

BALCO/ENV/A -02(A)/2025/491

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 1200 MW Coal based Thermal Power Plant.

Respected Sir,

As per the Environment Clearance (No J-13011/16/2007.IA-II (T) dated 14.08.2007, subsequent amendment dated 27.04.11 and extension dated 18.09.2014) received for the expansion of Thermal Power Plant by M/s Bharat Aluminium Company Limited (hereinafter referred to as 'BALCO'), Korba, please find enclosed herewith the compliance report along with the necessary supporting documents.

We hope that the above is in line with the requirements under the referred Environment Clearance. In case your good office requires any further information or clarification, we would be glad to furnish 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 Conservation Board, Korba.

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**COMPLIANCE STATUS 1200MW COAL BASED THERMAL POWER PLANT
AT KORBA, CHHATTISGARH BY M/s BALCO LTD.**

Duration: April 2025 to September 2025

MoEF&CC's Letter No: J-13011/16/2007-IA.II (T), dated 14.08.2007 and dated 27.04.11 and EC extension dated 18.09.2014.

S.No	Terms & Condition	Present Status
i	The total land requirement shall not exceed 355 acres for all the activities/facilities of the power project.	The total land requirement is within 355 acres.
ii	Ash & Sulphur contents in the coal to be used as fuel shall not exceed 42% and 0.5% respectively.	Efforts are made to maintain Ash & Sulphur contents in the coal used as fuel within 42% and 0.5% respectively.
iii	Two bi-flue stacks of 275 m height shall be provided with continuous online monitoring equipments for SO _x , NO _x , and PM _{2.5} & PM ₁₀ . Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack may also monitored on periodic basis.	Two bi-flue stacks of 275m height have been provided and provision for online monitoring equipment has been provided for continuous monitoring of pollutants. Exit velocity of flue gases is being maintained $\geq$ 22 m/sec. Mercury emission from stack is being monitored on periodic basis (Please refer Annexure-I).
iv	High efficiency Electrostatic Precipitator (ESP) with efficiency not less than 99.9% shall be installed so as to ensure that particulate emissions do not exceed 50mg/Nm ³ .	Hybrid Electrostatic Precipitator (ESP) followed with bag filters having efficiency of 99.99% has been provided for ensuring emission level below the norms i.e. 50 mg/Nm ³ (Please refer Annexure-I).
v	Space provision shall be made for Flue Gas De-sulphurisation (FGD) unit of requisite efficiency of removal of SO ₂ , if required at a later stage.	Space provision for FGD system is provided in plant design layout.
vi	Low NO _x burners shall be installed.	Low NO _x burners have been provided.
vii	Closed Circuit Cooling system with cycle of concentration (COC) of 5 shall be provided.	Induced Draft Cooling Tower (IDCT) with COC 5 has been provided.
viii	For controlling fugitive dust, regular sprinkling of water in the coal handling area and other vulnerable areas of the plant shall be ensured.	Dust Suppression and extraction equipment, Rain guns & Water sprinklers have been provided to suppress dust emission from coal handling plant.
ix	The project authorities should adhere to the provisions stipulated in the fly ash notification of September 1999 and as amended in august, 2003 in regard to fly ash utilization.	We are complying with the conditions as notified in the Fly Ash notification. We have achieved 100 % fly ash utilization during the FY 2024-25 for 1200 MW power plant by supplying ash for road construction, cement plants and brick manufacturing as per fly ash notification.

S.No	Terms & Condition	Present Status
x	The unutilized fly ash and bottom ash shall be disposed in the form of high concentration slurry in the abandoned red mud ponds. The ash pond shall be lined with Impervious lining to avoid any leaching into ground water. The ash dyke shall be so designed and strengthened to ensure guard against breaching. Adequate safety measures shall also be taken so that pond ash does not become air borne to cause air pollution in the surrounding areas.	High Concentrated Slurry Disposal system has been adopted for disposal of ash in ash ponds (abandoned red mud ponds). Please refer to Annexure-II . The Fly ash is being disposed in these ponds/ Ash Dyke as per the feasibility study and design submitted by the consultant. Adequate safety measures have been taken during construction. Further, adequate measures have been taken to ensure that pond ash doesn't become air borne.
xi	Rainwater harvesting should be adopted. Central Groundwater Authority /Board shall be consulted for finalization of appropriate rainwater harvesting structure within a period of three months from the date of clearance.	Complied. Please refer to Annexure-III .
xii	The study on reuse of 1920 m ³ /day of discharge water shall be completed early latest within three months and submitted to MoEF. Based on the same, any additional safeguard measures required shall be implemented in the project. Zero discharge shall be adopted.	The wastewater generated in the power plant is treated and reused. Best efforts are made to maintain zero discharge condition at all times.
xii	Regular monitoring of ground water quality including heavy metals shall be undertaken around ash dyke and the project area to ascertain the change, if any, in the water quality due to leaching of contaminants from ash disposal area.	Regular monitoring of ground water quality including heavy metals is being carried out. Please refer Annexure-IV .
xiii	A green belt shall be developed all along the plant and ash pond boundary covering a total area of 1/3 of total project area.	Extensive tree plantation is being carried out in 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.
xiv	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	First aid and sanitation for the drivers and Business Partners have been provided.
xv	Leq of Noise level should be limited to 75 dBA and regular maintenance of equipment be undertaken. For people working in the high noise areas, personal protection devices should be provided.	Equipment has been designed with acoustic enclosures to ensure that noise level at plant boundary is within the stipulated level. Personal protective equipment is being provided to the workers in high noise areas. (Annexure-V)



S.No	Terms & Condition	Present Status
xvi	Regular Monitoring of the ambient air quality shall be carried out in and around the power plant and records maintained. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Quarterly reports shall be submitted to the Regional Office of this Ministry.	Regular monitoring of AAQ is carried out in and around the power plant and reports submitted to the board on a monthly basis. Frequency and location of AAQ stations were fixed in consultation with Chhattisgarh Environment Conservation Board. Continuous Ambient Air Quality Monitoring Station has also been installed (Annexure-VI).
xvii	The project proponent should advertise within seven days of issue of environmental clearance, in at least two local newspapers widely circulated in the region around the project, one of which should be in the vernacular language of the locality concerned, informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board/Committee and may also be seen in the website of the Ministry of Environment and Forest in the http://envfor.nic.in .	Complied with. Newspaper publication Date as below. 1.Haribhumi – 18.08.07 2.Deshbandhu – 18.08.07 (Annexure-VII)
xviii	A separate environment monitoring cell with suitable qualified staff should be set up for implementation of the stipulated environmental safeguards.	An environmental cell with qualified personnel under the control of a senior executive is already in place. Also, we have a laboratory facility for collection and analysis of environmental samples under the supervision of competent technical personnel.
xix	Half Yearly report on the status of implementation of the conditions and environmental safeguards should be submitted to this ministry, the Regional office, CPCB and SPCB.	Half yearly Compliance report submitted regularly. Last submitted vide our letter BALCO/ENV/A - 02(A)/2025/262 dated 21 st May 2025.
xx	Regional office of the Ministry of Environment & Forests located at Bhopal will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report, Environment Management Plan and the additional information / clarifications submitted subsequently should be forwarded to the Regional Office for their use during monitoring.	Documents have been submitted vide letter no: Balco/Kb/1200MW/Statutory/MoEF/2007/21, dated: 20.08.07.

S.No	Terms & Condition	Present Status
xxi	Separate funds should be allocated for the implementation of environmental protection measures along with item-wise break-up. These costs should be included as part of the project cost. The funds earmarked for the environment protection measures should not be diverted for other purposes and year-wise expenditure should be reported to the ministry.	Expenditure done during the FY 2025-26 (April 25-September-25) for 1200 MW is 72.14 crores including Maintenance of Pollution control equipment, spares, other environment requirements etc.
xxii	Full cooperation should be extended to the scientists/Officers from the Ministry and its Regional Office at Bhopal / the CPCB/ the SPCB during monitoring of the project.	Complied.
xxiii	The project proponent shall upload the status of compliance of the conditions stipulated in the environmental clearance issued vide this Ministry's letter of even no. dated 14.08.2007, in its website and updated periodically and also simultaneously send the same by e-mail to the Regional Office of the Ministry of Environment and Forests.	Status of compliance of conditions stipulated in the environmental clearance issued vide this Ministry's letter dated 14.08.2007 is submitted regularly on website and by e-mail to the Regional Office of the Ministry of Environment and Forests.
xxiv	Criteria pollutants levels including NOx, RSPM (PM10 & PM 2.5), SOx (from stack & ambient air) shall be regularly monitored, and results displayed in your website and also at the main gate of the power plant.	Online monitoring equipment for stack & ambient air has been provided for continuous monitoring of pollutants and this is being displayed at the main gate, website and CPCB server.
xxv	The action plan formulated for CECB/CPCB shall be complied.	Korba action plan is reviewed by CECB and is being complied for 1200 MW power plant.
xxvi	Harnessing solar power within the premises of the plant particularly at available roof tops shall be undertaken and status of implementation shall be submitted periodically to the regional office of the ministry.	Rooftop solar power plant installed. Status of implementation updated in the half yearly compliance reports from time to time.
xxvii	A long-term study on radioactivity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter mechanism for in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	Analysis of coal for radioactivity and heavy metal contents of coal carried out through VIMTA Labs Hyderabad (Annexure-VIII). For in-built continuous monitoring for radioactivity and heavy metals in coal and fly ash (including bottom ash), we have sought advice from the following departments: 1. Atomic Energy Regulatory board vide letter 1200/ Env't /A-01/2018/120 dated 30.04.2018 2. Uranium Corporation of India Ltd vide letter 1200/ Env't / A-01 / 2018/ 142 dated 14.05.2018 3. Bhabha Atomic Research Centre vide letter 1200 /Env't/ A-01 /2018 /143 dated 14.05.2018

S.No	Terms & Condition	Present Status
xxviii	Mercury emission from stack also shall be monitored on periodic basis.	Monitoring of mercury emission from stack is carried out every month (Please refer Annexure-I).
xxix	No ground water shall be extracted for use in the operation of power plant even in lean season. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up /operation of the power plant.	Complied with.
xxx	Minimum required flow suggested by the competent authority of the state Govt. shall be maintained in the channel /Rivers (as applicable) even in lean season.	We are getting water from the Water Management Division of Hasdeo Barrage as per the water withdrawal agreement only and not from Channel/River and this condition is not applicable to us.
xxxi	Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the state pollution control board and implementation done in close coordination with the state pollution control board.	Presently, we are utilizing fly ash in mine void filling in SECL mines. MoU signed with SECL for disposal of fly ash in mine voids of SECL.
xxxii	Green belt shall also be developed around the ash pond over and above the green belt around the plant boundary.	Complied With. Saplings have been planted in areas available on and around Ash dyke.
xxxiii	Monitoring of surface water quantity and quality shall also be regularly conducted, and records maintained. The monitored data shall be submitted to the ministry regularly. Further monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.	Complied. Surface water and ground water monitoring is being carried out regularly and reports being submitted to CECB on regular basis. Refer to Annexure-IV .

S.No	Terms & Condition	Present Status
xxxiv	The environment statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned state pollution control board as prescribed under the environment protection rules 1986 as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective regional offices of the ministry by email.	Complied. Submitted vide letter no: CPP-II/ENV/A-02(C)/2025/455, Dated: 26 th September 2025.
xxxv	CSR schemes identified based on need-based assessment shall be implemented in consultation with the village panchayat and the district administration starting from development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating programs.	The company has set up a vocational skills school in BALCO currently in partnership with Social Empowerment & Economic Development Society (Learned Skills Limited) in FY'11-12. The center along with residential setup provides vocational training and placement assistance in 7 disciplines namely, Welding, Electrician, Fitter, Hospitality (F&B), Solar PV Technician, Industrial Sewing and Mobile Repair. A separate amount is allocated for the center each year and till date 13.53 crores rupees have been invested by BALCO under the project. Till date more than 13,500 Youths with 75% placement record.
xxxvi	The project proponent shall also adequately contribute in the development of the neighboring villages. Special package with implementation schedule for free potable drinking water supply in the nearby villages and schools shall be undertaken in a time bound manner.	BALCO has ensured the availability of water through creation of community assets in different villages and has always been proactive in fulfilling the needs of the community and in future, the organization will ensure the availability of water whenever the need arises from the community.
xxxvii	For proper and periodic monitoring of CSR activities, a CSR committee or a social audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.	BALCO has a CSR Board Committee which meets once a year and approves the annual CSR plan. There is also a dedicated third party concurrent auditor who does a quarterly review of all expenditures. Also, the dedicated CSR professionals in the Company are responsible for project design, monitoring & reporting. They also stay in constant touch with the local community and stakeholders. For large flagship projects, we have monthly Project Steering Committees (PSCs) in place comprising of CSR team and implementing partners. The PSC is responsible for reviewing the projects.

Handwritten signature and initials in blue ink, including a stylized signature and the letters 'BON'.

S.No	Terms & Condition	Present Status
xxxviii	An environment cell comprising of atleast one expert in environmental science/engineering, ecology, occupational health and social science, shall be created at the project site itself and shall be headed by an officer of appropriate superiority and qualification. It shall be ensured that the head of the cell shall directly report to the head of the plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.	Environmental Management Cell is in place headed by Senior Executive, directly reporting to the Head of the Unit and is accountable for implementation of environmental regulations and social impact improvement/mitigation measures. The environment management cell is enabled by trained professionals in respective fields of environment, safety and occupational health.
xxxix	The project proponent shall formulate a well laid corporate environment policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	Corporate Environment policy is formulated and designated officers are responsible for adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.



Compliance status of Office Memorandum F.No.22-13/2019-IA.III MoEF&CC dated 28th August 2019.

