BALCO/ENV/A-02(A)/2026/432

Date: 11.11.2026

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

Sub: Half yearly compliance status (April 2026 to September 2026) of New Cold Rolling Mill.

Respected Sir,

Please find enclosed herewith the half yearly compliance report of the Environmental Clearance No. J - 11011/10/1994-IA II, dated 10.8.1994 for the New Cold Rolling Mill.

We hope that the above is in line with the requirements under the referred Environmental Clearance. In case you require 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.

Compliance Status of conditions stipulated in Environmental clearance in installation of New Cold Rolling Mill and Modernization of Smelter
Duration: April 2026 to September 2026
MoEF No. 11011/10/94-IA II dated 10.8.1994

S.No.	Consent conditions	Present status
1.	The Project Authorities must strictly adhere to the stipulations laid down by the State Pollution Control Board and the State Government.	The stipulations laid down by the State Pollution Control Board and the State Government are being followed.
2.	Any expansion of the plant either with the existing product mix or new products can be taken up only with the prior approval of this Ministry.	Noted.
3.	The gaseous emissions from various process units should conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission level should go beyond the stipulated standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should be put out of operation immediately and should not be restored until the control measures are rectified to achieve the desired efficiency.	Emissions from various processes are within the stipulated standards. Regular monitoring is being carried out to estimate the efficiency of the pollution control equipment; any deviation from the design is being rectified immediately.
4.	Adequate number of ambient air quality monitoring station should be set up in the down wind direction as well as where maximum ground level concentrations are anticipated in consultation with the State Pollution Control Board. Monitoring network should be designed taking into account land use pattern, location of the stacks, meteorological conditions and topographic features including existing ambient air quality data.	Adequate number of Ambient Air Quality monitoring stations have been installed as per the approved location by State Pollution Control Board. Monitoring is being carried out as per the norms.
5.	All the stacks of the plant must be provided with Online automatic stack emission monitoring equipment. Stack emission and ambient air quality data must be submitted to the State Pollution Control Board once in 3 months and to this Ministry once in 6 months along with statistical analysis and interpretation.	Complied with.
6.	Fugitive emissions of dust/mists, vapors, fumes etc. should be controlled and work environment monitored for prevailing contaminants regularly.	Fugitive emissions of dust/mists, vapors, fumes are controlled and the work environment is monitored.

7.	There should be no change in the stack design without prior approval of the State Pollution Control Board and this Ministry.	Any change in stack design will be done only with prior approval of the State Pollution Control Board.
8.	Adequate number of effluent monitoring stations must be set up in consultation with the State Pollution Control Board. If the effluent quality at any time exceeds the standards prescribed, the corresponding unit of the plant which are contributing to the excessive pollution load shall be immediately stopped from the operation till the quality of pollutant discharged from units are brought down to the required standards.	No water is required for industrial use in the New Cold Rolling Mill. There is no discharge from New Cold Rolling Mill & Smelter, hence, this clause is not applicable.
9.	The treated effluent should conform to the prescribed standards and should be utilized for Green Belt Development to the maximum extent possible.	No effluent is generated in the New Cold Rolling Mill.
10.	Water quality and quantity in Belgiri Nallah and Dengur Nallah during summer season along with flow data after discharge of effluent should also be monitored.	Complied with.
11.	Ash pond water should be recycled to the maximum extent possible. The ground water quality around the ash pond should also be regularly monitored especially for heavy metals.	Not Applicable as plant has rolling mill only and no ash generation from New Cold Rolling Mill.
12.	The Project Authorities should ensure that villages located around the plant within 10 km radius should have no pollution problem especially from fluoride because of the existing and proposed operations. Drinking water should be provided to all those villages where fluoride contamination has been taken place. Fluoride levels in drinking water should be within the WHO standards of 1.5 mg. per liter. Wherever necessary de-F Plant may be installed for giving drinking water free from fluoride.	We are ensuring periodically monitoring of the drinking water sources of the villages for relevant parameters including Fluoride. The monitoring data does not indicate any contamination. All the sources have no contamination of fluoride. Ground water monitoring is being done monthly.
13.	Disposal sites of red mud, spent cathodes should be made impervious to avoid ground water contamination. These sites should have approval of State Pollution Control Board. Adequate monitoring of the impoundment sites (soil, surface and ground water) should be carried out regularly and record maintained.	Red mud and Spent cathodes are not generated from NCRM.

14.	Spent cathodes should be enclosed in reinforced cement concrete vaults/container before disposal. Recovery of carbon and fluoride from the spent cathodes lining should be attempted by Balco to minimize ground water pollution.	Spent cathodes are not generated from NCRM.
15.	Proper earth cover should be provided for red mud ponds, which are completely filled up and are of no use. Embankment should be provided around the ponds to prevent surface run-off. Balco should also explore the possibility of recovery of TiO_2, Fe_2O_3, and Al_2O_3 from red mud. The Balco should also explore the possibility of supplying red mud to the cement industries in the nearby area for production of ferrite cement so as to utilize the same to the maximum extent possible.	Operation of alumina plant has been stopped since 2009.The existing red mud ponds have been converted into ash dyke for disposal of fly ash generated from power plants as per approval granted in Environment Clearances received for BALCO Power plants. Embankment is also provided around the ponds to prevent surface run-off.
16.	The guidelines published by Ministry of Environment and Forests for management and handling of hazardous wastes in 1991 should be adopted by Balco while disposing the hazardous wastes generated.	Noted.
17.	Impact study (carrying capacity) to assess the assimilating and the supportive capacity of local environment should be carried out. The scope of the carrying capacity should be finalized in consultation with the State Pollution Control Board/Central Pollution Control Board and this Ministry.	Complied with.
18.	Inventorisation of pollution sources and loads in terms of liquid, gases and solid wastes should also be carried out and report submitted to the State Pollution Control Board and Ministry of Environment and Forests once in six months.	Six monthly reports are submitted to the State Pollution Control Board and Ministry of Environment and Forests. Last report was submitted vide: Letter No. BALCO/ENV/A-02(A)/2026/209 dated 16th May 2026.
19.	Biological monitoring of flora must be started within the vicinity of the smelter plant and pollution. Isopleths should also be plotted based on the fluoride contents of certain species and plants.	We are carrying out monitoring of forage fluoride in vicinity of Smelter and submitting report to CECB on monthly basis.

20.	Cyanide and fluoride levels in the ground water around Balco complex should be monitored on a regular basis and report submitted to this Ministry every 6 months.	Ground water quality in and around BALCO is being monitored periodically for relevant parameters and the report submitted regularly (**Annexure-I**).
21.	Performance evaluation report on the existing pollution control systems at Balco should be furnished to this Ministry within 3 months.	Complied with.
22.	Environmental Audit Report for the year 1993-94 should also be submitted.	Environment Statement is submitted every year to the CECB. The Environment Statement for FY 2025-26 was submitted on 28th September 2026 vide our letter No. BALCO/ENVT/A-01/2026/ 364.
23.	In addition to the above all recommendations made in the Environmental Management Plan based on the rapid EIA study should be implemented.	Environmental Management Plan is being implemented.
24.	A time bound action plan to implement the conditions stipulated by the Ministry as well as the recommendations of the consultants should be submitted within a period of 3 months.	Complied with.
25.	The Project authorities must set up laboratory facilities for collection and analysis of samples under the supervision of competent technical personnel who will directly report to the Chief Executive.	We have appointed a third party NABL accredited laboratory for collection and analysis of environmental samples under the supervision of competent technical personnel.
26.	A separate Environmental Management Cell with suitable qualified people to carry out various functions should be set up under the control of senior executive who will report directly to the Head of Organization.	A full-fledged Environment Management Cell is in place and is headed by a senior executive directly reporting to the Head of Organization.
27.	The funds earmarked for the environmental protection measures should not be diverted for any other purpose and year wise expenditure should be reported to this Ministry.	Complied with.

