केवल नागपुर कोर्ट के अधिकार में

Under Jurisdiction of Nagpur Court Only

वेस्टर्न कोलफील्ड्स लिमिटेड

WESTERN COALFIELDS LIMITED

(मिनीरत्न कंपनी) (A Miniratna Company)

(कोल इंडिया लि. की अनुषंगी कंपनी)

(A Subsidiary of Coal India Limited

स्वच्छ भारत

एक कदम स्वच्छता की ओर

उपक्षेत्रिय प्रबन्धक का कार्यालय

घोंसा उपक्षेत्र

Ghonsa Sub Area,
Wani North Area

घोंसा उपक्षेत्र, वनी उत्तर क्षेत्र

Office of the Sub Area Manager
Ghonsa Sub Area.
www.westerncoal.nic.in

पंजी॰का: पो.रासा, तह. वनी, जि. यवतमाल (महाराष्ट्र)-445304/ Regd. Off Po Rasa, Tah Wani , Dist. Yavatmal Mah- 445304

Ref. No.- WCL/WNA/GSA/SAM/2023-24/1354 Dt. 27-11-2023

प्रति,
अपर मुख्य प्रधान वन संरक्षक,
पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय,
क्षेत्रीय कार्यालय (पश्चिम केन्द्रीय क्षेत्र),
भूतल, ईस्ट विंग, न्यू सेक्रेटरीएट बिल्डिंग,
सिविल लाइन्स, नागपुर – 440 001 (महाराष्ट्र राज्य)

विषय:- Six Monthly Compliance Report of Conditions Stipulated in Environmental Clearance for **Ghonsa Opencast Coal Mine (0.60 MTPA)** of Wani North Area, WCL for the period **April 2023 to September 2023**

महोदय,

With reference to above subject matter, please find enclosed herewith the Six Monthly Compliance Report of Conditions Stipulated in Environmental Clearance for **Ghonsa Opencast Coal Mine (0.60 MTPA)** of Wani North Area, WCL for the period **April 2023 to September 2023.**
For your kind information please.

Thanking you Sir.

भवदीय

27/11/23

उपक्षेत्रीय प्रबंधक
घोन्सा उपक्षेत्र

प्रतिलिपि:

1. क्षेत्रीय महाप्रबन्धक, वणी नार्थ क्षेत्र
2. महाप्रबंधक (पर्यावरण/विभागाध्यक्ष), वेस्टर्न कोलफील्ड्स लिमिटेड, मुख्यालय, नागपुर, महाराष्ट्र - 440 001
3. क्षेत्रीय अधिकारी, महाराष्ट्र प्रदूषण नियंत्रण बोर्ड, प्रथम तल, उद्योग भवन, स्टेशन रोड, चंद्रपुर, महाराष्ट्र – 442 401
4. क्षेत्रीय नोडल अधिकारी(पर्या.), वणी नॉर्थ क्षेत्र
5. कार्यालय प्रति

No.J-11015/165/2009-IA-II (M) pt. file
Government of India
Ministry of Environment, Forest and Climate Change
IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,
Jorbagh Road, N Delhi-3
Dated: 8th June, 2017

To,

The General Manager (Environment),
M/s Western Coalfields Ltd,
Coal Estate, 9th Floor, Civil Lines,
Nagpur - 1 (Maharashtra)

Email: gmenvironment.wcl@nic.in; wclenv@yahoo.in

Sub: Expansion of Ghonsa OCP of capacity 0.60 MTPA of M/s Western Coalfields Ltd with increase in land area from 128.79 ha to 278.683 ha located in District Yavatmal (Maharashtra) - Environmental Clearance - reg.

Sir,

This is with reference to your letter No. WCL/ENV/HQ/11-B/95 dated 10.03.2016, online proposal No. IA/MH/CMIN/61865/2013 and subsequent letters/email dated 27.04.2016, 07.05.2016, 13.05.2016, 21.09.2016, 23.09.2016, 05.10.2016, 31.01.2017, 20.03.2017, 18.04.2017 and 27.04.2017 for grant of environmental clearance to the above-mentioned project.

2. The Ministry of Environment, Forest and Climate Change has considered the application. It is noted that the proposal is for grant of environmental clearance to the expansion of Ghonsa OCP of capacity 0.60 MTPA of M/s Western Coalfields Ltd with increase in land area from 128.79 ha to 278.683 ha located in District Yavatmal (Maharashtra).

3. The proposal was considered in its 55th EAC meeting held on 11-13 May, 2016, 4th reconstituted EAC meeting held on 30-31 January, 2017 and 9th meeting held on 27-28 April, 2017. The details of the proposal, as per the documents submitted by the project proponent, and also as informed during the meeting, are reported to be as under:-

(i) EC was granted vide letter no J-11015/165/2009-IA-II (M) dated 29th February, 2012 for Phase-I of Ghonsa OC for 0.45 MTPA in an area of 128.79 ha. EC was further granted under 7(ii) of EIA notification 2006 vide letter no J-11015/165/2009-IA-II (M) dated 8th December, 2014 for expansion in production capacity from 0.45 MTPA to 0.60 MTPA within same mine lease area of 128.79 ha.

(ii) The latitude and longitude of the project are 19° 57'11" to 19° 58'35" N and 78° 49'30" to 78° 50' 25" E respectively.

(iii) Joint Venture: There is no Joint venture.

(iv) Coal Linkage: Thermal power plants of MAHAGENCO & Miscellaneous consumers.

(v) Employment generated / to be generated: Required Manpower for the project is 108 Nos.

(vi) Benefits of the project: This project will thus bridge the gap to the extent of the peak production capacity of the project) between demand & supply of non – coking coal for power plants& other bulk consumers from Western as well as Southern part of the country.

(vii) The land usage of the project will be as follows:

Pre-Mining:

Agriculture Land	204.443 ha
Forest Land	24.0 ha
Waste land	50.240 ha

Post- Mining:

S. No.	Land use post mining	Land use (ha)				
		Plantation	Water Body	Public use	Undis-turbed	Total
1	External OB Dump	29.35	0	0	0	29.35
2	Excavation Area	80	46.84	0	8.28	135.12
3	Infrastructure like Sub-station, CHP Service Buildings etc.	4	0	11	0	15
4	Diverted Road	0.25	0	1.25	0	1.5
5	Blasting Zone (including rationalization Area)	20	0	0	32.333	52.333
6	Future Extn. & Plain Land Plantation	0.76	0	0	14.24	15
7	Embankment	0	0	30.38	0	30.38
Total		134.36	46.84	42.63	54 853	278.683

(viii) Total geological reserve is 20.50 MT. The mineable reserve 4.90 MT, extractable reserve is 4.90 MT (balance as on 1.04.2016). The per cent of extraction would be 100 %.

(ix) The coal grade is GCV – 4684 Kcal/kg. G9. The stripping ratio is 1: 5.77 m3/t. The average Gradient is 1 in 12 to 1 in 7.5. There will be three seams.

(x) Thickness of the Seam:

Seam/Parting	Depth Range (floor) (m)		Thickness Range (m)	
	Min.	Max	Min.	Max.
Seam-II	8.95	84.30	2.80	6.30
Parting	12.30 m - 19.27 m			
Seam-I	11.25	107.20	0.85	3.50
Parting	6.95 m to 8.41 m			
Local Seam	-	-	0.20	1.10

(xi) Total estimated water requirement is 130 KLD.
(xii) The Method of mining would be Opencast with Shovel – Dumper Combination
(xiii) There is one external OB dump with Quantity of 3 27 Mm3(As on 01.04.2016) in an area of 29.35 ha ha with height of 60 meter above the surface level and one internal dump with Quantity of 25.85 Mm3 in an area of 88.28 ha (maximum height 30 m above ground level) .
(xiv) The final mine void would be in 46 84 ha with depth upto 75.m and the Total quarry area is 135.12 Ha. Backfilled quarry area of 80 Ha shall be reclaimed with plantation (and 8.28 ha of backfilled area shall remain as undisturbed). A void of 46.84 ha ha with depth varying upto 75 m which is proposed to be converted into a water body.
(xv) Fortnightly environmental monitoring as per Existing EC is being carried out.
(xvi) The life of mine is 9 Years.
(xvii) Transportation: Coal transportation in pit by dumpers. Surface to siding by Tippers and loading at siding by pay loaders
(xviii) There is no R & R involved.
(xix) Cost: Total capital cost of the project is Rs.102.47 crore (Existing Capital Rs.5.23 Crores & Additional Capital requirement Rs 97.24 Crores). CSR Cost: The fund for the CSR will be allocated based on 2% of the average net profit of the Company for the three immediate preceding financial years or Rs 2.00 per tonne of coal production of the previous year whichever is higher. R&R Cost Nil. Environmental Management Cost: Capital Cost Rs 0.60 crores and Recurring cost Rs.6.00 per tonne.
(xx) Water body : The main drainage of the area is controlled by Vidharbha River which flows in south-westerly direction passing along the Central and Southern property and finally meets with Penganga River. A few small seasonal nallahs passing through the property drain into Vidharbha River during rainy season.
(xxi) Approvals: Application submitted to CGWA vide letter no. WCL/ENV/HQ/20-J&17-U/567 dated 26.12.16. Mining plan has been approved vide letter no. WCL/BD/SECTT/BM-267/2015/2241 on 21.08.2015 by WCL Board. Mine closure plan is an integral part of mining plan.
(xxii) Wildlife issues: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
(xxiii) Forestry issues: 24.0 ha is the forest land for which Stage-I FC has been obtained.
(xxiv) Total afforestation plan shall be implemented covering an area of 134.36 ha at the end of mining. Green Belt over an area of 20 Ha ha. Density of tree plantation 2500 trees/ ha of plants.
(xxv) -There are no court cases/violation pending with the project proponent.
(xxvi) Public Hearing was held on 09.08.2011. The issues raised in the PH include land compensation, air pollution control, plantation & disposal of OB, water sprinkling & CSR works.
(xxvii) Public notice: Public notice issued in three local newspapers (In English, Marathi and Hindi) for inviting comments. No comments were received.
(xxviii) The proposal for expansion of Ghonsa Opencast Coal Mine involving an increase in production capacity from 0.30 MTPA to 0.45 MTPA and ML area from 128 ha to 293.65 ha was earlier discussed in the EAC meeting held on 3-4 January, 2012. The mine lease area of 293.65 ha involved 24 ha of forest land, for which the stage-I FC was not available while considering the proposal for grant of EC at that stage. In order to meet the production target, the EC for enhancement was granted for 0.45 MTPA in the existing land area without forest land i.e. 128 79 ha as Phase-I. Regarding phase-II for production capacity 0.45 MTPA in the extended ML area of 293.65 ha, EAC recommended the project for EC, mentioning about the Public

Hearing (PH) conducted 9th August, 2011. The Stage-I Forestry Clearance has since been obtained vide MoEF's letter dated 8th March, 2016.

(xxix) The latest status of compliance of PH along with details of CSR activities (from 2010-11 to 2013-14) taken up in the subject mine as well as various pollution control measures taken up in the surrounding operating mines of Wani North Area of WCL have been compiled in the form of a booklet. It may be seen that all the issues raised in the Public Hearing have been duly addressed and the work completed. Further, additional works beyond the works committed during PH have also been completed and listed in the booklet. As such, the Public Hearing has been duly completed for the mining area of 293 ha and the present area of 278.683 ha is within the same land area of 293 ha and there is no change in location, type of mining etc.

(xxx) Re-inspection by the Regional Office, MoEF&CC has been conducted and the fresh Regional Office's report as received vide no. 3-29/2012 (ENV) dated 7th September, 2016. The same was deliberated in the meeting.

(xxxi) The Mine Closure Plan (MCP) for the existing Mine vis-a-vis existing Environmental Clearance (EC) has been prepared and duly approved by WCL Board. Further, based on the existing EC and the Project Report, the Escrow Account details as well as details of Corpus have also been submitted along with the compliance report. As such, the final Mine Closure Plan vis-a-vis the existing mine / existing EC is not applicable, hence not prepared. However, the progressive Mine Closure Plan for the expansion project (with enhanced land area) as per Ministry of Coal's guidelines dated 07.01.2013 has been prepared and approved.

(xxxii) Fresh air quality and water quality data are monitored & submitted.

(xxxiii) The instant proposal is for grant of EC to Ghonsa OCP at its existing capacity of 0.60 MTPA, but in the mine lease area increased from 128.79 ha to 278.683 ha located in District Yavatmal (Maharashtra).

(xxxiv) Out of the total area of 278.683 ha, forest land involved is 24 ha, for which stage-I FC has been obtained on 8th March, 2016.

(xxxv) As desired by the EAC in its meeting held on 31st January, 2017, public notice was issued on 22nd February, 2017 in three local newspapers in English, Hindi and Marathi inviting comments/suggestions from the locals/stakeholders within three weeks, and thus fulfilling the requirement of public consultations. There have been no comments/suggestions so far.

4. The EAC, after detailed deliberations on the proposal in the 9th meeting held on 27-28 April, 2017 decided for exempting the proposal from the requirement of fresh TOR and fresh Public Hearing, and recommended the proposal for grant of Environmental Clearance. The Ministry of Environment, Forest and Climate Change hereby accords Environmental Clearance to the **Expansion of Ghonsa OCP of capacity 0.60 MTPA of M/s Western Coalfields Ltd with increase in land area from 128.79 ha to 278.683 ha located in District Yavatmal (Maharashtra)** under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto, subject to the compliance of the following terms and conditions and environmental safeguards mentioned below:

A. Specific Conditions

(i) The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.

(ii) The validity of the EC is for the life of the Mine or as specified in the EIA Notification, 2006, whichever is earlier.

(iii) The project proponent shall obtain Consent to Establish/Operate under the Air Act, 1981 and the Water Act, 1974 from the State Pollution Control for the Ghonsa OCP of 0.60 MTPA in the mine lease area of 278.683 ha in District Yavatmal (Maharashtra).

(iv) Transportation of coal to be carried out through rail network or the covered trucks. Mitigative measures to be undertaken to control dust and other fugitive emissions all along the roads by providing water sprinklers.

(v) Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.

(vi) Controlled blasting technique should be adopted to control ground vibrations and fly rocks.

(vii) A progressive afforestation plan shall be implemented covering an area of 134.36 ha at the end of mining, which includes reclaimed External OB dump area 29.35ha, Internal OB dump area (80.0 ha) and Green belt (20 ha) and in township located outside the lease by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.