SNo	Condition	Status
i	The guidelines prepared by CPCB for the disposal of fly Ash for reclamation of low lying areas and in stowing /backfilling of abandoned mines/quarries shall be followed during disposal of ash in abandoned or working mines, as annexed.	The guidelines prepared by CPCB are being followed while disposal of fly ash for stowing/ backfilling of abandoned mines/ quarries. Due permission is sought from Chhattisgarh Environment Conservation Board (CECB) for backfilling of abandoned mines. No ash is being utilized for reclamation of low lying areas.
ii	There should at least be clearance of 500 m of safe distance be maintained from River and water body in case of ash disposal in abandoned mines to be prevent embankment failure and fly ash flowing into the nearby water body.	Complied.
iii	The top layer of the fly ash disposal area in the abandoned mines shall be kept moist during disposal.	Complied.
iv	Top layer of disposal area should have 70 cm overburden or Gravels/stones and then 30 cm sweet soil cover. Subsequently, the vegetation shall be raised on the soil cover.	Noted and Complied.
v	Bioaccumulation and bio-magnification tests shall be conducted around the surrounding flora and fauna (tree leaves, vegetation, crop yields and cattle population) during pre-monsoon and post – monsoon to find out any trace metals escaped through ground water or runoff.	Bioaccumulation and Bio-magnification study being carried out for the locations Dhelwadiah Naktikhar, Katbitla, Kudurmali, Kukricholi, Nonbirra and Unga.
vi	Surface runoff and supernatant water, in any case shall not be let into the surrounding areas. It shall be collected by providing adequate drains around the mine. The supernatant water along with surface runoff shall be treated and re-used for mixing ash and plant operations.	The surface run-off and supernatant water is being collected and recycled/ reused.
vii	To the extent possible, only decanted water from mine, make up water from treated effluents such as cooling tower blow down and treated sewage water shall be used for making ash slurry.	The ash pond water is recycled for ash slurry making. The treated effluent from coal handling plant and cooling tower blowdown is utilized for slurry making.
viii	Fly ash to be used as soil conditioner in agriculture needs and to be applied in controlled manner to limit excessive application so as to prevent soil degradation. The optimize proportion of ash to be applied	Presently, we are not utilizing fly ash as soil conditioner in agricultural needs.

	which is to be certified by the State Agriculture Universities /Colleges based on the soil testing.	
ix	Approval from DGMS shall be obtained before disposing the ash in the mine voids.	Complied.
x	Technology for conversion of fly ash into coarse granules for stowing in the underground mines to be explored.	Presently, we are utilizing fly ash in avenues like, Cement manufacturing, Brick manufacturing, Road making and Mine void filling. Technology for conversion of fly ash into coarse granules will be explored if needed in future as demand for stowing in the underground mines arises.
xi	All the power plants should install different silos for dry collection of fly ash.	We have installed separate silos for collection of dry fly ash and the same are utilized for utilization of fly ash in cement and brick plants.
xii	Records pertaining to details of month wise quantity of fly ash disposed and water consumption along with nature/ source of water shall be maintained and submitted to Ministry/ Regional office annually.	Monthly details of quantity of fly ash disposed in mines are submitted to Regional Office-CECB and with half yearly compliance report to IRO- MOEF&CC also submitting Specific water consumption report to updated periodically quarterly. Copies of report are attached herewith as Annexure -IX .
xiii	Before starting the disposal of ash into mine voids, the NOC/permission from the mine owner is to be obtained in case the mine closure activities are not completed or State Government in case the mine has been handed over to the State Govt. after its closure. A copy of such NOC/Permission is to be submitted to the Ministry and its Regional Offices.	Presently, we are utilizing fly ash in mine void filling in SECL mines. MoU signed with SECL for disposal of fly ash in mine voids of SECL.

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Compliance status of MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE NOTIFICATION dated 21st May 2020

Sl.No	Condition	Status
i	Setting Up Technology Solution for emission norms: Compliance of specified emission norms for Particulate Matter, as per extant notifications and instructions of Central Pollution Control Board, issued from time to time.	Hybrid Electrostatic precipitator (ESP) followed with bag filters having efficiency of 99.99% has been provided for ensuring emission level below the norms i.e. 50 mg/Nm ³ .
ii	Management of Ash Ponds: The thermal powers plants shall comply with conditions, as notified in the Fly Ash notification issued from time to time, without being entitled to additional capacity of fly ash pond (for existing power generation capacity) on ground of switching from washed coal to unwashed coal.	We are complying with conditions as notified in the Fly Ash notification. We have achieved 100 % fly ash utilization during FY 2024-25 for 1200 MW power plant by supplying ash for road construction activities, cement plants and brick manufacturing as per fly ash notification.
iii	Management of Ash Ponds: Appropriate Technology solutions shall be applied to optimise water consumption for Ash management;	HCSD system has been provided for disposal of ash in the ash pond to optimize water consumption. Please refer to Annexure-II . The ash pond water is recycled back for ash slurry making. Moreover, treated water is also used for ash slurry making. This ensures that water consumption is optimum.
iv	Management of Ash Ponds: The segregation of ash may be done at the Electro-Static Precipitator stage, if required, based on site specific conditions, to ensure maximum utilization of fly ash;	Separate dry ash collection mechanism is in place via dry ash silos. The dry ash is provided to cement plants, brick manufacturers through these silos itself.
v	Management of Ash Ponds: The thermal power plants to dispose flyash in abandoned or working mines (to be facilitated by mine owner) with environmental safeguards.	Presently, we are utilizing fly ash in mine void filling in SECL mines. MoU signed with SECL for disposal of fly ash in mine voids of SECL.
vi	Transportation: Coal transportation may be undertaken by covered Railway wagon (railway wagons covered by tarpaulin or other means) and/or covered conveyer beyond the mine area. However, till such time enabling Rail transport/conveyer infrastructure is not	Coal is transported to the plant by road in tarpaulin covered trucks. Measures are being taken to ensure coal transportation by covered Railway wagon by tarpaulin.

	available, road transportation may be undertaken in trucks, covered by tarpaulin or other means.	
vii	Transportation: It shall be ensured by the thermal power plant that a. Rail siding facility or conveyor facility is set up at or near the power plant, for transportation by rail or conveyor; and b. If transportation by rail or conveyor facility is not available, ensure that the coal is transported out from the Delivery Point of the respective mine in covered trucks (By tarpaulin or other means), or any mechanized closed trucks by road.	The plant receives coal from rail and road. a. For the coal which is transported by railways, railway siding facility has been set up at the power plant. b. For the coal which is transported through road, the coal is received in tarpaulin covered trucks.



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:		VLL/VLS/25-26/02532/ CPP3		
					Issue Date:		2025-05-05		
					P.O No:		8500005780		
					P.O Date:		2022-06-29		
Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW									
Analysis starting date :- 2025-04-09					Analysis Completion date :- 2025-05-02				
Test Required :- PM, NO _x , CO and Hg;									
TEST RESULTS									
1200 MW Power Plant					Unit-1		Unit-2		Method
S No.	Location	Parameter	Limits	Units	2025-04-08	2025-04-28	2025-04-08	2025-04-28	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	126	123	146	134	-
5		Stack Pressure	-	mmHg	731	728	731	728	-
6		Velocity	-	m/s	17.0	16.2	18.7	16.5	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1780548	1702595	1865113	1687257	
8		Particulate Matter (PM)	50	mg/Nm ³	39.2	20.1	19.1	22.9	USEPA M-5
9		Average			29.7		21.0		
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	415	422	428	433	Measured by Portable Combustion Analyser
11		Average			418.5		430.5		
12		Carbon Monoxide as CO	-	mg/Nm ³	26	45	10	33	
13		Average			35.5		21.5		
14		Mercury as Hg	0.03	mg/Nm3	0.010	0.013	0.013	0.015	USEPA M-29
15		Average			0.012		0.014		

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND – Not Deducted

*USD – Unit Under Shut Down



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/02532/CPP3			
					Issue Date:	2025-05-05			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW									
Analysis starting date :- 2025-04-09					Analysis Completion date :- 2025-05-02				
Test Required :- PM, NO _x , CO and Hg;									
TEST RESULTS									
1200 MW Power Plant					Unit-3		Unit-4		Method
S No.	Location	Parameter	Limits	Units	2025-04-08	2025-04-28	2025-04-08	2025-04-28	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	131	128	142	140	-
5		Stack Pressure	-	mmHg	731	727	730	727	-
6		Velocity	-	m/s	17.0	16.6	17.3	16.9	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1758511	1720514	1739727	1700714	
8		Particulate Matter (PM)	50	mg/Nm ³	35.7	27.7	28.4	32.8	USEPA M-5
9		Average			31.7		30.6		
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	357	418	438	407	Measured by Portable Combustion Analyser
11		Average			387.5		422.5		
12		Carbon Monoxide as CO	-	mg/Nm ³	804	352	10	28	
13		Average			578.0		19.0		
14		Mercury as Hg	0.03	mg/Nm ³	0.014	0.012	0.012	0.013	USEPA M-29
15		Average			0.013		0.013		

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND – Not Deducted

*USD – Unit Under Shut Down



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Driven by Quality. Inspired by Science.

ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:		VLL/VLS/25-26/04458/ CPP3			
					Issue Date:		2025-06-04			
					P.O No:		8500005780			
					P.O Date:		2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW										
Analysis starting date :- 2025-05-14					Analysis Completion date :- 2025-06-03					
Test Required :- PM, NO _x , CO and Hg;										
TEST RESULTS										
1200 MW Power Plant					Unit-1		Unit-2		Method	
S No.	Location	Parameter	Limits	Units	2025-05-13	2025-05-28	2025-05-13	2025-05-28		
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-	
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-	
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-	
4		Stack Temperature	-	°C	131	134	150	146	-	
5		Stack Pressure	-	mmHg	726	726	726	727	-	
6		Velocity	-	m/s	16.9	16.6	16.7	16.7	USEPA M-2	
7		Volumetric Flow Rate	-	Nm ³ /Hr	1736210	1692819	1638600	1656521		
8		Particulate Matter (PM)	50	mg/Nm ³	36.3	29.6	18.6	25.7		
9		Average			33.0		22.2		USEPA M-5	
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	428	404	417	439		Measured by Portable Combustion Analyser
11		Average			416.0		428.0			
12		Carbon Monoxide as CO	-	mg/Nm ³	165	95	11	14		
13		Average			130.0		12.5			
14		Mercury as Hg	0.03	mg/Nm3	0.008	0.005	0.004	0.006	USEPA M-29	
15		Average			0.007		0.005			

PM and NO_x values are reported as 12% O₂ corrected

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down



Vimta Labs Limited

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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:		VLL/VLS/25-26/04458/CPP3		
					Issue Date:		2025-06-04		
					P.O No:		8500005780		
					P.O Date:		2022-06-29		
Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW									
Analysis starting date :- 2025-05-14					Analysis Completion date :- 2025-06-03				
Test Required :- PM, NO _x , CO and Hg;									
TEST RESULTS									
1200 MW Power Plant					Unit-3		Unit-4		Method
S No.	Location	Parameter	Limits	Units	2025-05-13	2025-05-28	2025-05-13	2025-05-28	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	139	141	144	141	-
5		Stack Pressure	-	mmHg	726	725	731	726	-
6		Velocity	-	m/s	17.9	18.1	16.7	17.2	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1803236	1812076	1673624	1724348	
8		Particulate Matter (PM)	50	mg/Nm ³	41.6	36.5	23.4	30.6	
9		Average			39.1		27.0		USEPA M-5
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	437	425	377	364	
11		Average			431.0		370.5		
12		Carbon Monoxide as CO	-	mg/Nm ³	19	33	415	429	
13		Average			26.0		422.0		
14		Mercury as Hg	0.03	mg/Nm ³	0.007	0.004	0.006	0.008	USEPA M-29
15		Average			0.006		0.007		
*PM and Nox values are corrected to 6% O ₂ values									

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down



Dr. Subba Reddy Mallampati
Manager - Environment

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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:		VLL/VLS/25-26/06982/CPP3		
					Issue Date:		2025-07-04		
					P.O No:		8500005780		
					P.O Date:		2022-06-29		
Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW									
Analysis starting date :- 2025-06-14					Analysis Completion date :- 2025-07-03				
Test Required :- PM, NO _x , CO and Hg;									
TEST RESULTS									
1200 MW Power Plant					Unit-1		Unit-2		Method
S No.	Location	Parameter	Limits	Units	2025-06-13	2025-06-27	2025-06-13	2025-06-27	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	133	132	137	135	-
5		Stack Pressure	-	mmHg	724	724	725	724	-
6		Velocity	-	m/s	16.6	16.3	17.3	16.8	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1692313	1665833	1748882	1704307	
8		Particulate Matter (PM)	50	mg/Nm ³	38.9	32.9	23.0	21.8	USEPA M-5
9		Average			35.9		22.4		
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	418	435	439	426	Measured by Portable Combustion Analyser
11		Average			426.5		432.5		
12		Carbon Monoxide as CO	-	mg/Nm ³	32	14	28	68	
13		Average			23.0		48.0		
14		Mercury as Hg	0.03	mg/Nm3	0.007	0.005	0.006	0.004	USEPA M-29
15		Average			0.006		0.005		

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND – Not Deducted

*USD – Unfl Under Shut Down



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:		VLL/VLS/25-26/06982/CPP3		
					Issue Date:		2025-07-04		
					P.O No:		8500005780		
					P.O Date:		2022-06-29		
Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW									
Analysis starting date :- 2025-06-14					Analysis Completion date :- 2025-07-03				
Test Required :- PM, NO _x , CO and Hg;									
TEST RESULTS									
1200 MW Power Plant					Unit-3		Unit-4		Method
S No.	Location	Parameter	Limits	Units	2025-06-13	2025-06-27	2025-06-13	2025-06-27	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	130	128	140	133	-
5		Stack Pressure	-	mmHg	726	727	725	725	-
6		Velocity	-	m/s	16.6	16.8	17.3	16.8	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1709621	1741244	1736178	1715068	
8		Particulate Matter (PM)	50	mg/Nm ³	44.8	37.3	25.1	26	USEPA M-5
9		Average			41.1		25.6		
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	410	445	424	417	Measured by Portable Combustion Analyser
11		Average			427.5		420.5		
12		Carbon Monoxide as CO	-	mg/Nm ³	95	155	154	242	
13		Average			125.0		198.0		
14		Mercury as Hg	0.03	mg/Nm ³	0.005	0.007	0.006	0.007	USEPA M-29
15		Average			0.006		0.007		

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

ENVIRONMENT
Vimta
REGD No- DL 3300-
Sr. No.-5
Dr. Subba Reddy Mallampati
Manager, Environment

ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:		VLL/VLS/25-26/09740/CPP3		
					Issue Date:		2025-08-05		
					P.O No:		8500005780		
					P.O Date:		2022-06-29		
Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW									
Analysis starting date :- 2025-07-09					Analysis Completion date :- 2025-07-30				
Test Required :- PM, NO _x , CO and Hg;									
TEST RESULTS									
1200 MW Power Plant					Unit-1		Unit-2		Method
S No.	Location	Parameter	Limits	Units	2025-07-07	2025-07-24	2025-07-07	2025-07-24	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	122	125	127	131	-
5		Stack Pressure	-	mmHg	721	722	720	722	-
6		Velocity	-	m/s	16.9	17.6	16.3	16.3	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1763539	1825269	1677337	1665343	
8		Particulate Matter (PM)	50	mg/Nm ³	33.4	42.0	38.5	46.8	USEPA M-5
9		Average			37.7		42.7		
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	410	427	424	398	Measured by Portable Combustion Analyser
11		Average			418.5		411.0		
12		Carbon Monoxide as CO	-	mg/Nm ³	13	10	14	15	
13		Average			11.5		14.5		
14		Mercury as Hg	0.03	mg/Nm3	0.006	0.008	0.007	0.005	USEPA M-29
15		Average			0.007		0.006		