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ISSUED TO:

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

Report Number	:	**VLL/VLS/26-27/02504/001**
Issued Date	:	**2026-05-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-04-12	Sampling Date	:	2026-04-06
Analysis Starting Date	:	2026-04-12	Analysis Completion Date	:	2026-04-28
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)	6.81	7.08	6.98	7.14
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)	4	3	1	2
6	Total dissolved solids at 180^{0}C	mg/l	500(2000)	410	330	530	398
7	Total Hardness as $CaCO_3$	mg/l	200(600)	258	130	295	248
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	125	116	260	165
9	Calcium as Ca	mg/l	75(200)	68.0	28.7	74.0	63.2
10	Magnesium as Mg	mg/l	30(100)	21.4	14.3	26.7	21.9
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	0.016	0.018	0.023
13	Chlorides as Cl	mg/l	250(1000)	152.2	76.1	125.1	83.1
14	Sulphate as SO_4	mg/l	200(400)	63.9	30.6	45.8	28.4
15	Fluorides as F	mg/l	1.0(1.5)	0.279	0.319	0.518	0.490
16	Nitrates as NO_3	mg/l	45(NR)	4.3	3.8	5.6	2.7
17	Phenolic Compounds as C_6H_5OH	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

ENVIRONMENT LABORATORY VIMTA LABS REGD. No- DL 3300/99 Sr. No.-5

Dr. Subba Reddy Mallampati
(Manager - Environment)

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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	0.01	0.009	<0.01
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)	0.025	0.019	0.046	0.024
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)	0.018	0.008	0.017	0.023
32	Aluminum as Al	mg/l	0.03(0.2)	0.01	0.026	0.021	0.013
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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	0.018	0.027
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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL Sr. No.-5 VIMTA

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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	Chlorpyriphos	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

Vimta VIMTA LABS LTD. REGD. No- DL 33004/99 Sr. No.-5

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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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 33 Sr. No.-5

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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)	7.24	6.72	6.82	6.88
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	3	3	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	250	313	204	360
7	Total Hardness as $CaCO_3$	mg/l	200(600)	140	98	96	214
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	120	130	70	118
9	Calcium as Ca	mg/l	75(200)	34.4	23.0	18.4	52.0
10	Magnesium as Mg	mg/l	30(100)	12.6	9.7	12.2	20.4
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)	0.034	0.015	0.022	0.011
13	Chlorides as Cl	mg/l	250(1000)	34.3	57.3	42.4	98.5
14	Sulphate as SO_4	mg/l	200(400)	19.1	23.4	28.8	27.3
15	Fluorides as F	mg/l	1.0(1.5)	0.352	0.366	0.251	0.283
16	Nitrates as NO_3	mg/l	45(NR)	1.9	2.6	1.5	7.4
17	Phenolic Compounds as C_6H_5OH	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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL-0000 Sr. No.-5

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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)*
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)	0.014	0.01	0.013	<0.01
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)	0.017	0.034	0.029	0.032
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	0.031	0.043	0.016
32	Aluminum as Al	mg/l	0.03(0.2)	0.017	0.023	0.031	0.23
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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)	0.023	0.018	0.013	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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 3300/99 Sr. No.-5

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

Report Number	:	**VLL/VLS/26-27/02504/001**
Issued Date	:	**2026-05-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-04-12	Sampling Date	:	2026-04-06
Analysis Starting Date	:	2026-04-12	Analysis Completion Date	:	2026-04-28
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	Chlorpyriphos	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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 33[illegible] Sr. No.-5

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M/s. Bharat Aluminum Company Limited,
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Report Number	:	**VLL/VLS/26-27/02504/001**
Issued Date	:	**2026-05-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-04-12	Sampling Date	:	2026-04-06
Analysis Starting Date	:	2026-04-12	Analysis Completion Date	:	2026-04-28
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:
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Chhattisgarh

Report Number	:	**VLL/VLS/26-27/02504/001**
Issued Date	:	**2026-05-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-04-12	Sampling Date	:	2026-04-06
Analysis Starting Date	:	2026-04-12	Analysis Completion Date	:	2026-04-25
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	-	7.10	7.49	7.62	6.29
2	Colour	Hazen	1	2	1	3
3	Conductivity	µS/cm	180	195	130	160
4	TDS	mg/l	115	125	83	104
5	DO	mg/l	6.2	4.6	6.0	5.8
6	BOD	mg/l	0.7	2.6	1.2	1.3
7	COD	mg/l	3.1	10	4.8	5.6
8	Turbidity	NTU	3.0	6.0	6.0	7.0
9	Total Hardness as $CaCO_3$	mg/l	53	54	40	42
10	Total Alkalinity as $CaCO_3$	mg/l	46	40	30	40
11	Calcium as Ca	mg/l	11.0	14.0	9.8	10.0
12	Magnesium as Mg	mg/l	6.2	4.5	3.7	4.2
13	Chlorides as Cl	mg/l	16.0	24.0	14.0	17.0
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.03	0.043	0.027	0.039
16	Sulphates as SO_4	mg/l	17.7	19.8	12.3	13.1
17	Fluorides as F	mg/l	0.066	0.229	0.348	0.328
18	Nitrates as NO_3	mg/l	0.9	1.2	0.9	1.1
19	Sodium as Na	mg/l	15.2	19.6	11	16.5
20	Potassium as K	mg/l	1.8	1.1	0.8	1.3
21	Total Boron as B	mg/l	<0.01	0.011	0.007	0.031
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	0.054	0.017	0.026
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	0.021	0.032	0.026	0.011
33	Aluminum as Al	mg/l	0.010	0.017	0.022	0.031
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.91	1.17	0.76	1.10
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	38	54	26	34

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:

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Chhattisgarh

Report Number	:	**VLL/VLS/26-27/02504/002**
Issued Date	:	**2026-05-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-04-12	Sampling Date	:	2026-04-06
Analysis Starting Date	:	2026-04-12	Analysis Completion Date	:	2026-04-25
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	-	7.38	7.24	7.50	7.28	7.22
2	Colour	Hazen	1	4	3	3	2
3	Conductivity	µS/cm	172	158	160	176	167
4	TDS	mg/l	110	98	102	112	105
5	DO	mg/l	7.1	7.2	6.9	7.3	7.4
6	BOD	mg/l	1.6	1.7	1.5	2.0	1.5
7	COD	mg/l	6.4	7.2	6.4	8	7.2
8	Turbidity	NTU	8.0	6.0	9.0	10.0	8.0
9	Total Hardness as $CaCO_3$	mg/l	46	50	45	51	52
10	Total Alkalinity as $CaCO_3$	mg/l	40	35	38	40	40
11	Calcium as Ca	mg/l	10.5	9.5	11.2	12.3	11.9
12	Magnesium as Mg	mg/l	4.7	6.2	4.1	4.9	5.3
13	Chlorides as Cl	mg/l	25.8	26.4	23.3	27.2	25.8
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.034	0.056	0.029	0.048	0.051
16	Sulphates as SO_4	mg/l	6.7	4.8	5.9	6.1	5.3
17	Fluorides as F	mg/l	0.492	0.541	0.487	0.561	0.510
18	Nitrates as NO_3	mg/l	1.2	1.8	1.9	1.7	0.9
19	Sodium as Na	mg/l	17.8	13.7	15.6	16.3	14.5
20	Potassium as K	mg/l	1.2	0.9	0.8	1.1	0.7
21	Total Boron as B	mg/l	0.01	0.023	0.034	0.026	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	0.022	0.036	0.041	0.018	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	0.035	0.052	0.039	0.024	0.037
33	Aluminum as Al	mg/l	0.023	0.019	0.027	0.018	0.026
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.15	0.85	1.01	0.99	0.88
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	52	48	54	50	58

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

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ISSUED TO:

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BALCO
KORBA
Chhattisgarh

Report Number	:	**VLL/VLS/26-27/05017/001**
Issued Date	:	**2026-06-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-05-11	Sampling Date	:	2026-05-04
Analysis Starting Date	:	2026-05-11	Analysis Completion Date	:	2026-05-29
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)	6.95	7.10	6.73	7.14
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	2
6	Total dissolved solids at 180^{0}C	mg/l	500(2000)	610	270	673	408
7	Total Hardness as $CaCO_3$	mg/l	200(600)	214	110	330	230
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	190	85	290	210
9	Calcium as Ca	mg/l	75(200)	54.8	34.7	98.6	56.0
10	Magnesium as Mg	mg/l	30(100)	18.7	5.4	19.9	21.87
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)	0.017	0.011	0.026	0.015
13	Chlorides as Cl	mg/l	250(1000)	156.3	61.2	118.0	46.1
14	Sulphate as SO_4	mg/l	200(400)	58.8	32.5	51.1	31.2
15	Fluorides as F	mg/l	1.0(1.5)	0.538	0.640	0.467	0.569
16	Nitrates as NO_3	mg/l	45(NR)	5.3	4.1	6.2	3.8
17	Phenolic Compounds as C_6H_5OH	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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Report Number : **VLL/VLS/26-27/05017/001**
Issued Date : **2026-06-04**
P.O. No. : **3402001553**
P.O. Date : **2025-10-01**