(viii) An estimated total 29.12 Mm^3 of OB will be generated during the entire life of the mine. Out of which 3.27 Mm^3 of OB will be dumped in one external OB Dumps an earmarked area covering 29.35 ha of land. 25.85 Mm^3 of will be one internal OB dump in covering an area of 88.28 ha The maximum height of internal OB dump will not exceed 30 m above ground level. The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self- sustaining and compliance status shall be submitted to Regional Office on yearly basis.

(ix) Of the total quarry area of 135.12 ha, the backfilled quarry area of 80 ha shall be reclaimed with plantation and a void of 46.84 ha with maximum depth of 75 m is proposed to be converted into a water body shall be gently sloped and the upper benches shall be terraced and stabilised with plantation/afforestation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha

B. General Conditions

(a) Mining

(i) No change in mining technology and scope of work shall be made without prior approval of the Ministry of Environment, Forest and Climate Change. No change in the calendar plan including excavation, quantum of coal and waste should be made.

(ii) Mining shall be carried out as per the approved mining plan, and also abiding by the relevant laws related to coal mining and the circulars issued by Directorate General Mines Safety (DGMS). An approved progressive Mine Closure Plan shall strictly be complied with and submitted.

(b) Land Reclamation

(i) Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment, Forest and Climate Change its Regional Office.

(ii) Final mine void depth should not be more than 40 m. The void area should be converted into water body. The remaining area should be back filled up to the ground level and covered with thick top soil. The land after mining should be restored for agriculture or forestry purpose.

(iii) The top soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The overburden dumps should be vegetated with suitable native species to prevent erosion and surface run off. The entire excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.

(iv) Greenbelt shall be developed all along the mine lease area in a phased manner. The width of the green belt along forest area should not be less than 7.5 m, and the total area covered by 3 tier green belt shall not be less than 100 ha. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads.

(c) Emissions, Effluents, and Waste Disposal

(i) Transportation of coal by road should be carried out by covered trucks only. Effective measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM_{10} and $PM_{2.5}$ such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board in this regard.

(ii) Vehicular emissions shall be kept under control and regularly monitored. Project should obtain 'PUC' certificate for all the vehicles from authorized pollution testing centres

(iii) Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM_{10}, $PM_{2.5}$, SO_2 and NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.

(iv) Crusher/feeder and breaker material transfer points should invariably be provided with dust suppression system. Belt-conveyors should be fully covered to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.

(v) The project proponent shall not alter the major channels around the site. Appropriate embankment should be provided along the side of the river/nallah flowing near or adjacent to the mine. The embankment constructed along the river/nallah boundary should be of suitable dimensions and critical patches should be strengthened by stone pitching on the river front side and stabilised with plantation so as to withstand the peak water flow and prevent mine inundation.

(vi) Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources in the area in consultation with Central Ground Water Board.

(vii) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, coal heaps and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc The drains shall be regularly desilted particularly after monsoon and maintained properly. Sump capacity should provide

adequate retention period to allow proper settling of silt material. Dimension of the retaining wall to be constructed at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.

(viii) Industrial waste water (CHP, workshop and waste water from the mine) should be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.

(d) Noise & Vibration Control

(i) Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.

(ii) Controlled blasting techniques should be practiced with use of delay detonators to mitigate ground vibrations and fly rocks.

(e) Occupational Health & Safety

(i) Besides carrying out regular periodic health check-up of their workers, 20% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialised agency /institution within the District/State and the results reported to this Ministry and to DGMS.

(ii) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Supervisory staff shall be held responsible for ensuring compulsory wearing of dust mask.

(iii) In case of outsourcing of work through MDO, the project proponent shall ensure the strict enforcement of the above conditions.

(f) Biodiversity

(i) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.

(g) Implementation of Action Plan as per Public Hearing and CSR Activities

(i) Implementation of Action Plan on the issues raised during the Public Hearing shall be ensured. The Project Proponent shall complete all the tasks as per the Action Plan submitted with budgetary provisions during the Public Hearing. Land oustees should be compensated as per the norms laid out R&R Policy of the Company or the National R&R Policy or R&R Policy of the State Government, whichever is higher.

(ii) The Board of every company, shall ensure that the company spends, in every financial year, at least two per cent. of the average net profits of the company made during the three immediately preceding financial years, in pursuance of its Corporate Social Responsibility Policy

under Section 135 of the Companies Act, 2013, for the socio economic development of the neighbourhood.

(h) Corporate Environment Responsibility

(i) The Company should have a well laid down Environment Policy approved by the Board of Directors
(ii) To have proper checks and balances, the Company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large.
(iii) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
(iv) The funds earmarked for environmental protection measures should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office.

(i) Statutory Obligations

(i) Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, NGT and any other Court of Law, if any, as may be applicable to the project.
(ii) This Environmental Clearance is subject to obtaining requisite NBWL Clearance from the Standing Committee of National Board for Wildlife, if any, as applicable to the project.
(iii) The project proponent shall obtain Consent to Establish and Consent to Operate from the concerned State Pollution Control Board prior to increase in capacity of washery and effectively implement all the conditions stipulated therein.
(iv) Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) for drawl of water (surface and ground water).

(j) Monitoring of Project

(i) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board.
(ii) The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.
(iii) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/information/monitoring reports.
(iv) The activities pertaining to development of green belt/horticulture shall be reported to concerned Regional Office of MoEF&CC on six monthly basis from the date of commencement of mining operations.

(v) For half yearly monitoring reports, the data should be monitored for the period of April to September and October to March of the financial years and submitted to the concerned authorities within 2 months of the completion of periodicity of monitoring.

(k) Miscellaneous

(i) A copy of clearance letter will be marked to concerned Panchayat/local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
(ii) An electronic copy of the EC letter shall be marked to the concerned State Pollution Control Board, Regional Office, District Industry Sector and Collector's Office/Tehsildar Office for information in public domain within 30 days.
(iii) The EC letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM_{10}, $PM_{2.5}$, SO_2 and NO_x (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.
(iv) The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at www.environmentclearance.nic.in and a copy of the same should be forwarded to the Regional Office.
(v) The Environmental Statement for each financial year ending 31 March in Form-V is mandated to be submitted by the PP for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the Company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&CC by e-mail.

5. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during their presentation to the EAC. The commitment made by the project proponent to the issue raised during Public Hearing shall be implemented by the proponent.

6. The project proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

7. The PP shall set up an Environment Audit cell with responsibility and accountability to ensure implementation of all the EC Conditions.

8. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this EC and attract action under the provisions of Environment (Protection) Act, 1986.

9. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter. The PP shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.

10. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

11 This EC supersedes the earlier EC granted vide letter No.J-11015/165/2009-IA-II(M) dated 8th December, 2014 for expansion in production capacity from 0.45 MTPA to 0.60 MTPA in ML area of 128.79 ha.

Std
8/6/2017

(S. K. Srivastava)
Scientist E

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. The Secretary, Department of Environment, Government of Maharashtra, 15th Floor, New Admn. Bldg., Madam Cama Road, Mumbai - 32.
3. The APCCF, Ministry of Environment Forest and Climate Change, Regional Office (Western Central Zone), Ground Floor, East Wing, New Secretariat Building Civil Lines, Nagpur (Maharashtra)
4. The Member Secretary, Maharashtra State Pollution Control Board, Kalapataru Point, 3rd & 4th Floors, Sion, Matunga Scheme Road No. 8, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai – 400 002.
5. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, Delhi -110 032.
6. The Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. The District Collector, Nagpur, Government of Maharashtra
8. Monitoring File 9. Guard File 10. Record File 11. Notice Board

Std
8/6/2017

(S. K. Srivastava)
Scientist E

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437
Fax: 24023516
Website: http://mpcb.gov.in
Email: cac-cell@mpcb.gov.in

Kalpataru Point, 2nd and 4th floor, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai-400022

RED/L.S.I (R35)
No:- Format1.0/CAC/UAN No.MPCB-CONSENT-0000107029/CR/2203000019

Date: 01/03/2022

To,
M/s. Ghonsa Opencast Mine,
Western Coalfields Limited,
25/1,2,3,Ghonsa village, Po.- Rasa
Tal-Wani, Dist-Yavatmal.

Your Service is Our Duty

Sub: Renewal of consent to operate under RED/LSI Category

Ref:
1. Consent granted by Board vide No.CAC/UAN No.87637/CR-2011001165 dtd. 24/11/2020 valid upto 31/03/2021.
2. Minutes of 15th Consent Committee meeting held on 30/12/2021.

Your application No.MPCB-CONSENT-0000107029 Dated 23.01.2021

For: grant of Consent to Operate under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules 2016 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I, II, III & IV annexed to this order:

1. **The consent to renewal is granted for a period up to 31/03/2023**
2. **The capital investment of the project is Rs.122.3544 Crs. (As per undertaking submitted by pp (Existing Consented CI Rs.108.9683 Cr+ Increased in CI by Rs. 13.39 Cr= Rs. 122.3544 Cr.))**
3. **Consent is valid for the manufacture of:**

Sr No	Product	Maximum Quantity	UOM
Products			
1	COAL Mining over mining lease area 278.683 Ha.	0.6	MTPA

4. **Conditions under Water (P&CP), 1974 Act for discharge of effluent:**

Sr No	Description	Permitted (in CMD)	Standards to	Disposal Path
1.	Trade effluent	4363	As per Schedule-I	Recycle -652 CMD for Dust Suppression & Fire Fighting and 3711 CMD discharge into nearby nallah which further meets to Vidhrabha River located at 0.5 KM.

Sr No	Description	Permitted	Standards to	Disposal
2.	Domestic effluent	10	As per Schedule-I	On land for gardening

5. **Conditions under Air (P& CP) Act, 1981 for air emissions:**

Sr No.	Stack No.	Description of stack / source	Number of Stack	Standards to be achieved
NA				

6. **Non-Hazardous Wastes:**

Sr No	Type of Waste	Quantity	UoM	Treatment	Disposal
1	Overburden	1175000	m3/month	Landfill	Backfilling and Reclamation of Land

7. **Conditions under Hazardous & Other Wastes (M & T M) Rules 2016 for treatment and disposal of hazardous waste:**

Sr No	Category No./ Type	Quantity	UoM	Treatment	Disposal
1	5.1 Used or spent oil	25	KL/A	Recycle	Authorized Reprocessor/Recycler
2	5.2 Wastes or residues containing oil	6	MT/A	Incineration	CHWTSDF

8. The Board reserves the right to review, amend, suspend, revoke etc. this consent and the same shall be binding on the industry.
9. This consent should not be construed as exemption from obtaining necessary NOC/permission from any other Government authorities
10. The applicant shall comply with the conditions of the Environmental Clearance granted by MoEF CC, GoI vide letter J-11015/165/2009- IA.II(M) dtd. 08.06.2017.
11. PP shall install CAAQMS arrangement within 03 months.
12. PP shall convert existing water sprinkling arrangement into chemical fogging arrangement ($MgCl_2$) within two months period.
13. PP shall submit the technical details including design parameters and the operational parameters of the existing dust suppression system and submit the action plan for upgradation of the air pollution control system within 1 month.
14. PP shall carry out over burden dump management as per CPCB guidelines.
15. PP shall carry out plantation as per EC condition before ensuing monsoon.
16. PP shall complete the Covering of secondary crusher at Ghonsa CHP & Installation of rain guns along coal transportation roads within three months.
17. PP shall submit NOC of CGWA within 03 months.
18. PP shall complete the Recarpeting/Retarring of existing black top road and complete the construction of cement road at portable weigh bridge area within three months.

19. The applicant shall make an application for renewal of consent 60 days prior to date of expiry of the consent.

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Signed by: Ashok Shingare
Member Secretary
For and on behalf of
Maharashtra Pollution Control Board
ms@mpcb.gov.in
2022-03-01 20:35:21 IST

Received Consent fee of -

Sr.No	Amount(Rs.)	Transaction/DR.No.	Date	Transaction Type
Rs. 1731746/-balance as per earlier Consent CAC/UAN No.87637/CR-2011001165 dtd. 24/11/2020 valid upto 31/03/2021 considered in this renewal. Now Rs. 7,12,328/- balance out of Rs. 1731746/- will be considered during next renewal.				

Copy to:

1. Regional Officer, MPCB, Chandrapur and Sub-Regional Officer, MPCB, Chandrapur
- They are directed to ensure the compliance of the consent conditions.
2. Chief Accounts Officer, MPCB,Sion, Mumbai
3. CC/CAC desk - for record & website updation purpose.

SCHEDULE-I

Terms & conditions for compliance of Water Pollution Control:

1. A] As per the application submitted by industry , sedimentation tank of capacity 225 cubic meter is provided for treatment of mine water.

   B] The Applicant shall operate the effluent treatment plant (ETP) to treat the trade effluent so as to achieve the following standards prescribed by the Board or under EP Act, 1986 and Rules made there under from time to time, whichever is stringent:

Sr.No	Parameters	Limiting concentration not to exceed in mg/l, except for pH
(1)	pH	5.5 to 9.0
(2)	Oil & Grease	10
(3)	BOD (3 days 27°C)	30
(4)	Total Suspended solids	100
(5)	Total Dissolved solids	2100
(6)	COD	250

   C] The treated eflluent shall be recycled (652 CMD) for dust suppression & Fire fighting ,50 CMD shall be utilised on land for gardening and plantation in the mine lease area & 3661 CMD discharged into nearby local nalla which further meets to Vidarbha River located at 0.5 KM, after confirming above standards.

2. A] As per your application, you have provided Septic Tank followed by Soak pit for the treatment of 10 CMD of sewage.

   B] The Applicant shall operate the sewage treatment system to treat the sewage so as to achieve the following standards.

Sr.No	Parameters	Standards (mg/l)	
1	BOD (3 days 27°C)	Not to exceed	30 mg/l
2	COD	Not to exceed	100 mg/l
3	SS	Not to exceed	50 mg/l

   C] The treated sewage shall be discharged on land for gardening within premise after confirming above standards. In no case, sewage shall find its way to outside factory premises.

3. The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification there of & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions. The Applicant shall obtain prior consent of the Board to take steps to establish the unit or establish any treatment and disposal system or an extension or addition thereto.

4. The industry shall ensure replacement of pollution control system or its parts after expiry of its expected life as defined by manufacturer so as to ensure the compliance of standards and safety of the operation thereof.

