time medical facilities shall be provided through organizing health camps.                                                                             | BALCO hospital is providing medical facility to the nearby communities. Further Mobile Health Van has been put in to service for medical needs of the nearby villages.                                                                                                 |
| 6 | New smelter and power plant should not be established in the area where the old plant is established | New smelter and power plant will be established in our own land within the Industrial premises of the Company and the same is falling under the jurisdiction of Nagar Nigam, Korba.                                                                           | Expansion has been carried out in the BALCO's industrial premises. No additional land was procured for the expansion.                                                                                                                                                  |
| 7 | Industry is not aware of mitigation of pollution issues                                              | Industry shall install appropriate and effective pollution controlling devices in all source point to minimize the pollution as per the norms laid down by the board. Separate fund for pollution abatement activity shall be provided to mitigate pollution. | Industry has provided latest technology pollution control equipment for control of Air pollution, Water pollution like FTP's, Hybrid ESP's, ETP with RO etc, and the CEMs and CAAQMS have been installed for online real time monitoring and connected to CPCB server. |



**आदेश द्वारा पी.व्ही. नरसिंग राव, भा.व.से. प्रधान मुख्य वन संरक्षक,  
(वन्यप्राणी एवं जैव विविधता संरक्षण) सह मुख्य वन्यप्राणी  
अभिरक्षक, छत्तीसगढ़**

सेक्टर-19, नार्थ ब्लॉक, अरण्य भवन, प्रथम तल (एफ.आर.) अटल नगर, नवा रायपुर

✉ cwlwcg@gmail.com

(☎0771-2512880, 📠 0771-2512881)

// आदेश //

आदेश क्रमांक/व.प्रा./प्रबंध-540/110

नवा रायपुर, दिनांक- 02.08.2021

मुख्य वन संरक्षक (वन्यप्राणी) एवं क्षेत्र संचालक, अचानकमार टायगर रिजर्व, बिलासपुर का पत्र क्रमांक/व.प्रा./त.अधि./2021/1554 दिनांक 03.07.2021 द्वारा मेसर्स भारत एल्युमिनियम कम्पनी लिमिटेड द्वारा कोरबा वनमंडल अंतर्गत ग्राम रिसदा, तहसील व जिला कोरबा में बाल्को प्लांट के अंदर एल्युमिनियम स्मेल्टर का विस्तार हेतु कुल रकबा 39.66 हेक्ट. में व्यपर्वतन बाबत भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन, मंत्रालय के पत्र दिनांक 19.09.2017 के पालनार्थ वन्यप्राणी संरक्षण योजना तैयार कर इस कार्यालय को अनुशंसा सहित प्रस्तुत की गई है।

प्रस्तुत वन्यप्राणी संरक्षण योजना का गहन परीक्षण किया गया। आवेदक संस्थान द्वारा प्रस्तुत वन्यप्राणी संरक्षण योजना का अनुमोदन करते हुये योजना में प्रावधानित राशि का कुल 10 वर्षों में उपयोग करते हुये वर्षवार आबंटन किया जाता है। अनुमोदित योजना में वन्यजीव रहवास सुधार, वन्यजीव संरक्षण तथा जन जागरूकता आदि से संबंधित राशि का विवरण निम्नानुसार है :-

| Sr. No. | Item                                                                                                                            | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8 | Y9 | Y10 | Estimated Expenditure (in Lakhs) |
|---------|---------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|----|----|----|----|----|-----|----------------------------------|
| 1       | First aid care center for injured animals                                                                                       | 10 | 5  | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 1   | 25.00                            |
|         | Temporary rescue rooms for orphan animals                                                                                       |    |    |    |    |    |    |    |    |    |     |                                  |
|         | Strengthening of Existing veterinary care unit                                                                                  |    |    |    |    |    |    |    |    |    |     |                                  |
|         | Blood analyzer                                                                                                                  |    |    |    |    |    |    |    |    |    |     |                                  |
|         | Portable x-ray machine                                                                                                          |    |    |    |    |    |    |    |    |    |     |                                  |
|         | Laser messenger                                                                                                                 |    |    |    |    |    |    |    |    |    |     |                                  |
|         | Maintenance and repair                                                                                                          |    |    |    |    |    |    |    |    |    |     |                                  |
| 2       | Study to assess the population of aquatic fauna in the Hasdeo River ecosystem                                                   | 5  | 3  | 1  | 1  | -  | -  | -  | -  | -  | -   | 10.00                            |
| 3       | Procurement of Protection and monitoring equipment to track the movement of wildlife in Hasdeo-Achhanakmar land scape ecosystem | 15 | 10 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1   | 33.00                            |

|   |                                                                                                                                                              |     |     |   |   |   |   |   |   |   |   |        |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|---|---|---|---|---|---|---|---|--------|
| 4 | Contribution of the Tiger Conservation foundation fund to be strengthen the wildlife protection infrastructure of the Hasdeo-Achhanakmar landscape ecosystem | 7.5 | 2.5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 18.00  |
| 5 | Awareness creation programs on nature Wild life conservation days                                                                                            | 2   | 2   | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 17.00  |
| 6 | Establishment of Rapid response unit. System to deal with man animal conflicts in an around the mining areas.                                                | 25  | 10  | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 47.00  |
|   | Procurement of transportation vehicle                                                                                                                        |     |     |   |   |   |   |   |   |   |   |        |
|   | Procurement of square cage                                                                                                                                   |     |     |   |   |   |   |   |   |   |   |        |
|   | Tranquilizer gun and other chemicals                                                                                                                         |     |     |   |   |   |   |   |   |   |   |        |
|   | Hiring the veterinary expertise services on contract basis                                                                                                   |     |     |   |   |   |   |   |   |   |   |        |
|   | Grand Total in lakhs                                                                                                                                         |     |     |   |   |   |   |   |   |   |   | 150.00 |
|   | Cost escalation @2% of the total                                                                                                                             |     |     |   |   |   |   |   |   |   |   | 3.00   |
|   | Grand Total (One crore fifty-three lakhs only)                                                                                                               |     |     |   |   |   |   |   |   |   |   | 153.00 |

उक्त वन्यप्राणी संरक्षण योजना की लागत राशि रूपये 153.00 लाख वर्तमान दरों पर है। परियोजना में देरी होने से समय लागत बढ़ेगी, जिसमें प्राईस इन्डेक्स के हिसाब से वृद्धि होगी। परियोजना के क्रियान्वयन के समय जो भी लागत आयेगी वह प्रस्तावकों को वन विभाग में एकमुश्त जमा करानी होगी, जिससे मूल्य वृद्धि के प्रभाव को समाप्त किया जा सके। वन विभाग इस प्रकार जमा की गई राशि से वन्यप्राणी संरक्षण योजना में दर्शाते समय सारणी के अनुसार क्रियान्वित करेगा।

अनुमोदित वन्यप्राणी योजना में दर्शाये गये उपरोक्त घटकों के संगत फील्ड में किये जाने वाले कार्यों का कार्यवार/स्थलवार प्रोजेक्ट संबंधित वनमण्डलाधिकारी के द्वारा तत्समय प्रचलित मार्गदर्शी सिद्धांतों (व्यय नार्मस, कार्य की प्रकृति, वन्यप्राणी प्रबंधन के संबंध में लागू होने वाले अन्य तकनीकी तथ्यों व निर्देशों) के अनुरूप तैयार कर सक्षमतानुसार तकनीकी स्वीकृति/अनुमोदन हेतु अनुशंसा सहित संबंधित मुख्य वन संरक्षक को प्रेषित किया जावेगा। संबंधित मुख्य वन संरक्षक द्वारा प्रोजेक्ट की तकनीकी स्वीकृति/अनुमोदन की अनुशंसा के साथ मुख्य वन्यप्राणी अभिरक्षक छत्तीसगढ़ को प्रेषित किया जावेगा। प्रोजेक्ट का परीक्षण वन्यप्राणी प्रबंधन की उपयुक्तता की दृष्टि से किया जाकर मुख्य वन्यप्राणी अभिरक्षक के द्वारा कार्य हेतु प्रशासकीय स्वीकृति जारी किये जाने की अनुशंसा के साथ प्रोजेक्ट, प्रशासकीय स्वीकृति/बजट आबंटन करने हेतु सक्षम अधिकारी को प्रेषित किया जावेगा। प्रशासकीय स्वीकृति आदेश जारी किये जाने के पश्चात ही कार्यों का क्रियान्वयन व.मं.अ. द्वारा किया जावेगा।

वन्यप्राणी प्रबंधन योजना के कार्यों की मॉनिटरिंग का कार्य संबंधित मुख्य वन संरक्षक व मुख्य वन्यप्राणी अभिरक्षक छ.ग. द्वारा किया जावेगा। किये जा रहे कार्यों की भौतिक व आर्थिक प्रगति से मुख्य वन्यप्राणी अभिरक्षक को प्रतिमाह वनमंडलाधिकारी द्वारा अवगत कराया जावेगा।

कृपया वन्यप्राणी संरक्षण योजना में प्रावधानित राशि रूपये 153.00 लाख एकमुश्त जमा करने हेतु परियोजना प्रस्तावकों को आदेशित करें।

प्रधान मुख्य वन संरक्षक (व.प्रा.) सह मुख्य वन्यप्राणी  
अभिरक्षक, छ.ग., अटल नगर, रायपुर

पृ.क्रमांक/व.प्रा./प्रबंध-540/2734

नवा रायपुर, दिनांक-02.08.2021

प्रतिलिपि सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित :-

1. अपर प्रधान मुख्य वन संरक्षक (भू-प्रबंध) नवा रायपुर।
2. मुख्य वन संरक्षक, बिलासपुर वृत्त, बिलासपुर।
3. मुख्य वन संरक्षक वन्यजीवन और क्षेत्रीय निदेशक, अचानकमार टायगर रिजर्व बिलासपुर।
4. वनमंडलाधिकारी, कोरबा वनमंडल, कोरबा
5. मेसर्स भारत एल्युमिनियम कंपनी लिमिटेड, कोरबा छत्तीसगढ़।

प्रधान मुख्य वन संरक्षक (व.प्रा.) सह मुख्य वन्यप्राणी  
अभिरक्षक, अटल नगर, रायपुर, छ.ग.



10-10-2022

प्रति,  
वनमंडलाधिकारी,  
कोरबा वनमंडल,  
कोरबा, छग

**विषय: वन्य प्राणी संरक्षण योजना के तहत योजना राशि ₹1,53,00,000/- जमा करने के सम्बन्ध में।**

सन्दर्भ: आपके कार्यालय के पत्र क्रमांक /तक.अ./4771/कोरबा, दिनांक 24-08-2022

महोदया,

विषयान्तर्गत संदर्भित पत्र के सम्बन्ध में अवगत कराना चाहेंगे कि भारत एल्युमीनियम कंपनी लिमिटेड द्वारा वन्य प्राणी संरक्षण योजना के तहत योजना राशि **₹1,53,00,000/-** (रुपये एक करोड़ तिरपन लाख मात्र) का डिमांड ड्राफ्ट (बैंक का नाम: **आईसीआईसीआई बैंक, कोरबा**; क्रमांक: **500410**, दिनांक **10-10-2022**) आपके कार्यालय में जमा किया जा रहा है।

सधन्यवाद

सहयोग की अपेक्षा के साथ  
वास्ते, भारत एल्युमीनियम कंपनी लिमिटेड



अधिकृत हस्ताक्षरकर्ता

प्रतिलिपि:

1. प्रधान मुख्य वन संरक्षक (वन्य एवं जैव विविधता संरक्षण) -सह- मुख्य वन्यप्राणी अभिरक्षक, छत्तीसगढ़ रायपुर की ओर सूचनार्थ सम्प्रेषित।
2. अपर प्रधान मुख्य वन संरक्षक (भू-प्रबंध/ व.से.अ. ) छत्तीसगढ़ रायपुर की ओर सूचनार्थ सम्प्रेषित।
3. मुख्य वन संरक्षक, बिलासपुर वृत्त, बिलासपुर की ओर सूचनार्थ सम्प्रेषित।
4. मुख्य वन संरक्षक, वन्य जीवन एवं क्षेत्रीय निदेशक, अचानकमार टाइगर रिजर्व, बिलासपुर की ओर सूचनार्थ सम्प्रेषित।



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# कार्यालय वनमण्डलाधिकारी, कोरबा वनमण्डल कोरबा (छ.ग.)