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

Sample Registration Date	:	2026-05-11	Sampling Date	:	2026-05-04
Analysis Starting Date	:	2026-05-11	Analysis Completion Date	:	2026-05-29
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	0.008	0.01	0.007
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.021	0.017	0.032	0.018
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)	<0.005	<0.005	<0.005	<0.005
31	Zinc as Zn	mg/l	5.0(15)	0.028	0.007	0.024	0.016
32	Aluminum as Al	mg/l	0.03(0.2)	0.01	0.019	0.014	0.012
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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)	0.023	0.013	0.025	0.018
38	Silver as Ag	mg/l	0.1(NR)	<0.005	<0.005	<0.005	<0.005

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/26-27/05017/001**
Issued Date	:	**2026-06-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-05-11	Sampling Date	:	2026-05-04
Analysis Starting Date	:	2026-05-11	Analysis Completion Date	:	2026-05-29
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	Chlorpyriphos	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

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P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-05-11	Sampling Date	:	2026-05-04
Analysis Starting Date	:	2026-05-11	Analysis Completion Date	:	2026-05-29
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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Issued Date	:	**2026-06-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date	:	2026-05-11	Sampling Date	:	2026-05-04
Analysis Starting Date	:	2026-05-11	Analysis Completion Date	:	2026-05-29
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	6.85	6.92	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)	1	3	3	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	322	229	178	398
7	Total Hardness as $CaCO_3$	mg/l	200(600)	133	108	86	164
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	120	90	75	150
9	Calcium as Ca	mg/l	75(200)	28.0	24.2	18.4	38.8
10	Magnesium as Mg	mg/l	30(100)	15.4	11.5	9.72	16.3
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	0.01	<0.01	0.022
13	Chlorides as Cl	mg/l	250(1000)	78.0	44.5	31.1	84.1
14	Sulphate as SO_4	mg/l	200(400)	20.1	23.2	17.6	33.2
15	Fluorides as F	mg/l	1.0(1.5)	0.392	0.687	0.377	0.291
16	Nitrates as NO_3	mg/l	45(NR)	2.5	1.2	1.1	6.4
17	Phenolic Compounds as C_6H_5OH	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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Issued Date	:	**2026-06-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-05-11	Sampling Date	:	2026-05-04
Analysis Starting Date	:	2026-05-11	Analysis Completion Date	:	2026-05-29
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)	0.013	0.01	<0.005	0.008
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.024	0.015	0.031	0.025
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)	<0.005	<0.005	<0.005	<0.005
31	Zinc as Zn	mg/l	5.0(15)	0.019	0.021	0.01	0.013
32	Aluminum as Al	mg/l	0.03(0.2)	0.023	0.013	0.028	0.016
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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)	0.027	0.016	0.021	0.011
38	Silver as Ag	mg/l	0.1(NR)	<0.005	<0.005	<0.005	<0.005

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.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-05-11	Sampling Date	:	2026-05-04
Analysis Starting Date	:	2026-05-11	Analysis Completion Date	:	2026-05-29
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	Chlorpyriphos	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

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

Sample Registration Date	:	2026-05-11	Sampling Date	:	2026-05-04
Analysis Starting Date	:	2026-05-11	Analysis Completion Date	:	2026-05-29
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

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Issued Date	:	**2026-06-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date	:	2026-05-11	Sampling Date	:	2026-05-06
Analysis Starting Date	:	2026-05-11	Analysis Completion Date	:	2026-05-26
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	-	8.45	7.33	7.52	6.85
2	Colour	Hazen	1	3	1	2
3	Conductivity	µS/cm	227	288	120	148
4	TDS	mg/l	143	184	80	96
5	DO	mg/l	5.9	4.7	6.2	5.4
6	BOD	mg/l	1.5	2.9	1.5	2.2
7	COD	mg/l	7.2	11.2	5.6	9.6
8	Turbidity	NTU	2.0	4.0	5.0	8.0
9	Total Hardness as $CaCO_3$	mg/l	54	63	34	50
10	Total Alkalinity as $CaCO_3$	mg/l	45	50	30	40
11	Calcium as Ca	mg/l	10.5	16	8	12.8
12	Magnesium as Mg	mg/l	6.7	5.6	3.4	4.9
13	Chlorides as Cl	mg/l	38.2	45.6	13.3	15.8
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.037	0.054	0.036	0.044
16	Sulphates as SO_4	mg/l	13.07	24.1	11.2	9.40
17	Fluorides as F	mg/l	0.262	0.341	0.382	0.421
18	Nitrates as NO_3	mg/l	1.2	2.8	0.8	1.7
19	Sodium as Na	mg/l	26.2	35.1	12.4	9.8
20	Potassium as K	mg/l	2.4	3.8	0.8	0.9
21	Total Boron as B	mg/l	0.010	0.023	0.009	0.024
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	<0.005	<0.005	<0.005	<0.005
26	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001
27	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005
28	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005
29	Iron as Fe	mg/l	0.028	0.063	0.035	0.017
30	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005
32	Zinc as Zn	mg/l	0.015	0.037	0.031	0.026
33	Aluminum as Al	mg/l	0.007	0.025	0.018	0.037
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.55	1.92	0.93	0.59
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	32	62	40	36

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 Date	:	**2026-06-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-05-11	Sampling Date	:	2026-05-06
Analysis Starting Date	:	2026-05-11	Analysis Completion Date	:	2026-05-26
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	-	7.45	7.34	7.56	7.12	7.84
2	Colour	Hazen	1	3	4	2	3
3	Conductivity	µS/cm	196	166	190	180	176
4	TDS	mg/l	125	106	122	115	113
5	DO	mg/l	7.4	7.0	7.3	7.2	7.3
6	BOD	mg/l	1.8	1.3	2.1	2.4	1.4
7	COD	mg/l	7.2	5.6	8.8	9.6	7.2
8	Turbidity	NTU	5.0	6.0	7.0	5.0	7.0
9	Total Hardness as $CaCO_3$	mg/l	52	50	52	48	50
10	Total Alkalinity as $CaCO_3$	mg/l	45	40	47	40	40
11	Calcium as Ca	mg/l	13.6	14.4	14.4	13.6	12.8
12	Magnesium as Mg	mg/l	4.4	3.2	3.9	3.4	4.4
13	Chlorides as Cl	mg/l	27	21.5	24	23.6	25.7
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.052	0.049	0.031	0.063	0.058
16	Sulphates as SO_4	mg/l	11	8.5	10.3	12.5	9.7
17	Fluorides as F	mg/l	0.562	0.521	0.509	0.543	0.517
18	Nitrates as NO_3	mg/l	1.6	2.3	1.5	1.9	1.2
19	Sodium as Na	mg/l	19.8	14.7	18.6	17.9	17.2
20	Potassium as K	mg/l	1.8	1.1	1.4	1.9	0.9
21	Total Boron as B	mg/l	0.017	0.036	0.028	0.023	0.035
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	<0.005	<0.005	<0.005	<0.005	<0.005
26	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
27	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
28	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
29	Iron as Fe	mg/l	0.038	0.045	0.056	0.039	0.043
30	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
32	Zinc as Zn	mg/l	0.043	0.067	0.033	0.028	0.044
33	Aluminum as Al	mg/l	0.021	0.017	0.024	0.032	0.038
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.20	0.91	1.12	1.11	1.06
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	58	53	56	54	51

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

ENVIRONMENT LABORATORY REGD. No- DL-33004/99 Sr. No.-5 VIMTA

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ISSUED TO:

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

Report Number	:	**VLL/VLS/26-27/07623/001**
Issued Date	:	**2026-07-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date	:	2026-06-11	Sampling Date	:	2026-06-05
Analysis Starting Date	:	2026-06-11	Analysis Completion Date	:	2026-06-26
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)	6.84	6.93	6.78	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)	1	3	1	1
6	Total dissolved solids at 180°C	mg/l	500(2000)	548	308	642	390
7	Total Hardness as $CaCO_3$	mg/l	200(600)	186	120	276	210
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	180	95	280	195
9	Calcium as Ca	mg/l	75(200)	47.6	37.3	75.0	52.4
10	Magnesium as Mg	mg/l	30(100)	16.3	6.7	21.6	19.5
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)	0.014	0.01	0.017	0.012
13	Chlorides as Cl	mg/l	250(1000)	139.8	72.0	113.0	48.4
14	Sulphate as SO_4	mg/l	200(400)	46.40	37.6	45.6	29.5
15	Fluorides as F	mg/l	1.0(1.5)	0.486	0.594	0.391	0.489
16	Nitrates as NO_3	mg/l	45(NR)	3.8	2.9	4.6	2.8
17	Phenolic Compounds as C_6H_5OH	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