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down



ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/09740/CPP3			
					Issue Date:	2025-08-05			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW									
Analysis starting date :- 2025-07-09					Analysis Completion date :- 2025-07-30				
Test Required :- PM, NO _x , CO and Hg:									
TEST RESULTS									
1200 MW Power Plant					Unit-3		Unit-4		Method
S No.	Location	Parameter	Limits	Units	2025-07-07	2025-07-24	2025-07-07	2025-07-24	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	128	127	134	132	-
5		Stack Pressure	-	mmHg	721	721	721	721	-
6		Velocity	-	m/s	16.2	16.6	17.8	17.4	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1665199	1710581	1802690	1770882	
8		Particulate Matter (PM)	50	mg/Nm ³	42.6	34.3	38.6	40.6	USEPA M-5
9		Average			38.5		39.6		
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	414	383	437	406	Measured by Portable Combustion Analyser
11		Average			398.5		421.5		
12		Carbon Monoxide as CO	-	mg/Nm ³	53	35	14	13	
13		Average			44.0		13.5		
14		Mercury as Hg	0.03	mg/Nm ³	0.006	0.007	0.004	0.007	USEPA M-29
15		Average			0.007		0.006		

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down



ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:		VLL/VLS/25-26/11867/CPP3		
					Issue Date:		2025-09-04		
					P.O No:		8500005780		
					P.O Date:		2022-06-29		
Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW									
Analysis starting date :- 2025-08-11					Analysis Completion date :- 2025-09-03				
Test Required :- PM, NO _x , CO and Hg;									
TEST RESULTS									
1200 MW Power Plant					Unit-1		Unit-2		Method
S No.	Location	Parameter	Limits	Units	2025-08-08	2025-08-28	2025-08-08	2025-08-28	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	132	130	128	129	-
5		Stack Pressure	-	mmHg	724	725	724	724	-
6		Velocity	-	m/s	14.2	14.8	14.6	15.1	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1451216	1522141	1506979	1554711	
8		Particulate Matter (PM)	50	mg/Nm ³	38.6	22.5	15.9	29.7	USEPA M-5
9		Average			30.6		22.8		
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	437	392	383	418	Measured by Portable Combustion Analyser
11		Average			414.5		400.5		
12		Carbon Monoxide as CO	-	mg/Nm ³	24	54	38	33	
13		Average			39.0		35.5		
14		Mercury as Hg	0.03	mg/Nm ³	0.007	0.005	0.005	0.006	USEPA M-29
15		Average			0.006		0.006		

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down



Dr. Subba Reddy Mallampati
Manager - Environment

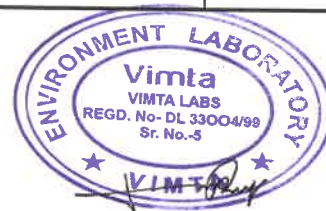
ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)						Report No:		VLL/VLS/25-26/11867/ CPP3	
						Issue Date:		2025-09-04	
						P.O No:		8500005780	
						P.O Date:		2022-06-29	
Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW									
Analysis starting date :- 2025-08-11					Analysis Completion date :- 2025-09-03				
Test Required :- PM, NO _x , CO and Hg:									
TEST RESULTS									
1200 MW Power Plant					Unit-3		Unit-4		Method
S No.	Location	Parameter	Limits	Units	2025-08-08	2025-08-28	2025-08-08	2025-08-28	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	146	130	136	131	-
5		Stack Pressure	-	mmHg	725	724	726	723	-
6		Velocity	-	m/s	15.2	14.8	15.4	15.3	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1503584	1520041	1562767	1565340	
8		Particulate Matter (PM)	50	mg/Nm ³	21.4	44.9	18.5	31.2	USEPA M-5
9		Average			33.2		24.9		
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	437	396	418	422	Measured by Portable Combustion Analyser
11		Average			416.5		420.0		
12		Carbon Monoxide as CO	-	mg/Nm ³	160	24	21	41	
13		Average			92.0		31.0		
14		Mercury as Hg	0.03	mg/Nm ³	0.004	0.007	0.005	0.006	USEPA M-29
15		Average			0.006		0.006		

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND – Not Deducted

*USD – Unit Under Shut Down



Dr. Subba Reddy Mallampati
Manager - Environment

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

Report No: VLL/VLS/25-26/14073/CPP3

Issue Date: 2025-10-04

P.O No: 8500005780

P.O Date: 2022-06-29

Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW

Analysis starting date :- 2025-09-13

Analysis Completion date :- 2025-10-03

Test Required :- PM, NO_x, CO and Hg;**TEST RESULTS**

1200 MW Power Plant					Unit-1		Unit-2		Method
S No.	Location	Parameter	Limits	Units	2025-09-15	2025-09-27	2025-09-12	2025-09-27	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	126	120	125	121	-
5		Stack Pressure	-	mmHg	725	725	727	725	-
6		Velocity	-	m/s	15.6	14.7	16.3	16.7	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1620503	1550326	1702155	1756784	
8		Particulate Matter (PM)	50	mg/Nm ³	38.5	30.1	43.1	30.9	
9		Average			34.3		37.0		
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	426	408	418	436	Measured by Portable Combustion Analyser
11		Average			417.0		427.0		
12		Carbon Monoxide as CO	-	mg/Nm ³	5	3	11	1	
13		Average			4.0		6.0		
14		Mercury as Hg	0.03	mg/Nm3	0.006	0.005	0.004	0.005	USEPA M-29
15		Average			0.006		0.005		
*PM and Nox values are corrected to 6% O ₂ values									

*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down



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

Report No: VLL/VLS/25-26/14073/CPP3

Issue Date: 2025-10-04

P.O No: 8500005780

P.O Date: 2022-06-29

Sample Particular:- STACK EMISSION MONITORING AT POWER PLANT 1200 MW

Analysis starting date :- 2025-09-13

Analysis Completion date :- 2025-10-03

Test Required :- PM, NO_x, CO and Hg;**TEST RESULTS**

1200 MW Power Plant					Unit-3		Unit-4		Method
S No.	Location	Parameter	Limits	Units	2025-09-12	2025-09-27	2025-09-12	2025-09-27	
1	POWER PLANT	Height of the stack	-	m	275	275	275	275	-
2		Dimensions at Sampling Point	-	m	4.5*9	4.5*9	4.5*9	4.5*9	-
3		Surface Area	-	m ²	40.5	40.5	40.5	40.5	-
4		Stack Temperature	-	°C	120	118	118	123	-
5		Stack Pressure	-	mmHg	728	726	728	726	-
6		Velocity	-	m/s	14.8	15.3	14.2	15.7	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1567331	1624095	1511483	1645513	
8		Particulate Matter (PM)	50	mg/Nm ³	23.2	39.5	38.1	27.4	USEPA M-5
9		Average			31.4		32.8		
10		Oxides of Nitrogen NO _x as NO ₂	450	mg/Nm ³	285	428	428	413	Measured by Portable Combustion Analyser
11		Average			356.5		420.5		
12		Carbon Monoxide as CO	-	mg/Nm ³	389	13	6	3	
13		Average			201.0		4.5		
14		Mercury as Hg	0.03	mg/Nm ³	0.006	0.004	0.004	0.007	USEPA M-29
15		Average			0.005		0.006		
*PM and No _x values are corrected to 4% O ₂ values									

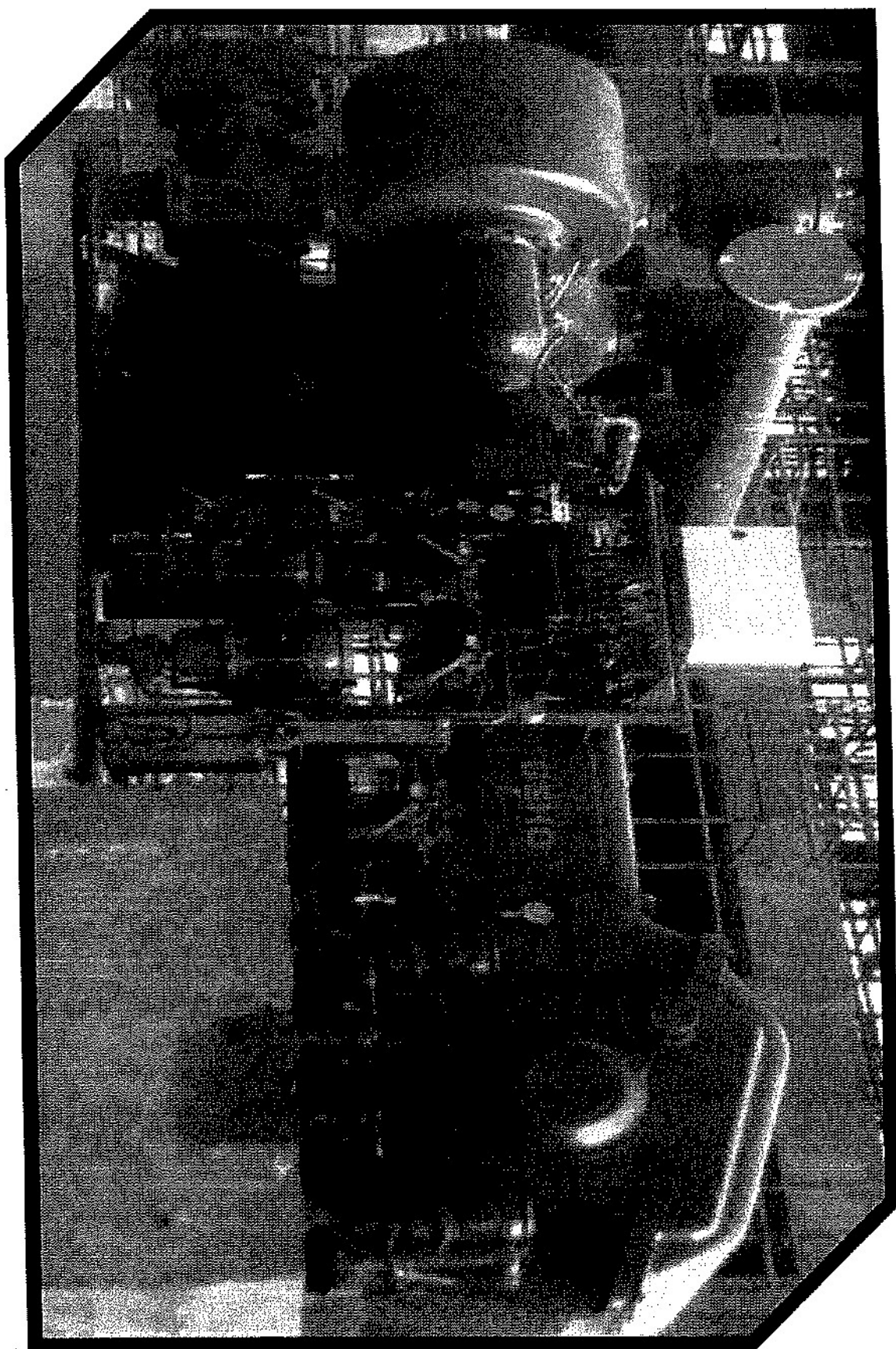
*PM and Nox values are corrected to 6% O₂ values.

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

Dr. Subba Reddy Mallampati
Manager Environment



HIGH CONCENTRATION SLURRY DISPOSAL SYSTEM – 1200 MW PP

RAINWATER HARVESTING SYSTEM – 1200 MW



Vimta Labs Limited

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**ISSUED TO:**

**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 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

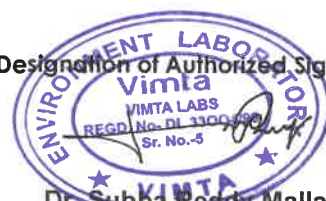
Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
1	pH value	-	6.5-8.5 (NR)	6.78	7.12	6.97	7.24
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	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 ₃	mg/l	200(600)	97	143	205	258
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	1.9	2.1	3.2	2.6
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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
Issued Date : 2025-05-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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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	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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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**

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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	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)	Pesticides						
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 23rd 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	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)	Radioactive						
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 23rd 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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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 ₃	mg/l	200(600)	211	231	114	196
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	1.7	1.5	1.1	2.3
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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)
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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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)
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)	Pesticides						
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 23rd 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)	Radioactive						
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 23rd 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 : 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 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	-	7.28	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 ₃	mg/l	45	85	57	74
10	Total Alkalinity as CaCO ₃	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 ₄	mg/l	0.03	0.06	0.02	0.05
16	Sulphates as SO ₄	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 ₃	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 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	0.156	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 23rd 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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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

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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 ₃	mg/l	62	72	70	72	77
10	Total Alkalinity as CaCO ₃	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 ₄	mg/l	0.02	0.03	0.02	0.04	0.03
16	Sulphates as SO ₄	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 ₃	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 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	0.097	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 23rd 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**

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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 ₃	mg/l	200(600)	263	167	300	208
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	3.4	1.9	5.6	2.3
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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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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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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:**

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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 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)	Pesticides						
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 23rd 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

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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)
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)	Radioactive						
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 23rd 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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REGD. No- DL 33004/99
Sr. No.-11
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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 ₃	mg/l	200(600)	205	85	109	210
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	1.8	1.2	1.4	1.1
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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/3004/99
Sr. No. 1
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/25-26/04458/001
Issued Date : 2025-06-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

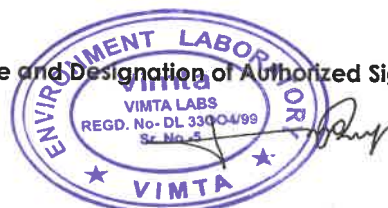
Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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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**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

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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)	Pesticides						
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 23rd 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 : 2025-05-12 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)	Radioactive						
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 23rd 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
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P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS	:	SURFACE WATER SAMPLE (BALCO PLANT)
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 ₃	mg/l	37	55	46	86	86
10	Total Alkalinity as CaCO ₃	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 ₄	mg/l	0.01	0.05	0.03	0.08	0.09
16	Sulphates as SO ₄	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 ₃	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 ⁺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	0.084	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 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Signature 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 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 ₃	mg/l	38	106	44	54
10	Total Alkalinity as CaCO ₃	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 ₄	mg/l	0.02	0.08	0.03	0.07
16	Sulphates as SO ₄	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 ₃	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 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	0.076	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 23rd 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
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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 ₃	mg/l	200(600)	167	103	145	160
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	2.5	1.6	1.8	2.4
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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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REGD. No. DL 3100456
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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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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

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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)	Pesticides						
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 23rd 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 : 2025-06-10 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)	Radioactive						
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 23rd 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)

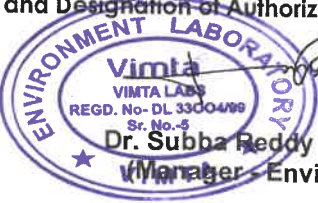
Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

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 ₃	mg/l	200(600)	225	148	220	175
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	2.9	1.7	3.2	2.1
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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 : 2025-06-10 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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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 : 2025-06-10 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)	Pesticides						
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 23rd 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 : 2025-06-10 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)
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)	Radioactive						
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 23rd 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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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 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	-	7.23	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 ₃	mg/l	44	87	63	74
10	Total Alkalinity as CaCO ₃	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 ₄	mg/l	0.03	0.06	0.02	0.04
16	Sulphates as SO ₄	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 ₃	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 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	0.065	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 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



Dr. Subha Reddy Mallampati
(Manager – Environment)

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Vimta Labs Limited

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Driven by Quality. Inspired by Science.