5. The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974 and as amended, by installing water meters and other provisions as contained in the said act:

Sr. No.	Purpose for water consumed	Water consumption quantity (CMD)
1.	Industrial Cooling, spraying in mine pits or boiler feed	652.00
2.	Domestic purpose	18.00
3.	Processing whereby water gets polluted & pollutants are easily biodegradable	0.00
4.	Processing whereby water gets polluted & pollutants are not easily biodegradable and are toxic	0.00
5.	Gardening	50

6. The Applicant shall provide Specific Water Pollution control system as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance/ CREP guidelines.

SCHEDULE-II

Terms & conditions for compliance of Air Pollution Control:

1. As per your application, you have provided the Air pollution control (APC) system and erected following stack (s) to observe the following fuel pattern:

Stack No.	Source	APC System provided/proposed	Stack Height(in mtr)	Type of Fuel	Sulphur Content(in %)	Pollutant	Standard
NA	NA		0.00	-	-	NA	-

2. The Applicant shall provide Specific Air Pollution control equipments as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance / CREP guidelines.
3. The Applicant shall obtain necessary prior permission for providing additional control equipment with necessary specifications and operation thereof or alteration or replacement/alteration well before its life come to an end or erection of new pollution control equipment.
4. The Board reserves its rights to vary all or any of the condition in the consent, if due to any technological improvement or otherwise such variation (including the change of any control equipment, other in whole or in part is necessary).
5. Control Equipments
   a. Coal handling plant shall be provided with GI sheet enclosures & automatic water sprinkler and shall be operated continuously.
   b. Scientific spraying of water on all working area, dump area, stock piles with the help of appropriate dust suppression system.
   c. Coal transportation shall be done by installing conveyors wherever possible & mechanically covered closed trucks shall be used for transportation. Overloading of dumpers shall be avoided to prevent spillages.
   d. The applicant shall carry out tree plantation along road side, around dumps or compulsory afforestation as per proposal approved by Forest Department. The tree plantation programme shall be taken up well in advance of the actual mining activity, so that green belt of sufficient width & height is developed between mining area/road and surrounding environment.
   e. Black topped metal roads shall be provided and shall be well maintained to prevent dust formation
   f. Slope of the over burden shall have slope not more than 28° to the horizontal. The overburden shall be covered by vegetation for stabilization.
   g. Correct type & quantity of explosive shall be used to avoid excess dust formation & vibration in the surrounding area.
6. Standards for Ambient Air Pollutants:

   The Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), Sulphur dioxide (SO_2) and Oxides of Nitrogen (NO_x) concentration in downwind direction considering predominant wind direction, at a distance of 500 metres from the following dust generating sources shall not exceed the standards specified in the table given below:

   Dust Generating Sources:

   Loading or unloading, Haul Road, coal transportation road, Coal handling plant (CHP), Railway Sliding, Blasting, Drilling, Overburden dumps, or any other dust generating external sources like coke ovens (hard as well as soft), briquette industry, nearby road etc.

Pollutant	***Time weighted average***	***Concentration in Ambient Air***
Suspended Particulates Matter (SPM)	Annual Average	360 µg/m^3
	24 hours	500 µg/m^3
Respirable Particulate Matter (size less than 10 µm) (RPM)	Annual Average	180 µg/m^3
	24 hours	250 µg/m^3
Sulphur Dioxide (SO_2)	Annual Average	80 µg/m^3
	24 hours	120 µg/m^3
Oxides of Nitrogen as NO_x	Annual Average	80 µg/m^3
	24 hours	120 µg/m^3

i. In case of any residential or commercial or industrial place falls within 500 metres of any dust generating sources, the National Ambient Air Quality Standards notified vide MOEFCC GOI notification dtd 16.11.2009 as ammended shall be made applicable.

ii. The applicant shall provide minimum three ambient air quality monitoring stations within mining area which should be monitored for SPM, RSPM, SO_2, NOx, HC, CO etc. The Annual Arithmetic Mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval shall conform to the National Ambient Air Quality Standards prescribed under Air (Prevention and Control of Pollution) Act, 1981 and Environment (Protection) Act, 1986. The records of results of monitoring done shall be made available for inspection to the officers of the Board.

7. The applicant shall take adequate measures for control of noise levels from its own sources as follows:

Sr. No	***Location***	***Permissible Norms [in dB (A)]***	***Desired minimum thickness of green belt (m)***
1.	Along Road side	65 (Commercial Area)	20
2.	In colonies	55 (Residential Area)	20
3.	Near Opencast Mines	75 (Industrial Area)	10
4.	Near CHPs	75	30
5.	Near Shaft	75	20
6.	Near Mine exhaust fan	75	> 50

8. Other conditions:

i Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess standards laid down, such information shall be forthwith reported to Board, concerned Police station, office of Directorate of Health services, Dept. of explosives, Inspectorate of Factories & Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.

SCHEDULE-III

Details of Bank Guarantees:

Sr. No.	Consent (C2E/ C2O /C2R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
1	C2R	Rs. 2.0 Lakh	15 days	Regular monitoring of groung water level and quality should be carried out by establishing the network of existing wells and constructing new piezometers during mining operations	6 Monthly	31/07/2023
2	C2R	Rs.5.0 Lakh	15 days	Catch drain and situation ponds of appropriate size should be constructed to arrest silt and sediment flow from soil, OB and mineral dumps. Water so collected should be utilized for watering of the mining area, roads green belt developers etc.	Regular Activity	31/07/2023
3	C2R	Rs.25.0 Lakh	15 days	Coal transportation shall be done by mechanically closed trucks. Overloading of shall be avoided to prevent spilleges. 10% of total fleet available to be replaced every six month	6 Months	31/07/2023
4	C2R	Rs.5.0 Lakh	15 days	Coal Handling Plant (CHP) & loading / unloading area will be provided with Dust COllector and Automatic Water Sprinkler.	2 Months	31/07/2023
5	C2R	Rs.5.0 Lakh	15 days	Convert existing water sprinkling arrangement into chemical fogging arrangement (M_gCl2)	2 Months	31/07/2023
6	C2R	Rs.10.0 Lakh	15 days	To provide tar road in remaining area and to be well maintain to prevent dust formation	6 Months	31/07/2023
7	C2R	Rs.5.0 Lakh	15 days	Deploy mechanized sweepers which are automated suction sweeper for cleaning the coal dust from road.	2 Months	31/07/2023
8	C2R	Rs.5.0 Lakh	15 days	Adoption and installation of tyre wash system to mining transportation at entry and exit point of mining area.	3 Months	31/07/2023
9	C2R	Rs.5.0 Lakh	15 days	Use of toppers/binders/surfactants on the top surface of coal pile on trucks carrying coal on road to minimize spillage during transportation	3 Months	31/07/2023
10	C2R	Rs.5.0 Lakh	15 days	To provide CAAQMS within 4 months	4 Months	31/07/2023
11	C2R	Rs.5.0 Lakh	15 days	Install real time coal ash analyser on pilot basis	2 Months	31/07/2023
12	C2R	Rs.5.0 Lakh	15 days	Over burden (OB) should be stacked at earmarked dumpsites only and should not be kept active for long period. Proper terracing of OB should be carried out so that the overall slope will come down to 28°. Over Burden shall be disposed by way of backfilling.	Regular Activity	31/07/2023
13	C2R	Rs.25.0 Lakh	15 days	Operation and Maintenance of pollution control system so as to maintain consented standards precribed as per Air(Prevention & Control of pollution) Act, 1974 Water (Prevention & Control of Pollution) Act, 1981 & HW (MH & TM) Rules 2008 and also adhering to compliance of specific / general condition of Environment Clearance.	Regular Activity	31/07/2023

The above Bank Guarantee(s) shall be submitted by the applicant in favour of Regional Officer at the respective Regional Office within 15 days from the date of issue of Consent.

BG Forfeiture History

Srno.	Consent (C2E/C2O/C2R)	Amount of BG imposed	Submission Period	Purpose of BG	Amount of BG Forfeiture	Reason of BG Forfeiture
NA						

BG Return details

Srno.	Consent (C2E/C2O/C2R)	BG imposed	Purpose of BG	Amount of BG Returned
NA				

SCHEDULE-IV

General Conditions:

1. The applicant shall provide facility for collection of environmental samples and samples of trade and sewage effluents, air emissions and hazardous waste to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.
2. If the MIDC pipeline is broken/ overflowing chamber, in such cases industry shall not discharge their treated effluent into MIDC drain, it shall be sent to CETP by tanker.
3. Industry should monitor effluent quality, stack emissions and ambient air quality monthly/quarterly.
4. The applicant shall provide ports in the chimney/(s) and facilities such as ladder, platform etc. for monitoring the air emissions and the same shall be open for inspection to/and for use of the Board's Staff. The chimney(s) vents attached to various sources of emission shall be designated by numbers such as S-1, S-2, etc. and these shall be painted/ displayed to facilitate identification.
5. Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess of standards laid down, such information shall be forthwith Reported to Board, concerned Police Station, office of Directorate of Health Services, Department of Explosives, Inspectorate of Factories and Local Body. In case of failure of pollution control equipment, the production process connected to it shall be stopped.
6. The applicant shall provide an alternate electric power source sufficient to operate all pollution control facilities installed to maintain compliance with the terms and conditions of the consent. In the absence, the applicant shall stop, reduce or otherwise, control production to abide by terms and conditions of this consent.
7. The firm shall submit to this office, the 30th day of September every year, the Environmental Statement Report for the financial year ending 31st March in the prescribed Form-V as per the provisions of rule 14 of the Environment (Protection) (Second Amendment) Rules, 1992.
8. The industry shall recycle/reprocess/reuse/recover Hazardous Waste as per the provision contain in the H&OW(M&TM) Rules 2016, which can be recycled/processed/ reused/ recovered and only waste which has to be incinerated shall go to incineration and waste which can be used for land filling and cannot be recycled/ reprocessed etc. should go for that purpose, in order to reduce load on incineration and landfill site/environment.
9. The industry should comply with the Hazardous & Other Wastes (M & TM) Rules, 2016 and submit the Annual Returns as per Rule 6(5) & 20(2) of Hazardous & Other Wastes (M & TM) Rules, 2016 for the preceding year April to March in Form-IV by 30th June of every year.
10. An inspection book shall be opened and made available to the Board's officers during their visit to the applicant.
11. The applicant shall make an application for renewal of the consent at least 60 days before the date of the expiry of the consent.
12. Industry shall strictly comply with the Water (P&CP) Act, 1974, Air (P&CP) Act,1981 and Environmental Protection Act,1986 and industry specific standard under EP Rules 1986 which are available on MPCB website(www.mpcb.gov.in).
13. The industry shall constitute an Environmental cell with qualified staff/personnel/agency to see the day to day compliance of consent condition towards Environment Protection.

14. Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided at the end of the collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers downstream of the terminal manholes. No effluent shall find its way other than in designed and provided collection system.
15. Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the factory.
16. The applicant shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants and air pollution control system. A register showing consumption of chemicals used for treatment shall be maintained.
17. Conditions for D.G. Set
    a) Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.
    b) Industry should provide acoustic enclosure for control of noise. The acoustic enclosure/ acoustic treatment of the room should be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on higher side. A suitable exhaust muffler with insertion loss of 25 dB (A) shall also be provided. The measurement of insertion loss will be done at different points at 0.5 meters from acoustic enclosure/room and then average.
    c) Industry should make efforts to bring down noise level due to DG set, outside industrial premises, within ambient noise requirements by proper sitting and control measures.
    d) Installation of DG Set must be strictly in compliance with recommendations of DG Set manufacturer.
    e) A proper routine and preventive maintenance procedure for DG set should be set and followed in consultation with the DG manufacturer which would help to prevent noise levels of DG set from deteriorating with use.
    f) D.G. Set shall be operated only in case of power failure.
    g) The applicant should not cause any nuisance in the surrounding area due to operation of D.G. Set.
    h) The applicant shall comply with the notification of MoEFCC, India on Environment (Protection) second Amendment Rules vide GSR 371(E) dated 17.05.2002 and its amendments regarding noise limit for generator sets run with diesel.
18. The industry should not cause any nuisance in surrounding area.
19. The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standard in respect of noise to less than 75 dB (A) during day time and 70 dB (A) during night time. Day time is reckoned in between 6 a.m. and 10 p.m. and night time is reckoned between 10 p.m. and 6 a.m.
20. The applicant shall maintain good housekeeping.
21. The applicant shall bring minimum 33% of the available open land under green coverage/ plantation. The applicant shall submit a yearly statement by 30th September every year on available open plot area, number of trees surviving as on 31st March of the year and number of trees planted by September end
22. The non-hazardous solid waste arising in the factory premises, sweepings, etc. be disposed of scientifically so as not to cause any nuisance / pollution. The applicant shall take necessary permissions from civic authorities for disposal of solid waste.
23. The applicant shall not change or alter the quantity, quality, the rate of discharge, temperature or the mode of the effluent/emissions or hazardous wastes or control equipment provided for without previous written permission of the Board. The industry will not carry out any activity, for which this consent has not been granted/without prior consent of the Board.

24. The industry shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises
25. The industry shall submit official e-mail address and any change will be duly informed to the MPCB.
26. The industry shall achieve the National Ambient Air Quality standards prescribed vide Government of India, Notification dtd. 16.11.2009 as amended.

This certificate is digitally & electronically signed.