☎ का. : 07759-221273, नि. : 07759-222504, फैक्स 07759-223531, Email : dfo\_korba@yahoo.co.in

क्रमांक/तक.अ/4772

कोरबा, दिनांक 24/08/2022

प्रति,

Chief Executive Officer  
& Whole Time Director  
Bharat Aluminium Company  
Limited Balco (C.G.)

विषय — "Authentication of Flora & Fauna and approval of Wild Life Conservation and Management Plan" - Regarding

- संदर्भ —
1. प्रधान मुख्य वन संरक्षक, (वन्यप्राणी एवं जैव विविधता संरक्षण) सह मुख्य वन्यप्राणी अभिरक्षक, छत्तीसगढ़ रायपुर का आदेश क्र/व.प्रा./प्रबंध-540/110 रायपुर दिनांक 02.08.2021
  2. मुख्य वन संरक्षक, वन्य जीवन और क्षेत्रीय निदेशक, अचानकमार टाईगर रिजर्व बिलासपुर का पत्र क्र./व.प्रा./तक.अ./2022/4909 दिनांक 03.08.2022

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उपरोक्त विषयांतर्गत लेख है कि संदर्भित पत्र के द्वारा भारत एल्युमिनियम कम्पनी लिमिटेड बालको को कोरबा वनमण्डल अंतर्गत ग्राम रिसदा, तहसील व जिला कोरबा में बालको प्लांट के अंदर एल्युमिनियम स्मेल्टर का विस्तार हेतु भारत सरकार पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय के पत्र दिनांक 10.09.2017 के पालनार्थ वन्यप्राणी संरक्षण योजना तैयार कर अनुशंसा सहित प्रस्तुत की गई है के परिपालन में आवेदक संस्थान से 10 वर्षों का वन्यप्राणी संरक्षण योजना राशि 153.00 लाख रुपये एकमुश्त जमा करने हेतु परियोजना प्रस्तावकों को निर्देश दिये गये।

संदर्भित पत्र के निर्देशानुसार आप वन्यप्राणी संरक्षण योजना की राशि 153.00 लाख रुपये (एक करोड़ तिरपन लाख रुपये) का अद्योहस्ताक्षर के नाम पर बैंकर चेक/डी.डी. के माध्यम से इस कार्यालय में जमा करें।

सहपत्र — उपरोक्तानुसार।

वनमण्डलाधिकारी

कोरबा वनमण्डल कोरबा

पृ. क्रमांक/तक.अ/4772

कोरबा, दिनांक 24/08/2022

प्रतिलिपि —

1. प्रधान मुख्य वन संरक्षक, (वन्यप्राणी एवं जैव विविधता संरक्षण) सह मुख्य वन्यप्राणी अभिरक्षक, छत्तीसगढ़ रायपुर की ओर संदर्भित पत्र के तारतम्य में सूचनार्थ संप्रेषित।
2. अपर प्रधान मुख्य वन संरक्षक (भू-प्रबंध/व.से.अ.) छत्तीसगढ़ रायपुर की ओर सूचनार्थ संप्रेषित।
3. मुख्य वन संरक्षक, बिलासपुर वृत्त बिलासपुर की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु संप्रेषित।
4. मुख्य वन संरक्षक, वन्य जीवन और क्षेत्रीय निदेशक, अचानकमार टाईगर रिजर्व बिलासपुर की ओर सूचनार्थ संप्रेषित।

वनमण्डलाधिकारी

कोरबा वनमण्डल कोरबा

# कार्यालय वनमण्डलाधिकारी, कोरबा वनमण्डल कोरबा (छ.ग.)

☎ का. : 07759-221273 , नि. : 07759- 222504,, फ़ैक्स 07759-223531, Email : dfo\_korba@yahoo.co.in

क्रमांक/तक.अ/  
प्रति,

7432

कोरबा, दिनांक 20/12/2022

मुख्य कार्यकारी अधिकारी

और पूर्णकालिक निदेशक

भारत एल्युमिनियम कंपनी लिमिटेड, कोरबा (छ.ग.)

विषय :- वन्यजीव संरक्षण/प्रबंधन योजना के संबंध में ।

संदर्भ :- आपका पत्र क्र./BALCO/Smelter 5-1 LTPA/Envr-01/282 दिनांक 6.10.2022 एवं 291 दिनांक 18.10.2022

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उपरोक्त विषयांतर्गत लेख है कि आवेदक संस्थान भारत एल्युमिनियम कंपनी लिमिटेड, कोरबा (छ.ग.) के द्वारा 10 वर्षों का वन्यप्राणी संरक्षण योजना के कार्यान्वयन के लिये वनमण्डलाधिकारी कोरबा के नाम डी.डी. के माध्यम से धनादेश क्रमांक 500410 दिनांक 10.10.2022 राशि 1,53,00,000/- रुपये प्राप्त किया है।

वनमण्डलाधिकारी

कोरबा वनमण्डल कोरबा

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|                                                                                            |             |                         |
|--------------------------------------------------------------------------------------------|-------------|-------------------------|
| <b>ISSUED TO:</b><br><b>M/s. Bharat Aluminium Company Limited,</b><br><b>KORBA ( C.G.)</b> | Report No.: | VLL/VLS/25-26/02532/006 |
|                                                                                            | Issue Date: | 2025-05-05              |
|                                                                                            | P.O.No:     | 8500005780              |
|                                                                                            | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)**

Analysis starting date :- 2025-04-05

Analysis Completion date :- 2025-05-05

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : COAL GATE |            |            |            |            |            |            |            |            | Method                                     |
|------------------------------------------|-------------------|--------|--------------------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
|                                          |                   |        | 2025-04-03               | 2025-04-05 | 2025-04-09 | 2025-04-11 | 2025-04-15 | 2025-04-17 | 2025-04-21 | 2025-04-23 | 2025-04-27 |                                            |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 23.2                     | 30.5       | 35.8       | 38.8       | 36.7       | 21.9       | 32.8       | 37.1       | 36.6       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 16.2                     | 17.7       | 15.8       | 24.2       | 19.8       | 21.1       | 18.6       | 20.3       | 26.2       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM <sub>10</sub> )   | µg/m <sup>3</sup> | 100    | 59.3                     | 61.8       | 63.1       | 65.3       | 58.4       | 60.7       | 62.5       | 64.8       | 56.9       | Gravimetric Method                         |
| Particulate Matter (PM <sub>2.5</sub> )  | µg/m <sup>3</sup> | 60     | 23.6                     | 27.3       | 19.0       | 21.9       | 17.6       | 29.1       | 26.0       | 24.7       | 20.9       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 3.7                      | 3.1        | 4.1        | 4.6        | 5.4        | 5.2        | 2.0        | 2.2        | 2.6        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                     | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 4.6                      | 3.2        | 6.4        | 5.8        | 4.1        | 3.9        | 4.6        | 4.2        | 5.2        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 384                      | 326        | 271        | 423        | 368        | 324        | 419        | 377        | 392        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 7.8                      | 9.4        | 8.0        | 9.3        | 6.4        | 8.6        | 7.3        | 5.6        | 6.5        | UV photometric method                      |





|                                                                                                                                                                                                                                                                                                                            |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------|--------|--------------------------------|------------|------------|------------|----------------------------------------|------------|-------------------------|------------|------------|--------------------------------------------|
| ISSUED TO:<br>M/s. Bharat Aluminium Company Limited,<br>KORBA ( C.G.)                                                                                                                                                                                                                                                      |  |                   |        |                                |            |            |            | Report No.:                            |            | VLL/VLS/25-26/02532/003 |            |            |                                            |
|                                                                                                                                                                                                                                                                                                                            |  |                   |        |                                |            |            |            | Issue Date:                            |            | 2025-05-05              |            |            |                                            |
|                                                                                                                                                                                                                                                                                                                            |  |                   |        |                                |            |            |            | P.O.No:                                |            | 8500005780              |            |            |                                            |
|                                                                                                                                                                                                                                                                                                                            |  |                   |        |                                |            |            |            | P.O. Date:                             |            | 2022-06-29              |            |            |                                            |
| AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)                                                                                                                                                                                                                                                             |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
| Analysis starting date :- 2025-04-05                                                                                                                                                                                                                                                                                       |  |                   |        |                                |            |            |            | Analysis Completion date :- 2025-05-05 |            |                         |            |            |                                            |
| Tests required: Sulphur Dioxide (SO <sub>2</sub> ), Nitrogen Dioxide (NO <sub>x</sub> ), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH <sub>3</sub> ), Benzene (C <sub>6</sub> H <sub>6</sub> ), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead. |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
| TEST RESULTS                                                                                                                                                                                                                                                                                                               |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
| Parameters                                                                                                                                                                                                                                                                                                                 |  | Units             | Limits | AAQ Location : GAP & BAKE OVEN |            |            |            |                                        |            |                         |            |            |                                            |
| Sampling Date                                                                                                                                                                                                                                                                                                              |  |                   |        | 2025-04-03                     | 2025-04-05 | 2025-04-09 | 2025-04-11 | 2025-04-15                             | 2025-04-17 | 2025-04-21              | 2025-04-23 | 2025-04-27 | Method                                     |
| Sulphur Dioxide (SO <sub>2</sub> )                                                                                                                                                                                                                                                                                         |  | µg/m <sup>3</sup> | 80     | 32.9                           | 33.1       | 38.6       | 22.2       | 33.3                                   | 29.6       | 25.0                    | 28.9       | 33.8       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )                                                                                                                                                                                                                                                                                        |  | µg/m <sup>3</sup> | 80     | 17.5                           | 20.5       | 19.4       | 21.9       | 23.1                                   | 18.2       | 22.4                    | 20.7       | 22.7       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                                                                                                                                                                                                                                                                                                  |  | µg/m <sup>3</sup> | 100    | 64.7                           | 61.9       | 57.6       | 63.5       | 68.2                                   | 59.1       | 62.1                    | 65.8       | 67.7       | Gravimetric Method                         |
| Particulate Matter (PM2.5)                                                                                                                                                                                                                                                                                                 |  | µg/m <sup>3</sup> | 60     | 24.2                           | 20.8       | 18.8       | 22.5       | 27.2                                   | 18.5       | 21.1                    | 24.0       | 23.6       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )                                                                                                                                                                                                                                                                                                 |  | µg/m <sup>3</sup> | 400    | 4.9                            | 3.8        | 5.1        | 4.5        | 5.9                                    | 3.3        | 3.4                     | 2.6        | 2.9        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> )                                                                                                                                                                                                                                                                                   |  | µg/m <sup>3</sup> | 5      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01                                  | <0.01      | <0.01                   | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase                                                                                                                                                                                                                                                                                       |  | ng/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01                                  | <0.01      | <0.01                   | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                                                                                                                                                                                                                                                                                                              |  | ng/m <sup>3</sup> | 6      | <1.0                           | <1.0       | <1.0       | <1.0       | <1.0                                   | <1.0       | <1.0                    | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                                                                                                                                                                                                                                                                                                               |  | ng/m <sup>3</sup> | 20     | 4.7                            | 4.2        | 5.8        | 3.6        | 3.9                                    | 4.4        | 4.8                     | 3.1        | 4.6        | AAS/ICP Method                             |
| Lead as Pb                                                                                                                                                                                                                                                                                                                 |  | µg/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01                                  | <0.01      | <0.01                   | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                                                                                                                                                                                                                                                                                                            |  | µg/m <sup>3</sup> | 2000   | 363                            | 482        | 327        | 321        | 378                                    | 406        | 385                     | 319        | 354        | NDIR Spectroscopy Method                   |
| Ozone                                                                                                                                                                                                                                                                                                                      |  | µg/m <sup>3</sup> | 100    | 8.2                            | 10.5       | 9.6        | 7.9        | 6.5                                    | 8.9        | 6.6                     | 8.1        | 6.1        | UV photometric method                      |



|                                                                       |             |                         |
|-----------------------------------------------------------------------|-------------|-------------------------|
| ISSUED TO:<br>M/s. Bharat Aluminium Company Limited,<br>KORBA ( C.G.) | Report No.: | VLL/VLS/25-26/02532/002 |
|                                                                       | Issue Date: | 2025-05-05              |
|                                                                       | P.O.No:     | 8500005780              |
|                                                                       | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)**