ISSUED TO:

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

Report Number : VLL/VLS/25-26/06982/002
Issued Date : 2025-07-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS

SURFACE WATER SAMPLE (BALCO PLANT)

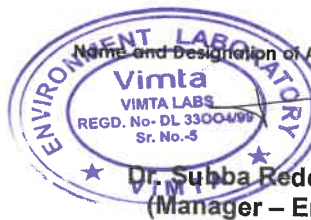
Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-24
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- 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 ₃	mg/l	37	55	46	86	80
10	Total Alkalinity as CaCO ₃	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 ₄	mg/l	0.02	0.06	0.04	0.07	0.08
16	Sulphates as SO ₄	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 ₃	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 ⁺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	0.087	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 23rd 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 ₃	mg/l	200(600)	216	133	214	159
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	2.4	1.6	2.7	1.8
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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

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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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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

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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)	Pesticides						
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 23rd 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**

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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)
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)	Radioactive						
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 23rd 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

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P.O. No. : 8500005780
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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 ₃	mg/l	200(600)	152	89	133	143
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	2.2	1.4	1.9	2.1
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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
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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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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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P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

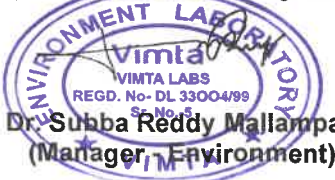
Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

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)	Pesticides						
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 23rd 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**

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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)	Radioactive						
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 23rd 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

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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 ₃	mg/l	37	78	53	64
10	Total Alkalinity as CaCO ₃	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 ₄	mg/l	0.02	0.04	0.03	0.02
16	Sulphates as SO ₄	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 ₃	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 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	0.057	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 23rd 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 ₃	mg/l	31	47	38	74	69
10	Total Alkalinity as CaCO ₃	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 ₄	mg/l	0.03	0.04	0.05	0.06	0.05
16	Sulphates as SO ₄	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 ₃	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 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	0.063	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 23rd 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
(Manager - Environment)
VIMTA

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Driven by Quality. Inspired by Science.

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

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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 ₃	mg/l	200(600)	106	174	205	183
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	1.8	2.3	3.7	1.9
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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 33004/99
Sr. No.-5
Dr. Subba Reddy Mallampati
(Manager Environment)

Vimta Labs Limited

Registered Office

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Driven by Quality. Inspired by Science.

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

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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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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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 Medchal-Malkajgiri, Hyderabad-500 101, Telangana, India. T : +91 40 6740 4040 E : mdoffice@vimta.com URL : www.vimta.com

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

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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)	Pesticides						
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 23rd 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

142, IDA Phase II, Cherlapally

Hyderabad-500 051, Telangana, India

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Driven by Quality. Inspired by Science.

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

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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)
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)	Radioactive						
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 23rd 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)



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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

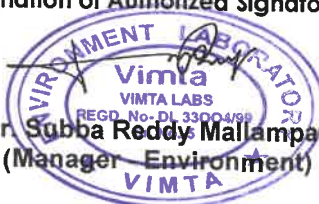
Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
1	pH value	-	6.5-8.5 (NR)	7.36	6.86	6.85	6.84
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	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 ₃	mg/l	200(600)	162	102	158	164
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	5.6	1.2	2.3	3.5
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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 : 2025-08-13 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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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
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REGD. No. DL 3304/2023
Dr. Subba Reddy Mallampati
(Manager - Environment)
VIMTA

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ISSUED TO:

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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)	Pesticides						
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 23rd 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 : 2025-08-13 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)	Radioactive						
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 23rd 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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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	µS/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 CaCO ₃	mg/l	36	70	48	68
10	Total Alkalinity as 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 PO ₄	mg/l	0.04	0.05	0.03	0.06
16	Sulphates as 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 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 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 23rd 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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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 CaCO_3	mg/l	44	55	50	66	57
10	Total Alkalinity as 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 PO_4	mg/l	0.04	0.08	0.03	0.06	0.05
16	Sulphates as 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 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 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 23rd 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
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Registered Office

142, IDA Phase II, Cherlapally

Hyderabad-500 051, Telangana, India

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Driven by Quality. Inspired by Science.

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 ₃	mg/l	200(600)	128	145	221	193
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	2.1	1.7	2.9	1.7
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
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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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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

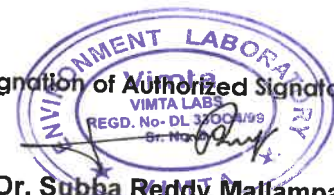
Method of Testing: As per APHA 23rd edition and IS: 3025

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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Chhattisgarh

Report Number : VLL/VLS/25-26/14073/001
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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)	Pesticides						
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 23rd 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

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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.

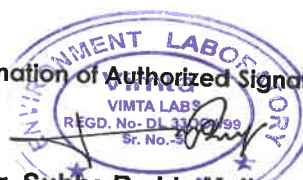
TEST REPORT

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)	Radioactive						
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 23rd 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
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Chhattisgarh**

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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 ₃	mg/l	200(600)	186	130	190	180
8	Total Alkalinity as CaCO ₃	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 ₄	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 ₃	mg/l	45(NR)	3.6	1.4	2.8	1.7
17	Phenolic Compounds as C ₆ H ₅ 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 23rd 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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(Manager - Environment)

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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 ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	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 23rd 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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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)	Pesticides						
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 23rd 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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(Manager - Environment)

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Test Required : Water Analysis as per IS 10500 : 2012

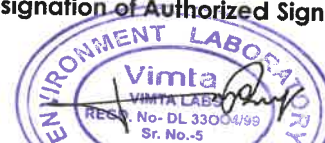
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TEST REPORT

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)	Radioactive						
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 23rd 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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(Manager - Environment)

Vimta Labs Limited

Registered Office

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2022-06-29

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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 ₃	mg/l	45	82	64	82
10	Total Alkalinity as CaCO ₃	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 ₄	mg/l	0.03	0.04	0.04	0.05
16	Sulphates as SO ₄	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 ₃	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 ⁺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	0.037	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 23rd 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)

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Driven by Quality. Inspired by Science.

ISSUED TO:

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

Report Number : VLL/VLS/25-26/14073/002
Issued Date : 2025-10-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

Page 1 of 1

SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-09-15 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 ₃	mg/l	38	50	49	55	57
10	Total Alkalinity as CaCO ₃	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 ₄	mg/l	0.03	0.06	0.02	0.05	0.03
16	Sulphates as SO ₄	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 ₃	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 ⁺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	0.121	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 23rd 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				Report Number: VLL/VLS/25-26/02532/006		
M/s. Bharat Aluminium Company Limited				Issue Date: 2025-05-05		
KORBA (C.G)				P.O. No: 8500005780		
				P.O. Date: 2022-06-29		
AMBIENT NOISE MONITORING AT CPP - 3 (1200 MW)						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-04-22	Norms in dB(Night)	2025-04-22
				6:00 to 22.00		22.00 to 6.00
1	Maintenance Office Room no-1	dB	75	52.1	70	47.4
2	Maintenance Office Room no-2	dB	75	52.8	70	49.4
3	Central Control room-1200 MW	dB	75	61.6	70	59.3
4	Meeting room near Central Control room-1200 MW	dB	75	65.5	70	63.7
5	Cooling Tower (North)	dB	75	70.1	70	66.5
6	Cooling Tower (South)	dB	75	65.8	70	60.7



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ISSUED TO M/s. Bharat Aluminium Company Limited KORBA (C.G)				Report Number: VLL/VLS/25-26/04458/006 Issue Date: 2025-06-04 P.O. No: 8500005780 P.O. Date: 2022-06-29		
AMBIENT NOISE MONITORING AT CPP - 3 (1200 MW)						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-05-21	Norms in dB(Night)	2025-05-21
				6:00 to 22.00		22.00 to 6.00
1	Maintenance Office Room no-1	dB	75	51.8	70	46.7
2	Maintenance Office Room no-2	dB	75	53.5	70	49.2
3	Central Control room-1200 MW	dB	75	62.5	70	59.5
4	Meeting room near Central Control room-1200 MW	dB	75	65.7	70	64.5
5	Cooling Tower (North)	dB	75	69.3	70	66.7
6	Cooling Tower (South)	dB	75	66.3	70	60.9



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ISSUED TO						
M/s. Bharat Aluminium Company Limited				Report Number:	VLL/VLS/25-26/06982/006	
KORBA (C.G)				Issue Date:	2025-07-05	
				P.O. No:	8500005780	
				P.O. Date:	2022-06-29	
AMBIENT NOISE MONITORING AT CPP - 3 (1200 MW)						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-06-11	Norms in dB(Night)	2025-06-11
				6:00 to 22.00		22.00 to 6.00
1	Maintenance Office Room no-1	dB	75	48.6	70	44.3
2	Maintenance Office Room no-2	dB	75	54.3	70	48.8
3	Central Control room-1200 MW	dB	75	60.9	70	60.0
4	Meeting room near Central Control room-1200 MW	dB	75	63.6	70	62.5
5	Cooling Tower (North)	dB	75	68.1	70	64.1
6	Cooling Tower (South)	dB	75	67.0	70	61.0



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ISSUED TO				Report Number: VLL/VLS/25-26/09740/006		
M/s. Bharat Aluminium Company Limited				Issue Date: 2025-08-05		
KORBA (C.G)				P.O. No: 8500005780		
				P.O. Date: 2022-06-29		
AMBIENT NOISE MONITORING AT CPP - 3 (1200 MW)						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-07-10	Norms in dB(Night)	2025-07-10
				6:00 to 22.00		22.00 to 6.00
1	Maintenance Office Room no-1	dB	75	49.5	70	44.8
2	Maintenance Office Room no-2	dB	75	55.1	70	48.9
3	Central Control room-1200 MW	dB	75	61.4	70	60.2
4	Meeting room near Central Control room-1200 MW	dB	75	64.4	70	62.9
5	Cooling Tower (North)	dB	75	68.5	70	64.2
6	Cooling Tower (South)	dB	75	66.8	70	61.7

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ISSUED TO						
M/s. Bharat Aluminium Company Limited				Report Number:		VLL/VLS/25-26/11867/006
KORBA (C.G)				Issue Date:		2025-09-04
				P.O. No:		8500005780
				P.O. Date:		2022-06-29
AMBIENT NOISE MONITORING AT CPP - 3 (1200 MW)						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-08-18	Norms in dB(Night)	2025-08-18
				6:00 to 22.00		22.00 to 6.00
1	Maintenance Office Room no-1	dB	75	48.7	70	44.5
2	Maintenance Office Room no-2	dB	75	57.7	70	48.6
3	Central Control room-1200 MW	dB	75	61.5	70	59.9
4	Meeting room near Central Control room-1200 MW	dB	75	63.2	70	61.6
5	Cooling Tower (North)	dB	75	68.4	70	63.6
6	Cooling Tower (South)	dB	75	67.4	70	61.3


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ISSUED TO**M/s. Bharat Aluminium Company Limited****KORBA (C.G)****Report Number: VLL/VLS/25-26/14073/006****Issue Date: 2025-10-04****P.O. No: 8500005780****P.O. Date: 2022-06-29****AMBIENT NOISE MONITORING AT CPP - 3 (1200 MW)****Tests required: Sound Level****SAMPLES COLLECTED BY VIMTA LABS LTD****LAB REF.: EC****TEST RESULTS**

S. No	Location	Unit	Norms in dB(Day)	2025-09-11	Norms in dB(Night)	2025-09-11
				6:00 to 22.00		22.00 to 6.00
1	Maintenance Office Room no-1	dB	75	48.9	70	44.6
2	Maintenance Office Room no-2	dB	75	58.6	70	48.5
3	Central Control room-1200 MW	dB	75	63.9	70	58.1
4	Meeting room near Central Control room-1200 MW	dB	75	66.6	70	62.8
5	Cooling Tower (North)	dB	75	68.3	70	63.4
6	Cooling Tower (South)	dB	75	68.1	70	60.9


Dr. Subba Reddy Mallampati
Manager - Environment

Sensitivity: Internal (C3)

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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), 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			2025-04-03	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 ₂)	µg/m ³	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 _x)	µg/m ³	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 (PM10)	µg/m ³	100	59.3	61.8	63.1	65.3	58.4	60.7	62.5	64.8	56.9	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	23.6	27.3	19.0	21.9	17.6	29.1	26.0	24.7	20.9	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	3.7	3.1	4.1	4.6	5.4	5.2	2.0	2.2	2.6	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	384	326	271	423	368	324	419	377	392	NDIR Spectroscopy Method
Ozone	µg/m ³	100	7.8	9.4	8.0	9.3	6.4	8.6	7.3	5.6	6.5	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, 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 ₂), Nitrogen Dioxide (NO _x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH3), Benzene (C ₆ H ₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	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 ³	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 ³	60	24.2	20.8	18.8	22.5	27.2	18.5	21.1	24.0	23.6	Gravimetric Method	
Ammonia (NH ₃)	µg/m ³	400	4.9	3.8	5.1	4.5	5.9	3.3	3.4	2.6	2.9	Indophenol Blue Method	
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	363	482	327	321	378	406	385	319	354	NDIR Spectroscopy Method	
Ozone	µg/m ³	100	8.2	10.5	9.6	7.9	6.5	8.9	6.6	8.1	6.1	UV photometric method	