ENVIRONMENT LABORATORY VIMTA LABS REGD. No- DL 33004/99 Sr. No. 5

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Report Number	:	**VLL/VLS/26-27/07623/001**
Issued Date	:	**2026-07-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-06-11	Sampling Date	:	2026-06-05
Analysis Starting Date	:	2026-06-11	Analysis Completion Date	:	2026-06-26
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)	<0.005	<0.005	<0.005	<0.005
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.001	<0.001	<0.001	<0.001
23	Copper as Cu	mg/l	0.05(1.5)	<0.005	<0.005	<0.005	<0.005
24	Lead as Pb	mg/l	0.01(NR)	<0.005	<0.005	<0.005	<0.005
25	Manganese as Mn	mg/l	0.1(0.3)	0.01	0.008	0.009	0.006
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.018	0.015	0.026	0.013
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)	<0.005	<0.005	<0.005	<0.005
31	Zinc as Zn	mg/l	5.0(15)	0.021	0.009	0.015	0.011
32	Aluminum as Al	mg/l	0.03(0.2)	0.01	0.012	0.009	0.014
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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	0.01	0.017	0.021
38	Silver as Ag	mg/l	0.1(NR)	<0.005	<0.005	<0.005	<0.005

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. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-06-11	Sampling Date	:	2026-06-05
Analysis Starting Date	:	2026-06-11	Analysis Completion Date	:	2026-06-26
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	Chlorpyriphos	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

ENVIRONMENT LABORATORY
VIMTA LABS
REGD. No- DL 33004/99
Sr. No. 5

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P.O. No.	:	**3402001553**
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SAMPLE PARTICULARS : **GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date	:	2026-06-11	Sampling Date	:	2026-06-05
Analysis Starting Date	:	2026-06-11	Analysis Completion Date	:	2026-06-26
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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P.O. No.	:	**3402001553**
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date	:	2026-06-11	Sampling Date	:	2026-06-05
Analysis Starting Date	:	2026-06-11	Analysis Completion Date	:	2026-06-26
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)	7.33	6.84	6.78	6.85
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)	295	242	192	383
7	Total Hardness as $CaCO_3$	mg/l	200(600)	125	115	95	180
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	110	95	80	140
9	Calcium as Ca	mg/l	75(200)	27.0	25.0	19.5	41.5
10	Magnesium as Mg	mg/l	30(100)	13.5	12.4	11.3	18.6
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)	0.025	<0.005	<0.005	0.018
13	Chlorides as Cl	mg/l	250(1000)	69.2	48.4	33.7	88.3
14	Sulphate as SO_4	mg/l	200(400)	18.7	22.5	19.8	31.6
15	Fluorides as F	mg/l	1.0(1.5)	0.345	0.568	0.352	0.271
16	Nitrates as NO_3	mg/l	45(NR)	4.8	2.1	1.1	5.3
17	Phenolic Compounds as C_6H_5OH	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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 33004/99

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

Sample Registration Date	:	2026-06-11	Sampling Date	:	2026-06-05
Analysis Starting Date	:	2026-06-11	Analysis Completion Date	:	2026-06-26
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)	<0.005	<0.005	<0.005	<0.005
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.001	<0.001	<0.001	<0.001
23	Copper as Cu	mg/l	0.05(1.5)	<0.005	<0.005	<0.005	<0.005
24	Lead as Pb	mg/l	0.01(NR)	<0.005	<0.005	<0.005	<0.005
25	Manganese as Mn	mg/l	0.1(0.3)	0.012	<0.005	<0.005	0.010
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.021	0.011	0.028	0.017
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)	<0.005	<0.005	<0.005	<0.005
31	Zinc as Zn	mg/l	5.0(15)	0.017	0.019	0.011	0.008
32	Aluminum as Al	mg/l	0.03(0.2)	0.021	0.016	0.023	0.010
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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	0.012	0.01	0.009
38	Silver as Ag	mg/l	0.1(NR)	<0.005	<0.005	<0.005	<0.005

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

ENVIRONMENT LABORATORY VIMTA LABS REGD. No- DL 3300/99 Sr. No.-5

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

Report Number	:	**VLL/VLS/26-27/07623/001**
Issued Date	:	**2026-07-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-06-11	Sampling Date	:	2026-06-05
Analysis Starting Date	:	2026-06-11	Analysis Completion Date	:	2026-06-26
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	Chlorpyriphos	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

ENVIRONMENTAL LABORATORY Vimta Labs Ltd. REGD. No- DL 33004/99 Sr. No.-6

Dr. Subba Reddy Mallampati
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Report Number	:	**VLL/VLS/26-27/07623/001**
Issued Date	:	**2026-07-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-06-11	Sampling Date	:	2026-06-05
Analysis Starting Date	:	2026-06-11	Analysis Completion Date	:	2026-06-26
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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Chhattisgarh

Report Number	:	**VLL/VLS/26-27/07623/001**
Issued Date	:	**2026-07-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date	:	2026-06-11	Sampling Date	:	2026-06-05
Analysis Starting Date	:	2026-06-11	Analysis Completion Date	:	2026-06-26
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	-	7.94	7.33	7.52	6.35
2	Colour	Hazen	1	2	1	3
3	Conductivity	µS/cm	198	265	145	180
4	TDS	mg/l	125	166	92	113
5	DO	mg/l	5.6	4.8	6.4	5.6
6	BOD	mg/l	1.6	2.7	1.2	2.2
7	COD	mg/l	7.0	10.0	5.0	9.0
8	Turbidity	NTU	3.0	2.0	4.0	7.0
9	Total Hardness as $CaCO_3$	mg/l	47	60	38	57
10	Total Alkalinity as $CaCO_3$	mg/l	40	45	35	45
11	Calcium as Ca	mg/l	9.8	14	10.5	13.7
12	Magnesium as Mg	mg/l	5.4	6.2	2.8	5.6
13	Chlorides as Cl	mg/l	32.2	46.1	16.7	22.6
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.056	0.084	0.067	0.092
16	Sulphates as SO_4	mg/l	11.6	18.7	9.8	8.7
17	Fluorides as F	mg/l	0.322	0.348	0.382	0.314
18	Nitrates as NO_3	mg/l	0.9	1.8	1.1	2.4
19	Sodium as Na	mg/l	23.2	31.3	14.5	13.6
20	Potassium as K	mg/l	1.6	2.6	1.1	1.4
21	Total Boron as B	mg/l	0.009	0.027	0.010	0.021
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	<0.005	<0.005	<0.005	<0.005
26	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001
27	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005
28	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005
29	Iron as Fe	mg/l	0.031	0.058	0.046	0.019
30	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005
32	Zinc as Zn	mg/l	0.012	0.023	0.045	0.016
33	Aluminum as Al	mg/l	0.009	0.015	0.011	0.027
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.48	1.75	1.03	0.78
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	28	41	36	54

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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KORBA
Chhattisgarh

Report Number	:	**VLL/VLS/26-27/07623/002**
Issued Date	:	**2026-07-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-06-11	Sampling Date	:	2026-06-05
Analysis Starting Date	:	2026-06-11	Analysis Completion Date	:	2026-06-26
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	-	7.45	7.34	7.56	7.12	7.84
2	Colour	Hazen	1	4	3	2	2
3	Conductivity	µS/cm	175	220	205	155	165
4	TDS	mg/l	110	142	130	101	106
5	DO	mg/l	7.1	7.2	7.4	7.0	7.2
6	BOD	mg/l	1.7	1.2	2.1	2.7	2.3
7	COD	mg/l	6.0	5.0	8.0	10.0	9.0
8	Turbidity	NTU	6.0	4.0	8.0	4.0	8.0
9	Total Hardness as $CaCO_3$	mg/l	46	60	54	42	46
10	Total Alkalinity as $CaCO_3$	mg/l	40	50	45	35	40
11	Calcium as Ca	mg/l	12.4	15.6	13.5	12.2	13.2
12	Magnesium as Mg	mg/l	3.7	4.3	4.9	2.9	3.2
13	Chlorides as Cl	mg/l	25.6	31.4	29.8	21.7	22.5
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.075	0.085	0.079	0.11	0.14
16	Sulphates as SO_4	mg/l	9.7	12.3	11.8	9.8	8.2
17	Fluorides as F	mg/l	0.294	0.365	0.421	0.256	0.274
18	Nitrates as NO_3	mg/l	1.2	2.7	2.5	1.2	1.9
19	Sodium as Na	mg/l	18.4	23.2	21.2	15.4	16.2
20	Potassium as K	mg/l	1.4	2.6	1.9	1.3	0.8
21	Total Boron as B	mg/l	0.018	0.018	0.024	0.011	0.027
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	<0.005	<0.005	<0.005	<0.005	<0.005
26	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
27	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
28	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
29	Iron as Fe	mg/l	0.027	0.039	0.062	0.045	0.051
30	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
32	Zinc as Zn	mg/l	0.035	0.054	0.018	0.107	0.031
33	Aluminum as Al	mg/l	0.031	0.026	0.022	0.018	0.023
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.18	1.34	1.26	1.03	1.04
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	52	43	56	48	53