Ministry of Environment, Forests & Climate Change, Regional Office (WCZ), Nagpur

MONITORING PROFORMA: PART – I

Name of the Project	Expansion of Ghonsa OCP
Location and address	On Wani - Patan Main road at 3.00KM. At-Ghonsa , Po-Rasa, Tah- wani, Dist- Yavatmal, State- Maharashtra.
Address for correspondence	Office of the Sub Area Manager, Ghonsa Sub Area, Post-Rasa, Tah- Wani, Dist- Yavatmal, State- Maharashtra.
MoEF&CC Clearance Letter No. & Date	EC Letter No. J-11015/165/2009-IA.II(M) dated 8th June, 2017 Amended letter no. J/11015/165/2009-IA.II(M) Pt. date 10/01/2018
Period of Status Report	From **April'2023 to September'2023**
Date of commencement of the project Work	24-11-2008

STATUS OF LAND ACQUISITION:-

Type of Land	**Required as per EIA-EMP (ha)**	**Actual acquired (ha) As on 30.09.2023**
Agriculture	204.443	204.443
Forest Land	24.00	24.00
Waste Land (Govt. Land)	50.240	50.240
Total	278.683	278.683

STATUS OF LEGAL COMPLIANCES: -

a. Consent under Air (Prevention and control of Pollution) Act. b. Consent under Water (Prevention and Control of Pollution) Act. b. Consent under Water (Prevention and control of Pollution) Cess Act	Consent to Operate has been granted by MPCB vide Consent Order No. RED/L.S.I (R35)No:-Format1.0/CAC/UAN No.MPCBCONSENT-0000107029/CR/2203000019 dated 01.03.2022. Valid upto 31.03.2023 CTO renewal applied vide UAN MPCB-CONSENT – 0000160313 dated 24.01.2023
c. Environment (Protection) Act.	Environment Clearance accorded vide MoEF&CC, New Delhi vide EC Letter No. J-11015/165/2009-IA.II(M) dated 8th June, 2017. Environment Audit statement for the year **2022-23** has been submitted online on MPCB portal.
d. Forest (Conservation) Act	Forest Clearance accorded by RO(WCZ), MoEF&CC, Nagpur vide letter no.: F.No. 6-MHC-30/2014-BHO/2372 dated 7th September, 2017 for 24Ha forest land at Mauja Ghonsa.

PART –II
STATUS OF ENVIRONMENT

Air Pollution Control :-

a) No. of ambient air monitoring stations & frequency of monitoring	04 Nos. Ambient Air quality (Fortnightly Monitoring)
b) Name of the location	**Ambient Air Quality Monitoring Stations** 1.Ghonsa Village:W_NGOA-1 2.Kumbharkhani Guest House/ Colony: W_NGOA-2 3.SAM Office/ Canteen: W_NGOA-3 4.Project Manager Office(Ghonsa) : W_NGOA-4
c) Ambient air quality status for the parameters prescribed by state pollution control board.	Location | SPM | PM10 | SO_x | NO_x | PM2.5 Reports of Environmental Monitoring for the period from **April'2023 to September'2023** has been enclosed

Water Pollution Control :-

a). No. of stations and frequency of monitoring	One, Fortnightly
b). Description of locations	1)Mine Water discharge: W_NGOW-1
c). Average concentrations of major pollutants prescribed by State Pollution Control Board (fig. in mg/lit except pH)	Location | **pH** | **COD** | **TSS** | **O&G** Reports of Environmental Monitoring Report for the period from **April'2023 to September'2023** has been enclosed.
d). Quantity of effluent discharge to Local Water source from each Source in Cu.m./day	----

Noise Pollution Control :-

a) No. of noise monitoring stations & frequency of monitoring	: 1 No.(Fortnightly)
b) Description of locations	1.CHP: W_NGON-1
c) Noise level status prescribed by state pollution control board.	Location | Day | Night Reports of Environmental Monitoring Report for the period from **April'2023 to September'2023** are enclosed.

PART-III
STATUS OF IMPLEMENTATION OF PROVISIONS OF EMP

i)Land Use Status:

S.N.	Particulars	As per EMP	Current Period (April'2023 to September'2023)	Progressive up to 30.09.2023
1.	Area excavated (Ha)		6·10	93·922
2.	Top soil removed (MM^3)	Nil	0·111	1·329
3.	OB removed (MM^3) (Hard)	Nil	1·223	19·891
4.	OB back filled (MM^3)	Nil	1·223	13·344
5.	OB dumped (MM^3) (Hard)	Nil	1·223	19·784
6.	Area recovered for reclamation (physical reclamation)	Under process	Under process	Under process
7.	Area reclaimed biologically (tree plantation on backfilled area)	Under process	Nil	Nil

ii)Production:

Present Capacity/ Production: Previous years production figures are:

Year	Coal Production (Tons)
2020-21	**5,07,900.00**
2021-22	**4,26,100.00**
2022-23	**4,60,235.00**
2023-24 (upto Sep 2023)	**2,56,000.00**

iii) Afforestation: (Figures in Numbers)

S.N.	Locations	Current Period (April'2023 to September'2023)	Progressive up to 30.09.2023
1.	OB dump & embankments	Nil	10250
2.	Safety Zones	Nil	Nil
3.	Backfilled Area	Nil	Nil
4.	Other area	Nil	Nil
	TOTAL	Nil	10250

Area under plantation (progressive)	4.10 Ha
No. of plants per Hectare.	2500
Species planted up to date	Sisum, Nilgiri,Neem

Rehabilitation and Resettlement:-

Sr.No.	Particulars		Status
1.	Total No. of Land oustees	:	47
2.	No. of Employment	:	32
3.	No. of monitory compensation against employment	:	15
4.	Nos. of land oustees under consideration	:	NIL

Organizational set up at Project level :-

Name and designation of the persons :

(1) Shri. Uday kumar Mehta, SAM, Ghonsa Sub Area
(2) Shri. G.Khobragade, Mine Manager, Ghonsa OCM
(3) Shri. Anilkumar Shinde, SOE(Civil)/ Nodal Officer(Env.), Ghonsa Sub Area
(4) Shri. Gopendra Kant, Survey Officer, Ghonsa OC Mine.

27/11/23
Survey Officer
Ghonsa OC Mine

27/11/2023
SOE(Civil)/N.O. (Env.)
Ghonsa Sub Area

27/11/23
Mine Manager
Ghonsa OC Mine

27/11/23
Sub Area Manager
Ghonsa Sub Area

EXPENDITURE STATEMENT(ENVIRONMENT HEAD)

CAPITAL HEAD:-

(Figure in Rs. Lakhs)

Account Head	(Oct 2022 to March 2023)	Progressive up to 31.03.2023
1)Reclamation (HEMM) partly back filled	-	-
2) Air Pollution Control	-	14.86
3) Water Pollution Control	-	25.87
TOTAL	-	**40.73**

REVENUE HEAD:-

(Figures in Rs. Lakhs)

Account Head	(Oct 2022 to March 2023)	Progressive up to 31.03.2023
1) Afforestation		6.745
2) Monitoring (JVS)		-
3) Legal expenses (Water Cess, Environment Statement)	9.74	109.54
4) Other (Pollution control measures)	13.80	96.38
TOTAL	23.54	212.665

27/11/2023

SOE (Civil)/N.O. (Env.)
Ghonsa Sub Area

27/11/23

Sub Area Manager
Ghonsa Sub Area

SIX MONTHLY COMPLIANCE STATUS
OF COMPLIANCE OF ENVIRONMENTAL CLEARANCE CONDITIONS
(For the period April'2023 to September'2023)

Name of the Project: Expansion of Ghonsa OCP (0.60 MTPA)

EC Letter No.: MoEF & CC vide EC Letter No.: J-11015/165/2009-IA.II(M) dated 08th June, 2017

Amended letter no. J/11015/165/2009-IA.II(M) Pt. date 10/01/2018

Sl. No.	Conditions	Compliance Status
	A. Specific Conditions	
i.	The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.	Noted, The Maximum production from Ghonsa OCM will not be exceed the limit of 0.60 MTPA as prescribed in the EC.
ii.	The validity of the EC is for the life of the Mine or as specified in the EIA Notification, 2006, whichever is earlier.	Noted.
iii.	The project proponent shall obtain Consent to Establish/Operate under the Air Act, 1981 and the Water Act, 1974 from the State Pollution Control for the Ghonsa OCP of 0.60 MTPA in the mine lease are of 278.683 ha in District Yavatmal (Maharashtra).	Consent to Operate has been granted by MPCB vide Consent Order No. RED/L.S.I (R35)No:-Format1.0/CAC/UAN No.MPCBCONSENT-0000107029/CR/2203000019 dated 01.03.2022. Valid upto 31.03.2023 CTO renewal applied vide UAN MPCB-CONSENT – 0000160313 dated 24.01.2023
iv.	Transportation of coal to be carried out through rail network or the covered trucks. Mitigative measures to be undertaken to control dust and other fugitive emissions all along the roads by providing water sprinklers.	Transportation of coal will be carried out by tarpaulin covered trucks. Mitigative measures will be undertaken to control dust and other fugitive emissions all along the roads by providing water sprinklers/water tankers.
v.	Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.	Continuous monitoring of occupational safety and other health hazards and the corrective actions will be ensured and complied.
vi.	Controlled blasting should be adopted to control ground vibration and fly rocks.	Controlled blasting is being done in day time only and the mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders are implemented as per the permission given by DGMS. Design of holes and charging of holes are being done as per DGMS permission.
vii.	A progressive afforestation plan shall be implemented covering an area of 134.36 Ha at the end of mining, which includes reclaimed External OB dump area 29.35 ha, Internal OB dump area (80.0 ha) and Green belt (20 Ha) and in township located	Plantation Details: In 2010-11, 1500 nos. of plants have been planted in 0.60 Ha Area on embankment portion. In 2012-13, 8750 nos. of plants have been planted in 3.50 Ha Area on OB Dump.

	outside the lease by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.	The plantation has been carried out through Forest Development Corporation of Maharashtra and the density of plantation is always maintained at 2500 plants per ha. A progressive afforestation plan will be implemented at the end of mining.
viii.	An estimated total 29.12 Mm^3 of OB will be generated during the entire life of the mine. Out of which 3.27 Mm^3 of OB will be dumped in one external OB dumps an earmarked area covering 29.35 Ha of land. 25.85 Mm^3 of will be one internal OB dump covering an area of 88.28 ha. The maximum height of internal OB dump will not exceed 30 m above ground level. Maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to Regional Office on yearly basis.	Aforesaid overburden will dumped on earmarked area only. The maximum height of internal OB dump will not exceed 30 m above ground level. The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to MoEF and its Regional Office on yearly basis.
ix.	Of the total quarry area of 135.12 Ha, the backfilled quarry area of 80 ha shall be reclaimed with plantation and a void of 46.84 ha with maximum depth of 75 m shall be converted into a water body in conformity with the post mining land-use plan, which remains an integral part of the approved mining plan and the EIA/EMP submitted to this Ministry.	Of the total quarry area of 135.12 Ha, the backfilled quarry area of 80 ha shall be reclaimed with plantation and a void of 46.84 ha with maximum depth of 75 m shall be converted into a water body in conformity with the post mining land-use plan, which remains an integral part of the approved mining plan and the EIA/EMP submitted to MoEF&CC.
	B. General Conditions	
	a) Mining	
i.	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forest and Climate Change. No change in the calendar plan including excavation, quantum of coal and waste should be made.	Noted. No change in mining technology and scope of working will be made without prior approval of MoEF & CC. No change in the calendar plan including excavation, quantum of coal and waste should be made.
ii.	Mining shall be carried out as per the approved mining plan, and also abiding by the relevant laws related to coal mining and the circulars issued by Directorate General	Mining will be carried out as per the approved mining plan, and also abiding by the relevant laws related to coal mining and the circulars issued by Directorate General Mines Safety (DGMS). A

	Mines Safety (DGMS). A approved progressive Mine Closure Plan shall strictly be complied with and submitted.	approved progressive Mine Closure Plan strictly be complied with.
	b) Land Reclamation	
i.	Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment, Forest and Climate Change its Regional Office.	Monitoring of land use pattern based on Satellite Data carried out by CMPDIL, Ranchi and report is regularly submitted to Regional Office, MoEF & CC Nagpur along with Six Monthly Compliance Report.
ii.	Final mine void depth of 75 m shall be in conformity with the post mining land-use plan, which remains an integral part of the approved mining plan and the EIA/EMP submitted to this Ministry.	Final mine void depth of 75m will be in conformity with the post mining land-use plan, which remains an integral part of the approved mining plan and the EIA/EMP submitted to MoEF & CC.
iii.	The top soil, if any shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The overburden should be vegetated with suitable native species to prevent erosion and surface run off. The entire excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and Management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.	The top soil will be temporarily stored at earmarked site(s) only and it will not be kept unutilized for long. The topsoil will be used for land reclamation and plantation. The overburden will be vegetated with suitable native species to prevent erosion and surface run off. The entire excavated area will be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and Management of rehabilitated areas will continue until the vegetation becomes self-sustaining. Compliance status will be submitted to Regional Office, MoEF & CC Nagpur.
iv.	Greenbelt shall be developed all along the mine lease area in a phased manner. The width of the green belt along forest area should not be less than 7.5m and the total area covered by 3 tier green belt shall not be less than 100 ha. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads.	Greenbelt will be developed all along the mine lease area in a phased manner.
	(c) Emissions, Effluents and Waste Disposal	
i.	Transportation of coal by road should be carried out by covered trucks only. Effective measures such as regular water sprinkling shall be carried out in critical	Transportation of coal by road will be carried out by tarpaulin covered trucks only. Regular water sprinkling will be carried out along haul road, loading and unloading point and transfer points.

	areas prone to air pollution and having high levels of PM10 and PM2.5 such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board in this regard.	Fugitive dust emissions from all the sources will be controlled regularly. It will be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the CPCB/MPCB.
ii.	Vehicular emissions shall be kept under control and regularly monitored. Project should obtain 'PUC' certificate for all the vehicles from authorized pollution testing centres.	Vehicular emissions will be kept under control and regularly monitored. Project will obtain 'PUC' certificate for all the vehicles from authorized pollution testing centres.
iii.	Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM_{10}, $PM_{2.5}$, SO_2 and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.	Following four ambient air quality monitoring stations have been established in the core zone and buffer zone for PM_{10}, $PM_{2.5}$ SO_2 and NO_x monitoring: 1. Ghonsa village 2. Kumbharkhani Guest house/colony 3. SAM Office/ Canteen 4. Project Manager Office, Ghonsa Monitoring of heavy metals such as As, Pb, Ni, Cr & Cd is carried out once in six months. Reports of Environmental monitoring from **(April'2023 to September'2023)** has been enclosed.
iv.	Crusher/feeder and breaker material transfer points should invariably be provided with dust suppression system. Belt-conveyors should be fully covered to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors	Crusher/feeder and breaker material transfer points will be invariably provided with dust suppression system. Drills will be fitted with dust extractors
v.	The project proponent shall not alter the major channels around the site. Appropriate embankment should be provided along the side of the river/nallah flowing near or adjacent to the mine. The embankment constructed along the river/nallah boundary should be of suitable dimensions and critical patches should be strengthened by stone pitching on the river front side and stabilised with plantation so as to withstand the peak water .flow and prevent mine inundation.	The major channels around the site will not be altered. Embankment of length 1.40 Km, width 30m and height 7-10m has been constructed along Vidharbha river as per permission given by DGMS. To arrest embankment erosion toe wall of stone masonry has been constructed as well as natural grass and plantation has been developed to stabilized embankment.
vi.	Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources in the area in consultation with Central Ground Water Board.	Rain water harvesting measures have already been taken with due consultation with the concerned village Panchayat through de-silting/ deepening of existing pond in the following villages at a total cost of Rs. 12.48 lakhs:-

<table>
<tr><td></td><td></td><td>(i) Sakhara Village;
(ii) Rasa Village;
(iii) Sukanegaon Village.