Analysis starting date :- 2025-04-05

Analysis Completion date :- 2025-05-05

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : NEW ETP |            |            |            |            |            |            |            |            |                                            |
|------------------------------------------|-------------------|--------|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
| Sampling Date                            |                   |        | 2025-04-03             | 2025-04-05 | 2025-04-09 | 2025-04-11 | 2025-04-15 | 2025-04-17 | 2025-04-21 | 2025-04-23 | 2025-04-27 | Method                                     |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 31.0                   | 36.4       | 26.3       | 34.9       | 26.1       | 24.6       | 22.1       | 27.8       | 28.4       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 12.1                   | 16.1       | 13.6       | 18.0       | 17.0       | 14.4       | 13.8       | 15.1       | 18.3       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | 100    | 63.7                   | 59.3       | 56.6       | 52.8       | 61.4       | 57.5       | 65.8       | 60.1       | 54.6       | Gravimetric Method                         |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | 60     | 22.8                   | 19.4       | 17.0       | 15.7       | 20.6       | 17.4       | 24.1       | 21.9       | 18.5       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 2.6                    | 2.8        | 3.4        | 3.1        | 2.1        | 2.4        | 2.7        | 2.0        | 1.7        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                   | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 3.4                    | 5.2        | 2.8        | 4.6        | 3.1        | 4.4        | 3.8        | 4.3        | 2.8        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 317                    | 269        | 384        | 412        | 363        | 402        | 286        | 328        | 287        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 6.2                    | 5.3        | 7.3        | 5.1        | 8.1        | 6.4        | 4.7        | 5.8        | 4.4        | UV photometric method                      |



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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------|--------|--------------------------------|------------|------------|------------|----------------------------------------|------------|-------------------------|------------|------------|--------------------------------------------|
| ISSUED TO:<br>M/s. Bharat Aluminium Company Limited,<br>KORBA ( C.G.)                                                                                                                                                                                                                                         |  |                   |        |                                |            |            |            | Report No.:                            |            | VLL/VLS/25-26/04458/003 |            |            |                                            |
|                                                                                                                                                                                                                                                                                                               |  |                   |        |                                |            |            |            | Issue Date:                            |            | 2025-06-04              |            |            |                                            |
|                                                                                                                                                                                                                                                                                                               |  |                   |        |                                |            |            |            | P.O.No:                                |            | 8500005780              |            |            |                                            |
|                                                                                                                                                                                                                                                                                                               |  |                   |        |                                |            |            |            | P.O. Date:                             |            | 2022-06-29              |            |            |                                            |
| AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)                                                                                                                                                                                                                                                |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
| Analysis starting date :- 2025-05-03                                                                                                                                                                                                                                                                          |  |                   |        |                                |            |            |            | Analysis Completion date :- 2025-06-03 |            |                         |            |            |                                            |
| Tests required: Sulphur Dioxide (SO <sub>2</sub> ), Nitrogen Dioxide (NO <sub>x</sub> ), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH3), Benzene (C <sub>6</sub> H <sub>6</sub> ), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead. |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
| TEST RESULTS                                                                                                                                                                                                                                                                                                  |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
| Parameters                                                                                                                                                                                                                                                                                                    |  | Units             | Limits | AAQ Location : GAP & BAKE OVEN |            |            |            |                                        |            |                         |            |            |                                            |
| Sampling Date                                                                                                                                                                                                                                                                                                 |  |                   |        | 2025-05-01                     | 2025-05-07 | 2025-05-09 | 2025-05-13 | 2025-05-15                             | 2025-05-19 | 2025-05-21              | 2025-05-25 | 2025-05-27 | Method                                     |
| Sulphur Dioxide (SO <sub>2</sub> )                                                                                                                                                                                                                                                                            |  | µg/m <sup>3</sup> | 80     | 23.6                           | 25.4       | 36.2       | 37.7       | 22.6                                   | 40.0       | 29.4                    | 37.8       | 22.3       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )                                                                                                                                                                                                                                                                           |  | µg/m <sup>3</sup> | 80     | 19.1                           | 21.1       | 18.5       | 19.5       | 17.3                                   | 17.9       | 16.6                    | 14.9       | 15.8       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                                                                                                                                                                                                                                                                                     |  | µg/m <sup>3</sup> | 100    | 60.6                           | 62.7       | 62.1       | 59.4       | 60.1                                   | 61.4       | 56.4                    | 58.4       | 47.8       | Gravimetric Method                         |
| Particulate Matter (PM2.5)                                                                                                                                                                                                                                                                                    |  | µg/m <sup>3</sup> | 60     | 26.5                           | 21.9       | 24.4       | 25.5       | 22.2                                   | 20.6       | 24.7                    | 22.2       | 25.5       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )                                                                                                                                                                                                                                                                                    |  | µg/m <sup>3</sup> | 400    | 2.4                            | 2.8        | 2.0        | 1.9        | 2.2                                    | 2.0        | 2.3                     | 2.5        | 2.1        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> )                                                                                                                                                                                                                                                                      |  | µg/m <sup>3</sup> | 5      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01                                  | <0.01      | <0.01                   | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase                                                                                                                                                                                                                                                                          |  | ng/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01                                  | <0.01      | <0.01                   | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                                                                                                                                                                                                                                                                                                 |  | ng/m <sup>3</sup> | 6      | <1.0                           | <1.0       | <1.0       | <1.0       | <1.0                                   | <1.0       | <1.0                    | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                                                                                                                                                                                                                                                                                                  |  | ng/m <sup>3</sup> | 20     | 4.1                            | 6.7        | 5.6        | 7.3        | 6.9                                    | 5.2        | 5.8                     | 6.3        | 7.6        | AAS/ICP Method                             |
| Lead as Pb                                                                                                                                                                                                                                                                                                    |  | µg/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01                                  | <0.01      | <0.01                   | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                                                                                                                                                                                                                                                                                               |  | µg/m <sup>3</sup> | 2000   | 341                            | 389        | 274        | 308        | 366                                    | 297        | 245                     | 372        | 282        | NDIR Spectroscopy Method                   |
| Ozone                                                                                                                                                                                                                                                                                                         |  | µg/m <sup>3</sup> | 100    | 5.4                            | 4.1        | 4.9        | 6.4        | 5.5                                    | 6.6        | 5.3                     | 6.4        | 4.7        | UV photometric method                      |



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**ISSUED TO:**

**M/s. Bharat Aluminium Company Limited,  
KORBA ( C.G.)**

|             |                         |
|-------------|-------------------------|
| Report No.: | VLL/VLS/25-26/04458/006 |
| Issue Date: | 2025-06-04              |
| P.O.No:     | 8500005780              |
| P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)**

Analysis starting date :- 2025-05-03

Analysis Completion date :- 2025-06-03

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : COAL GATE |            |            |            |            |            |            |            |            |                                            |
|------------------------------------------|-------------------|--------|--------------------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
| Sampling Date                            |                   |        | 2025-05-01               | 2025-05-07 | 2025-05-09 | 2025-05-13 | 2025-05-15 | 2025-05-19 | 2025-05-21 | 2025-05-25 | 2025-05-27 | Method                                     |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 30.5                     | 35.6       | 26.8       | 36.4       | 33.2       | 39.7       | 31.0       | 34.0       | 29.1       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 16.5                     | 18.4       | 20.9       | 17.0       | 18.9       | 22.1       | 19.5       | 16.0       | 13.5       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | 100    | 61.9                     | 61.9       | 62.5       | 62.6       | 58.4       | 53.6       | 61.5       | 56.8       | 51.2       | Gravimetric Method                         |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | 60     | 20.5                     | 26.1       | 23.1       | 27.9       | 23.3       | 25.3       | 27.0       | 20.5       | 24.6       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 2.0                      | 2.7        | 1.8        | 1.3        | 1.9        | 2.5        | 2.1        | 1.7        | 2.4        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                     | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 6.4                      | 5.8        | 6.1        | 7.4        | 4.9        | 5.6        | 6.9        | 7.2        | 6.5        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 349                      | 314        | 375        | 283        | 251        | 388        | 296        | 272        | 337        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 4.8                      | 3.0        | 5.7        | 5.1        | 5.9        | 5.7        | 6.5        | 4.2        | 5.8        | UV photometric method                      |





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**ISSUED TO:**

M/s. Bharat Aluminium Company Limited,  
KORBA ( C.G.)

|             |                         |
|-------------|-------------------------|
| Report No.: | VLL/VLS/25-26/04458/002 |
| Issue Date: | 2025-06-04              |
| P.O.No:     | 8500005780              |
| P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)**

Analysis starting date :- 2025-05-03

Analysis Completion date :- 2025-06-03

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| TEST RESULTS                             |                   |        |                        |            |            |            |            |            |            |            |            |                                            |  |
|------------------------------------------|-------------------|--------|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|--|
| Parameters                               | Units             | Limits | AAQ Location : NEW ETP |            |            |            |            |            |            |            |            |                                            |  |
| Sampling Date                            |                   |        | 2025-05-01             | 2025-05-07 | 2025-05-09 | 2025-05-13 | 2025-05-15 | 2025-05-19 | 2025-05-21 | 2025-05-25 | 2025-05-27 | Method                                     |  |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 30.8                   | 25.9       | 29.6       | 21.1       | 28.5       | 27.6       | 29.9       | 17.2       | 16.7       | Improved West and Gaeke Method             |  |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 15.5                   | 18.2       | 16.7       | 19.5       | 15.3       | 14.3       | 12.7       | 11.9       | 9.7        | Modified Jacob & Hochheiser Method         |  |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | 100    | 57.4                   | 63.8       | 60.4       | 56.8       | 59.7       | 54.9       | 61.0       | 55.8       | 51.0       | Gravimetric Method                         |  |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | 60     | 17.0                   | 21.7       | 19.1       | 16.3       | 19.0       | 15.8       | 20.7       | 17.8       | 16.3       | Gravimetric Method                         |  |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 1.7                    | 2.2        | 1.9        | 1.7        | 1.6        | 1.2        | 1.8        | 1.5        | 2.0        | Indophenol Blue Method                     |  |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |  |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |  |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                   | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |  |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 3.7                    | 5.3        | 4.9        | 6.6        | 3.2        | 5.9        | 6.2        | 4.7        | 5.1        | AAS/ICP Method                             |  |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |  |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 268                    | 247        | 388        | 326        | 233        | 251        | 364        | 282        | 318        | NDIR Spectroscopy Method                   |  |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 3.9                    | 2.9        | 3.2        | 4.2        | 3.8        | 4.4        | 4.9        | 2.1        | 3.2        | UV photometric method                      |  |



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|                                                                                            |             |                         |
|--------------------------------------------------------------------------------------------|-------------|-------------------------|
| <b>ISSUED TO:</b><br><b>M/s. Bharat Aluminium Company Limited,</b><br><b>KORBA ( C.G.)</b> | Report No.: | VLL/VLS/25-26/06982/006 |
|                                                                                            | Issue Date: | 2025-07-05              |
|                                                                                            | P.O.No:     | 8500005780              |
|                                                                                            | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)**

Analysis starting date :- 2025-06-09

Analysis Completion date :- 2025-07-04

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : COAL GATE |            |            |            |            |            |            |            | Method                                     |
|------------------------------------------|-------------------|--------|--------------------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
|                                          |                   |        | 2025-06-05               | 2025-06-07 | 2025-06-11 | 2025-06-13 | 2025-06-17 | 2025-06-19 | 2025-06-23 | 2025-06-25 |                                            |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 26.0                     | 31.4       | 33.6       | 28.8       | 39.8       | 36.9       | 38.4       | 32.7       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 19.0                     | 20.4       | 19.0       | 17.9       | 18.3       | 16.2       | 24.1       | 18.5       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM <sub>10</sub> )   | µg/m <sup>3</sup> | 100    | 63.3                     | 68.2       | 56.4       | 57.4       | 52.8       | 54.2       | 55.9       | 51.2       | Gravimetric Method                         |
| Particulate Matter (PM <sub>2.5</sub> )  | µg/m <sup>3</sup> | 60     | 25.2                     | 29.5       | 23.6       | 21.7       | 17.1       | 19.3       | 20.6       | 22.8       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 4.6                      | 3.9        | 2.5        | 3.1        | 2.1        | 2.8        | 3.1        | 2.0        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                     | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 4.4                      | 7.3        | 7.1        | 5.9        | 6.3        | 6.8        | 5.8        | 6.5        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 349                      | 314        | 375        | 283        | 251        | 388        | 296        | 272        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 6.3                      | 4.8        | 4.2        | 5.0        | 6.2        | 5.5        | 4.7        | 5.1        | UV photometric method                      |



|                                                                                            |             |                         |
|--------------------------------------------------------------------------------------------|-------------|-------------------------|
| <b>ISSUED TO:</b><br><b>M/s. Bharat Aluminium Company Limited,</b><br><b>KORBA ( C.G.)</b> | Report No.: | VLL/VLS/25-26/06982/003 |
|                                                                                            | Issue Date: | 2025-07-05              |
|                                                                                            | P.O.No:     | 8500005780              |
|                                                                                            | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)**