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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 33004/99 VIMTA

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KORBA
Chhattisgarh

Report Number	:	**VLL/VLS/26-27/10232/001**
Issued Date	:	**2026-08-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-07-13	Sampling Date	:	2026-07-06
Analysis Starting Date	:	2026-07-13	Analysis Completion Date	:	2026-07-28
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)	7.12	7.02	6.97	7.23
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	3	3	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	535	250	687	386
7	Total Hardness as $CaCO_3$	mg/l	200(600)	210	127	285	236
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	170	85	265	180
9	Calcium as Ca	mg/l	75(200)	44.8	25.6	73.6	58.4
10	Magnesium as Mg	mg/l	30(100)	23.4	15.4	24.3	21.9
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)	0.023	0.017	0.012	0.01
13	Chlorides as Cl	mg/l	250(1000)	151.2	62.2	143.8	55.3
14	Sulphate as SO_4	mg/l	200(400)	39.7	23.4	58.0	36.7
15	Fluorides as F	mg/l	1.0(1.5)	0.511	0.534	0.426	0.501
16	Nitrates as NO_3	mg/l	45(NR)	3.4	2.2	4.8	2.1
17	Phenolic Compounds as C_6H_5OH	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

ENVIRONMENT LABORATORY Vimta REGD. No- DL 33004/99 Sr. No. 5 VIMTA

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Report Number	:	**VLL/VLS/26-27/10232/001**
Issued Date	:	**2026-08-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-07-13	Sampling Date	:	2026-07-06
Analysis Starting Date	:	2026-07-13	Analysis Completion Date	:	2026-07-28
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)	<0.005	<0.005	<0.005	<0.005
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.001	<0.001	<0.001	<0.001
23	Copper as Cu	mg/l	0.05(1.5)	<0.005	<0.005	<0.005	<0.005
24	Lead as Pb	mg/l	0.01(NR)	<0.005	<0.005	<0.005	<0.005
25	Manganese as Mn	mg/l	0.1(0.3)	0.009	0.01	0.007	0.005
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.023	0.017	0.019	0.016
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)	<0.005	<0.005	<0.005	<0.005
31	Zinc as Zn	mg/l	5.0(15)	0.16	0.010	0.019	0.007
32	Aluminum as Al	mg/l	0.03(0.2)	0.013	0.01	0.011	0.008
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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	0.011	0.019	0.026
38	Silver as Ag	mg/l	0.1(NR)	<0.005	<0.005	<0.005	<0.005

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

ENVIRONMENT LABORATORY Vimta REGD. No- DL 33004/99 Sr. No.-5 VIMTA

Name and Designation of Authorized Signatory

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BALCO
KORBA
Chhattisgarh

Report Number	:	**VLL/VLS/26-27/10232/001**
Issued Date	:	**2026-08-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-07-13	Sampling Date	:	2026-07-06
Analysis Starting Date	:	2026-07-13	Analysis Completion Date	:	2026-07-28
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	Chlorpyriphos	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

ENVIRONMENT LABORATORY Vimta VIMTA LABS Sr. No.-5

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/26-27/10232/001**
Issued Date	:	**2026-08-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-07-13	Sampling Date	:	2026-07-06
Analysis Starting Date	:	2026-07-13	Analysis Completion Date	:	2026-07-28
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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Report Number	:	**VLL/VLS/26-27/10232/001**
Issued Date	:	**2026-08-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date	:	2026-07-13	Sampling Date	:	2026-07-06
Analysis Starting Date	:	2026-07-13	Analysis Completion Date	:	2026-07-28
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)	7.45	6.78	6.84	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)	2	2	3	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	298	210	175	372
7	Total Hardness as $CaCO_3$	mg/l	200(600)	94	87	90	130
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	120	80	70	125
9	Calcium as Ca	mg/l	75(200)	18.4	24.5	19.5	34
10	Magnesium as Mg	mg/l	30(100)	11.7	6.3	9.2	11.2
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)	0.106	<0.005	<0.005	0.011
13	Chlorides as Cl	mg/l	250(1000)	63.7	39.8	31.2	93.2
14	Sulphate as SO_4	mg/l	200(400)	17.3	19.8	17.4	28.7
15	Fluorides as F	mg/l	1.0(1.5)	0.412	0.587	0.369	0.345
16	Nitrates as NO_3	mg/l	45(NR)	3.6	2.3	1.4	4.3
17	Phenolic Compounds as C_6H_5OH	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 33004/99 Sr. No.-5 ENVIRONMENT LABORATORY VIMTA

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Chhattisgarh

Report Number	:	**VLL/VLS/26-27/10232/001**
Issued Date	:	**2026-08-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-07-13	Sampling Date	:	2026-07-06
Analysis Starting Date	:	2026-07-13	Analysis Completion Date	:	2026-07-28
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)	<0.005	<0.005	<0.005	<0.005
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.001	<0.001	<0.001	<0.001
23	Copper as Cu	mg/l	0.05(1.5)	<0.005	<0.005	<0.005	<0.005
24	Lead as Pb	mg/l	0.01(NR)	<0.005	<0.005	<0.005	<0.005
25	Manganese as Mn	mg/l	0.1(0.3)	0.01	<0.005	<0.005	0.011
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.023	0.013	0.031	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)	<0.005	<0.005	<0.005	<0.005
31	Zinc as Zn	mg/l	5.0(15)	0.012	0.015	0.01	0.006
32	Aluminum as Al	mg/l	0.03(0.2)	0.014	0.018	0.026	0.011
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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	0.013	0.011	0.010
38	Silver as Ag	mg/l	0.1(NR)	<0.005	<0.005	<0.005	<0.005

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

ENVIRONMENTAL LABORATORY Vimta VIMTA LABS LTD. REGD. No- DL 33004/99 Sr. No.-5 KIMTA

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Report Number	:	**VLL/VLS/26-27/10232/001**
Issued Date	:	**2026-08-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-07-13	Sampling Date	:	2026-07-06
Analysis Starting Date	:	2026-07-13	Analysis Completion Date	:	2026-07-28
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	Chlorpyriphos	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

ENVIRONMENT LABORATORY Vimta REGD. No- DL-33004/99 Sr. No.-5

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BALCO
KORBA
Chhattisgarh

Report Number	:	**VLL/VLS/26-27/10232/001**
Issued Date	:	**2026-08-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-07-13	Sampling Date	:	2026-07-06
Analysis Starting Date	:	2026-07-13	Analysis Completion Date	:	2026-07-28
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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Report Number	:	**VLL/VLS/26-27/10232/002**
Issued Date	:	**2026-08-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-07-13	Sampling Date	:	2026-07-06
Analysis Starting Date	:	2026-07-13	Analysis Completion Date	:	2026-07-28
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	-	7.12	7.09	7.14	6.94	7.22
2	Colour	Hazen	2	4	2	3	2
3	Conductivity	µS/cm	184	168	178	165	154
4	TDS	mg/l	117	110	113	105	101
5	DO	mg/l	7.2	7.5	7.1	6.9	7.2
6	BOD	mg/l	2.1	1.7	1.9	2.0	1.8
7	COD	mg/l	7.4	7.0	7.2	7.3	7.1
8	Turbidity	NTU	12.0	14.0	13.0	16.0	14.0
9	Total Hardness as $CaCO_3$	mg/l	47	46	47	45	43
10	Total Alkalinity as $CaCO_3$	mg/l	35	40	40	38	32
11	Calcium as Ca	mg/l	11.5	12.2	10.5	12.6	10.8
12	Magnesium as Mg	mg/l	4.5	3.8	4.8	3.2	3.8
13	Chlorides as Cl	mg/l	29.3	21.4	24.7	22.6	24.6
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.084	0.093	0.075	0.12	0.13
16	Sulphates as SO_4	mg/l	13.4	10.2	11.3	9.4	8.7
17	Fluorides as F	mg/l	0.254	0.301	0.378	0.201	0.227
18	Nitrates as NO_3	mg/l	1.8	1.7	1.4	1.2	1.9
19	Sodium as Na	mg/l	19.7	16.3	18.7	16.1	15.8
20	Potassium as K	mg/l	1.8	1.2	1.6	1.2	0.7
21	Total Boron as B	mg/l	0.019	0.015	0.028	0.013	0.021
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	<0.005	<0.005	<0.005	<0.005	<0.005
26	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
27	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
28	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
29	Iron as Fe	mg/l	0.018	0.032	0.056	0.037	0.044
30	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
32	Zinc as Zn	mg/l	0.026	0.043	0.014	0.098	0.067
33	Aluminum as Al	mg/l	0.037	0.023	0.019	0.027	0.018
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.25	1.04	1.20	1.05	1.05
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	74	72	86	80	76