In July 2015, deepening of pond at Rasa and Kumbharkhnai village has been done for ground water recharge.

At Kumbharkhani Village Pond:
Deepening size: (65m x 40.m x 1.08m)
Expenditure: 4.21 Lakh

At. Rasa Village Pond:
Deepening size: a. (50m x 50m x 0.60)
b.(40m x 20m x 0.94m)
c.(40m x 15m x 0.94m)
Expenditure: 4.47Lakh
The quantum of water will be stored 2700KL at Rasa & 2800KL Kumbharkhani village.</td></tr>
<tr><td>vii.</td><td>Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, coal heaps and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. To check run off and siltation, retaining wall of adequate dimension to be constructed at the toe of OB dumps and OB benches, as applicable, based on rainfall data.</td><td>Catch drains of size 2.50m x 2.00m for a length of 2.00 Km is constructed around the mine. Two sumps of capacity 10.50 Million Gallon & capacity of 0.45 Million Gallon have been provided inside the mine to arrest silt and sediments of soil and OB. Garland drain of length 3.4 Km has been provided. Cleaning and desilting of garland drain is regularly being done.

Rainfall details at Ghonsa OCM:
<table>
<tr><th>Year</th><th>Total Rainfall (mm)</th><th>Date max. Rainfall (mm)</th><th>Max Rainfall</th></tr>
<tr><td>2013</td><td>1243</td><td>12/07/2013</td><td>96</td></tr>
<tr><td>2014</td><td>644.5</td><td>07/09/2014</td><td>108</td></tr>
<tr><td>2015</td><td>596</td><td>16/09/2015</td><td>172</td></tr>
<tr><td>2016</td><td>786</td><td>08/07/2016</td><td>64</td></tr>
<tr><td>2017</td><td>484</td><td>12/09/2017</td><td>64</td></tr>
<tr><td>2018</td><td>911</td><td>09/07/2018</td><td>113</td></tr>
<tr><td>2019</td><td>828</td><td>29/07/2019</td><td>071</td></tr>
<tr><td>2020</td><td>1158</td><td>22/07/2020</td><td>114</td></tr>
<tr><td>2021</td><td>1168</td><td>10/07/2021</td><td>98</td></tr>
<tr><td>2022</td><td>2110</td><td>11/07/2022</td><td>137</td></tr>
</table>
Toe wall of size 82m x 1.8m x 0.6m has been constructed for arresting the silt against embankment to guide catchment water to settle.</td></tr>
<tr><td>viii.</td><td>Industrial waste water (CHP, workshop and waste water from the mine) should be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Oil and grease trap should be installed before discharge of</td><td>Agreed.</td></tr>
</table>

	workshop effluents.	
	(d) Noise & Vibration Control	
i.	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	Proper maintenance of HEMM will be done and plantation has been done to control noise levels below 85 dBA. Workers engaged in blasting and drilling operations will be provided with ear plugs/muffs.
ii.	Controlled blasting techniques should be practiced with use of delay detonators to mitigate ground vibrations and fly rocks.	Controlled blasting is being done with delay detonator in day time only. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders are implemented as per the permission given by DGMS. Design of holes and charging of holes are being done as per DGMS permission.
	(e) Occupational Health & Safety	
i.	Besides carrying out regular periodic health check-up of their workers, 20% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialised agency /institution within the District/State and the results reported to this Ministry and to DGMS.	Periodical medical examinations of all workers are conducted in every five years. If any occupational diseases and hearing impairment found, action is taken as per guidelines and complied. Medical examination of 10% of the workers identified from workforce engaged in active mining operations will be subjected to health check-up through specialized agency within the district (Govt. hospital).
ii.	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Supervisory staff shall be held responsible for ensuring compulsory wearing of dust mask.	Personnel working in dusty areas are given dust mask and training and information on safety and health aspects. Training and information on safety and health aspects is provided at GVTC.
iii.	In case of outsourcing of work through MDO, the project proponent shall ensure the strict compliance enforcement of the above conditions.	Strict compliance of enforcement of the above conditions will be ensured.
	(f) Biodiversity	
i.	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.	All precautionary measures will be taken during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna will be prepared and implemented in consultation with the State Forest and Wildlife Department.

	(g) Implementation of Action Plan as Per Public Hearing & CSR Activities	
i.	Implementation of Action Plan on the issues raised during the Public Hearing shall be ensured. The Project Proponent shall complete all the tasks as per the Action Plan submitted with budgetary provisions during the Public Hearing. Land oustees should be compensated as per the norms laid out R&R Policy of the Company or the National R&R Policy or R&R Policy of the State Government, whichever is higher.	Noted and will be complied.
ii.	The Board of every company, shall ensure that the company spends, in every financial year, at least two per cent, of the average net profits of the company made during the three immediately preceding financial years, in pursuance of its Corporate Social Responsibility Policy under Section 135 of the Companies Act, 2013, for the Socio Economic Development of the neighborhood.	As per CSR policy of Coal India Limited Rs. 2/tonne of coal produced or 2% of the average net profits of the company made during the three immediately preceding financial years whichever is more is spent on Corporate Social Responsibility works.
	(h) Corporate Environment Responsibility	
i.	The Company should have a well laid down Environment Policy approved by the Board of Directors.	Coal India Limited's Corporate Environment Policy approved by the board of director exists.
ii.	To have proper checks and balances, the Company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large.	To have proper checks and balances, the WCL have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the WCL.
iii.	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.	At unit level Environmental Management Cell is headed by Chief Manager (Civil) / Nodal Officer (Environment) who reports to Sub Area Manager. At Area level Environmental Management Cell is headed by Area Nodal Officer (Env.) and assisted by Asst. Manager(Env.) who report to Area General Manager. At company level Environmental Management Cell is headed by General Manager (Environment)/HOD assisted by qualified and experienced environmental engineers who directly report to the Director (Project & Planning), WCL.
iv.	The funds earmarked for environmental protection measures should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office.	Funds earmarked for Environment protection measures is not diverted for other purpose. Year wise expenditure under Environment Head is regularly report to Regional Office, MoEF & CC Nagpur along with Six Monthly EC Compliance Report.

	(i) Statutory Obligations	
i.	Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, NGT and any other Court of Law, if any, as may be applicable to this project.	Noted.
ii.	This Environmental Clearance is subject to obtaining requisite NBWL Clearance from the Standing Committee of National Board for Wildlife, if any, as applicable for this Mining project.	Not applicable for this project
iii.	The project proponent shall obtain Consent to Establish and Consent to Operate from the concerned State Pollution Control Board prior to increase in capacity of washery and effectively implement all the conditions stipulated therein.Consent to Operate has been granted by MPCB vide Consent Order No. RED/L.S.I (R35)No:-Format1.0/CAC/UAN No.MPCBCONSENT-0000107029/CR/2203000019 dated 01.03.2022. Valid upto 31.03.2023	Consent to Operate has been granted by MPCB vide Consent Order No. RED/L.S.I (R35)No:-Format1.0/CAC/UAN No.MPCBCONSENT-0000107029/CR/2203000019 dated 01.03.2022. Valid upto 31.03.2023 CTO renewal applied vide UAN MPCB-CONSENT – 0000160313 dated 24.01.2023
iv.	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project.	Noted
v.	Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) for drawl of water (surface and ground water).	Noted
	(j) Monitoring of Project	
i.	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board.	Regular monitoring of ground water level and quality is being carried out four times in a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) and for quality in May. Report on Monitoring Ground Water Level and Quality Analysis is being sent regularly to MoEF & CC Delhi, RO MoEF & CC Nagpur, CGWA Delhi, Regional Director CGWB Nagpur and RO MPCB Chandrapur
ii.	The project proponent shall submit six monthly reports on the status of the	Six monthly compliance reports are being sent regularly to Regional Office, MoEF&CC, Nagpur

	implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.	and Regional Office, MPCB, Chandrapur.
iii.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	All necessary co-operations will be extended to Regional Office, Nagpur.
iv.	The activities pertaining to development of green belt / horticulture shall be reported to concerned Regional Office of MoEF&CC on six monthly basis from the date of commencement of mining operations.	The activities pertaining to development of green belt / horticulture will be reported to Regional Office, MoEF & CC, Nagpur on six monthly basis.
v.	For half yearly monitoring reports, the data should be monitored for the period of April to September and October to March of the financial years and submitted to the concerned authorities within 2 months of the completion of periodicity of monitoring.	Agreed.
	(k) Miscellaneous	
i.	A copy of clearance letter will be marked to concerned Panchayat /local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	A copy of EC Letter has been given to Gram Panchayat Ghonsa village on 10th June, 2017.
ii.	An electronic copy of the EC letter shall be marked to the concerned State Pollution Control Board, Regional Office, District Industry Sector and Collector's Office/Tehsildar Office for information in public domain within 30 days.	An electronic copy of the EC Letter has been emailed to Maharashtra Pollution Control Board, Regional Officer Chandapur, Collector Yavatmal, SDO Wani on 10th June, 2017.
iii.	The EC letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM10, PM25, SO2 and NO (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.	Environmental Clearance letter has been uploaded on WCL's website (www.westerncoal.gov.in) Link for EC letter: http://westerncoal.nic.in/sites/default/files/userfiles/GHONSA%20OC%200.6.pdf Six Monthly Compliance Status of EC Conditions and monitoring data of environmental quality parameter (air, water, noise) is regularly uploaded on WCL's website.

iv.	The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at www.environmentclearance.nic.in and a copy of the same should be forwarded to the Regional Office.	A public notice regarding this information has been advertised in two local news papers: 1. तरुण भारत, आपलं यवतमाळ dated 15th June, 2017 on Page no. 13, Marathi Daily news paper 2. The Hitavada dated 15th June, 2017 on Page no. 3. English Daily news paper
v.	The Environmental Statement for each financial year ending 31 March in Form-V is mandated to be submitted by the PP for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the Company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&CC by e-mail.	Environmental Statement for each financial year ending 31st March in Form - V is submitted to Maharashtra Pollution Control Board. Environmental Statement-Form V for year **2022-23** has been submitted on online portal of MPCB.
5.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during their presentation to the EAC. The commitment made by the project proponent to the issue raised during Public Hearing shall be implemented by the proponent.	Noted.
6.	The project proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection.	Noted.
7.	The PP shall set up an Environment Audit cell with responsibility and accountability to ensure implementation of all the EC Conditions.	Environment Audit Cell has been setup with responsibility & accountability to ensure compliance of all the Environment Clearance conditions.
8.	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this EC and attract action under the provisions of Environment (Protection) Act, 1986.	Noted.
9.	The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act,	Noted.

	1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter. The PP shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.	
10.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted.
11.	This EC supersedes the earlier EC granted vide letter No.J-11015/165/2009-IA.II (M) dated 8th December, 2014 for expansion in production capacity from 0.45 MTPA to 0.60 MTPA in ML area of 128.79 ha.	Noted.

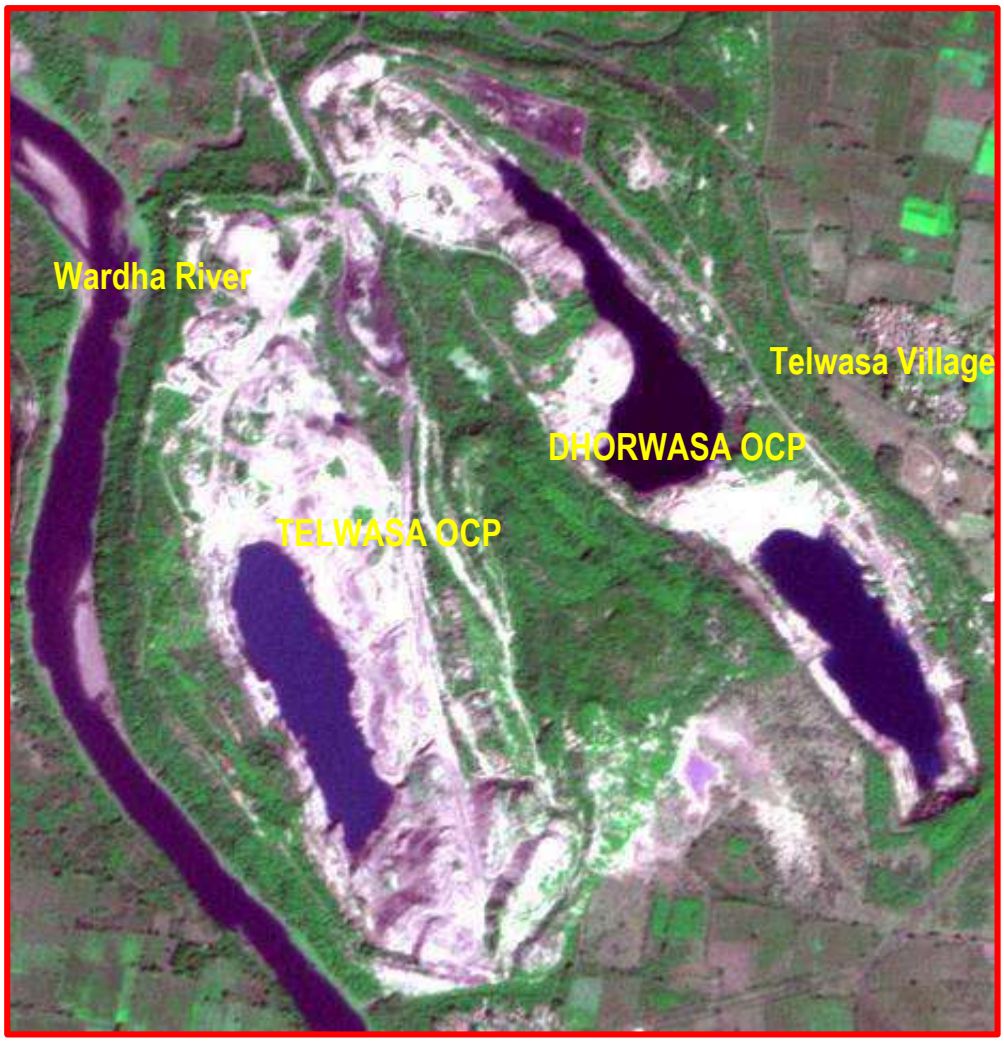
27/11/23
Survey Officer
Ghonsa OC Mine

27/11/2023
Nodal Officer (Env.)
Ghonsa Sub Area

27/11/23
Mine Manager
Ghonsa OC Mine

27/11/23
Sub Area Manager
Ghonsa Sub Area

Land Restoration / Reclamation Monitoring of less than 5 million Cu. M. (Coal+OB) Capacity Opencast Coal Mines of Western Coalfields Limited based on Satellite Data for the Year 2020



Submitted to

WESTERN COALFIELDS LIMITED

cmpdi

A Mini Ratna Company

Land Restoration / Reclamation Monitoring of less than 5 million Cu. M. (Coal+OB) Capacity Opencast Coal Mines of Western Coalfields Limited based on Satellite Data for the Year 2020

March-2021

Remote Sensing Cell
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Executive Summary

1.0 Project

Land restoration / reclamation monitoring of 15 opencast coal mines of Western Coalfields Ltd. (WCL) producing less than 5 million cu.m. (Coal+OB) per year based on satellite data, regularly basis at an interval of three years.