ISSUED TO: M/s. Bharat Aluminium Company Limited, 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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	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 (PM ₁₀)	µg/m ³	100	63.7	59.3	56.6	52.8	61.4	57.5	65.8	60.1	54.6	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	22.8	19.4	17.0	15.7	20.6	17.4	24.1	21.9	18.5	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.6	2.8	3.4	3.1	2.1	2.4	2.7	2.0	1.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	317	269	384	412	363	402	286	328	287	NDIR Spectroscopy Method
Ozone	µg/m ³	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: M/s. Bharat Aluminium Company Limited, 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 ₂), Nitrogen Dioxide (NO _x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH3), Benzene (C ₆ H ₆), 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 ₂)		µg/m ³	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 _x)		µg/m ³	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 ³	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 ³	60	26.5	21.9	24.4	25.5	22.2	20.6	24.7	22.2	25.5	Gravimetric Method
Ammonia (NH ₃)		µg/m ³	400	2.4	2.8	2.0	1.9	2.2	2.0	2.3	2.5	2.1	Indophenol Blue Method
Benzene (C ₆ H ₆)		µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	341	389	274	308	366	297	245	372	282	NDIR Spectroscopy Method
Ozone		µg/m ³	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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	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 ³	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 ³	60	20.5	26.1	23.1	27.9	23.3	25.3	27.0	20.5	24.6	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.0	2.7	1.8	1.3	1.9	2.5	2.1	1.7	2.4	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	349	314	375	283	251	388	296	272	337	NDIR Spectroscopy Method
Ozone	µg/m ³	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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	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 ³	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 ³	60	17.0	21.7	19.1	16.3	19.0	15.8	20.7	17.8	16.3	Gravimetric Method	
Ammonia (NH ₃)	µg/m ³	400	1.7	2.2	1.9	1.7	1.6	1.2	1.8	1.5	2.0	Indophenol Blue Method	
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	268	247	388	326	233	251	364	282	318	NDIR Spectroscopy Method	
Ozone	µg/m ³	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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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	80	19.0	20.4	19.0	17.9	18.3	16.2	24.1	18.5	Modified Jacob & Hochheiser Method
Particulate Matter (PM ₁₀)	µg/m ³	100	63.3	68.2	56.4	57.4	52.8	54.2	55.9	51.2	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	25.2	29.5	23.6	21.7	17.1	19.3	20.6	22.8	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	4.6	3.9	2.5	3.1	2.1	2.8	3.1	2.0	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	349	314	375	283	251	388	296	272	NDIR Spectroscopy Method
Ozone	µg/m ³	100	6.3	4.8	4.2	5.0	6.2	5.5	4.7	5.1	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	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 ³	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 ³	60	27.0	23.6	26.1	21.0	18.5	22.7	20.5	21.2	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	4.3	3.1	2.5	2.0	2.5	2.6	3.7	2.9	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	361	264	326	382	247	271	358	342	NDIR Spectroscopy Method
Ozone	µg/m ³	100	5.6	5.2	7.1	4.6	3.5	6.2	5.0	4.5	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	80	13.2	14.5	16.6	12.9	17.6	19.9	21.6	16.2	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	68.8	53.2	55.2	61.5	52.6	53.5	53.1	54.8	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	26.2	20.5	24.1	21.4	16.2	18.2	19.4	17.4	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.6	2.8	1.7	2.4	1.8	2.3	2.6	1.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	276	321	347	263	315	307	296	229	NDIR Spectroscopy Method
Ozone	µg/m ³	100	4.3	3.9	3.3	5.1	6.2	4.9	4.4	3.2	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

AAQ Location : COAL GATE

Parameters	Units	Limits											
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 ₂)	µg/m ³	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 _x)	µg/m ³	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 ³	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 ³	60	21.2	17.7	26.9	21.6	24.8	18.3	22.7	16.4	13.2		Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.2	2.6	2.4	3.9	1.4	1.5	1.1	1.7	2.0		Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	291	377	405	258	384	358	264	248	396		NDIR Spectroscopy Method
Ozone	µg/m ³	100	6.0	5.7	11.1	10.7	2.5	5.2	6.2	6.5	4.0		UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, 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

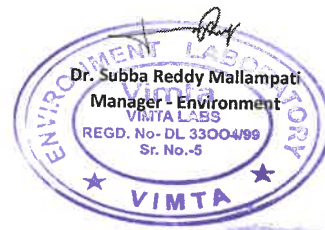
Analysis starting date :- 2025-07-05

Analysis Completion date :- 2025-08-04

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

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 ₂)	µg/m ³	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 _x)	µg/m ³	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 ³	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 ³	60	11.5	14.4	27.6	23.9	18.3	20.7	22.8	17.4	19.6	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.8	3.7	2.8	3.0	2.2	1.8	1.5	2.1	2.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	401	349	367	393	431	285	352	398	269	NDIR Spectroscopy Method
Ozone	µg/m ³	100	5.4	6.6	8.1	7.9	5.1	6.0	7.2	8.1	7.1	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, 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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	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 ³	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 ³	60	12.2	15.7	19.3	13.9	22.7	20.6	18.4	14.9	17.4	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	1.5	1.7	1.3	2.0	0.9	1.3	1.3	1.8	2.1	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	293	385	324	309	297	352	339	381	276	NDIR Spectroscopy Method
Ozone	µg/m ³	100	6.1	5.2	4.3	8.3	4.6	5.1	4.8	5.7	4.4	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, 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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	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 ³	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 ³	60	22.0	16.9	22.0	25.9	21.0	21.4	19.0	21.9	24.1	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	1.3	1.7	1.2	2.4	2.2	1.0	1.7	2.3	1.9	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	248	372	294	253	277	256	315	283	251	NDIR Spectroscopy Method
Ozone	µg/m ³	100	5.8	4.6	6.4	6.4	6.1	4.8	2.4	5.6	3.1	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, 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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	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 ₁₀)	µg/m ³	100	56.8	54.2	64.8	57.4	60.3	58.7	57.1	55.6	59.3	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	20.7	18.7	23.2	20.6	23.6	21.9	22.6	21.0	23.2	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	1.8	2.0	1.4	2.9	2.3	2.1	1.5	2.0	1.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	358	271	238	296	354	247	270	238	314	NDIR Spectroscopy Method
Ozone	µg/m ³	100	7.5	5.3	6.8	4.8	5.5	3.6	5.7	6.0	4.7	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, 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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	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 (PM ₁₀)	µg/m ³	100	47.6	55.8	56.2	63.2	50.2	49.1	46.3	58.2	61.4	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	17.3	22.7	25.4	27.2	20.9	18.4	18.6	22.0	23.5	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	1.5	2.4	1.9	1.8	1.7	1.5	1.3	1.0	1.4	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	2000	294	336	242	301	358	283	259	318	271	NDIR Spectroscopy Method
Ozone	µg/m ³	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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	80	16.3	15.5	16.4	14.2	19.7	17.6	20.2	18.5		
Particulate Matter (PM10)	µg/m ³	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 ³	60	20.1	22.7	16.1	17.2	18.5	16.4	23.1	19.8	Gravimetric Method	
Ammonia (NH ₃)	µg/m ³	400	3.5	2.3	1.2	2.3	2.6	3.3	3.7	3.2	Indophenol Blue Method	
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method	
Carbon Monoxide	µg/m ³	2000	317	348	249	402	448	361	325	374	NDIR Spectroscopy Method	
Ozone	µg/m ³	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)

ISSUED TO: M/s. Bharat Aluminium Company Limited, 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 (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), 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 ₂)	µg/m ³	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 _x)	µg/m ³	80	17.9	16.7	15.7	16.5	17.3	20.2	18.3	22.6	Modified Jacob & Hochheiser Method
Particulate Matter (PM ₁₀)	µg/m ³	100	59.2	54.0	69.3	57.7	54.1	51.8	62.4	56.3	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	20.1	16.7	24.3	21.1	18.6	16.6	22.5	18.6	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	3.4	2.6	2.4	1.9	3.7	2.8	3.0	2.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	416	268	396	408	342	326	271	359	NDIR Spectroscopy Method
Ozone	µg/m ³	100	4.8	5.8	4.2	6.3	7.6	6.3	4.8	6.8	UV photometric method



Sensitivity: Internal (C3)

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

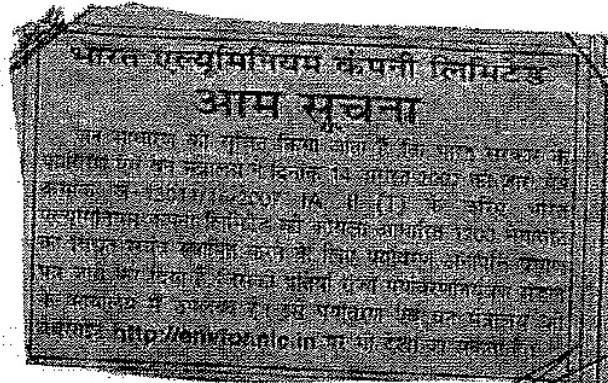
Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

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 ₂)	µg/m ³	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 _x)	µg/m ³	80	14.5	13.2	13.1	18.1	15.4	16.2	15.9	17.6	Modified Jacob & Hochheiser Method
Particulate Matter (PM ₁₀)	µg/m ³	100	51.2	54.8	49.4	57.1	46.7	53.9	50.2	48.5	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	16.4	18.7	14.8	21.1	14.2	17.6	15.6	13.6	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.3	2.0	1.7	2.6	2.2	3.1	2.4	3.4	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	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 ³	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 ³	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 ³	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 ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	241	362	284	395	418	296	385	369	NDIR Spectroscopy Method
Ozone	µg/m ³	100	4.3	3.9	5.4	4.8	5.3	4.8	2.6	4.0	UV photometric method

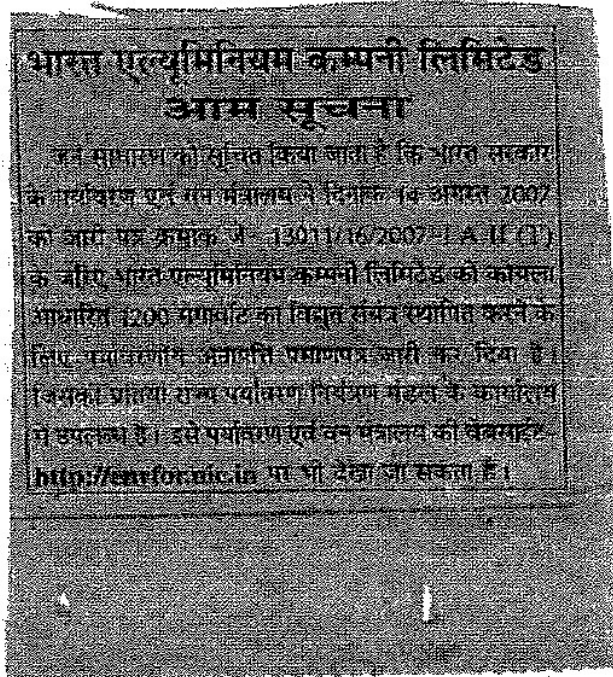


Sensitivity: Internal (C3)



हरि भूमि

दिनांक 18 अगस्त 2007



देशलंघु

दिनांक 18 अगस्त 2007



ULR NO: TC531225000000967F

Modern Test Center



TC-5312

Accredited To ISO/IEC 17025:2017 through NABL

Berhampur

Office Address:-
Gandhi Nagar 5th line Extn. East,
Berhampur-760001, Dist-Ganjam (Odisha),
Visit us: www.moderntestcenter.com

Lab Address:-
Neelanchal Nagar 3rd lane,
Berhampur-760010, Dist-Ganjam (Odisha),
Phone:-0680 240321-22
Mail:- moderntestcenter@gmail.com

Ref: -46045/MTC/LF/7.8/15/2025

DATE: 15/04/2025

TEST CERTIFICATE

Issued to: BALCO LTD.

Bharat Aluminium Company Limited
Korba, Chhattisgarh, Pin: 495684.

LOCATION: 540 MW

Customer Reference No. Nil Date: 13/03/2025

Date of Receipt: 24/03/2025

Date of Initiation of Test : 24/03/2025

Date of Completion of Test: 15/04/2025

TEST CERTIFICATE NO: 2113 35126

DATE: 15/04/2025

TEST METHOD USED: BARC/2008/E/023

PART A: PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER

- | | |
|---|--|
| a) Name of the Sample | : Coal Sample (540 MW) |
| b) Batch No./Lot No. and Date of manufacture/
Collection/Sampling (if any) | : Batch No. : Not Specified
3 kg |
| a) Quantity | : Not available |
| b) Brand Name (if any) | : Estimation of ^{232}Th , ^{238}U & ^{40}K |
| c) Parameters of the test suggested | : No Specific Observation |
| d) Any other information | |

PART B: SUPPLEMENTARY INFORMATIONS

- | | |
|---|---|
| a) Reference to Sampling plan (By the lab/Submitted by the party) | : Sample submitted by
Vimta Labs Limited, Hyderabad. |
| By Lab: i) Location | |
| ii) Date & time of collection | |
| iii) Name of lab representative (Wherever applicable) | |
| b) Supporting documents like graphs, tables,
Sketches for the measurements taken and
The results derived, if any to be attached | |
| c) Deviation from the test methods as
Prescribed in relevant ISS / Work Instructions, if any | : No deviation |
| d) Deviation from environmental condition, if any | : No deviation |

PART C: TEST RESULTS

Sl. No	Parameters testing	Result Obtained
1	Th-232	(41.207 ± 14.623) Bq.kg ⁻¹
2	U-238	(39.952 ± 18.326) Bq.kg ⁻¹
3	K-40	(82.231 ± 37.309) Bq.kg ⁻¹

PART D: REMARKS

- The results stated above relates to the sample tested only.
- This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
- The sample shall be kept for three months after the test and can be returned on request on payment of transport charges or shall be destroyed. Any customer complaint or by regulatory authority shall be entertained, if and only if the complaint is registered within one month from date of report.

Modern Test Center

Signature of the witness
Name: Rajendra Kumar Mishra
Designation: Chief Executive

End of Report

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

**ISSUED TO:**

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

Report Number : VLL/VLS/24-25/24919//001
Issue Date : 2025-04-03
Your Ref : 8500005780
P.O. Date : 2022.06.29

Page 1 of 1

Sample Name:	Coal Sample		
Sample Received Date:	2025-03-22	Sample Registration Date:	2025-03-22
Analysis Starting Date:	2025-03-24	Analysis completion Date:	2025-04-03
Received Quantity:	2 kg x 1no.		
Method of Testing	As per ASTM D 6349 , Instrument Used: ICP-OES and SOP No. 26/22		
Test Required:	Manganese as Mn, Cadmium as Cd , Lead as Pb, Mercury as Hg , Nickel as Ni , Arsenic as As, Cobalt as Co , Chromium as Cr, and Carbon Content;		
Location Details:	Coal Sample 540 MW		

TEST REPORTS

Metals			
1	Manganese as Mn	mg/kg	41.0
2	Cadmium as Cd	mg/kg	<0.1
3	Lead as Pb	mg/kg	3.5
4	Mercury as Hg	mg/kg	<0.1
5	Nickel as Ni	mg/kg	14.5
6	Arsenic as As	mg/kg	<0.1
7	Cobalt as Co	mg/kg	25.0
8	Chromium as Cr	mg/kg	11.23
9	Carbon Content	%	64.56

Results relate only to the sample tested

Remarks: Sample tested as received.