Analysis starting date :- 2025-06-09

Analysis Completion date :- 2025-07-04

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : GAP & BAKE OVEN |            |            |            |            |            |            |            | Method                                     |
|------------------------------------------|-------------------|--------|--------------------------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
|                                          |                   |        | 2025-06-05                     | 2025-06-07 | 2025-06-11 | 2025-06-13 | 2025-06-17 | 2025-06-19 | 2025-06-23 | 2025-06-25 |                                            |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 32.3                           | 29.7       | 33.1       | 36.2       | 31.8       | 35.0       | 29.0       | 34.7       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 18.9                           | 23.2       | 24.4       | 19.5       | 22.5       | 20.3       | 25.9       | 20.6       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | 100    | 63.3                           | 64.5       | 58.5       | 58.3       | 51.8       | 56.4       | 57.8       | 57.2       | Gravimetric Method                         |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | 60     | 27.0                           | 23.6       | 26.1       | 21.0       | 18.5       | 22.7       | 20.5       | 21.2       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 4.3                            | 3.1        | 2.5        | 2.0        | 2.5        | 2.6        | 3.7        | 2.9        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                           | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 5.9                            | 7.3        | 6.6        | 5.2        | 4.7        | 3.4        | 5.2        | 7.1        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 361                            | 264        | 326        | 382        | 247        | 271        | 358        | 342        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 5.6                            | 5.2        | 7.1        | 4.6        | 3.5        | 6.2        | 5.0        | 4.5        | UV photometric method                      |



|                                                                                            |             |                         |
|--------------------------------------------------------------------------------------------|-------------|-------------------------|
| <b>ISSUED TO:</b><br><b>M/s. Bharat Aluminium Company Limited,</b><br><b>KORBA ( C.G.)</b> | Report No.: | VLL/VLS/25-26/06982/002 |
|                                                                                            | Issue Date: | 2025-07-05              |
|                                                                                            | P.O.No:     | 8500005780              |
|                                                                                            | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)**

Analysis starting date :- 2025-06-09

Analysis Completion date :- 2025-07-04

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : NEW ETP |            |            |            |            |            |            |            | Method                                     |
|------------------------------------------|-------------------|--------|------------------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
|                                          |                   |        | 2025-06-05             | 2025-06-07 | 2025-06-11 | 2025-06-13 | 2025-06-17 | 2025-06-19 | 2025-06-23 | 2025-06-25 |                                            |
| Sampling Date                            |                   |        |                        |            |            |            |            |            |            |            |                                            |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 23.6                   | 21.0       | 33.4       | 24.8       | 30.5       | 37.8       | 30.2       | 34.3       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 13.2                   | 14.5       | 16.6       | 12.9       | 17.6       | 19.9       | 21.6       | 16.2       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM <sub>10</sub> )   | µg/m <sup>3</sup> | 100    | 68.8                   | 53.2       | 55.2       | 61.5       | 52.6       | 53.5       | 53.1       | 54.8       | Gravimetric Method                         |
| Particulate Matter (PM <sub>2.5</sub> )  | µg/m <sup>3</sup> | 60     | 26.2                   | 20.5       | 24.1       | 21.4       | 16.2       | 18.2       | 19.4       | 17.4       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 2.6                    | 2.8        | 1.7        | 2.4        | 1.8        | 2.3        | 2.6        | 1.7        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                   | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 4.6                    | 5.1        | 3.8        | 5.8        | 6.3        | 4.8        | 4.4        | 6.5        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 276                    | 321        | 347        | 263        | 315        | 307        | 296        | 229        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 4.3                    | 3.9        | 3.3        | 5.1        | 6.2        | 4.9        | 4.4        | 3.2        | UV photometric method                      |





|                                                                                            |             |                         |
|--------------------------------------------------------------------------------------------|-------------|-------------------------|
| <b>ISSUED TO:</b><br><b>M/s. Bharat Aluminium Company Limited,</b><br><b>KORBA ( C.G.)</b> | Report No.: | VLL/VLS/25-26/09740/006 |
|                                                                                            | Issue Date: | 2025-08-05              |
|                                                                                            | P.O.No:     | 8500005780              |
|                                                                                            | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)**

Analysis starting date :- 2025-07-05

Analysis Completion date :- 2025-08-04

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

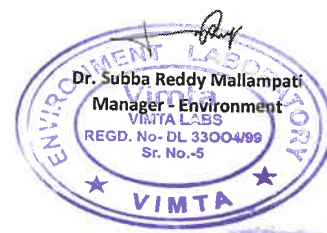
**TEST RESULTS**

**AAQ Location : COAL GATE**

| Parameters                               | Units             | Limits |            |            |            |            |            |            |            |            |            |  | Method                                     |
|------------------------------------------|-------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--------------------------------------------|
| Sampling Date                            |                   |        | 2025-07-03 | 2025-07-05 | 2025-07-09 | 2025-07-11 | 2025-07-15 | 2025-07-17 | 2025-07-21 | 2025-07-23 | 2025-07-28 |  |                                            |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 39.8       | 33.9       | 46.0       | 45.9       | 37.5       | 29.4       | 41.6       | 28.5       | 36.9       |  | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 21.7       | 23.5       | 20.1       | 17.4       | 10.0       | 12.5       | 8.7        | 11.3       | 11.2       |  | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | 100    | 46.6       | 45.8       | 54.3       | 42.1       | 53.6       | 54.7       | 50.7       | 54.8       | 50.6       |  | Gravimetric Method                         |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | 60     | 21.2       | 17.7       | 26.9       | 21.6       | 24.8       | 18.3       | 22.7       | 16.4       | 13.2       |  | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 2.2        | 2.6        | 2.4        | 3.9        | 1.4        | 1.5        | 1.1        | 1.7        | 2.0        |  | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |  | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |  | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       |  | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 6.4        | 4.8        | 4.4        | 5.9        | 6.1        | 5.8        | 5.3        | 6.6        | 4.7        |  | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      |  | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 291        | 377        | 405        | 258        | 384        | 358        | 264        | 248        | 396        |  | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 6.0        | 5.7        | 11.1       | 10.7       | 2.5        | 5.2        | 6.2        | 6.5        | 4.0        |  | UV photometric method                      |



|                                                                                                                                                                                                                                                                                                                            |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------|--------|--------------------------------|------------|------------|------------|----------------------------------------|------------|-------------------------|------------|------------|--------------------------------------------|
| ISSUED TO:<br>M/s. Bharat Aluminium Company Limited,<br>KORBA ( C.G.)                                                                                                                                                                                                                                                      |  |                   |        |                                |            |            |            | Report No.:                            |            | VLL/VLS/25-26/09740/003 |            |            |                                            |
|                                                                                                                                                                                                                                                                                                                            |  |                   |        |                                |            |            |            | Issue Date:                            |            | 2025-08-05              |            |            |                                            |
|                                                                                                                                                                                                                                                                                                                            |  |                   |        |                                |            |            |            | P.O.No:                                |            | 8500005780              |            |            |                                            |
|                                                                                                                                                                                                                                                                                                                            |  |                   |        |                                |            |            |            | P.O. Date:                             |            | 2022-06-29              |            |            |                                            |
| AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)                                                                                                                                                                                                                                                             |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
| Analysis starting date :- 2025-07-05                                                                                                                                                                                                                                                                                       |  |                   |        |                                |            |            |            | Analysis Completion date :- 2025-08-04 |            |                         |            |            |                                            |
| Tests required: Sulphur Dioxide (SO <sub>2</sub> ), Nitrogen Dioxide (NO <sub>x</sub> ), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH <sub>3</sub> ), Benzene (C <sub>6</sub> H <sub>6</sub> ), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead. |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
| TEST RESULTS                                                                                                                                                                                                                                                                                                               |  |                   |        |                                |            |            |            |                                        |            |                         |            |            |                                            |
| Parameters                                                                                                                                                                                                                                                                                                                 |  | Units             | Limits | AAQ Location : GAP & BAKE OVEN |            |            |            |                                        |            |                         |            |            |                                            |
| Sampling Date                                                                                                                                                                                                                                                                                                              |  |                   |        | 2025-07-03                     | 2025-07-05 | 2025-07-09 | 2025-07-11 | 2025-07-15                             | 2025-07-17 | 2025-07-21              | 2025-07-23 | 2025-07-28 | Method                                     |
| Sulphur Dioxide (SO <sub>2</sub> )                                                                                                                                                                                                                                                                                         |  | µg/m <sup>3</sup> | 80     | 24.9                           | 33.0       | 33.1       | 28.6       | 31.6                                   | 33.3       | 37.9                    | 40.1       | 28.4       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )                                                                                                                                                                                                                                                                                        |  | µg/m <sup>3</sup> | 80     | 22.7                           | 25.1       | 18.5       | 20.2       | 13.1                                   | 10.2       | 14.8                    | 11.0       | 13.7       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                                                                                                                                                                                                                                                                                                  |  | µg/m <sup>3</sup> | 100    | 48.8                           | 47.4       | 53.3       | 48.4       | 51.2                                   | 53.0       | 57.8                    | 54.6       | 51.8       | Gravimetric Method                         |
| Particulate Matter (PM2.5)                                                                                                                                                                                                                                                                                                 |  | µg/m <sup>3</sup> | 60     | 11.5                           | 14.4       | 27.6       | 23.9       | 18.3                                   | 20.7       | 22.8                    | 17.4       | 19.6       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )                                                                                                                                                                                                                                                                                                 |  | µg/m <sup>3</sup> | 400    | 2.8                            | 3.7        | 2.8        | 3.0        | 2.2                                    | 1.8        | 1.5                     | 2.1        | 2.7        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> )                                                                                                                                                                                                                                                                                   |  | µg/m <sup>3</sup> | 5      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01                                  | <0.01      | <0.01                   | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase                                                                                                                                                                                                                                                                                       |  | ng/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01                                  | <0.01      | <0.01                   | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                                                                                                                                                                                                                                                                                                              |  | ng/m <sup>3</sup> | 6      | <1.0                           | <1.0       | <1.0       | <1.0       | <1.0                                   | <1.0       | <1.0                    | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                                                                                                                                                                                                                                                                                                               |  | ng/m <sup>3</sup> | 20     | 5.3                            | 6.8        | 6.1        | 5.9        | 4.7                                    | 5.4        | 6.9                     | 6.2        | 5.8        | AAS/ICP Method                             |
| Lead as Pb                                                                                                                                                                                                                                                                                                                 |  | µg/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01                                  | <0.01      | <0.01                   | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                                                                                                                                                                                                                                                                                                            |  | µg/m <sup>3</sup> | 2000   | 401                            | 349        | 367        | 393        | 431                                    | 285        | 352                     | 398        | 269        | NDIR Spectroscopy Method                   |
| Ozone                                                                                                                                                                                                                                                                                                                      |  | µg/m <sup>3</sup> | 100    | 5.4                            | 6.6        | 8.1        | 7.9        | 5.1                                    | 6.0        | 7.2                     | 8.1        | 7.1        | UV photometric method                      |



|                                                                       |             |                         |
|-----------------------------------------------------------------------|-------------|-------------------------|
| ISSUED TO:<br>M/s. Bharat Aluminium Company Limited,<br>KORBA ( C.G.) | Report No.: | VLL/VLS/25-26/09740/002 |
|                                                                       | Issue Date: | 2025-08-05              |
|                                                                       | P.O.No:     | 8500005780              |
|                                                                       | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)**