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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 33004/99 Sr. No.-5 VIMTA

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Report Number	:	**VLL/VLS/26-27/10232/001**
Issued Date	:	**2026-08-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-07-13	Sampling Date	:	2026-07-06
Analysis Starting Date	:	2026-07-13	Analysis Completion Date	:	2026-07-28
Samples Details	:	SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti, SW3- Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco			

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	7.85	7.21	7.35	6.54
2	Colour	Hazen	2	3	1	2
3	Conductivity	µS/cm	205	232	125	151
4	TDS	mg/l	130	145	80	98
5	DO	mg/l	5.6	7.2	6.4	6.4
6	BOD	mg/l	1.3	1.4	1.5	1.4
7	COD	mg/l	5.8	5.1	6.2	5.7
8	Turbidity	NTU	6.0	13.0	5.0	11.0
9	Total Hardness as $CaCO_3$	mg/l	45	51	34	43
10	Total Alkalinity as $CaCO_3$	mg/l	42	40	30	40
11	Calcium as Ca	mg/l	10.2	11.8	9.6	10.3
12	Magnesium as Mg	mg/l	4.7	5.2	2.5	4.2
13	Chlorides as Cl	mg/l	34.2	42.2	15.4	18.5
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.067	0.093	0.056	0.086
16	Sulphates as SO_4	mg/l	9.8	13.5	8.5	7.6
17	Fluorides as F	mg/l	0.256	0.3	0.3	0.278
18	Nitrates as NO_3	mg/l	1.1	1.5	1.2	1.8
19	Sodium as Na	mg/l	25.3	28.7	12.4	14.4
20	Potassium as K	mg/l	1.7	1.8	1	1.3
21	Total Boron as B	mg/l	0.010	0.023	0.014	0.025
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	<0.005	<0.005	<0.005	<0.005
26	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001
27	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005
28	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005
29	Iron as Fe	mg/l	0.029	0.047	0.038	0.022
30	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005
32	Zinc as Zn	mg/l	0.010	0.017	0.031	0.019
33	Aluminum as Al	mg/l	0.023	0.019	0.017	0.029
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.64	1.75	0.92	0.96
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	42	68	54	62

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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 3400/WS Sr. No.

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ISSUED TO:

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

Report Number	:	**VLL/VLS/26-27/13104/001**
Issued Date	:	**2026-09-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-08-11	Sampling Date	:	2026-08-04
Analysis Starting Date	:	2026-08-12	Analysis Completion Date	:	2026-08-27
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)	7.25	6.89	6.82	7.12
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	3	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	475	240	624	342
7	Total Hardness as $CaCO_3$	mg/l	200(600)	180	114	272	218
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	150	60	210	130
9	Calcium as Ca	mg/l	75(200)	50.4	28.0	73.5	51.6
10	Magnesium as Mg	mg/l	30(100)	13.1	10.7	21.4	21.6
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)	0.015	0.013	0.024	0.011
13	Chlorides as Cl	mg/l	250(1000)	116.5	70.1	153.5	68.5
14	Sulphate as SO_4	mg/l	200(400)	49.6	31.4	56.7	41.9
15	Fluorides as F	mg/l	1.0(1.5)	0.489	0.529	0.419	0.463
16	Nitrates as NO_3	mg/l	45(NR)	4.7	1.8	5.6	1.4
17	Phenolic Compounds as C_6H_5OH	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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Report Number	:	**VLL/VLS/26-27/13104/001**
Issued Date	:	**2026-09-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-08-11	Sampling Date	:	2026-08-04
Analysis Starting Date	:	2026-08-12	Analysis Completion Date	:	2026-08-27
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)	<0.005	<0.005	<0.005	<0.005
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.001	<0.001	<0.001	<0.001
23	Copper as Cu	mg/l	0.05(1.5)	<0.005	<0.005	<0.005	<0.005
24	Lead as Pb	mg/l	0.01(NR)	<0.005	<0.005	<0.005	<0.005
25	Manganese as Mn	mg/l	0.1(0.3)	<0.005	<0.005	0.008	0.005
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.025	0.015	0.028	0.021
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)	<0.005	<0.005	<0.005	<0.005
31	Zinc as Zn	mg/l	5.0(15)	0.043	0.008	0.017	0.009
32	Aluminum as Al	mg/l	0.03(0.2)	0.017	0.006	0.013	0.01
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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	0.01	0.023	0.015
38	Silver as Ag	mg/l	0.1(NR)	<0.005	<0.005	<0.005	<0.005

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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Report Number	:	**VLL/VLS/26-27/13104/001**
Issued Date	:	**2026-09-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-08-11	Sampling Date	:	2026-08-04
Analysis Starting Date	:	2026-08-12	Analysis Completion Date	:	2026-08-27
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	Chlorpyriphos	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

ENVIRONMENT LABORATORY VIMTA LABS REGD. No- DL 33004/99 Sr. No-5

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Report Number	:	**VLL/VLS/26-27/13104/001**
Issued Date	:	**2026-09-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-08-11	Sampling Date	:	2026-08-04
Analysis Starting Date	:	2026-08-12	Analysis Completion Date	:	2026-08-27
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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Report Number	:	**VLL/VLS/26-27/13104/001**
Issued Date	:	**2026-09-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date	:	2026-08-11	Sampling Date	:	2026-08-04
Analysis Starting Date	:	2026-08-12	Analysis Completion Date	:	2026-08-27
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)	7.25	6.71	6.78	6.81
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	1	3	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	262	198	140	295
7	Total Hardness as $CaCO_3$	mg/l	200(600)	110	119	92	116
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	95	40.48	30	70
9	Calcium as Ca	mg/l	75(200)	24.0	32.2	17.5	25.6
10	Magnesium as Mg	mg/l	30(100)	12.2	9.2	11.7	12.6
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)	0.034	<0.005	<0.005	<0.005
13	Chlorides as Cl	mg/l	250(1000)	62.4	71.7	46.0506	98
14	Sulphate as SO_4	mg/l	200(400)	19.1	20.2	19.8	27.4
15	Fluorides as F	mg/l	1.0(1.5)	0.453	0.559	0.354	0.329
16	Nitrates as NO_3	mg/l	45(NR)	3.4	2.1	1.7	3.4
17	Phenolic Compounds as C_6H_5OH	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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 33004/99 VIMTA

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Report Number : **VLL/VLS/26-27/13104/001**
Issued Date : **2026-09-04**
P.O. No. : **3402001553**
P.O. Date : **2025-10-01**

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

Sample Registration Date	:	2026-08-11	Sampling Date	:	2026-08-04
Analysis Starting Date	:	2026-08-12	Analysis Completion Date	:	2026-08-27
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)	<0.005	<0.005	<0.005	<0.005
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.001	<0.001	<0.001	<0.001
23	Copper as Cu	mg/l	0.05(1.5)	<0.005	<0.005	<0.005	<0.005
24	Lead as Pb	mg/l	0.01(NR)	<0.005	<0.005	<0.005	<0.005
25	Manganese as Mn	mg/l	0.1(0.3)	0.011	<0.005	<0.005	0.011
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.034	0.018	0.028	0.011
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)	<0.005	<0.005	<0.005	<0.005
31	Zinc as Zn	mg/l	5.0(15)	0.01	0.013	0.007	0.008
32	Aluminum as Al	mg/l	0.03(0.2)	0.016	0.024	0.018	0.010
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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)	0.022	0.026	0.016	0.015
38	Silver as Ag	mg/l	0.1(NR)	<0.005	<0.005	<0.005	<0.005

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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 3300/99 Sr. No.-5

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Report Number : **VLL/VLS/26-27/13104/001**
Issued Date : **2026-09-04**
P.O. No. : **3402001553**
P.O. Date : **2025-10-01**

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

Sample Registration Date	:	2026-08-11	Sampling Date	:	2026-08-04
Analysis Starting Date	:	2026-08-12	Analysis Completion Date	:	2026-08-27
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	Chlorpyriphos	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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No.- DL 3300/99 VIMTA