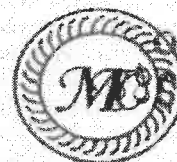
-END OF THE TEST REPORT-


Dr. Subba Reddy Mallampati
Manager – Environment



ULR NO: TC531225000000968F

Modern Test Center



Original

15

TC-5312

Accredited To ISO/IEC 17025:2017 through NABL

Berhampur

Office Address:-

Gandhi Nagar 8th line Extn. East,
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Visit us: www.moderntestcenter.com

Lab Address:-

Noulanchal Nagar 3rd lane,
Berhampur-760010, Dist-Ganjam (Odisha),
Phone:-0680 2403321-22
Mail:- moderntestcenter@gmail.com

Ref: -46046/MTC/LF/7.8/15/2025

DATE: 15/04/2025

TEST CERTIFICATE

Issued to: BALCO LTD.

Bharat Aluminium Company Limited
Korba, Chhattisgarh, Pin: 495684.

LOCATION: 1200 MW

Customer Reference No. Nil Date: 13/03/2025

Date of Receipt: 24/03/2025

Date of Initiation of Test: 24/03/2025

Date of Completion of Test: 15/04/2025

TEST CERTIFICATE NO: 2113 35127

DATE: 15/04/2025

TEST METHOD USED: BARC/2008/E/023

PART A: PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER

- Name of the Sample
- Batch No./Lot No. and Date of manufacture/
Collection/Sampling (if any)
- Quantity
- Brand Name (if any)
- Parameters of the test suggested
- Any other information

Coal Sample (1200 MW)

Batch No.: Not Specified

3 kg

Not available

Estimation of ^{232}Th , ^{238}U & ^{40}K

No Specific Observation

PART B: SUPPLEMENTARY INFORMATIONS

- Reference to Sampling plan (By the lab/Submitted by the party)

By Lab: i) Location

ii) Date & time of collection

iii) Name of lab representative (Wherever applicable)

- Supporting documents like graphs, tables,
Sketches for the measurements taken and
The results derived, if any to be attached

- Deviation from the test methods as

Prescribed in relevant ISS / Work Instructions, if any

- Deviation from environmental condition, if any

Sample submitted by
Vimta Labs Limited, Hyderabad

No deviation

No deviation

PART C: TEST RESULTS

Sl. No	Parameters testing	Result Obtained
1	Th-232	(121.870 ± 13.844) Bq.kg ⁻¹
2	U-238	BDL
3	K-40	(117.647 ± 28.463) Bq.kg ⁻¹

N.B:- BDL is below detection limit

The Minimum Detectable Limit for U-238 is 28.043 Bq.kg⁻¹

PART D: REMARKS

- The results stated above relates to the sample tested only.
- This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
- The sample shall be kept for three months after the test and can be returned on request on payment of transport charges or shall be destroyed. Any customer complaint or by regulatory authority shall be entertained, if and only if the complaint is registered within one month from date of report.

Modern Test Center

Signature of CEO with Seal
Name: Rajendra Kumar Mishra
Designation: Chief Executive

End of Report

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

ISSUED TO:

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

Report Number : VLL/VLS/24-25/24919//002
Issue Date : 2025-04-03
Your Ref : 8500005780
P.O. Date : 2022.06.29

Page 1 of 1

Sample Name:	Coal Sample		
Sample Received Date:	2025-03-22	Sample Registration Date:	2025-03-22
Analysis Starting Date:	2025-03-24	Analysis completion Date:	2025-04-03
Received Quantity:	2 kg x 1no.		
Method of Testing	As per ASTM D 6349 , Instrument Used: ICP-OES and SOP No. 26/22		
Test Required:	Manganese as Mn, Cadmium as Cd , Lead as Pb, Mercury as Hg , Nickel as Ni , Arsenic as As, Cobalt as Co , Chromium as Cr, and Carbon Content		
Location Details:	Coal Sample 1200 MW		

TEST REPORTS

SL.No.	Parameters	Units of Measurement	Result
Metals			
1	Manganese as Mn	mg/kg	26.5
2	Cadmium as Cd	mg/kg	<0.1
3	Lead as Pb	mg/kg	1.2
4	Mercury as Hg	mg/kg	<0.1
5	Nickel as Ni	mg/kg	5.9
6	Arsenic as As	mg/kg	<0.1
7	Cobalt as Co	mg/kg	16.2
8	Chromium as Cr	mg/kg	24.14
9	Carbon Content	%	43.03

Results relate only to the sample tested

Remarks: Sample tested as received.**-END OF THE TEST REPORT-**

Dr. Subba Reddy Mallampati
Manager – Environment



ULR NO: TC531225000000969F

Modern Test Center



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16

TC-5312

Accredited To ISO/IEC 17025:2017 through NABL

Berhampur

Office Address:-

Gandhi Nagar 5th Line Extn. East,
Berhampur-760001, Dist-Ganjam (Odisha),
Visit us: www.moderntestcenter.com

Lab Address:-

Neelanchal Nagar 3rd lane,
Berhampur-760010, Dist-Ganjam (Odisha),
Phone: 0680 2403321-22
Mail: moderntestcenter@gmail.com

Ref: -46047/MTC/LF/7.8/15/2025

DATE: 15/04/2025

TEST CERTIFICATE

Issued to: BALCO LTD.

Bharat Aluminium Company Limited
Korba, Chhattisgarh, Pin: 495684.

LOCATION: 540 MW

Customer Reference No. Nil Date: 13/03/2025

Date of Receipt: 24/03/2025

Date of Initiation of Test: 24/03/2025

Date of Completion of Test: 15/04/2025

TEST CERTIFICATE NO: 2113 3S128

DATE: 15/04/2025

TEST METHOD USED: BARC/2008/E/023

PART A: PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER

- Name of the Sample
- Batch No./Lot No. and Date of manufacture/
Collection/Sampling (if any)
- Quantity
- Brand Name (if any)
- Parameters of the test suggested
- Any other information

Fly Ash Sample (540 MW)

Batch No.: Not Specified

3 kg

Not available

Estimation of ^{232}Th , ^{238}U & ^{40}K

No Specific Observation

PART B: SUPPLEMENTARY INFORMATIONS

- Reference to Sampling plan (By the lab/Submitted by the party)

Sample submitted by
Vimta Labs Limited, Hyderabad.

By Lab: i) Location

ii) Date & time of collection

iii) Name of lab representative (Wherever applicable)

- Supporting documents like graphs, tables,
Sketches for the measurements taken and
The results derived, if any to be attached

- Deviation from the test methods as

Prescribed in relevant ISS / Work Instructions, if any

No deviation

- Deviation from environmental condition, if any

No deviation

PART C: TEST RESULTS

Sl. No	Parameters testing	Result Obtained
1	Th-232	(106.263 ± 15.683) Bq.kg ⁻¹
2	U-238	(82.259 ± 19.008) Bq.kg ⁻¹
3	K-40	(129.477 ± 37.735) Bq.kg ⁻¹

PART D: REMARKS

- The results stated above relates to the sample tested only
- This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
- The sample shall be kept for three months after the test and can be returned on request on payment of transport charges or shall be destroyed. Any customer complaint or by regulatory authority may be entertained if and only if the complaint is registered within one month from date of report.

Modern Test Center

Signature of CE with Seal
Name: Rajendra Kumar Mishra
Designation: Chief Executive

End of Report

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

ISSUED TO:

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

Report Number : VLL/VLS/24-25/24919//003
Issue Date : 2025-04-03
Your Ref : 8500005780
P.O. Date : 2022.06.29

Page 1 of 1

Sample Name:	Fly ash Sample		
Sample Received Date:	2025-03-22	Sample Registration Date:	2025-03-22
Analysis Starting Date:	2025-03-24	Analysis completion Date:	2025-04-03
Received Quantity:	2kg x 1no		
Method of Testing	As per ASTM D 6349 and Instrument Used: ICP-OES		
Test Required:	Manganese as Mn, Cadmium as Cd, Lead as Pb, Mercury as Hg, Nickel as Ni, Arsenic as As, Cobalt as Co, and Chromium as Cr;		
Location Details:	Fly ash 540 MW		

TEST REPORTS

SL.No.	Parameters	Units of Measurement	Result
Metals			
1	Manganese as Mn	mg/kg	62.59
2	Cadmium as Cd	mg/kg	0.15
3	Lead as Pb	mg/kg	<0.10
4	Mercury as Hg	mg/kg	<0.10
5	Nickel as Ni	mg/kg	4.53
6	Arsenic as As	mg/kg	<0.10
7	Cobalt as Co	mg/kg	13.83
8	Chromium as Cr	mg/kg	6.32

Results relate only to the sample tested

Remarks: Sample tested as received.**-END OF THE TEST REPORT-**

Dr. Subba Reddy Mallampati
Manager – Environment



ULR NO: TC531225000000970F

Modern Test Center



TC-5312

Accredited To ISO/IEC 17025:2017 through NABL

Berhampur

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Lab Address:-

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Berhampur-760010, Dist-Ganjam (Odisha),
Phone:-0680 2403321-22
Mail:- moderntestcenter@gmail.com

Ref: -46048/MTC/LF/7.8/15/2025

DATE: 15/04/2025

TEST CERTIFICATE

Issued to: BALCO LTD.

Bharat Aluminium Company Limited
Korba, Chhattisgarh, Pin: 495684.

LOCATION: 1200 MW

Customer Reference No. Nil Date: 13/03/2025

Date of Receipt: 24/03/2025

Date of Initiation of Test : 24/03/2025

Date of Completion of Test: 15/04/2025

TEST CERTIFICATE NO: 2113 35129

DATE: 15/04/2025

TEST METHOD USED: BARC/2008/E/023

PART A: PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER

- Name of the Sample
- Batch No./Lot No. and Date of manufacture/
Collection/Sampling (if any)
- Quantity
- Brand Name (if any)
- Parameters of the test suggested
- Any other information

Fly Ash Sample (1200 MW)

Batch No.: Not Specified

3 kg

Not available

Estimation of ²³²Th, ²³⁸U & ⁴⁰K

No Specific Observation

PART B: SUPPLEMENTARY INFORMATIONS

- Reference to Sampling plan (By the lab/Submitted by the party)

Sample submitted by
Vimta Labs Limited, Hyderabad.

By Lab: i) Location

ii) Date & time of collection

iii) Name of lab representative (Wherever applicable)

- Supporting documents like graphs, tables,
Sketches for the measurements taken and
The results derived, if any to be attached

- Deviation from the test methods as

Prescribed in relevant ISS / Work Instructions, if any

- Deviation from environmental condition, if any

No deviation

No deviation

PART C: TEST RESULTS

Sl. No	Parameters testing	Result Obtained
1	Th-232	(182.916 ± 15.438) Bq.kg ⁻¹
2	U-238	(46.963 ± 16.768) Bq.kg ⁻¹
3	K-40	(109.180 ± 28.592) Bq.kg ⁻¹

PART D: REMARKS

- The results stated above relates to the sample tested only.
- This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
- The sample shall be kept for three months after the test and can be returned on request on payment of transport charges or shall be destroyed. Any customer complaint or by regulatory authority may be entertained if and only if the complaint is registered within one month from date of report.

Modern Test Center

Chief Executive

Signature of CE with Seal

Name: Rajendra Kumar Mishra

Designation: Chief Executive

End of Report

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

ISSUED TO:

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

Report Number: VLL/VLS/24-25/24919//004

Issue Date : 2025-04-03

Your Ref : 8500005780

P.O. Date : 2022.06.29

Page 1 of 1

Sample Name:	Fly ash Sample		
Sample Received Date:	2025-03-22	Sample Registration Date:	2025-03-22
Analysis Starting Date:	2025-03-24	Analysis completion Date:	2025-04-03
Received Quantity:	2kg x 1no.		
Method of Testing	As per ASTM D6349 and Instrument Used: ICP-OES		
Test Required:	Arsenic as As, Cadmium as Cd, Chromium as Cr, Cobalt as Co, Lead as Pb, Manganese as Mn, Mercury as Hg and Nickel as Ni		
Location Details:	Fly ash 1200 MW		

TEST REPORTS

SL.No.	Parameters	Units of Measurement	Result
Metals			
1	Manganese as Mn	mg/kg	37.16
2	Cadmium as Cd	mg/kg	0.15
3	Lead as Pb	mg/kg	2.12
4	Mercury as Hg	mg/kg	<0.10
5	Nickel as Ni	mg/kg	3.94
6	Arsenic as As	mg/kg	<0.10
7	Cobalt as Co	mg/kg	9.89
8	Chromium as Cr	mg/kg	8.75

Results relate only to the sample tested

Remarks: Sample tested as received.

-END OF THE TEST REPORT-

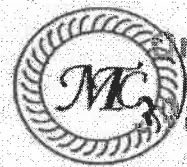


Dr. Subba Reddy Mallampati
Manager – Environment



ULR NO: TC531225000002100F

Modern Test Center



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Berhampur

Office Address:-

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Visit us: www.moderntestcenter.com

Lab Address:-

Noelanchal Nagar 3rd lane,
Berhampur-760010, Dist-Ganjam (Odisha),
Phone:-0680 2403321-22
Mail:- moderntestcenter@gmail.com

Ref: -47384/MTC/LF/7.8/15/2025

DATE: 11/08/2025

TEST CERTIFICATE

Issued to: BALCO LTD.

Bharat Aluminium Company Limited
Korba, Chhattisgarh, Pin: 495684.