Analysis starting date :- 2025-07-05

Analysis Completion date :- 2025-08-04

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : NEW ETP |            |            |            |            |            |            |            |            |                                            |
|------------------------------------------|-------------------|--------|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
| Sampling Date                            |                   |        | 2025-07-03             | 2025-07-05 | 2025-07-09 | 2025-07-11 | 2025-07-15 | 2025-07-17 | 2025-07-21 | 2025-07-23 | 2025-07-28 | Method                                     |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 31.9                   | 36.2       | 28.7       | 24.6       | 25.3       | 34.6       | 31.0       | 28.7       | 11.4       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 15.8                   | 17.4       | 14.0       | 12.3       | 8.2        | 9.9        | 9.0        | 10.7       | 11.7       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | 100    | 46.3                   | 46.2       | 52.5       | 43.7       | 53.1       | 53.7       | 53.1       | 52.0       | 55.4       | Gravimetric Method                         |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | 60     | 12.2                   | 15.7       | 19.3       | 13.9       | 22.7       | 20.6       | 18.4       | 14.9       | 17.4       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 1.5                    | 1.7        | 1.3        | 2.0        | 0.9        | 1.3        | 1.3        | 1.8        | 2.1        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                   | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 4.9                    | 6.2        | 5.8        | 5.4        | 6.1        | 4.7        | 5.5        | 6.2        | 5.7        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 293                    | 385        | 324        | 309        | 297        | 352        | 339        | 381        | 276        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 6.1                    | 5.2        | 4.3        | 8.3        | 4.6        | 5.1        | 4.8        | 5.7        | 4.4        | UV photometric method                      |



|                                                                              |             |                         |
|------------------------------------------------------------------------------|-------------|-------------------------|
| <b>ISSUED TO:</b><br>M/s. Bharat Aluminium Company Limited,<br>KORBA ( C.G.) | Report No.: | VLL/VLS/25-26/11867/006 |
|                                                                              | Issue Date: | 2025-09-04              |
|                                                                              | P.O.No:     | 8500005780              |
|                                                                              | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)**

Analysis starting date :- 2025-08-03

Analysis Completion date :- 2025-09-04

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : COAL GATE |            |            |            |            |            |            |            |            |                                            |
|------------------------------------------|-------------------|--------|--------------------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
| Sampling Date                            |                   |        | 2025-08-01               | 2025-08-07 | 2025-08-09 | 2025-08-13 | 2025-08-16 | 2025-08-19 | 2025-08-21 | 2025-08-25 | 2025-08-27 | Method                                     |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 41.0                     | 27.7       | 28.2       | 38.5       | 33.3       | 37.6       | 29.2       | 40.9       | 35.9       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 10.9                     | 12.1       | 16.5       | 19.7       | 17.2       | 13.8       | 16.6       | 19.5       | 14.6       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | 100    | 59.3                     | 52.8       | 54.9       | 65.8       | 58.1       | 56.7       | 57.6       | 55.9       | 61.5       | Gravimetric Method                         |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | 60     | 22.0                     | 16.9       | 22.0       | 25.9       | 21.0       | 21.4       | 19.0       | 21.9       | 24.1       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 1.3                      | 1.7        | 1.2        | 2.4        | 2.2        | 1.0        | 1.7        | 2.3        | 1.9        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                     | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 4.9                      | 6.3        | 6.1        | 5.9        | 5.4        | 6.7        | 4.2        | 6.7        | 6.2        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 248                      | 372        | 294        | 253        | 277        | 256        | 315        | 283        | 251        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 5.8                      | 4.6        | 6.4        | 6.4        | 6.1        | 4.8        | 2.4        | 5.6        | 3.1        | UV photometric method                      |





|                                                                              |             |                         |
|------------------------------------------------------------------------------|-------------|-------------------------|
| <b>ISSUED TO:</b><br>M/s. Bharat Aluminium Company Limited,<br>KORBA ( C.G.) | Report No.: | VLL/VLS/25-26/11867/003 |
|                                                                              | Issue Date: | 2025-09-04              |
|                                                                              | P.O.No:     | 8500005780              |
|                                                                              | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)**

Analysis starting date :- 2025-08-03

Analysis Completion date :- 2025-09-04

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : GAP & BAKE OVEN |            |            |            |            |            |            |            |            | Method                                     |
|------------------------------------------|-------------------|--------|--------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
|                                          |                   |        | 2025-08-01                     | 2025-08-07 | 2025-08-09 | 2025-08-13 | 2025-08-16 | 2025-08-19 | 2025-08-21 | 2025-08-25 | 2025-08-27 |                                            |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 37.2                           | 26.8       | 41.3       | 32.3       | 32.8       | 28.5       | 39.4       | 34.1       | 36.8       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 13.9                           | 15.4       | 11.4       | 14.8       | 14.0       | 17.7       | 15.0       | 17.9       | 16.2       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM <sub>10</sub> )   | µg/m <sup>3</sup> | 100    | 56.8                           | 54.2       | 64.8       | 57.4       | 60.3       | 58.7       | 57.1       | 55.6       | 59.3       | Gravimetric Method                         |
| Particulate Matter (PM <sub>2.5</sub> )  | µg/m <sup>3</sup> | 60     | 20.7                           | 18.7       | 23.2       | 20.6       | 23.6       | 21.9       | 22.6       | 21.0       | 23.2       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 1.8                            | 2.0        | 1.4        | 2.9        | 2.3        | 2.1        | 1.5        | 2.0        | 1.7        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                           | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 5.9                            | 7.2        | 6.4        | 6.6        | 5.1        | 4.8        | 6.9        | 5.4        | 5.8        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 358                            | 271        | 238        | 296        | 354        | 247        | 270        | 238        | 314        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 7.5                            | 5.3        | 6.8        | 4.8        | 5.5        | 3.6        | 5.7        | 6.0        | 4.7        | UV photometric method                      |



|                                                                              |             |                         |
|------------------------------------------------------------------------------|-------------|-------------------------|
| <b>ISSUED TO:</b><br>M/s. Bharat Aluminium Company Limited,<br>KORBA ( C.G.) | Report No.: | VLL/VLS/25-26/11867/002 |
|                                                                              | Issue Date: | 2025-09-04              |
|                                                                              | P.O.No:     | 8500005780              |
|                                                                              | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)**

Analysis starting date :- 2025-08-03

Analysis Completion date :- 2025-09-04

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : NEW ETP |            |            |            |            |            |            |            |            | Method                                     |
|------------------------------------------|-------------------|--------|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
|                                          |                   |        | 2025-08-01             | 2025-08-07 | 2025-08-09 | 2025-08-13 | 2025-08-16 | 2025-08-19 | 2025-08-21 | 2025-08-25 | 2025-08-27 |                                            |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 32.3                   | 30.3       | 27.8       | 28.7       | 31.3       | 38.1       | 24.3       | 36.9       | 26.5       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 9.6                    | 13.6       | 10.7       | 12.2       | 10.8       | 15.3       | 13.1       | 11.4       | 14.2       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | 100    | 47.6                   | 55.8       | 56.2       | 63.2       | 50.2       | 49.1       | 46.3       | 58.2       | 61.4       | Gravimetric Method                         |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | 60     | 17.3                   | 22.7       | 25.4       | 27.2       | 20.9       | 18.4       | 18.6       | 22.0       | 23.5       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 1.5                    | 2.4        | 1.9        | 1.8        | 1.7        | 1.5        | 1.3        | 1.0        | 1.4        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                   | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 5.2                    | 6.7        | 4.9        | 4.2        | 5.6        | 5.1        | 4.4        | 6.3        | 5.8        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 294                    | 336        | 242        | 301        | 358        | 283        | 259        | 318        | 271        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 4.2                    | 3.1        | 4.9        | 2.1        | 4.2        | 2.4        | 4.1        | 4.6        | 3.4        | UV photometric method                      |



**ISSUED TO:**

M/s. Bharat Aluminium Company Limited,  
KORBA ( C.G.)

Report No.: VLL/VLS/25-26/14073/006

Issue Date: 2025-10-04

P.O.No: 8500005780

P.O. Date: 2022-06-29

**AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)**

Analysis starting date :- 2025-09-05

Analysis Completion date :- 2025-10-03

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| TEST RESULTS                             |                   |        |                          |            |            |            |            |            |            |            |                                            |  |
|------------------------------------------|-------------------|--------|--------------------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|--|
| Parameters                               | Units             | Limits | AAQ Location : COAL GATE |            |            |            |            |            |            |            |                                            |  |
| Sampling Date                            |                   |        | 2025-09-04               | 2025-09-06 | 2025-09-10 | 2025-09-12 | 2025-09-16 | 2025-09-18 | 2025-09-22 | 2025-09-24 | Method                                     |  |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 29.5                     | 40.3       | 36.8       | 34.5       | 39.0       | 33.1       | 38.3       | 39.0       | Improved West and Gaeke Method             |  |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 16.3                     | 15.5       | 16.4       | 14.2       | 19.7       | 17.6       | 20.2       | 18.5       | Modified Jacob & Hochheiser Method         |  |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | 100    | 56.1                     | 60.9       | 53.6       | 50.9       | 54.7       | 52.4       | 62.8       | 55.4       | Gravimetric Method                         |  |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | 60     | 20.1                     | 22.7       | 16.1       | 17.2       | 18.5       | 16.4       | 23.1       | 19.8       | Gravimetric Method                         |  |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 3.5                      | 2.3        | 1.2        | 2.3        | 2.6        | 3.3        | 3.7        | 3.2        | Indophenol Blue Method                     |  |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |  |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |  |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                     | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |  |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 5.4                      | 7.8        | 5.3        | 6.1        | 6.8        | 5.9        | 5.3        | 6.7        | AAS/ICP Method                             |  |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                    | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |  |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 317                      | 348        | 249        | 402        | 448        | 361        | 325        | 374        | NDIR Spectroscopy Method                   |  |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 5.2                      | 4.1        | 4.7        | 5.1        | 5.7        | 6.5        | 3.6        | 7.4        | UV photometric method                      |  |

Dr. Subba Reddy Mallampati  
Manager - Environment

REGD. No- DL 33004/99  
Sr. No.-5

Sensitivity: Internal (C3)

|                                                                              |             |                         |
|------------------------------------------------------------------------------|-------------|-------------------------|
| <b>ISSUED TO:</b><br>M/s. Bharat Aluminium Company Limited,<br>KORBA ( C.G.) | Report No.: | VLL/VLS/25-26/14073/003 |
|                                                                              | Issue Date: | 2025-10-04              |
|                                                                              | P.O.No:     | 8500005780              |
|                                                                              | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)**

Analysis starting date :- 2025-09-05

Analysis Completion date :- 2025-10-03

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : GAP & BAKE OVEN |            |            |            |            |            |            |            | Method                                     |
|------------------------------------------|-------------------|--------|--------------------------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
|                                          |                   |        | 2025-09-04                     | 2025-09-06 | 2025-09-10 | 2025-09-12 | 2025-09-16 | 2025-09-18 | 2025-09-22 | 2025-09-24 |                                            |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 30.5                           | 27.8       | 28.7       | 34.7       | 33.3       | 38.1       | 40.5       | 36.0       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 17.9                           | 16.7       | 15.7       | 16.5       | 17.3       | 20.2       | 18.3       | 22.6       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | 100    | 59.2                           | 54.0       | 69.3       | 57.7       | 54.1       | 51.8       | 62.4       | 56.3       | Gravimetric Method                         |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | 60     | 20.1                           | 16.7       | 24.3       | 21.1       | 18.6       | 16.6       | 22.5       | 18.6       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 3.4                            | 2.6        | 2.4        | 1.9        | 3.7        | 2.8        | 3.0        | 2.7        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                           | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 6.8                            | 7.3        | 4.9        | 5.7        | 6.2        | 6.9        | 4.1        | 5.6        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                          | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 416                            | 268        | 396        | 408        | 342        | 326        | 271        | 359        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 4.8                            | 5.8        | 4.2        | 6.3        | 7.6        | 6.3        | 4.8        | 6.8        | UV photometric method                      |