2.0 Objective

Objective of the land restoration / reclamation monitoring is to assess the area of backfilled, plantation, social forestry, active mining area, water bodies, and distribution of wasteland, agricultural land and forest in the leasehold area of the project. This will help in assessing the progressive status of mined land reclamation and to take up remedial measures, if any, required for environmental protection.

3.0 Salient Findings

- Total 15 nos of OC projects has been cosidered for monitoring the status of land reclamation in the year 2020-21 as compared to 14 nos of OC projects in the year 2017-18 . Adasa UG to OC project is included for land reclamatioon in the year 2020-21on request of WCL.

- Out of 15 OC projects, leasehold boundary of Kolgaon , Ballarpur Junad Extn ,Bhatadi , Gondegaon and Kolarpimpri OC projects have been updated as per latest EC boundary. While Bellora – Naigaon and Gauri deep OC projects has been updated as per keyplan/shapfile sent by area.

- Out of the total mine leasehold area of 7759.95 Hectare of the 15 projects Viz.Kolegaon, Bellora-Naigaon, Ghonsa, Ballarpur, JunadExtn, Urdhan, Telwasa, GauriExpn(A),Bhatadi, Gondegaon ,Kolarpimpri, Chhinda ,Gauri deep and Juna kunada and Adasa UG to OC considered for monitoring during year2020-21; total excavated area is only 1466.24 Ha (18.89%) out of which 68.11Ha area (4.65%) has been planted on backfill (Biologically Reclaimed) and 485.02 Ha area (33.08%) is under backfilling (Technically Reclaimed) and 913.11 hectares(62.27%) area is under active mining.. It is evident from the analysis that 553.13 hectares (37.72%) area of the 15 OC projects taken for study for the year 2020-21 is under reclamation and balance 913.11 Ha (62.27%) area is under active mining. Project wise details are given in Table-1 & bar chart Fig-1.

- On comparing the status of land reclamation carried out for 15 nos of OC projects in year 2020-21 with respect to previous cycle study done for the 14nos of OC projects in WCL, It is evident from analysis that area under land reclamation has increased from 397.66 Hectares (Yr 2017-18) to 553.13 Hectares which includes both planation on backfill (Biological Reclamation) and area under backfilling (Technical Reclamation) .This increase of 155.47 Hectares area of land reclamation in period of three year is the result of the efforts made by WCL towards land reclamation. Year wise comparison in land reclamation in different OC projects is given in Table-1.

- Overall , total area under plantation (green cover) carried out on backfill, and barren OB dump and plantation under social forestry has gone up from 993.35 Hectares in the year 2017-18 to 1230.65 Hectares in the year 2020-21.

Table-1
Projectwise Land Reclamation Status in Opencast Projects of WCL
(<5 Million cu. M coal+OB) based on Satellite Data of the year 2020-21)

(Area in Ha)

Sl.No	Project	Total Leasehold Area		Technical Reclamation		Plantation						Area under Active Mining		Total Excavated Area		Total Area under Plantation (% Green Cover Generated in Leasehold)		Total Area under Reclamation	
						Biological Reclamation		Other Plantations											
				Area under Backfilling		Plantation on Excavated / Backfilled Area		Plantation on External Over Burden Dumps		Social Forestry, Avanue Plantation Etc.									
1	*2*	*3*		*4*		*5*		*6*		*7*		*8*		*9 (=4+5+8)*		*10 (=5+6+7)*		*11(=4+5)*	
		2017	*2020*	*2017*	*2020*	*2017*	*2020*	*2017*	*2020*	*2017*	*2020*	*2017*	*2020*	*2017*	*2020*	*2017*	*2020*	*2017*	*2020*
1	Kolegaon	349.00	397.52	0.00	0.00	0.00	0.00	37.41	72.83	22.23	25.63	39.26	48.03	39.26	48.03	59.64	98.46	0.00	0.00
				0.00%	0.00%	0.00%	0.00%					100.00%	100.00%			17.09%	24.77%	0.00%	0.00%
2	Bellora-Naigaon	398.66	664.80	8.81	53.02	9.81	12.75	21.87	35.62	28.94	28.94	122.24	91.53	140.86	157.30	60.62	77.31	18.62	65.77
				6.25%	33.71%	6.96%	8.11%					86.78%	58.19%			15.21%	11.63%	13.22%	41.81%
3	Ghonsa	278.68	278.68	0.00	7.28	0.00	0.00	2.10	2.55	4.65	4.65	46.87	60.29	46.87	67.57	6.75	7.20	0.00	7.28
				0.00%	10.77%	0.00%	0.00%					100.00%	89.23%			2.42%	2.58%	0.00%	10.77%
4	Ballarpur	549.64	242.64	67.87	80.79	12.99	15.00	67.73	69.49	14.03	9.74	30.12	17.47	110.98	113.26	94.75	94.23	80.86	95.79
				61.16%	71.33%	11.70%	13.24%					27.14%	15.42%			17.24%	38.84%	72.86%	84.58%
5	Junad EXTN	420.97	449.63	34.51	34.51	2.45	2.46	36.14	65.57	26.86	28.81	56.54	61.54	93.50	98.51	65.45	96.84	36.96	36.97
				36.91%	35.03%	2.62%	2.50%					60.47%	62.47%			15.55%	21.54%	39.53%	37.53%
6	Urdhan	315.00	315.00	0.00	2.36	0.00	0.00	3.34	5.79	0.00	6.87	21.46	19.45	21.46	21.81	3.34	12.66	0.00	2.36
				0.00%	10.82%	0.00%	0.00%					100.00%	89.18%			1.06%	4.02%	0.00%	10.82%
7	Telwasa	271.91	271.91	44.61	101.67	4.68	4.68	34.20	50.71	23.62	23.62	69.64	12.58	118.93	118.93	62.50	79.01	49.29	106.35
				37.51%	85.49%	3.94%	3.94%					58.56%	10.58%			22.99%	29.06%	41.44%	89.42%
8	Gouri Expn(A)	676.53	676.53	106.57	106.53	28.56	29.20	118.61	150.98	96.11	96.21	86.60	95.57	221.73	231.30	243.28	276.39	135.13	135.73
				48.06%	46.06%	12.88%	12.62%					39.06%	41.32%			35.96%	40.85%	60.94%	58.68%
9	Bhatadi	838.14	847.37	21.27	21.94	0.00	0.00	13.28	30.86	45.63	46.12	56.52	71.92	77.79	93.86	58.91	76.98	21.27	21.94
				27.34%	23.38%	0.00%	0.00%					72.66%	76.62%			7.03%	9.08%	27.34%	23.38%
10	Gondegaon	917.00	791.40	32.88	42.29	0.00	0.00	52.00	73.47	84.03	62.15	101.71	157.19	134.59	199.48	136.03	135.62	32.88	42.29
				24.43%	21.20%	0.00%	0.00%					75.57%	78.80%			14.83%	17.14%	24.43%	21.20%
11	Kolarpimpri	1484.97	1488.42	7.54	10.71	1.86	4.02	83.36	115.55	7.74	8.21	137.70	140.37	147.10	155.10	92.96	127.78	9.40	14.73
				5.13%	6.91%	1.26%	2.59%					93.61%	90.50%			6.26%	8.58%	6.39%	9.50%
12	Chhinda	106.68	106.68	0.00	0.00	0.00	0.00	20.44	20.44	2.80	2.87	22.78	23.29	22.78	23.29	23.24	23.31	0.00	0.00
				0.00%	0.00%	0.00%	0.00%					100.00%	100.00%			21.78%	21.85%	0.00%	0.00%
13	Gouri deep	356.11	339.10	0.00	0.00	0.00	0.00	0.00	0.00	6.19	8.00	44.29	51.04	44.29	51.04	6.19	8.00	0.00	0.00
				0.00%	0.00%	0.00%	0.00%					100.00%	100.00%			1.74%	2.36%	0.00%	0.00%
14	Juna-Kunada	325.87	325.87	13.25	23.92	0.00	0.00	35.98	66.18	43.71	42.20	41.90	62.84	55.15	86.76	79.69	108.38	13.25	23.92
				24.03%	27.57%	0.00%	0.00%					75.97%	72.43%			24.45%	33.26%	24.03%	27.57%
15	*Adasa UG to OC	———	564.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.48	0.00	0.00	0.00	0.00	0.00	8.48	0.00	0.00
				0.00%	0.00%	0.00%	0.00%					0.00%	0.00%			0.00%	1.50%	0.00%	0.00%
	TOTAL	**7289.16**	**7759.95**	**337.31**	**485.02**	**60.35**	**68.11**	**526.46**	**760.04**	**406.54**	**402.50**	**877.63**	**913.11**	**1275.29**	**1466.24**	**993.35**	**1230.65**	**397.66**	**553.13**
				26.45%	**33.08%**	**4.73%**	**4.65%**					**68.82%**	**62.27%**	**17.50%**	**18.89%**	13.63%	**15.86%**	**31.18%**	**37.72%**

(% is calculated with respected to Excavated Area as applicable)

*** Land Reclamation of Adasa UG to OC has been included for Land reclamation monitoring in the year 2020-21 on request of WCL.**

Leasehold boundary of Kolegaon ,Ballarpur ,Junad Extn ,Bhatadi ,Gondegaon and,Kolarpimpri OC mine have been modified as per latest EC Boundary.

Leasehold boundary of Project like bellora-Naigaon and Gauri Deep OC ia as per keyplan provided by area .

Note : In reference of the above Table-1, different parameters are classified as follows

1 Area under Biological Reclamation includes area under plantation done on backfilled area only.

2 Area under Technical Reclamation includes areas under barren backfill only.

3 Area under Active Mining includes coal quarry, advance quarry & quarry filled with water etc.

4 Social forestry and plantation on external OB dump are not included in biological reclamation and are put under other plantation.

5 % claculated in respect to total excaveted area except for "Total area under plantation" where % has been calculated in terms of leasehold area.

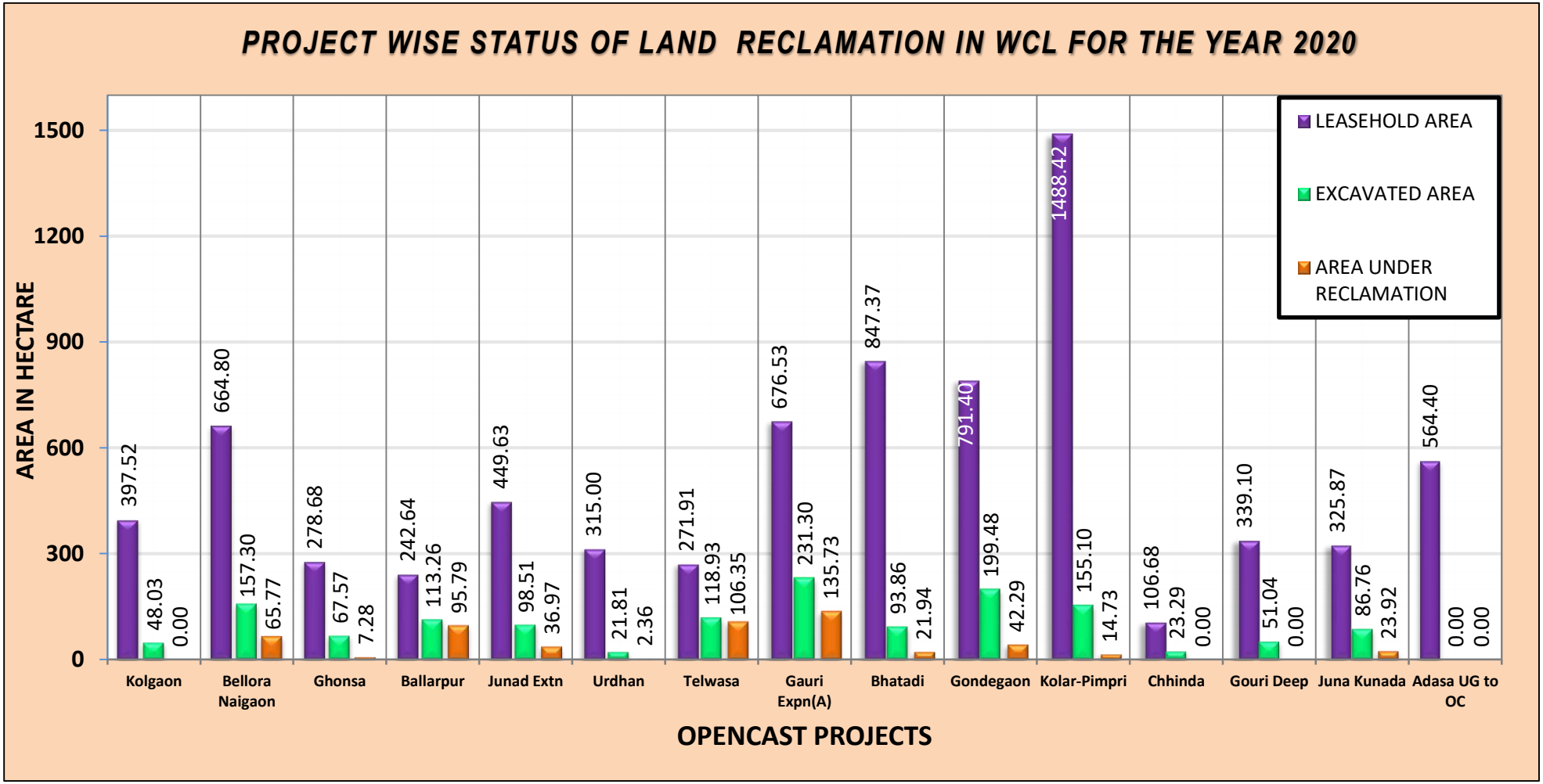


Fig.1: Land Reclamation Status in OC projects producing less than 5mcm (Coal +OB) of WCL in the Year 2020

1.0 Background

1.1 Land is the most important natural resource which embodies soil, water, flora fauna and total ecosystem. All human activities are based on the land which is the most scarce natural resource in our country. Mining is a site specific industry and it could not be shifted anywhere else from the location where mineral occurs. It is a fact that surface mining activities do effect the land environment due to ground breaking. Therefore, there is an urgent need to reclaim and restore the mined out land for its productive use for sustainable development of mining. This will not only mitigate environmental degradation, but would also help in creating a more congenial environment for land acquisition by coal companies in future.