LOCATION: 540 MW

Customer Reference No. Nil Date: 24/06/2025

Date of Receipt: 21/07/2025

Date of Initiation of Test : 21/07/2025

Date of Completion of Test: 11/08/2025

DATE: 11/08/2025

TEST CERTIFICATE NO: 2113 36399

TEST METHOD USED: BARC/2008/E/023

PART A: PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER

- | | |
|---|---|
| a) Name of the Sample | : Coal Sample (540 MW) |
| b) Batch No./Lot No. and Date of manufacture/
Collection/Sampling (if any) | : Batch No.: Not Specified |
| a) Quantity | : 3.450 Kg |
| b) Brand Name (if any) | : Not available |
| c) Parameters of the test suggested | : Estimation of ²³² Th, ²³⁸ U & ⁴⁰ K |
| d) Any other information | : No Specific Observation |

PART B: SUPPLEMENTARY INFORMATIONS

- | | |
|---|---|
| a) Reference to Sampling plan (By the lab/Submitted by the party) | : Sample submitted by
Vimta Labs Limited, Hyderabad. |
| By Lab: i) Location | : ----- |
| ii) Date & time of collection | : ----- |
| iii) Name of lab representative (Wherever applicable) | : ----- |
| b) Supporting documents like graphs, tables,
Sketches for the measurements taken and
The results derived, if any to be attached | : ----- |
| c) Deviation from the test methods as
Prescribed in relevant ISS / Work Instructions, if any | : No deviation |
| d) Deviation from environmental condition, if any | : No deviation |

PART C: TEST RESULTS

Sl. No	Parameters testing	Result Obtained
1	Th-232	(79.940 ± 13.785) Bq.kg ⁻¹
2	U-238	(43.753 ± 16.517) Bq.kg ⁻¹
3	K-40	BDL

N.B: - BDL is below detection limit

The Minimum Detectable Limit for K-40 is 61.004 Bq.kg⁻¹**PART D: REMARKS**

- The results stated above relates to the sample tested only.
- This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
- The sample shall be kept for three months after the test and can be returned on request on payment of transport charges or shall be destroyed. Any customer complaint or by regulatory authority shall be entertained if and only if the complaint is registered within one month from date of report.

Shankar Khatai
Authorized Signatory with Seal
Name: Shankar Khatai
Designation: Sr. Technical Officer

End of Report

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

ISSUED TO:

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

Report Number : VLL/VLS/24-25/06982/001
Issue Date : 2025-07-24
Your Ref : 8500005780
P.O. Date : 2022.06.29

Page 1 of 1

Sample Name:	Coal Sample		
Sample Received Date:	2025-06-30	Sample Registration Date:	2025-07-03
Analysis Starting Date:	2025-07-07	Analysis completion Date:	2025-07-23
Received Quantity:	2 kg x 1 no.		
Method of Testing	As per ASTM D 6349 , Instrument Used: ICP-OES and SOP No. 26/22		
Test Required:	Manganese as Mn, Cadmium as Cd , Lead as Pb, Mercury as Hg , Nickel as Ni , Arsenic as As, Cobalt as Co , Chromium as Cr, and Carbon Content;		
Location Details:	Coal Sample 540 MW		

TEST REPORTS

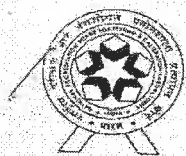
Metals			
1	Manganese as Mn	mg/kg	28.6
2	Cadmium as Cd	mg/kg	<0.1
3	Lead as Pb	mg/kg	1.8
4	Mercury as Hg	mg/kg	<0.1
5	Nickel as Ni	mg/kg	11.7
6	Arsenic as As	mg/kg	<0.1
7	Cobalt as Co	mg/kg	6.8
8	Chromium as Cr	mg/kg	12.3
9	Carbon Content	%	54.18

Results relate only to the sample tested

Remarks: Sample tested as received.

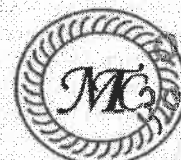
-END OF THE TEST REPORT-


Dr. Subba Reddy Mallampati
Manager – Environment



ULR NO: TC531225000002101F

Modern Test Center



Original

832

TC-5312

Accredited To ISO/IEC 17025:2017 through NABL

Berhampur

Office Address:-

Gandhi Nagar 5th line Extn. East,
Berhampur-760001, Dist-Ganjam (Odisha),
Visit us: www.moderntestcenter.com

Lab Address:-

Neelanchal Nagar 3rd lane,
Berhampur-760010, Dist-Ganjam (Odisha),
Phone:-0680 240331-22
Mail:- moderntestcenter@gmail.com

Ref: -47385/MTC/LF/7.8/15/2025

DATE: 11/08/2025

TEST CERTIFICATE

Issued to: BALCO LTD.

Bharat Aluminium Company Limited
Korba, Chhattisgarh, Pin: 495684,

LOCATION: 1200 MW

Customer Reference No. Nil Date: 24/06/2025

Date of Receipt: 21/07/2025

Date of Initiation of Test : 21/07/2025

Date of Completion of Test: 11/08/2025

TEST CERTIFICATE NO: 2113 36400

DATE: 11/08/2025

TEST METHOD USED: BARC/2008/E/023

PART A: PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER

- | | |
|---|---|
| a) Name of the Sample | : Coal Sample (1200 MW) |
| b) Batch No./Lot No. and Date of manufacture/
Collection/Sampling (if any) | : Batch No.: Not Specified |
| a) Quantity | : 3.800 Kg |
| b) Brand Name (if any) | : Not available |
| c) Parameters of the test suggested | : Estimation of ²³² Th, ²³⁸ U & ⁴⁰ K |
| d) Any other information | : No Specific Observation |

PART B: SUPPLEMENTARY INFORMATIONS

- | | |
|---|---|
| a) Reference to Sampling plan (By the lab/Submitted by the party) | : Sample submitted by
Vimta Labs Limited, Hyderabad. |
| By Lab: i) Location | : ----- |
| ii) Date & time of collection | : ----- |
| iii) Name of lab representative (Wherever applicable) | : ----- |
| b) Supporting documents like graphs, tables,
Sketches for the measurements taken and
The results derived, if any to be attached | : ----- |
| c) Deviation from the test methods as
Prescribed in relevant ISS / Work Instructions, if any | : No deviation |
| d) Deviation from environmental condition, if any | : No deviation |

PART C: TEST RESULTS

Sl. No	Parameters testing	Result Obtained
1	Th-232	BDL
2	U-238	(30.233 ± 17.237) Bq.kg ⁻¹
3	K-40	BDL

N.B: - BDL is below detection limit

The Minimum Detectable Limit for Th-232 is 19.775 Bq.kg⁻¹The Minimum Detectable Limit for K-40 is 50.147 Bq.kg⁻¹

PART D: REMARKS

- The results stated above relates to the sample tested only.
- This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
- The sample shall be kept for three months after the test and can be returned on request on payment of transport charges or shall be destroyed. Any customer complaint or by regulatory authority shall be entertained, if and only if the complaint is registered within one month from date of report.

Authorized Signatory with Seal

Name: Shankar Khatai

Designation: Sr. Technical Officer

End of Report

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

**ISSUED TO:**

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

Report Number : VLL/VLS/24-25/06982/002
Issue Date : 2025-07-24
Your Ref : 8500005780
P.O. Date : 2022.06.29

Page 1 of 1

Sample Name:	Coal Sample		
Sample Received Date:	2025-06-30	Sample Registration Date:	2025-07-03
Analysis Starting Date:	2025-07-07	Analysis completion Date:	2025-07-23
Received Quantity:	2 kg x 1no.		
Method of Testing	As per ASTM D 6349 , Instrument Used: ICP-OES and SOP No. 26/22		
Test Required:	Manganese as Mn, Cadmium as Cd , Lead as Pb, Mercury as Hg , Nickel as Ni , Arsenic as As, Cobalt as Co , Chromium as Cr, and Carbon Content		
Location Details:	Coal Sample 1200 MW		

TEST REPORTS

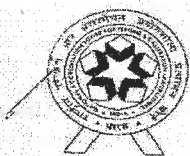
SL.No.	Parameters	Units of Measurement	Result
Metals			
1	Manganese as Mn	mg/kg	23.5
2	Cadmium as Cd	mg/kg	<0.1
3	Lead as Pb	mg/kg	3.7
4	Mercury as Hg	mg/kg	<0.1
5	Nickel as Ni	mg/kg	8.4
6	Arsenic as As	mg/kg	<0.1
7	Cobalt as Co	mg/kg	2.4
8	Chromium as Cr	mg/kg	27.61
9	Carbon Content	%	48.14

Results relate only to the sample tested

Remarks: Sample tested as received.

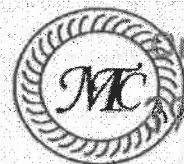
-END OF THE TEST REPORT-


Dr. Subba Reddy Mallampati
Manager – Environment



ULR NO: TC531225000002102F

Modern Test Center



Original

836

TC-5312

Accredited To ISO/IEC 17025:2017 through NABL

Berhampur

Office Address:-

Gandhi Nagar 8th line Extn. East,
Berhampur-760001, Dist-Ganjam (Odisha),
Visit us: www.moderntestcenter.com

Lab Address:-

Neelanchal Nagar 3rd lane,
Berhampur-760010, Dist-Ganjam (Odisha),
Phone:-0680 2403321-22
Mail:- moderntestcenter@gmail.com

Ref: -47386/MTC/LF/7.8/15/2025

DATE: 11/08/2025

TEST CERTIFICATE

Issued to: BALCO LTD.

Bharat Aluminium Company Limited
Korba, Chhattisgarh, Pin: 495684.

LOCATION: 540 MW

Customer Reference No. Nil Date: 24/06/2025

Date of Receipt: 21/07/2025

Date of Initiation of Test : 21/07/2025

Date of Completion of Test: 11/08/2025

TEST CERTIFICATE NO: 2113 36401

DATE: 11/08/2025

TEST METHOD USED: BARC/2008/E/023

PART A: PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER

- | | |
|---|---|
| a) Name of the Sample | : Fly Ash Sample (540 MW) |
| b) Batch No./Lot No. and Date of manufacture/
Collection/Sampling (if any) | : Batch No.: Not Specified |
| a) Quantity | : 3.230 Kg |
| b) Brand Name (if any) | : Not available |
| c) Parameters of the test suggested | : Estimation of ²³² Th, ²³⁸ U & ⁴⁰ K |
| d) Any other information | : No Specific Observation |

PART B: SUPPLEMENTARY INFORMATIONS

- | | |
|---|---|
| a) Reference to Sampling plan (By the lab/Submitted by the party) | : Sample submitted by
Vimta Labs Limited, Hyderabad. |
| By Lab: i) Location | : ----- |
| ii) Date & time of collection | : ----- |
| iii) Name of lab representative (Wherever applicable) | : ----- |
| b) Supporting documents like graphs, tables,
Sketches for the measurements taken and
The results derived, if any to be attached | : ----- |
| c) Deviation from the test methods as
Prescribed in relevant ISS / Work Instructions, if any | : No deviation |
| d) Deviation from environmental condition, if any | : No deviation |

PART C: TEST RESULTS

Sl. No	Parameters testing	Result Obtained
1	Th-232	(125.053 ± 16.096) Bq.kg ⁻¹
2	U-238	(105.398 ± 19.902) Bq.kg ⁻¹
3	K-40	(99.642 ± 35.520) Bq.kg ⁻¹

PART D: REMARKS

- The results stated above relates to the sample tested only.
- This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
- The sample shall be kept for three months after the test and can be returned on request on payment of transport charges or shall be destroyed. Any customer complaint or by regulatory authority shall be entertained, if and only if the complaint is registered within one month from date of report.

Shankar Khatai
Authorized Signatory with Seal
Name: Shankar Khatai
Designation: Sr. Technical Officer

End of Report

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

**ISSUED TO:**

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

Report Number : VLL/VLS/24-25/06982/003

Issue Date : 2025-07-24

Your Ref : 8500005780

P.O. Date : 2022.06.29

Page 1 of 1

Sample Name:	Fly ash Sample		
Sample Received Date:	2025-06-30	Sample Registration Date:	2025-07-03
Analysis Starting Date:	2025-07-07	Analysis completion Date:	2025-07-23
Received Quantity:	2kg x 1no		
Method of Testing	As per ASTM D 6349 and Instrument Used: ICP-OES		
Test Required:	Manganese as Mn, Cadmium as Cd, Lead as Pb, Mercury as Hg, Nickel as Ni, Arsenic as As, Cobalt as Co, and Chromium as Cr;		
Location Details:	Fly ash 540 MW		

TEST REPORTS

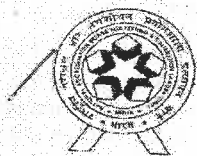
SL.No.	Parameters	Units of Measurement	Result
Metals			
1	Manganese as Mn	mg/kg	57.39
2	Cadmium as Cd	mg/kg	0.13
3	Lead as Pb	mg/kg	3.43
4	Mercury as Hg	mg/kg	<0.10
5	Nickel as Ni	mg/kg	7.27
6	Arsenic as As	mg/kg	<0.10
7	Cobalt as Co	mg/kg	2.13
8	Chromium as Cr	mg/kg	5.19

Results relate only to the sample tested

Remarks: Sample tested as received.

-END OF THE TEST REPORT-


Dr. Subba Reddy Mallampati
Manager – Environment



ULR NO: TC531225000002103F

Modern Test Center



TC-5312

Accredited To ISO/IEC 17025:2017 through NABL

Berhampur

Office Address:-

Gandhi Nagar 5th line Extn. East,
Berhampur-760001, Dist-Ganjam (Odisha),
Visit us: www.moderntestcenter.com

Lab Address:-

Neelanchal Nagar 3rd lane,
Berhampur-760010, Dist-Ganjam (Odisha),
Phone:-0880 2403321-23
Mail:- moderntestcenter@gmail.com

Ref: -47387/MTC/LF/7.8/15/2025

DATE: 11/08/2025

TEST CERTIFICATE

Issued to: BALCO LTD.

Bharat Aluminium Company Limited
Korba, Chhattisgarh, Pin: 495684.

LOCATION: 1200 MW

Customer Reference No. Nil Date: 24/06/2025

Date of Receipt: 21/07/2025

Date of Initiation of Test : 21/07/2025

Date of Completion of Test: 11/08/2025

TEST CERTIFICATE NO: 2113 36402

DATE: 11/08/2025

TEST METHOD USED: BARC/2008/E/023

PART A: PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER

- | | |
|---|--|
| a) Name of the Sample | : Fly Ash Sample (1200 MW) |
| b) Batch No./Lot No. and Date of manufacture/
Collection/Sampling (if any) | : Batch No.: Not Specified |
| a) Quantity | : 3.400 Kg |
| b) Brand Name (if any) | : Not available |
| c) Parameters of the test suggested | : Estimation of ^{232}Th , ^{238}U & ^{40}K |
| d) Any other information | : No Specific Observation |

PART B: SUPPLEMENTARY INFORMATIONS

- | | |
|---|---|
| a) Reference to Sampling plan (By the lab/Submitted by the party) | : Sample submitted by
Vimta Labs Limited, Hyderabad. |
| By Lab: i) Location | : ----- |
| ii) Date & time of collection | : ----- |
| iii) Name of lab representative (Wherever applicable) | : ----- |
| b) Supporting documents like graphs, tables,
Sketches for the measurements taken and
The results derived, if any to be attached | : ----- |
| c) Deviation from the test methods as
Prescribed in relevant ISS / Work Instructions, if any | : No deviation |
| d) Deviation from environmental condition, if any | : No deviation |

PART C: TEST RESULTS

Sl. No	Parameters testing	Result Obtained
1	Th-232	(40.814 $\pm$ 13.141) Bq.kg ⁻¹
2	U-238	(96.626 $\pm$ 22.732) Bq.kg ⁻¹
3	K-40	(85.775 $\pm$ 51.391) Bq.kg ⁻¹

PART D: REMARKS

- The results stated above relates to the sample tested only.
- This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
- The sample shall be kept for three months after the test and can be returned on request on payment of transport charges or shall be destroyed. Any customer complaint or by regulatory authority shall be entertained, if and only if the complaint is registered within one month from date of report.