Sensitivity: Internal (C3)



|                                                                                            |             |                         |
|--------------------------------------------------------------------------------------------|-------------|-------------------------|
| <b>ISSUED TO:</b><br><b>M/s. Bharat Aluminium Company Limited,</b><br><b>KORBA ( C.G.)</b> | Report No.: | VLL/VLS/25-26/14073/002 |
|                                                                                            | Issue Date: | 2025-10-04              |
|                                                                                            | P.O.No:     | 8500005780              |
|                                                                                            | P.O. Date:  | 2022-06-29              |

**AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)**

Analysis starting date :- 2025-09-05

Analysis Completion date :- 2025-10-03

**Tests required:** Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

**TEST RESULTS**

| Parameters                               | Units             | Limits | AAQ Location : NEW ETP |            |            |            |            |            |            |            | Method                                     |
|------------------------------------------|-------------------|--------|------------------------|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------|
|                                          |                   |        | 2025-09-04             | 2025-09-06 | 2025-09-10 | 2025-09-12 | 2025-09-16 | 2025-09-18 | 2025-09-22 | 2025-09-24 |                                            |
| Sulphur Dioxide (SO <sub>2</sub> )       | µg/m <sup>3</sup> | 80     | 27.2                   | 32.9       | 35.5       | 30.7       | 28.2       | 37.0       | 32.2       | 26.6       | Improved West and Gaeke Method             |
| Nitrogen Dioxide (NO <sub>x</sub> )      | µg/m <sup>3</sup> | 80     | 14.5                   | 13.2       | 13.1       | 18.1       | 15.4       | 16.2       | 15.9       | 17.6       | Modified Jacob & Hochheiser Method         |
| Particulate Matter (PM <sub>10</sub> )   | µg/m <sup>3</sup> | 100    | 51.2                   | 54.8       | 49.4       | 57.1       | 46.7       | 53.9       | 50.2       | 48.5       | Gravimetric Method                         |
| Particulate Matter (PM <sub>2.5</sub> )  | µg/m <sup>3</sup> | 60     | 16.4                   | 18.7       | 14.8       | 21.1       | 14.2       | 17.6       | 15.6       | 13.6       | Gravimetric Method                         |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | 400    | 2.3                    | 2.0        | 1.7        | 2.6        | 2.2        | 3.1        | 2.4        | 3.4        | Indophenol Blue Method                     |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | 5      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Benzo(a) Pyrene in particulate phase     | ng/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | Solvent Extraction followed by GC Analysis |
| Arsenic as As                            | ng/m <sup>3</sup> | 6      | <1.0                   | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | AAS/ICP Method                             |
| Nickel as Ni                             | ng/m <sup>3</sup> | 20     | 4.7                    | 6.4        | 5.8        | 5.2        | 4.4        | 6.1        | 5.9        | 6.3        | AAS/ICP Method                             |
| Lead as Pb                               | µg/m <sup>3</sup> | 1      | <0.01                  | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | <0.01      | AAS/ICP Method                             |
| Carbon Monoxide                          | µg/m <sup>3</sup> | 2000   | 241                    | 362        | 284        | 395        | 418        | 296        | 385        | 369        | NDIR Spectroscopy Method                   |
| Ozone                                    | µg/m <sup>3</sup> | 100    | 4.3                    | 3.9        | 5.4        | 4.8        | 5.3        | 4.8        | 2.6        | 4.0        | UV photometric method                      |



Sensitivity: Internal (C3)



# CHHATTISGARH ENVIRONMENT CONSERVATION BOARD

PARYAVAS BHAWAN, NORTH BLOCK, SECTOR -19,

NAVA RAIPUR ATAL NAGAR, RAIPUR (C.G.)

492002

E-mail : hocecb@gmail.com, Ph. No. 0771-2512220

No. 5394 /HSMD/HO/CECB/2025

Nava Raipur, Date 07/08/2025

To,

**M/s Bharat Aluminium Company Limited,**

**P.O.- Balco Nagar,**

**District - Korba (C.G.)**

Sub:- Grant of amendment in existing authorization under the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.

Ref:- 1. Grant of amendment in authorization and subsequent renewal of authorization letter no. 5255 /HSMD/HO/CECB/2021 Raipur, Date 22/10/2021.  
2. Your Online application no. 19196948 dated 27/05/2025 & Subsequent Correspondence ending dated 20/06/2025.

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Chhattisgarh Environment Conservation Board had granted of amendment in authorization and subsequent renewal of authorization under Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 vide letter no. 5255/HSMD/HO/CECB/2021 Raipur, Date 22/10/2021 for following hazardous wastes, category and quantity subject to fulfillment of the terms and conditions mentioned therein. :-

| Sl.No. | Hazardous Waste                                             | Cat. No.                         | Quantity/Year                                      |
|--------|-------------------------------------------------------------|----------------------------------|----------------------------------------------------|
| 1.     | Used or Spent oil                                           | (Schedule I Cat. No. 5.1)        | 300 MT/Year                                        |
| 2.     | Waste or residue containing oil                             | (Schedule I Cat. No.5.2)         | 7 MT/Year                                          |
| 3.     | Cathode residues including Pot Lining waste                 | (Schedule I Cat. No.11.2)        | 12000 T/Year                                       |
|        |                                                             |                                  | 42000 MT/Year                                      |
| 4.     | Chemical sludge from waste water treatment                  | (Schedule I Cat. No. 35.3)       | 20MT/Year                                          |
| 5.     | Rejected filter bags (FTP)                                  | (Schedule-I, Cat.no. 33.1)       | 50 MT/Year                                         |
| 6.     | Flammable chemical waste lab                                | (Schedule-II, Class-C-I)         | 0.4 KL/Year                                        |
| 7.     | Used anode butts                                            | (Schedule - I, Cat. No. - 11.6 ) | 1,00,000 MT/ Year.                                 |
| 8.     | Drosses and waste from treatment of salt sludge             | (Schedule - I, Cat. No. - 11.5)  | 10,000 MT/ Year                                    |
| 9.     | Flue gas dust and other particulates                        | (Schedule - I, Cat. No. - 11.4)  | 5,000 MT/ Year                                     |
| 10.    | Spent Ion exchange resin containing toxic metals            | (Schedule - I, Cat. No. - 35.2)  | 60 MT in 05 Years i.e. within authorization period |
| 11.    | Glasswool                                                   | (Schedule - II, C-4)             | 150 MT/Year                                        |
| 12.    | Discarded asbestos                                          | (Schedule - I, Cat. No. - 15.2)  | 100 MT/ Year                                       |
| 13.    | Empty barrels/containers/liners contaminated with hazardous | (Schedule - I, Cat. No. - 33.1)  | 300MT/Year                                         |

|     |                         |                                 |            |
|-----|-------------------------|---------------------------------|------------|
|     | chemicals /wastes       |                                 |            |
| 14. | Oil and grease skimming | (Schedule - I, Cat. No. - 35.4) | 1 KL/ Year |

Industry, vide their online application no. **19196948 dated 04/09/2024** has requested for an amendment in existing authorization with respect to hazardous wastes corresponding quantities mentioned therein. Based on the inspection report from R.O. Korba and after considering the application, facts and materials in records the board has decided to issue amendment in existing authorization with respect to hazardous waste and their corresponding quantities mentioned below:

| Sl.No. | Category of Hazardous Waste as per the Schedules I, II and III of these rules                                    | Authorised mode of disposal or recycling or utilization or co-processing etc.                                                                                                                                                               | Quantity (Tonnes/Annum)                            |
|--------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| 1.     | Used or Spent oil<br>(Schedule - I, Cat. No. 5.1)                                                                | Sale to authorized recyclers                                                                                                                                                                                                                | 300 MT/Year                                        |
| 2.     | Waste or residue containing oil<br>(Schedule - I, Cat. No. 5.2)                                                  | Captive Incineration in cast house furnaces/ Sale to authorized recyclers                                                                                                                                                                   | 7 MT/Year                                          |
| 3.     | Cathode residues including Pot Lining wastes<br>(Schedule - I, Cat. No. 11.2)                                    | (i) Disposal through captive SLF/ Sale to authorized reprocessor for detoxification/ Co-processing in cement plant/other residues of cathode will be sale to authorized recyclers/reprocessor/Coprocessing in Cement Plant/SLF/ <b>TSDF</b> | 12000 T/Year                                       |
|        |                                                                                                                  | (ii) Utilization of Spent Pot Lining (SPL) stored in Captive Secured Land Fill (SLF) and Sale to authorized reprocessor for detoxification/ Co-processing in Cement Plant/ <b>TSDF</b>                                                      | 42000 MT/Year                                      |
| 4.     | Chemical sludge from waste water treatment<br>(Schedule - I, Cat. No. 35.3)                                      | Disposal through captive SLF/ co-processing in cement plant/ <b>TSDF</b>                                                                                                                                                                    | 20MT/Year                                          |
| 5.     | Rejected filter bags (FTP) Captive Incineration in pots 50 MT/Year<br>(Schedule-I, Cat. no. 33.1)                | Captive Incineration in pots                                                                                                                                                                                                                | 50 MT/Year                                         |
| 6.     | Flammable chemical waste lab<br>(Schedule-II, Class-C-I)                                                         | Sale to authorized recycler/ captive incineration in cast house furnaces/ Captive incineration in power plant boilers /distillation and reuse                                                                                               | 0.4 KL/Year                                        |
| 7.     | Used anode butts<br>(Schedule - I, Cat. No. - 11.6),                                                             | Recycle and reuse in green anode plant for anode making/ captive SLF/ Sale to authorized recycler                                                                                                                                           | 1,00,000 MT/ Year.                                 |
| 8.     | Drosses and waste from treatment of salt sludge<br>(Schedule - I, Cat. No. - 11.5)                               | Metal recovery in cast house/sale to authorized utilizers/Disposal of residues to authorized utilizers                                                                                                                                      | 10,000 MT/ Year                                    |
| 9.     | Flue gas dust and other particulates<br>(Schedule - I, Cat. No. - 11.4)                                          | Reuse in GAP for anode making/ disposal in captive SLF/ Sale to authorized utilizers/ <b>TSDF</b>                                                                                                                                           | 5,000 MT/ Year                                     |
| 10.    | Spent Ion exchange resin containing toxic metals<br>(Schedule - I, Cat. No. 35.2)                                | Utilization for energy recovery in boiler for steam or power generation as per SOP issued by CPCB                                                                                                                                           | 60 MT in 05 Years i.e. within authorization Period |
| 11.    | Glasswool<br>(Schedule - II, C-4)                                                                                | Dispose of in captive SLF/ <b>TSDF</b>                                                                                                                                                                                                      | 150 MT/Year                                        |
| 12.    | Discarded asbestos<br>(Schedule - I, Cat. No. - 15.2)                                                            | Sale to authorized recyclers/ disposal in captive SLF/ <b>TSDF</b>                                                                                                                                                                          | 100 MT/ Year                                       |
| 13.    | Empty barrels/containers/liners contaminated with hazardous chemicals /wastes<br>(Schedule - I, Cat. No. - 33.1) | Sale to authorized recyclers                                                                                                                                                                                                                | 300 MT/Year                                        |
| 14.    | Oil and grease skimming<br>(Schedule - I, Cat. No. - 35.4)                                                       | Dispose of in captive SLF/ Sale to authorized recyclers                                                                                                                                                                                     | 1 KL/Year                                          |

The amendment in authorization shall be valid for the period **upto 23/10/2026**. The details of authorization along with terms & conditions are given as per below:

**FORM 2**  
**[See rule 6 (2)]**

**GRANT OF AMENDMENT IN EXISTING AUTHORIZATION BY STATE POLLUTION  
CONTROL BOARD TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER  
AND OPERATORS OF DISPOSAL FACILITIES**

1. Number of authorization **757/HO/HSMD/CECB/NAVA RAIPUR ATAL NAGAR, RAIPUR**
2. Reference of Online application no. **19196948 dated 27/05/2025 & Subsequent Correspondence ending dated 20/06/2025.**
3. The operator of facility i.e. occupier **M/s Bharat Aluminium Company Limited, P.O.- Balco Nagar, District - Korba (C.G.)** is hereby granted an amendment in existing authorization based on the signed inspection report from RO for generation, collection, storage, reuse, recycling and disposal of hazardous wastes in the premises situated at **P.O.- Balco Nagar, District - Korba (C.G.)**.