Dr. Subba Reddy Mallampati
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ISSUED TO:
M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number	:	**VLL/VLS/26-27/13104/001**
Issued Date	:	**2026-09-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-08-11	Sampling Date	:	2026-08-04
Analysis Starting Date	:	2026-08-12	Analysis Completion Date	:	2026-08-27
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

ENVIRONMENT LABORATORY VIMTA LABS REGD. No- DL 33004/99 VIMTA

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ISSUED TO:
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KORBA
Chhattisgarh

Report Number	:	**VLL/VLS/26-27/13104/001**
Issued Date	:	**2026-09-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-08-11	Sampling Date	:	2026-08-04
Analysis Starting Date	:	2026-08-12	Analysis Completion Date	:	2026-08-25
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	-	7.24	7.08	7.21	6.74
2	Colour	Hazen	1	2	1	3
3	Conductivity	µS/cm	260	298	205	230
4	TDS	mg/l	160	186	125	144
5	TSS	mg/l	270	380	310	450
6	DO	mg/l	6.2	5.2	6.5	5.7
7	BOD	mg/l	0.4	2.2	0.6	1.3
8	COD	mg/l	1.6	8.0	2.4	5.6
9	Turbidity	NTU	12	25	14	26
10	Total Hardness as $CaCO_3$	mg/l	67	75	61	70
11	Total Alkalinity as $CaCO_3$	mg/l	50	55	45	50
12	Calcium as Ca	mg/l	12.5	16.4	11.5	14.4
13	Magnesium as Mg	mg/l	8.7	8.3	7.8	8.3
14	Chlorides as Cl	mg/l	44.7	51.2	25.6	26.7
15	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
16	Phosphates as PO_4	mg/l	0.056	0.084	0.068	0.094
17	Sulphates as SO_4	mg/l	13.1	17.8	15.1	21.7
18	Fluorides as F	mg/l	0.187	0.246	0.252	0.278
19	Nitrates as NO_3	mg/l	1.6	2.4	1.3	2.1
20	Sodium as Na	mg/l	27.3	32.5	16.6	18.4
21	Potassium as K	mg/l	1.9	2.3	1.5	2.1
22	Total Boron as B	mg/l	0.012	0.034	0.011	0.028
23	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
24	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01
25	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0
26	Cadmium as Cd	mg/l	<0.005	<0.005	<0.005	<0.005
27	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001
28	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005
29	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005
30	Iron as Fe	mg/l	0.017	0.032	0.024	0.014
31	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05
32	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005
33	Zinc as Zn	mg/l	0.009	0.016	0.028	0.015
34	Aluminum as Al	mg/l	0.019	0.011	0.021	0.021
35	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
36	SAR	-	1.45	1.63	0.93	0.96
37	Insecticides	mg/l	Absent	Absent	Absent	Absent
38	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
39	Total Coliforms	MPN/100	190	270	150	290

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

Name and Designation of Authorized Signatory

ENVIRONMENT LABORATORY VIMTA LABS REGD. No- DL 33004/99

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ISSUED TO:

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

Report Number	:	**VLL/VLS/26-27/13104/002**
Issued Date	:	**2026-09-04**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-08-11	Sampling Date	:	2026-08-04
Analysis Starting Date	:	2026-08-12	Analysis Completion Date	:	2026-08-25
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	-	7.03	6.98	7.01	6.87	7.01
2	Colour	Hazen	1	2	3	4	3
3	Conductivity	µS/cm	215	250	241	195	230
4	TDS	mg/l	136	160	151	121	142
5	TSS	mg/l	225	390	340	470	430
6	DO	mg/l	7.4	7.7	7.3	7.2	7.4
7	BOD	mg/l	1.5	1.7	1.3	1.9	1.8
8	COD	mg/l	5.2	6.4	5.6	7.2	7.2
9	Turbidity	NTU	36	35	32	35	35
10	Total Hardness as $CaCO_3$	mg/l	69	70	76	62	74
11	Total Alkalinity as $CaCO_3$	mg/l	40	50	45	35	40
12	Calcium as Ca	mg/l	16.8	15.2	14.4	13.6	16.0
13	Magnesium as Mg	mg/l	6.5	7.8	9.7	6.9	8.3
14	Chlorides as Cl	mg/l	31.2	37	34.3	28.7	36
15	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
16	Phosphates as PO_4	mg/l	0.071	0.056	0.063	0.098	0.11
17	Sulphates as SO_4	mg/l	21.1	20.1	24.6	18.9	19.8
18	Fluorides as F	mg/l	0.274	0.296	0.209	0.254	0.239
19	Nitrates as NO_3	mg/l	1.3	2.1	1.5	1.5	2.7
20	Sodium as Na	mg/l	16.7	23.6	19.5	15.3	17.6
21	Potassium as K	mg/l	2.3	3.4	1.9	1.1	1.5
22	Total Boron as B	mg/l	0.017	0.011	0.031	0.016	0.018
23	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
24	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
25	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
26	Cadmium as Cd	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
27	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
28	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
29	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
30	Iron as Fe	mg/l	0.022	0.043	0.061	0.037	0.041
31	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
32	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
33	Zinc as Zn	mg/l	0.032	0.037	0.019	0.076	0.052
34	Aluminum as Al	mg/l	0.024	0.018	0.021	0.034	0.026
35	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
36	SAR	-	0.88	1.23	0.97	0.84	0.89
37	Insecticides	mg/l	Absent	Absent	Absent	Absent	Absent
38	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent	Absent
39	Total Coliforms	MPN/100	210	410	380	460	567

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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 33004/99 VIMTA

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ISSUED TO:

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

Report Number	:	**VLL/VLS/26-27/15382/001**
Issued Date	:	**2026-10-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-09-10	Sampling Date	:	2026-09-01
Analysis Starting Date	:	2026-09-10	Analysis Completion Date	:	2026-09-25
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)	6.97	6.81	6.84	6.85
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	2
6	Total dissolved solids at 180^{0}C	mg/l	500(2000)	544	210	645	633
7	Total Hardness as $CaCO_3$	mg/l	200(600)	218	86	261	284
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	165	50	220	250
9	Calcium as Ca	mg/l	75(200)	55.2	21.5	67.2	73.5
10	Magnesium as Mg	mg/l	30(100)	19.4	7.8	22.6	24.4
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)	0.01	0.017	0.021	0.009
13	Chlorides as Cl	mg/l	250(1000)	151.4	58.2	164.7	115.8
14	Sulphate as SO_4	mg/l	200(400)	47.6	29.7	49.8	68.7
15	Fluorides as F	mg/l	1.0(1.5)	0.667	0.416	0.661	0.626
16	Nitrates as NO_3	mg/l	45(NR)	3.5	2.3	4.5	2.9
17	Phenolic Compounds as C_6H_5OH	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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Report Number	:	**VLL/VLS/26-27/15382/001**
Issued Date	:	**2026-10-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-09-10	Sampling Date	:	2026-09-01
Analysis Starting Date	:	2026-09-10	Analysis Completion Date	:	2026-09-25
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)	<0.005	<0.005	<0.005	<0.005
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.001	<0.001	<0.001	<0.001
23	Copper as Cu	mg/l	0.05(1.5)	<0.005	<0.005	<0.005	<0.005
24	Lead as Pb	mg/l	0.01(NR)	<0.005	<0.005	<0.005	<0.005
25	Manganese as Mn	mg/l	0.1(0.3)	<0.005	<0.005	0.009	0.006
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.021	0.019	0.034	0.027
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)	<0.005	<0.005	<0.005	<0.005
31	Zinc as Zn	mg/l	5.0(15)	0.028	0.007	0.015	0.008
32	Aluminum as Al	mg/l	0.03(0.2)	0.015	0.009	0.017	0.011
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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	0.011	0.026	0.018
38	Silver as Ag	mg/l	0.1(NR)	<0.005	<0.005	<0.005	<0.005

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

ENVIRONMENT LABORATORY Vimta VIMTA LABS Sr. No.-5 VIMTA

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Chhattisgarh

Report Number	:	**VLL/VLS/26-27/15382/001**
Issued Date	:	**2026-10-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-09-10	Sampling Date	:	2026-09-01
Analysis Starting Date	:	2026-09-10	Analysis Completion Date	:	2026-09-25
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	Chlorpyriphos	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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 33004/99 Sr. No.-8 VIMTA

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ISSUED TO:

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

Report Number	:	**VLL/VLS/26-27/15382/001**
Issued Date	:	**2026-10-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-09-10	Sampling Date	:	2026-09-01
Analysis Starting Date	:	2026-09-10	Analysis Completion Date	:	2026-09-25
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-

ENVIRONMENT LABORATORY Vimta REGD. No- DL 33004/99 Sr. No.-5 VIMTA

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Report Number	:	**VLL/VLS/26-27/15382/001**
Issued Date	:	**2026-10-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date	:	2026-09-10	Sampling Date	:	2026-09-01
Analysis Starting Date	:	2026-09-10	Analysis Completion Date	:	2026-09-25
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)	7.16	6.90	6.88	6.92
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	2	3	3
6	Total dissolved solids at 180°C	mg/l	500(2000)	315	210	405	366
7	Total Hardness as $CaCO_3$	mg/l	200(600)	146	115	164	176
8	Total Alkalinity as $CaCO_3$	mg/l	200(600)	130	50	104	110
9	Calcium as Ca	mg/l	75(200)	32.8	27.2	37.6	46.4
10	Magnesium as Mg	mg/l	30(100)	15.6	11.2	17.0	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)	0.027	<0.005	0.056	<0.005
13	Chlorides as Cl	mg/l	250(1000)	64.1	67.6	197.8	97.8
14	Sulphate as SO_4	mg/l	200(400)	19.4	20.0	70.1	37.5
15	Fluorides as F	mg/l	1.0(1.5)	0.372	0.420	0.682	0.525
16	Nitrates as NO_3	mg/l	45(NR)	4.7	3.2	2.8	4.7
17	Phenolic Compounds as C_6H_5OH	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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No- DL 3300 Sr. No.-5 VIMTA

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Report Number	:	**VLL/VLS/26-27/15382/001**
Issued Date	:	**2026-10-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-09-10	Sampling Date	:	2026-09-01
Analysis Starting Date	:	2026-09-10	Analysis Completion Date	:	2026-09-25
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)	<0.005	<0.005	<0.005	<0.005
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.001	<0.001	<0.001	<0.001
23	Copper as Cu	mg/l	0.05(1.5)	<0.005	<0.005	0.011	<0.005
24	Lead as Pb	mg/l	0.01(NR)	<0.005	<0.005	<0.005	<0.005
25	Manganese as Mn	mg/l	0.1(0.3)	0.01	<0.005	0.011	0.008
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.039	0.014	0.078	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)	<0.005	<0.005	<0.005	<0.005
31	Zinc as Zn	mg/l	5.0(15)	0.011	0.016	0.067	0.010
32	Aluminum as Al	mg/l	0.03(0.2)	0.018	0.026	0.019	0.011
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H2S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl2	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	0.024	0.014	0.019
38	Silver as Ag	mg/l	0.1(NR)	<0.005	<0.005	<0.005	<0.005

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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. Sr. No. VIMTA

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P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-09-10	Sampling Date	:	2026-09-01
Analysis Starting Date	:	2026-09-10	Analysis Completion Date	:	2026-09-25
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	Chlorpyriphos	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

ENVIRONMENT LABORATORY Vimta VIMTA LABS REGD. No. DL-33004 Sr. No.-5 VIMTA

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Report Number	:	**VLL/VLS/26-27/15382/001**
Issued Date	:	**2026-10-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-09-10	Sampling Date	:	2026-09-01
Analysis Starting Date	:	2026-09-10	Analysis Completion Date	:	2026-09-25
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

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Issued Date	:	**2026-10-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date	:	2026-09-10	Sampling Date	:	2026-09-01
Analysis Starting Date	:	2026-09-10	Analysis Completion Date	:	2026-09-22
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	-	7.52	6.98	6.56	6.79
2	Colour	Hazen	1	3	1	4
3	Conductivity	µS/cm	353	224	120	210
4	TDS	mg/l	180	270	290	378
5	TSS	mg/l	220	143	80	134
6	DO	mg/l	6.9	6.1	7.1	6.0
7	BOD	mg/l	6.3	9.2	6.7	7.7
8	COD	mg/l	30.4	35.2	25.6	33.6
9	Turbidity	NTU	11	17	8	14
10	Total Hardness as $CaCO_3$	mg/l	110	60	32	58
11	Total Alkalinity as $CaCO_3$	mg/l	70	50	30	45
12	Calcium as Ca	mg/l	22.4	11.2	6.4	10.4
13	Magnesium as Mg	mg/l	13.1	7.8	3.9	7.8
14	Chlorides as Cl	mg/l	57.2	28.1	11.3	28.7
15	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
16	Phosphates as PO_4	mg/l	0.047	0.093	0.056	0.084
17	Sulphates as SO_4	mg/l	22.0	18.0	12.0	16.5
18	Fluorides as F	mg/l	0.386	0.402	0.326	0.382
19	Nitrates as NO_3	mg/l	1.5	2.4	1.3	1.9
20	Sodium as Na	mg/l	29.6	21.5	12.2	19.6
21	Potassium as K	mg/l	2.1	3.7	1.5	3.6
22	Total Boron as B	mg/l	0.010	0.025	0.031	0.025
23	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
24	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01
25	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0
26	Cadmium as Cd	mg/l	<0.005	<0.005	<0.005	<0.005
27	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001
28	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005
29	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005
30	Iron as Fe	mg/l	0.015	0.026	0.035	0.028
31	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05
32	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005
33	Zinc as Zn	mg/l	0.010	0.019	0.024	0.019
34	Aluminum as Al	mg/l	0.021	0.015	0.025	0.018
35	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
36	SAR	-	1.23	1.21	0.94	1.12
37	Insecticides	mg/l	Absent	Absent	Absent	Absent
38	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
39	Total Coliforms	MPN/100	170	240	160	310

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

Name and Designation of Authorized Signatory

ENVIRONMENT LABORATORY Vimta VIMTA LABS Regd. No.-DL Sr. No.-5

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Report Number	:	**VLL/VLS/26-27/15382/002**
Issued Date	:	**2026-10-05**
P.O. No.	:	**3402001553**
P.O. Date	:	**2025-10-01**

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

Sample Registration Date : 2026-09-10 Sampling Date : 2026-09-01
Analysis Starting Date : 2026-09-10 Analysis Completion Date : 2026-09-22
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	-	6.87	7.02	7.10	6.85	6.94
2	Colour	Hazen	1	3	4	3	4
3	Conductivity	µS/cm	170	187	160	155	165
4	TDS	mg/l	245	360	320	410	385
5	TSS	mg/l	108	120	105	96	110
6	DO	mg/l	7.7	7.5	7.7	7.7	7.6
7	BOD	mg/l	6.8	7.0	6.9	6.8	6.4
8	COD	mg/l	27.2	30.4	28.8	27.2	32.0
9	Turbidity	NTU	18	16	17	18	16
10	Total Hardness as $CaCO_3$	mg/l	50	43	50	50	56
11	Total Alkalinity as $CaCO_3$	mg/l	35	40	40	30	35
12	Calcium as Ca	mg/l	11.2	9.6	10.4	9.6	11.2
13	Magnesium as Mg	mg/l	5.4	4.7	5.8	6.3	6.8
14	Chlorides as Cl	mg/l	25.7	26.1	19.8	23.2	24.7
15	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
16	Phosphates as PO_4	mg/l	0.056	0.078	0.095	0.13	0.12
17	Sulphates as SO_4	mg/l	12.1	13.2	10.5	12.4	10.3
18	Fluorides as F	mg/l	0.398	0.385	0.378	0.398	0.374
19	Nitrates as NO_3	mg/l	1.1	2.2	1.2	1.3	1.9
20	Sodium as Na	mg/l	15.3	21.5	13.5	12.2	11.7
21	Potassium as K	mg/l	1.8	2.6	1.1	0.9	1.2
22	Total Boron as B	mg/l	0.015	0.013	0.028	0.019	0.024
23	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
24	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
25	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
26	Cadmium as Cd	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
27	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
28	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
29	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
30	Iron as Fe	mg/l	0.045	0.037	0.058	0.043	0.034
31	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
32	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
33	Zinc as Zn	mg/l	0.037	0.045	0.032	0.087	0.041
34	Aluminum as Al	mg/l	0.027	0.013	0.018	0.022	0.021
35	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
36	SAR	-	0.93	1.42	0.83	0.75	0.68
37	Insecticides	mg/l	Absent	Absent	Absent	Absent	Absent
38	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent	Absent
39	Total Coliforms	MPN/100	230	390	360	410	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

ENVIRONMENT LABORATORY VIMTA LABS REGD. No- DL 330(W)96 VIMTA

Dr. Subba Reddy Mallampati
(Manager – Environment)