1.2 Keeping above in view, Coal India Ltd. (CIL) issued a work order vide letter no. CIL/WBP/Env/2009/2478 dated 29.12.2009 to Central Mine Planning & Design Institute (CMPDI), Ranchi, for monitoring land reclamation status of all the opencast coal mines having production of less than 5 million m^3 per annum (coal + OB taken together per annum) based on remote sensing satellite data regularly on annual basis and less than 5 million m^3 per annum (coal + OB taken together per annum) at interval of three years based on remote sensing satellite data, for sustainable development of mining. Further a revised work order was issued vide letter no.CIL /WBP/Env/2011/4706 dated 12.10.2012 from Coal India Ltd for the period 2012-13 to 2016-2017.which was subsequently followed by another work order vide letter no: CIL /WBP/Env/2017/DP/8477 dated 21.09.2017from coal India ltd for period 2017—18 to 2021-22. The result of land reclamation status of all such mines to be put on the website of CIL, (www.coalindia.in), CMPDI (www.cmpdi.co.in) and the concerned coal companies in public domain. Detail report to be submitted to Coal India and respective subsidiaries.

1.3 Land reclamation monitoring of all opencast coal mining projects would also comply the statutory requirements of Ministry of Environment & Forest (MoEF).Such

monitoring would not only facilitate in taking timely mitigation measures against environmental degradation, but would also enable coal companies to utilize the reclaimed land for larger socio-economic benefits in a planned way.

1.4 Present report is embodying the finding of the study based on satellite data of the year 2017 and 2020 carried out for all the OC projects producing less than 5 mcm (Coal+OB) for Western Coalfields Ltd.

2.0 Objective

Objective of the land reclamation/restoration monitoring is to assess the area of backfilled, plantation, OB dumps, social forestry, active mining area, settlements and water bodies, distribution of wasteland, agricultural land and forest land in the leasehold area of the project. This is an important step taken up for assessing the progressive status of mined land reclamation and for taking up remedial measures, if any, required for environmental protection.

3.0 Methodology

There are number of steps involved between raw satellite data procurement and preparation of final map. National Remote Sensing Centre (NRSC) Hyderabad, being the nodal agency for satellite data supply in India, provides only raw digital satellite data, which needs further digital image processing for extracting the information and map preparation before uploading the same in the website. Methodology for land reclamation monitoring is given in given in figure-2. Following steps are involved in land reclamation /restoration monitoring:

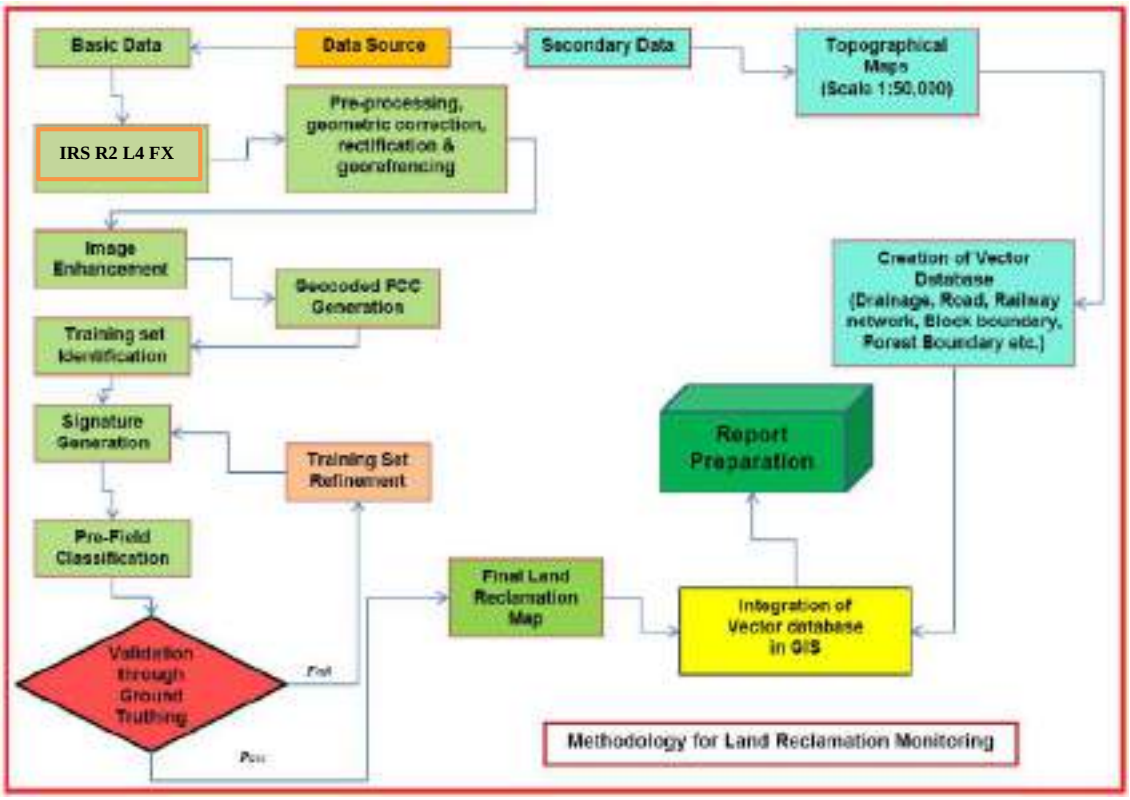


Figure :2 Methodology for Land Reclamation Monitoring

3.1 Data Procurement: After browsing the data quality and date of pass on internet, supply order for data is placed to NRSC. Secondary data like leasehold boundary, topo sheets are procured for creation of vector database.

3.2 Satellite Data Processing: Satellite data are processed using ERDAS IMAGINE version 2017digital image processing s/w. Methodology involves the following major steps:

- **Rectification & Geo-referencing:** Inaccuracies in digital imagery may occur due to 'systematic errors' attributed to earth curvature and rotation as well as 'non-systematic errors' attributed to satellite receiving station itself. Raw digital images contain geometric distortions, which make them unusable as maps. Therefore, geo-referencing is required for correction of image data using ground control points (GCP) to make it compatible to SoI toposheet.

- **Image enhancement:**

  To improve the interpretability of the raw data, image enhancement is necessary. local operations modify the value of each pixel based on brightness value of neighbouring pixels using ERDAS IMAGINE 2014 s/w. and enhance the image quality for interpretation.

- **Training set selection**

  Training set requires to be selected, so that software can classify the image data accurately. The image data are analysed based on the interpretation keys. These keys are evolved from certain fundamental image-elements such as tone/colour, size, shape, texture, pattern, location, association and shadow. Based on the image-elements and other geo-technical elements like land form, drainage pattern and physiography; training sets were selected/identified for each land use/cover class. Field survey was carried out by taking selective traverses in order to collect the ground information (or reference data) so that training sets are selected accurately in the image. This was intended to serve as an aid for classification.

- **Classification and Accuracy assessment**

  Image classification is carried out using the maximum likelihood algorithm. The classification proceeds through the following steps: (a) calculation of statistics [i.e. signature generation] for the identified training areas, and (b) the decision boundary of maximum probability based on the mean vector, variance, covariance and correlation matrix of the pixels. After evaluating the statistical parameters of the training sets, reliability test of training sets is conducted by measuring the statistical separation between the classes that resulted from computing divergence matrix. The overall accuracy of the classification was finally assessed with reference to ground truth data.

- **Area calculation**

  The area of each land use class in the leasehold is determined using ERDAS IMAGINE v. 2014 software.

- **Overlay of Vector data base**

  Vector data base created based on secondary data. Vector layer like drainage, railway line, leasehold boundary, forest boundary etc. are superimposed on the image as vector layer in the Arc GIS database.

- **Pre-field map preparation**

  Pre-field map is prepared for validation of the classification result

3.3 Ground Truthing:

Selective ground verification of the land use classes are carried out in the field and necessary corrections if required, are incorporated before map finalization.

3.4 Land reclamation database on GIS:

Land reclamation database is created on GIS platform to identify the temporal changes identified from satellite data of different cut-of dates.

4.0 Land Reclamation Status in Western Coalfields Ltd.

4.1 Following 15 opencast projects producing less than 5 million cubic m. (Coal + OB together) of Western Coalfields Ltd. have been taken up for land reclamation monitoring during the year 2020-21:

- Kolgaon
- Bellora-Naigaon
- Ghonsa
- Ballarpur
- Junad Extension
- Urdhan
- Telwasa
- Gauri Expn(A)
- Bhatadi
- Gondegaon
- Kolarpimpri
- Chhinda
- Gouri Deep
- Juna Kunda
- Adasa UG to OC

4.2 Area statistics of different land use class present in the mine leasehold of the above projects for the year 2020 are shown in the Table - 2. Land use maps derived from satellite data of year 2020 are shown in Plate 1 – 15. Changes in the different land use classes based on satellite data are depicted in Bar Charts in Fig. 3- 17.

4.3 Study reveals that out of total mine leasehold area of 7759.95 Hectare of the 15 projects Viz, Kolgaon,Bellora-Naigaon, Ghonsa ,Ballarpur ,Junad Extn , Telwasa ,Gauri Expn(A) ,Bhatadi, Gondegaon, Kolarpimpri ,Chhinda Gauri deep, Juna – Kunda and Adasa UG to OC considered for monitoring during year 2020-21; total excavated area is 1466.24 Ha (18.89%) ,out of which 68.11 Ha(4.65%) area has

been planted on backfill (Biologically Reclaimed) and 485.02 Ha(33.08%) area is under backfilling (Technically Reclaimed) .and balance 913.11 Ha (62.27%) area is under active mining. It is evident from analysis that 553.13 Ha (37.72%) area of above projects is under reclamation (Bilogically and Technically). Projects wise details area given in Table 1.

4.4 From analysis it is revealed that total vegetated area (Biological Reclamation) within leasehold of above projects has increased to 68.11 Ha (4.65%) in the year 2020-21 as compared to 60.35 Ha (4.73%) in the year 2017and area under technical reclamation (area under backfilling) has also increased from 337.31 Ha(26.45%) in the year 2017 to 485.02 Ha (33.08%) area in the year 2020. This increase of 147.71 Ha area in technical reclamation during span of three year is due to major increase in area under backfilling from 44.61 Ha (Yr2017) to 101.67 Ha (2020) in Telwasa OC

4.5 It is observed that overall marginal decrease of 0.08% in Biological reclamation in the year 2020 as compared to year 2017 is due to overall increase in excavated area from 1275.29 Ha (Yr.2017) to 1466.24Ha(Yr.2020) as such calculation for percentage of Biological reclamation has been carried out with respect to total excavated area.

4.6 Study indicates that overall the projects of WCL considered for this study indicate increase or static trend in biological reclamation (Plantation on backfill) as well as area under backfilling (Technical reclamation).

4.7 It is observed that backfilling process in Kolgaon OC project as well as Gauri deep OC could not be started till date due to its high gradient. At present Chhinda and Urdhan OC project are not in operation. Hence minor change in area of active mining is observed as indicated in Table-1.

4.8 After analyzing the satellite data of year 2017 vs. 2020 it is evident that total area under plantation (Green cover) carried out on backfilled area, OB dumps as well as under social forestry in above OC mines of WCL has increased from 993.35 Hectare (Yr.2017) to 1230.65 Hectare (Yr.2020) in the span of three year. This increase of 237.30 Hectare area under total plantation in three year time is due to the sincere efforts made by WCL towards generation of green cover in leasehold area of 15 opencast projects considered for land reclamation in the year 2020-21.

4.9 Total leasehold area of 15 OC project has increased from 7289.16 Ha(Yr.2017) to 7759.95 Ha (Yr.2020) mainly due to addition of Adasa UG to OC mine which has been considered for land reclamation in the year 2020. Technical and Biological reclamtion in this mine has not started till date as conversion of Adasa underground mine into opencast mine is under process. The data generated with respect to land reclamation monitoring of above mine will be used for comparision during cycle of three year.