**Detail of Authorization**

| Sl.No. | Category of Hazardous Waste as per the Schedules I, II and III of these rules                     | Authorised mode of disposal or recycling or utilization or co-processing etc.                                                                                                                                                        | Quantity (Tonnes/Annum) |
|--------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 1.     | Used or Spent oil<br>( Schedule - I, Cat. No. 5.1)                                                | Sale to authorized recyclers                                                                                                                                                                                                         | 300 MT/Year             |
| 2.     | Waste or residue containing oil<br>(Schedule - I, Cat. No. 5.2)                                   | Captive Incineration in cast house furnaces/ Sale to authorized recyclers                                                                                                                                                            | 7 MT/Year               |
| 3.     | Cathode residues including Pot Lining wastes<br>(Schedule - I, Cat. No. 11.2)                     | (i) Disposal through captive SLF/ Sale to authorized reprocessor for detoxification/ Co-processing in cement plant/other residues of cathode will be sale to authorized recyclers/re-processor/Coprocessing in Cement Plant/SLF/TSDF | 12000 T/Year            |
|        |                                                                                                   | (ii) Utilization of Spent Pot Lining (SPL) stored in Captive Secured Land Fill (SLF) and Sale to authorized re-processor for detoxification/ Co-processing in Cement Plant/TSDF                                                      | 42000 MT/Year           |
| 4.     | Chemical sludge from waste water treatment (Schedule - I, Cat. No. 35.3)                          | Disposal through captive SLF/ co-processing in cement plant/TSDF                                                                                                                                                                     | 20MT/Year               |
| 5.     | Rejected filter bags (FTP) Captive Incineration in pots 50 MT/Year<br>(Schedule-I, Cat. no. 33.1) | Captive Incineration in pots                                                                                                                                                                                                         | 50 MT/Year              |
| 6.     | Flammable chemical waste lab<br>(Schedule-II, Class-C-I)                                          | Sale to authorized recycler/ captive incineration in cast house furnaces/ Captive incineration in power plant boilers /distillation and reuse                                                                                        | 0.4 KL/Year             |
| 7.     | Used anode butts<br>(Schedule - I, Cat. No. - 11.6),                                              | Recycle and reuse in green anode plant for anode making/ captive SLF/ Sale to authorized recycler                                                                                                                                    | 1,00,000 MT/ Year.      |
| 8.     | Drosses and waste from treatment of salt sludge                                                   | Metal recovery in cast house/sale to authorized                                                                                                                                                                                      | 10,000 MT/ Year         |



|     |                                                                                                               |                                                                                                   |                                                    |
|-----|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------|
|     | (Schedule - I, Cat. No. - 11.5)                                                                               | utilizers/Disposal of residues to authorized utilizers                                            |                                                    |
| 9.  | Flue gas dust and other particulates (Schedule - I, Cat. No. - 11.4)                                          | Reuse in GAP for anode making/ disposal in captive SLF/ Sale to authorized utilizers/ <b>TSDF</b> | 5,000 MT/ Year                                     |
| 10. | Spent Ion exchange resin containing toxic metals (Schedule - I, Cat. No. 35.2)                                | Utilization for energy recovery in boiler for steam or power generation as per SOP issued by CPCB | 60 MT in 05 Years i.e. within authorization Period |
| 11. | Glasswool (Schedule - II, C-4)                                                                                | Dispose of in captive SLF/ <b>TSDF</b>                                                            | 150 MT/Year                                        |
| 12. | Discarded asbestos (Schedule - I, Cat. No. - 15.2)                                                            | Sale to authorized recyclers/ disposal in captive SLF/ <b>TSDF</b>                                | 100 MT/ Year                                       |
| 13. | Empty barrels/containers/liners contaminated with hazardous chemicals /wastes (Schedule - I, Cat. No. - 33.1) | Sale to authorized recyclers                                                                      | 300 MT/Year                                        |
| 14. | Oil and grease skimming (Schedule - I, Cat. No. - 35.4)                                                       | Dispose of in captive SLF/ Sale to authorized recyclers                                           | 1 KL/Year                                          |

(1) The authorization shall be valid for the period upto **23/10/2026**.

(2) The authorization is subject to the following conditions:

### **TERMS & CONDITIONS OF AUTHORIZATION**

- The authorization shall comply with the provisions of Environment (protection) Act, 1986 and the rules made there-under.
- The authorization or its renewal shall be produced for inspection at the request of an officer authorized by the Chhattisgarh Environment Conservation Board.
- The person authorized shall not rent, lend, sell transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Chhattisgarh Environment Conservation Board.
- Industry shall have to register in EPR portal of CPCB, Delhi as per Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 as amended if it comes under the categories of used oil producer, importer, recyclers/utilizers and collection agent.**
- Industry shall ensure to submit the agreement for disposal of their generated hazardous waste in TSDF of M/s Kesda Waste Management Private Limited, Village – Kesda, Tehsil – Simga, District – Balodabazar-Bhatapara (C.G.)**
- Any unauthorized change in personnel, equipment, or working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorization.
- The person authorized shall implement Emergency Response Procedure (ERP) which this authorization is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time.
- The person authorized shall comply with the provisions outlined in the Central Pollution Control Board guidelines on “Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty”.
- It is the duty of the authorized person to take prior permission of the Chhattisgarh Environment Conservation Board to close down the facility.
- The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
- Industry shall prepare emergency response plan (ERP) and ensure implementation of the same at the time of any accident occurs during handling and transportation of hazardous waste as per CPCB guidelines.
- The hazardous and other waste, generated during recycling or reuse or recovery or pre-processing or utilization of imported hazardous or other wastes shall be treated and disposed off as per standard operating procedures/guidelines issued by CPCB from time to time.
- An application for the renewal of an authorization shall be made three months before the expiry of authorization as laid down in the Rules.
- Annual return in form IV shall be filed by June 30th for the period ending 31st March of the last**

financial year.

15. The wastes shall be collected and stored properly with adequate safety measures as per rule.
16. Authorized person shall comply with the provisions of rule 17, 18 and 19 for packing, labeling and transport of Hazardous Waste.
17. The authorized person should maintain the record of Hazardous Waste as per Form-3 of Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
18. The occupier shall follow the guidelines (if any) issued by Central Pollution Control Board or MoEF & CC for management of Hazardous waste from time to time.
19. The industry shall display data outside factory gate, about on quantity and nature of hazardous chemicals and wastes being used in the plant, water quality and air emissions and solid wastes generated within the factory premises. The display board shall be made and placed as per CPCB guidelines.
20. At a time only one type/ Category of Hazardous waste shall be co-processed in the cement kiln. A log book of the waste co-process shall be maintained including emission monitoring result during co-processing.
21. Industry shall ensure that the transportation of hazardous wastes should be carried out through GPS enable dedicated vehicles of authorized transporters only.
22. Industry shall create new website for Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 and upload all the information above the waste in the website.
23. Before the wastes given for thermal/biological/physico-chemical treatment; should be completely dewatered, detoxified, and proper conditioned and any possible recovery is made before their disposal.
24. The industry should constitute a hazardous waste management cell to take care of the management aspect to the hazardous waste generated in the plant.
25. An on-site storage of the hazardous wastes for a maximum period of 90 days should be provided and it shall be ensured that there is no leakage or seepage from the surrounding walls or bottom. The site should be covered and properly protected to prevent the entry of rain water in storage area.
26. At least four nos. of piezometric points should be provided around the storage site of H.W. to monitor the leaching of the waste and the monitoring report of the same shall be submitted to the board every six monthly. Each type of waste shall be stored in a separate storage cell.
27. The discarded containers of Hazardous waste and chemical shall not be used for storage of food grade products. At the storage site "Hazardous waste storage site & danger signboard" shall be provided with all safety devices.
28. In the case of any accident due to handling of hazardous waste the authorized person must inform immediately to the Concerned Regional Office and H.O., Atal Nagar, Raipur of the Board by fax/telephone or by E-mail about the incident and details report be sent in form no. 11 [see rule 22].
29. The authorization obtained by the Chhattisgarh Environment Conservation Board should be prominently displayed.
30. Used batteries shall be disposed of as per the Batteries (Management & Handling) Rules, 2001.
31. Board reserves the right to cancel/amend the above condition and add new conditions as and when deemed necessary.

**Member Secretary**

C.G. Environment Conservation Board  
Nava Raipur Atal Nagar, Raipur (C.G.)

Endt. No. 5395/H.O./HSMD/CECB/2025

Nava Raipur, Date 07/08/2025

Copy to :- Regional Officer, Regional office, Chhattisgarh Environment Conservation Board, Korba (C.G.) please ensure compliance and report, if any condition/conditions are violated by the industry.

**Sd/-**

**Member Secretary**

C.G. Environment Conservation Board  
Nava Raipur Atal Nagar, Raipur (C.G.)

**Vimta Labs Limited**

Registered Office  
142, IDA Phase II, Cherlapally  
Hyderabad-500 051, Telangana, India  
T : +91 40 2726 4141  
F : +91 40 2726 3657



| <b>ISSUED TO</b>                                     |                                                        |      |                  | <b>Report Number:</b> VLL/VLS/25-26/02532/003 |                    |               |
|------------------------------------------------------|--------------------------------------------------------|------|------------------|-----------------------------------------------|--------------------|---------------|
| <b>M/s. Bharat Aluminium Company Limited</b>         |                                                        |      |                  | <b>Issue Date:</b> 2025-05-05                 |                    |               |
| <b>KORBA (C.G)</b>                                   |                                                        |      |                  | <b>P.O. No:</b> 8500005780                    |                    |               |
|                                                      |                                                        |      |                  | <b>P.O. Date:</b> 2022-06-29                  |                    |               |
| <b>AMBIENT NOISE MONITORING AT 3.25 LTPA SMELTER</b> |                                                        |      |                  |                                               |                    |               |
| <b>Tests required: Sound Level</b>                   |                                                        |      |                  |                                               |                    |               |
| <b>SAMPLES COLLECTED BY VIMTA LABS LTD</b>           |                                                        |      |                  | <b>LAB REF.: EC</b>                           |                    |               |
| <b>TEST RESULTS</b>                                  |                                                        |      |                  |                                               |                    |               |
| S. No                                                | Location                                               | Unit | Norms in dB(Day) | 2025-04-04                                    | Norms in dB(Night) | 2025-04-04    |
|                                                      |                                                        |      |                  | 6:00 to 22.00                                 |                    | 22.00 to 6.00 |
| 1                                                    | Rectifier Control room                                 | dB   | 75               | 55.3                                          | 70                 | 54.4          |
| 2                                                    | Process Control room First Floor (Nucleus Zone-1)      | dB   | 75               | 57.1                                          | 70                 | 55.0          |
| 3                                                    | Technical In charge room Second Floor (Nucleus Zone-1) | dB   | 75               | 58.6                                          | 70                 | 56.3          |
| 4                                                    | Control room GIS                                       | dB   | 75               | 50.7                                          | 70                 | 49.8          |
| 5                                                    | CRP room GIS                                           | dB   | 75               | 61.1                                          | 70                 | 55.2          |



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**ISSUED TO**

**M/s. Bharat Aluminium Company Limited  
KORBA (C.G)**

**Report Number:** VLL/VLS/25-26/04458/003  
**Issue Date:** 2025-06-04  
**P.O. No:** 8500005780  
**P.O. Date:** 2022-06-29

**AMBIENT NOISE MONITORING AT 3.25 LTPA SMELTER**

**Tests required: Sound Level**

**SAMPLES COLLECTED BY VIMTA LABS LTD**

**LAB REF.: EC**

**TEST RESULTS**

| S. No | Location                                                  | Unit | Norms in<br>dB(Day) | 2025-05-27    | Norms in<br>dB(Night) | 2025-05-27    |
|-------|-----------------------------------------------------------|------|---------------------|---------------|-----------------------|---------------|
|       |                                                           |      |                     | 6:00 to 22.00 |                       | 22.00 to 6.00 |
| 1     | Rectifier Control room                                    | dB   | 75                  | 55.5          | 70                    | 54.8          |
| 2     | Process Control room First Floor<br>(Nucleus Zone-1)      | dB   | 75                  | 57.3          | 70                    | 55.6          |
| 3     | Technical In charge room Second<br>Floor (Nucleus Zone-1) | dB   | 75                  | 58.2          | 70                    | 56.5          |
| 4     | Control room GIS                                          | dB   | 75                  | 50.9          | 70                    | 49.3          |
| 5     | CRP room GIS                                              | dB   | 75                  | 60.5          | 70                    | 55.6          |