Shankar Khatai
Authorized Signatory with Seal
Name: Shankar Khatai
Designation: Sr. Technical Officer

End of Report

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

**ISSUED TO:**

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

Report Number: VLL/VLS/24-25/06982/004

Issue Date : 2025-07-24

Your Ref : 8500005780

P.O. Date : 2022.06.29

Page 1 of 1

Sample Name:	Fly ash Sample		
Sample Received Date:	2025-06-30	Sample Registration Date:	2025-07-03
Analysis Starting Date:	2025-07-07	Analysis completion Date:	2025-07-23
Received Quantity:	2kg x 1no.		
Method of Testing	As per ASTM D6349 and Instrument Used: ICP-OES		
Test Required:	Arsenic as As, Cadmium as Cd, Chromium as Cr, Cobalt as Co, Lead as Pb, Manganese as Mn, Mercury as Hg and Nickel as Ni		
Location Details:	Fly ash 1200 MW		

TEST REPORTS

SL. No.	Parameters	Units of Measurement	Result
Metals			
1	Manganese as Mn	mg/kg	43.27
2	Cadmium as Cd	mg/kg	0.11
3	Lead as Pb	mg/kg	4.31
4	Mercury as Hg	mg/kg	<0.10
5	Nickel as Ni	mg/kg	5.04
6	Arsenic as As	mg/kg	<0.10
7	Cobalt as Co	mg/kg	7.36
8	Chromium as Cr	mg/kg	9.42

Results relate only to the sample tested

Remarks: Sample tested as received.

-END OF THE TEST REPORT-

Dr. Subba Reddy Mallampati
Manager – Environment

BALCO/ENV/A-12/2025/335

Date: 04.07.2025

To,
Mr. Nazimuddin,
Divisional Head IPC-II,
Central Pollution Control Board,
New Delhi.

Sub : Submission of Compliance Status by Thermal Power Plants with respect to Specific Water Consumption Limit-reg.
Ref : Your letter bearing no: B-33014/7/2018/IPC-II/TPP dated 2nd January 2019 received via E-mail.

Respected Sir,

With reference to the above subject, please find enclosed herewith the updated compliance status with respect to the Specific water consumption limit of 1200 MW Thermal Power Plant of BALCO for the quarter of April 2025- June 2025 (Quarter 1 of FY 2025-26) in the prescribed format.

Hope the above is in line with your requirements.

Thanking you,
Yours Faithfully,



Mr. Ashutosh Dwivedi

COO-Power

Bharat Aluminium Co. Ltd.

PO Box Balco Nagar,

Korba – 495684.

Format for quarterly reporting of water consumption data and compliance with respect to the limit notified vide notification dated 07.12.2015 for coal/lignite based thermal power plant

Name of the Power Plant : 1200MW
State : CG
Capacity (total in MW) : 1200 MW
Unit wise Capacity : 300 MW
Applicable SWC Standard : 3.5 m³/MWh
Zero Waste Water Discharge Condition mandatory or not: Mandatory.
Remark 1: Zero wastewater Discharge Status: Zero Discharge Maintained.
Remark 2: If SWC limit not complied, explain if any: Complied

Quarter	Date	Power Generation (MWh)	Water Consumption (m ³)	Sp. Water Consumption (Daily Avg. in m ³ /MWh)
April-June, 2025				
April	1-Apr-25	25744	58600	2.28
	2-Apr-25	25598	65700	2.57
	3-Apr-25	26599	64000	2.41
	4-Apr-25	25906	60300	2.33
	5-Apr-25	25245	64100	2.54
	6-Apr-25	24833	62600	2.52
	7-Apr-25	24517	61300	2.50
	8-Apr-25	25169	57600	2.29
	9-Apr-25	25373	60100	2.37
	10-Apr-25	23868	66000	2.77
	11-Apr-25	24386	64900	2.66
	12-Apr-25	25530	64900	2.54
	13-Apr-25	24385	63600	2.61
	14-Apr-25	23733	56200	2.37
	15-Apr-25	25376	59100	2.33
	16-Apr-25	25268	59700	2.36
	17-Apr-25	25954	53500	2.06
	18-Apr-25	24748	54800	2.21
	19-Apr-25	24927	59300	2.38
	20-Apr-25	25001	63900	2.56
	21-Apr-25	26453	61700	2.33
	22-Apr-25	26963	57600	2.14
	23-Apr-25	25431	57000	2.24
	24-Apr-25	21803	53400	2.45
	25-Apr-25	18925	56300	2.97
	26-Apr-25	18475	55100	2.98
	27-Apr-25	19350	60100	3.11

	28-Apr-25	16943	48700	2.87
	29-Apr-25	14375	38400	2.67
	30-Apr-25	20901	52100	2.49
April Summary/ Total / Average		711783	1760600	2.47
May	1-May-25	24182	60700	2.51
	2-May-25	24701	61300	2.48
	3-May-25	24552	56700	2.31
	4-May-25	22788	55700	2.44
	5-May-25	23751	55200	2.32
	6-May-25	25431	59100	2.32
	7-May-25	24838	64000	2.58
	8-May-25	24956	63900	2.56
	9-May-25	25913	58700	2.27
	10-May-25	26056	57800	2.22
	11-May-25	25498	58500	2.29
	12-May-25	25563	56700	2.22
	13-May-25	25817	56700	2.20
	14-May-25	24942	55900	2.24
	15-May-25	25720	56400	2.19
	16-May-25	24494	59200	2.42
	17-May-25	25088	62400	2.49
	18-May-25	24109	58100	2.41
	19-May-25	24875	58300	2.34
	20-May-25	25544	57000	2.23
	21-May-25	25504	56400	2.21
	22-May-25	23579	57300	2.43
	23-May-25	23920	60500	2.53
	24-May-25	24714	63000	2.55
	25-May-25	23274	63200	2.72
	26-May-25	23581	62900	2.67
	27-May-25	23893	63400	2.65
	28-May-25	22976	63200	2.75
	29-May-25	23690	62800	2.65
	30-May-25	22509	61500	2.73
	31-May-25	21705	62500	2.88
May Summary/ Total/ Average		758163	1849000	2.44
June	1-Jun-25	21433	62600	2.92
	2-Jun-25	23216	62400	2.69

3-Jun-25	15102	61300	4.06
4-Jun-25	20797	59300	2.85
5-Jun-25	21311	58700	2.75
6-Jun-25	23995	59400	2.48
7-Jun-25	23700	59600	2.51
8-Jun-25	23416	58900	2.52
9-Jun-25	24937	57300	2.30
10-Jun-25	23968	57700	2.41
11-Jun-25	25168	57400	2.28
12-Jun-25	24869	58600	2.36
13-Jun-25	24947	58500	2.34
14-Jun-25	25269	57400	2.27
15-Jun-25	24419	57000	2.33
16-Jun-25	23965	59400	2.48
17-Jun-25	23183	62700	2.70
18-Jun-25	22117	62200	2.81
19-Jun-25	22053	62700	2.84
20-Jun-25	21130	55100	2.61
21-Jun-25	22588	61900	2.74
22-Jun-25	22458	62500	2.78
23-Jun-25	20269	61500	3.03
24-Jun-25	14412	48900	3.39
25-Jun-25	18206	54600	3.00
26-Jun-25	19129	49400	2.58
27-Jun-25	22286	63100	2.83
28-Jun-25	23162	61900	2.67
29-Jun-25	21980	61500	2.80
30-Jun-25	21598	61600	2.85
June Summary/ Total/ Average	665082	1775100	2.67
Quarterly Summary/ Total/Average	2135028	5384700	2.52



Mr. Ashutosh Dwivedi
COO-Power

Bharat Aluminium Co. Ltd.
PO Box Balco Nagar
Korba – 498684

BALCO/ENV/A-12/2025/477

Date: 07.10.2025

To,
Mr. Nazimuddin,
Divisional Head IPC-II,
Central Pollution Control Board,
New Delhi.

Sub : Submission of Compliance Status by Thermal Power Plants with respect to Specific Water Consumption Limit-reg.
Ref : Your letter bearing no: B-33014/7/2018/IPC-II/TPP dated 2nd January 2019 received via E-mail.

Respected Sir,

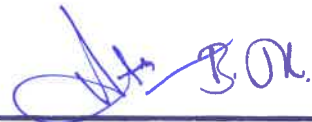
With reference to the above subject, please find enclosed herewith the updated compliance status with respect to the Specific water consumption limit of 1200 MW Thermal Power Plant of BALCO for the quarter of July 2025- September 2025 (Quarter 2 of FY 2025-26) in the prescribed format.

Hope the above is in line with your requirements.

Thanking you,
Yours Faithfully,



Mr. Anil Kumar Dubey
CEO-Power
Bharat Aluminium Co. Ltd.
PO Box Balco Nagar,
Korba – 495684.



**Format for quarterly reporting of water consumption data and compliance
with respect to the limit notified vide notification dated 07.12.2015 for
coal/lignite based thermal power plant**

Name of the Power Plant : 1200MW

State : CG

Capacity (total in MW) : 1200 MW

Unit wise Capacity : 300 MW

Applicable SWC Standard : 3.5 m³/MWh

Zero Waste Water Discharge Condition mandatory or not: Mandatory.

Remark 1: Zero wastewater Discharge Status: Zero Discharge Maintained.

Remark 2: If SWC limit not complied, explain if any: Complied

Quarter	Date	Power Generation (MWh)	Water Consumption (m ³)	Sp. Water Consumption (Daily Avg. in m ³ /MWh)
July-September, 2025				
July	1-Jul-25	22781	61200	2.69
	2-Jul-25	23733	61400	2.59
	3-Jul-25	23319	61000	2.62
	4-Jul-25	24784	49300	1.99
	5-Jul-25	23555	58900	2.50
	6-Jul-25	22751	60300	2.65
	7-Jul-25	23383	60300	2.58
	8-Jul-25	22387	60500	2.70
	9-Jul-25	23166	59900	2.59
	10-Jul-25	23021	60500	2.63
	11-Jul-25	24106	59000	2.45
	12-Jul-25	24202	58600	2.42
	13-Jul-25	23563	58900	2.50
	14-Jul-25	22919	58800	2.57
	15-Jul-25	21782	59000	2.71
	16-Jul-25	23260	61000	2.62
	17-Jul-25	24147	62000	2.57
	18-Jul-25	24758	59500	2.40
	19-Jul-25	23568	51200	2.17
	20-Jul-25	23849	56700	2.38
	21-Jul-25	23753	59500	2.50
	22-Jul-25	23333	57100	2.45
	23-Jul-25	23186	57700	2.49
	24-Jul-25	23229	59100	2.54
	25-Jul-25	22264	56900	2.56
	26-Jul-25	22082	54800	2.48

	27-Jul-25	21723	59900	2.76
	28-Jul-25	22698	60900	2.68
	29-Jul-25	22318	57900	2.59
	30-Jul-25	22992	60600	2.64
	31-Jul-25	22502	54200	2.41
July Summary/ Total / Average		719113	1816600	2.53
August	1-Aug-25	18774	52900	2.82
	2-Aug-25	18225	58400	3.20
	3-Aug-25	17882	47200	2.64
	4-Aug-25	18618	46800	2.51
	5-Aug-25	18331	50700	2.77
	6-Aug-25	17965	54900	3.06
	7-Aug-25	18169	60700	3.34
	8-Aug-25	22210	55600	2.50
	9-Aug-25	23175	60400	2.61
	10-Aug-25	22603	60700	2.69
	11-Aug-25	23816	60300	2.53
	12-Aug-25	23476	58800	2.50
	13-Aug-25	24640	57400	2.33
	14-Aug-25	24873	56800	2.28
	15-Aug-25	23057	58000	2.52
	16-Aug-25	19274	58800	3.05
	17-Aug-25	17832	59400	3.33
	18-Aug-25	18702	46200	2.47
	19-Aug-25	19089	48300	2.53
	20-Aug-25	18987	47600	2.51
	21-Aug-25	18706	47900	2.56
	22-Aug-25	18797	47500	2.53
	23-Aug-25	18530	53300	2.88
	24-Aug-25	18470	48800	2.64
	25-Aug-25	19058	49600	2.60
	26-Aug-25	18944	49500	2.61
	27-Aug-25	18592	54300	2.92
	28-Aug-25	19125	55200	2.89
	29-Aug-25	19411	50000	2.58
	30-Aug-25	19878	58100	2.92
	31-Aug-25	19431	47500	2.44
August Summary/ Total/ Average		618643	1661600	2.69



September	1-Sep-25	19727	48600	2.46
	2-Sep-25	19431	56400	2.90
	3-Sep-25	18264	48100	2.63
	4-Sep-25	17956	44700	2.49
	5-Sep-25	19637	44300	2.26
	6-Sep-25	19245	55300	2.87
	7-Sep-25	19136	55800	2.92
	8-Sep-25	18756	54600	2.91
	9-Sep-25	18575	51800	2.79
	10-Sep-25	18671	55700	2.98
	11-Sep-25	19252	53600	2.78
	12-Sep-25	20079	49400	2.46
	13-Sep-25	19339	55000	2.84
	14-Sep-25	19077	53100	2.78
	15-Sep-25	19771	50000	2.53
	16-Sep-25	22175	55000	2.48
	17-Sep-25	23643	42000	1.78
	18-Sep-25	24623	44700	1.82
	19-Sep-25	25447	59300	2.33
	20-Sep-25	24616	56700	2.30
	21-Sep-25	24212	57800	2.39
	22-Sep-25	22467	60700	2.70
	23-Sep-25	22822	57500	2.52
	24-Sep-25	24309	60800	2.50
	25-Sep-25	24515	60700	2.48
	26-Sep-25	24865	62000	2.49
	27-Sep-25	24288	57500	2.37
	28-Sep-25	23741	61200	2.58
	29-Sep-25	24715	60500	2.45
	30-Sep-25	25216	56300	2.23
September Summary/ Total/ Average		648570	1629100	2.51
Quarterly Summary/ Total/Average		1986326	5107300	2.57


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