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|                                                                   |                                                        |      |                  |                                                                                                                  |                    |               |
|-------------------------------------------------------------------|--------------------------------------------------------|------|------------------|------------------------------------------------------------------------------------------------------------------|--------------------|---------------|
| ISSUED TO<br>M/s. Bharat Aluminium Company Limited<br>KORBA (C.G) |                                                        |      |                  | Report Number: VLL/VLS/25-26/06982/003<br>Issue Date: 2025-07-05<br>P.O. No: 8500005780<br>P.O. Date: 2022-06-29 |                    |               |
| AMBIENT NOISE MONITORING AT 3.25 LTPA SMELTER                     |                                                        |      |                  |                                                                                                                  |                    |               |
| Tests required: Sound Level                                       |                                                        |      |                  |                                                                                                                  |                    |               |
| SAMPLES COLLECTED BY VIMTA LABS LTD                               |                                                        |      |                  | LAB REF.: EC                                                                                                     |                    |               |
| TEST RESULTS                                                      |                                                        |      |                  |                                                                                                                  |                    |               |
| S. No                                                             | Location                                               | Unit | Norms in dB(Day) | 2025-06-09                                                                                                       | Norms in dB(Night) | 2025-06-09    |
|                                                                   |                                                        |      |                  | 6:00 to 22.00                                                                                                    |                    | 22.00 to 6.00 |
| 1                                                                 | Rectifier Control room                                 | dB   | 75               | 55.2                                                                                                             | 70                 | 55.2          |
| 2                                                                 | Process Control room First Floor (Nucleus Zone-1)      | dB   | 75               | 58.5                                                                                                             | 70                 | 56.4          |
| 3                                                                 | Technical In charge room Second Floor (Nucleus Zone-1) | dB   | 75               | 58.9                                                                                                             | 70                 | 56.2          |
| 4                                                                 | Control room GIS                                       | dB   | 75               | 52.2                                                                                                             | 70                 | 47.7          |
| 5                                                                 | CRP room GIS                                           | dB   | 75               | 59.1                                                                                                             | 70                 | 54.3          |



|                                                                   |                                                        |      |                  |                |                         |               |
|-------------------------------------------------------------------|--------------------------------------------------------|------|------------------|----------------|-------------------------|---------------|
| ISSUED TO<br>M/s. Bharat Aluminium Company Limited<br>KORBA (C.G) |                                                        |      |                  | Report Number: | VLL/VLS/25-26/09740/003 |               |
|                                                                   |                                                        |      |                  | Issue Date:    | 2025-08-05              |               |
|                                                                   |                                                        |      |                  | P.O. No:       | 8500005780              |               |
|                                                                   |                                                        |      |                  | P.O. Date:     | 2022-06-29              |               |
| AMBIENT NOISE MONITORING AT 3.25 LTPA SMELTER                     |                                                        |      |                  |                |                         |               |
| Tests required: Sound Level                                       |                                                        |      |                  |                |                         |               |
| SAMPLES COLLECTED BY VIMTA LABS LTD                               |                                                        |      |                  | LAB REF.: EC   |                         |               |
| TEST RESULTS                                                      |                                                        |      |                  |                |                         |               |
| S. No                                                             | Location                                               | Unit | Norms in dB(Day) | 2025-07-08     | Norms in dB(Night)      | 2025-07-08    |
|                                                                   |                                                        |      |                  | 6:00 to 22.00  |                         | 22.00 to 6.00 |
| 1                                                                 | Rectifier Control room                                 | dB   | 75               | 55.1           | 70                      | 54.6          |
| 2                                                                 | Process Control room First Floor (Nucleus Zone-1)      | dB   | 75               | 59.0           | 70                      | 56.1          |
| 3                                                                 | Technical In charge room Second Floor (Nucleus Zone-1) | dB   | 75               | 58.8           | 70                      | 56.6          |
| 4                                                                 | Control room GIS                                       | dB   | 75               | 52.5           | 70                      | 47.3          |
| 5                                                                 | CRP room GIS                                           | dB   | 75               | 60.4           | 70                      | 54.8          |

  
Dr. Subba Reddy Mallampati  
Sr. No. 3  
Manager - Environment  
VIMTA

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| ISSUED TO                                     |                                                        |      |                  | Report Number: | VLL/VLS/25-26/11867/003 |               |
|-----------------------------------------------|--------------------------------------------------------|------|------------------|----------------|-------------------------|---------------|
| M/s. Bharat Aluminium Company Limited         |                                                        |      |                  | Issue Date:    | 2025-09-04              |               |
| KORBA (C.G)                                   |                                                        |      |                  | P.O. No:       | 8500005780              |               |
|                                               |                                                        |      |                  | P.O. Date:     | 2022-06-29              |               |
| AMBIENT NOISE MONITORING AT 3.25 LTPA SMELTER |                                                        |      |                  |                |                         |               |
| Tests required: Sound Level                   |                                                        |      |                  |                |                         |               |
| SAMPLES COLLECTED BY VIMTA LABS LTD           |                                                        |      |                  | LAB REF.: EC   |                         |               |
| TEST RESULTS                                  |                                                        |      |                  |                |                         |               |
| S. No                                         | Location                                               | Unit | Norms in dB(Day) | 2025-08-07     | Norms in dB(Night)      | 2025-08-07    |
|                                               |                                                        |      |                  | 6:00 to 22.00  |                         | 22.00 to 6.00 |
| 1                                             | Rectifier Control room                                 | dB   | 75               | 55.9           | 70                      | 54.7          |
| 2                                             | Process Control room First Floor (Nucleus Zone-1)      | dB   | 75               | 58.7           | 70                      | 55.7          |
| 3                                             | Technical In charge room Second Floor (Nucleus Zone-1) | dB   | 75               | 59.7           | 70                      | 56.4          |
| 4                                             | Control room GIS                                       | dB   | 75               | 53.1           | 70                      | 47.1          |
| 5                                             | CRP room GIS                                           | dB   | 75               | 62.0           | 70                      | 54.4          |

  
Dr. Subba Reddy Mallampati  
Manager - Environment

|                                               |                                                        |      |                  |                                        |                    |               |
|-----------------------------------------------|--------------------------------------------------------|------|------------------|----------------------------------------|--------------------|---------------|
| ISSUED TO                                     |                                                        |      |                  | Report Number: VLL/VLS/25-26/14073/003 |                    |               |
| M/s. Bharat Aluminium Company Limited         |                                                        |      |                  | Issue Date: 2025-10-04                 |                    |               |
| KORBA (C.G)                                   |                                                        |      |                  | P.O. No: 8500005780                    |                    |               |
|                                               |                                                        |      |                  | P.O. Date: 2022-06-29                  |                    |               |
| AMBIENT NOISE MONITORING AT 3.25 LTPA SMELTER |                                                        |      |                  |                                        |                    |               |
| Tests required: Sound Level                   |                                                        |      |                  |                                        |                    |               |
| SAMPLES COLLECTED BY VIMTA LABS LTD           |                                                        |      |                  | LAB REF.: EC                           |                    |               |
| TEST RESULTS                                  |                                                        |      |                  |                                        |                    |               |
| S. No                                         | Location                                               | Unit | Norms in dB(Day) | 2025-09-04                             | Norms in dB(Night) | 2025-09-04    |
|                                               |                                                        |      |                  | 6:00 to 22.00                          |                    | 22.00 to 6.00 |
| 1                                             | Rectifier Control room                                 | dB   | 75               | 55.6                                   | 70                 | 53.9          |
| 2                                             | Process Control room First Floor (Nucleus Zone-1)      | dB   | 75               | 58.4                                   | 70                 | 54.2          |
| 3                                             | Technical In charge room Second Floor (Nucleus Zone-1) | dB   | 75               | 59.0                                   | 70                 | 56.1          |
| 4                                             | Control room GIS                                       | dB   | 75               | 52.6                                   | 70                 | 46.7          |
| 5                                             | CRP room GIS                                           | dB   | 75               | 61.0                                   | 70                 | 54.4          |

  
**Dr. Subba Reddy Mallampati**  
**Manager - Environment**



Approx. 15 per cent scholarships will be referred by the students belonging to the SC category, 7.5 per cent for the students from the ST category and 3 per cent for physically challenged Group of Students each in respect of the class VIII.

Annexure - ~~BALCO~~

Government seems to

### PUBLIC NOTICE

This is to inform the general public that Ministry of Environment and Forests (MOEF) Govt. of India has accorded Environmental Clearance for Aluminium Smelter expansion by 3.5 LTPA to 9.0 LTPA and CPP of 300 MW at Korba of Bharat Aluminium Company Limited (BALCO). A copy of the clearance letter no. S-115/1/123/2007 - IA-II(I) dated 16-09-2008 is available with Chhattisgarh Environment Conservation Board and also at website of MOEF <http://www.moeff.nic.in>

For, Bharat Aluminium Co. Ltd.  
Korba, Chhattisgarh.



भारत

जिला का

धनधा

जयंत्यः 32

जयंत

क्रमांक- जामास्य/36/2007-0

// निविदा

भारतीय वायु निगम की त  
सामग्रियों एवं मुद्रित स्टेशनरी का

वे सील बंद निविदाएं आमंत्रित की

इच्छुक कर्म निविदा काएं,

सामग्रियों की सूची दिनांक 04

अगस्त में 25/- (पच्चीस रुपये)

आधार पर एवं निविदा काएं एवं

HITVADA

विशाल नव व्यवसाय में 40 फीसदी और 2,810 गांवों में 40 फीसदी तक  
 प्रतियोगिता में 65 फीसदी में बढ़ी। पंचायत समितियों और तालुका स्तर पर  
 ने यह रकम का आइसीआईसीआई के समूह प्रयोग में कर रहे हैं। इसका प्रमुख कारण  
 कि 80 लाख प्रतियोगिता है। उन्होंने भी उल्टी है। इसका प्रमुख कारण  
 उद्योग में वित्त निर्यात एवं विकास केवल और प्रभाव जैसे चरमों में  
 गता और प्राथमिक (इरडा) द्वारा सात्वती अग्रणी भारतीयों की कड़ी मदद  
 यह भारत सर्जित और उद्योग के निवेश भी है।

उत्तराखण्ड सरकार के आदेशों के तहत जारी किए जाने के

**सांख्यिकी का एलपीजी वैरिएंट पेश**  
 नई दिल्ली, 1 सितंबर (ए)। देश में एलपीजी अनुकूल बहनों  
 को प्रोत्साहित करने की दिशा में कार्य करने वाली अग्रणी कंपनी  
 इंडिया मोटर्स ने सांख्यिकी का एलपीजी वैरिएंट पेश करने की आज  
 घोषणा की है जिसकी कीमत 3.54 लाख 64 हजार और 3.75 लाख  
 रुपये के बीच रखी गई है।

| आम सूचना                                                                                   |  |
|--------------------------------------------------------------------------------------------|--|
| सर्वसाधारण को सूचित किया जाता है कि पर्यावरण एवं जन कल्याण                                 |  |
| भारत सरकार द्वारा भारत एल्यूमिनियम कंपनी लिमिटेड को                                        |  |
| एल्यूमिनियम स्क्वार्ड की क्षमता 2.5 लाख टन सालाना को बढ़ाकर 4.0                            |  |
| लाख टन सालाना और 300 मेगावॉट क्षमता के निजी ताप विद्युत गृह को                             |  |
| निर्माण के लिए पत्र सख्त नं-११०११२३/२००७ - आईए-टी                                          |  |
| नं. ११०११२३/२००७ के तहत एलपीजी वैरिएंट के अनुकूल                                           |  |
| प्रकार की गई है जिसे उद्योगीसंगत पर्यावरण संरक्षण बोर्ड और ए.पी.सी.                        |  |
| के पास वेबसाइट <a href="http://enviro.nic.in">http://enviro.nic.in</a> पर देखा जा सकता है। |  |
| कृते भारत एल्यूमिनियम कंपनी लिमिटेड                                                        |  |
| जोधपुर, राजस्थान                                                                           |  |

आम सूचना 2-10-07