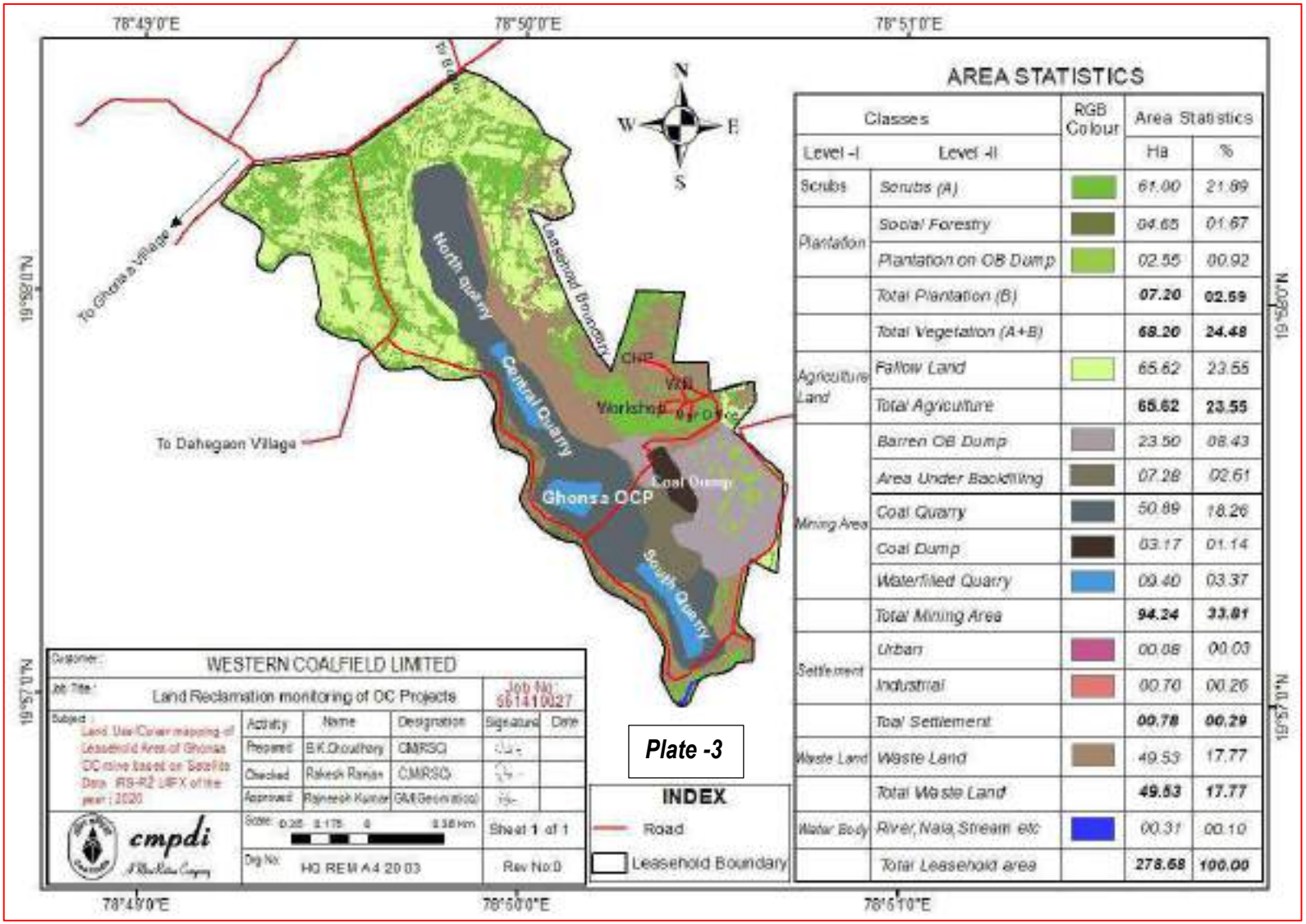
4.10 Decrease in leasehold area of Ballarpur OCP from 549.64Ha (Yr.2017) to 242.64 Ha (Yr.2020) has resulted in decrease of area under Social Forestry from 14.03 Ha(Yr.2017) to 9.74 Ha (Yr.2020) in Ballarpur OCP whereas area under Social Forestry has decreased from 84.03 Ha (Yr.2017) to 62.15 Ha (Yr.2020) in Gondegaon OCP .This decrease of 21.88 Hectare area under social forestry is due to increase in active mining area and decrease in area as well as change in shape of leasehold hold boundary.

4.11 Out of 15 projects of WCL , maximum land reclamation has been carried out in Telwasa OCP (89.42%) followed by Ballarpur OCP (84.58%) ,Gauri Expn(A) (58.68%) and Bellora –Naigaon OCP (41.81%).

TABLE 2: STATUS OF LAND USE/RECLAMATION IN OC MINES (<5MCU.M) OF WESTERNCOALFIELD LTD BASED ON SATELLITE DATA OF THE YEAR 2020

Area in Ha

		Kolgaon		Bellora -Naigaon		Ghonsa		Ballarpur		Junad Extn		Urdhan		Telwasa		Gouri Expn(A)		Bhatadi		Gondegaon		Kolar-Pimpri		Chhinda		Gouri Deep		Juna Kunada		Adasa UG to OC		Total	
		Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%
FORESTS	Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Open Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Forest	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
SCRUBS	Scrubs	**54.23**	**13.64**	**63.16**	**9.50**	**61.00**	**21.89**	**2.47**	**1.02**	**27.48**	**6.11**	**29.02**	**9.21**	**2.32**	**0.85**	**18.64**	**2.76**	**87.40**	**10.31**	**46.43**	**5.87**	**242.03**	**16.26**	**9.98**	**9.36**	**39.90**	**11.77**	**11.25**	**3.45**	**129.60**	**22.96**	**824.91**	**10.63**
	Total Scrubs	**54.23**	**13.64**	**63.16**	**9.50**	**61.00**	**21.89**	**2.47**	**1.02**	**27.48**	**6.11**	**29.02**	**9.21**	**2.32**	**0.85**	**18.64**	**2.76**	**87.40**	**10.31**	**46.43**	**5.87**	**242.03**	**16.26**	**9.98**	**9.36**	**39.90**	**11.77**	**11.25**	**3.45**	**129.60**	**22.96**	**824.91**	**10.63**
PLANTATION	Social Forestry	25.63	6.45	28.94	4.35	4.65	1.67	9.74	4.01	28.81	6.41	6.87	2.18	23.62	8.69	96.21	14.22	46.12	5.44	62.15	7.85	8.21	0.55	2.87	2.69	8.00	2.36	42.20	12.95	8.48	1.50	402.50	5.19
	Total Social Forest	**25.63**	**6.45**	**28.94**	**4.35**	**4.65**	**1.67**	**9.74**	**4.01**	**28.81**	**6.41**	**6.87**	**2.18**	**23.62**	**8.69**	**96.21**	**14.22**	**46.12**	**5.44**	**62.15**	**7.85**	**8.21**	**0.55**	**2.87**	**2.69**	**8.00**	**2.36**	**42.20**	**12.95**	**8.48**	**1.50**	402.50	5.19
	Plantation on OB Dump	72.83	18.32	35.62	5.36	2.55	0.92	69.49	28.64	65.57	14.58	5.79	1.84	50.71	18.65	150.98	22.32	30.86	3.64	73.47	9.28	115.55	7.76	20.44	19.16	0.00	0.00	66.18	20.31	0.00	0.00	760.04	9.79
	Total Plantation on OB Dump	**72.83**	**18.32**	**35.62**	**5.36**	**2.55**	**0.92**	**69.49**	**28.64**	**65.57**	**14.58**	**5.79**	**1.84**	**50.71**	**18.65**	**150.98**	**22.32**	**30.86**	**3.64**	**73.47**	**9.28**	**115.55**	**7.76**	**20.44**	**19.16**	**0.00**	**0.00**	**66.18**	**20.31**	**0.00**	**0.00**	**760.04**	**9.79**
	Plantation on Backfill	0.00	0.00	12.75	**1.92**	**0.00**	**0.00**	15.00	6.18	2.46	0.55	0.00	0.00	4.68	1.72	29.20	4.32	0.00	0.00	0.00	0.00	4.02	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.11	0.88
	Total Plantation on backfill *(Biological Reclamation)*	**0.00**	**0.00**	**12.75**	**1.92**	**0.00**	**0.00**	**15.00**	**6.18**	**2.46**	**0.55**	**0.00**	**0.00**	**4.68**	**1.72**	**29.20**	**4.32**	**0.00**	**0.00**	**0.00**	**0.00**	**4.02**	**0.27**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**68.11**	**0.88**
	Total Green Cover generated	**98.46**	**24.77**	**77.31**	**11.63**	**7.20**	**2.59**	**94.23**	**38.83**	**96.84**	**21.54**	**12.66**	**4.02**	**79.01**	**29.06**	**276.39**	**40.86**	**76.98**	**9.08**	**135.62**	**17.13**	**127.78**	**8.58**	**23.31**	**21.85**	**8.00**	**2.36**	**108.38**	**33.26**	**8.48**	**1.50**	**1230.65**	**15.86**
	Total Vegetation	**152.69**	**38.41**	**140.47**	**21.13**	**68.20**	**24.48**	**96.70**	**39.85**	**124.32**	**27.65**	**41.68**	**13.23**	**81.33**	**29.91**	**295.03**	**43.62**	**164.38**	**19.39**	**182.05**	**23.00**	**369.81**	**24.84**	**33.29**	**31.21**	**47.90**	**14.13**	**119.63**	**36.71**	**138.08**	**24.46**	**2055.56**	**26.49**
ACTIVE MINING	Coal Quarry	40.87	10.28	72.28	10.87	50.89	18.26	16.73	6.89	60.22	13.39	12.12	3.85	1.84	0.68	75.01	11.09	71.40	8.43	150.76	19.05	100.35	6.74	16.28	15.26	43.62	12.86	51.12	15.69	0.00	0.00	763.49	9.84
	Advance Quarry Site	5.64	1.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.02	1.78	0.00	0.00	0.00	0.00	11.66	0.15
	Quarry Filled With Water	1.52	0.38	19.25	2.89	9.40	3.37	0.74	0.30	1.32	0.29	7.33	2.33	10.74	3.95	20.56	3.04	0.52	0.06	6.43	0.81	40.02	2.69	7.01	6.57	1.40	0.41	11.72	3.60	0.00	0.00	137.96	1.78
	Coal Dump	3.66	0.92	5.96	0.90	3.17	1.14	5.40	2.23	2.26	0.50	5.10	1.62	2.57	0.95	1.33	0.20	6.87	0.81	5.14	0.65	3.68	0.25	0.31	0.29	3.90	1.15	2.70	0.83	0.00	0.00	52.05	0.67
	Total Area under *Active Mining*	**51.69**	**13.00**	**97.49**	**14.66**	**63.46**	**22.77**	**22.87**	**9.42**	**63.80**	**14.18**	**24.55**	**7.80**	**15.15**	**5.58**	**96.90**	**14.33**	**78.79**	**9.30**	**162.33**	**20.51**	**144.05**	**9.68**	**23.60**	**22.12**	**54.94**	**16.20**	**65.54**	**20.12**	**0.00**	**0.00**	**965.16**	**12.44**
	Barren OB Dump	77.74	19.56	90.35	13.59	23.50	8.43	22.24	9.17	124.27	27.64	64.91	20.61	51.09	18.79	98.71	14.59	159.34	18.80	179.07	22.63	263.42	17.70	22.50	21.09	96.76	28.53	77.51	23.79	0.00	0.00	1351.41	17.42
	Barren Backfilled Area	0.00	0.00	53.02	7.98	7.28	2.61	80.79	33.30	34.51	7.68	2.36	0.75	101.67	37.39	106.53	15.75	21.94	2.59	42.29	5.34	10.71	0.72	0.00	0.00	0.00	0.00	23.92	7.34	0.00	0.00	485.02	6.25
	Total Area under backfill(*Technical Reclamation)*	**0.00**	**0.00**	**53.02**	**7.98**	**7.28**	**2.61**	**80.79**	**33.30**	**34.51**	**7.68**	**2.36**	**0.75**	**101.67**	**37.39**	**106.53**	**15.75**	**21.94**	**2.59**	**42.29**	**5.34**	**10.71**	**0.72**	**0.00**	**0.00**	**0.00**	**0.00**	**23.92**	**7.34**	**0.00**	**0.00**	**485.02**	**6.25**
	Total Area Under Mine Operation	**129.43**	**32.56**	**240.86**	**36.23**	**94.24**	**33.81**	**125.90**	**51.89**	**222.58**	**49.50**	**91.82**	**29.16**	**167.91**	**61.76**	**302.14**	**44.67**	**260.07**	**30.69**	**383.69**	**48.48**	**418.18**	**28.10**	**46.10**	**43.21**	**151.70**	**44.73**	**166.97**	**51.25**	**0.00**	**0.00**	**2801.59**	**36.11**
WASTELANDS	Waste Lands	61.95	15.58	17.33	2.61	49.53	17.77	9.89	4.08	31.52	7.01	47.96	15.23	9.00	3.31	30.44	4.50	74.75	8.82	49.50	6.25	59.85	4.02	0.75	0.70	10.98	3.24	28.16	8.64	18.45	3.27	500.06	6.44
	Fly Ash Pond / Sand Body	3.85	0.97	5.19	0.78	0.00	0.00	2.81	1.15	3.53	0.79	0.00	0.00	1.55	0.57	12.54	1.85	5.09	0.60	1.39	0.18	3.07	0.21	0.24	0.22	0.24	0.07	1.24	0.38	3.76	0.67	44.50	0.57
	Total Wasteland	**65.80**	**16.55**	**22.52**	**3.39**	**49.53**	**17.77**	**12.70**	**5.23**	**35.05**	**7.80**	**47.96**	**15.23**	**10.55**	**3.88**	**42.98**	**6.35**	**79.84**	**9.42**	**50.89**	**6.43**	**62.92**	**4.23**	**0.99**	**0.92**	**11.22**	**3.31**	**29.40**	**9.02**	**22.21**	**3.94**	**544.56**	**7.01**
WATERBODIES	Reservoir, nallah, ponds	2.31	0.58	2.16	0.32	0.31	0.10	2.41	1.00	7.55	1.69	0.00	0.00	6.97	2.55	5.01	0.73	15.21	1.80	0.00	0.00	2.26	0.14	0.19	0.18	2.91	0.86	8.50	2.61	7.80	1.38	63.59	0.82
	Total Waterbodies	**2.31**	**0.58**	**2.16**	**0.32**	**0.31**	**0.10**	**2.41**	**1.00**	**7.55**	**1.69**	**0.00**	**0.00**	**6.97**	**2.55**	**5.01**	**0.73**	**15.21**	**1.80**	**0.00**	**0.00**	**2.26**	**0.14**	**0.19**	**0.18**	**2.91**	**0.86**	**8.50**	**2.61**	**7.80**	**1.38**	**63.59**	**0.82**
AGRICULTURE	Crop Lands	0.00	0.00	55.51	8.35	0.00	0.00	0.00	0.00	0.00	0.00	28.47	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.47	4.20	11.54	10.82	8.41	2.48	0.00	0.00	99.68	17.67	266.08	3.43
	Fallow Lands	44.60	11.22	202.95	30.53	65.62	23.55	2.96	1.22	57.73	12.84	101.93	32.36	3.61	1.33	28.81	4.26	321.09	37.89	168.87	21.34	557.02	37.42	13.54	12.70	115.77	34.14	0.00	0.00	289.45	51.28	1973.95	25.44
	Total Agriculture	**44.60**	**11.22**	**258.46**	**38.88**	**65.62**	**23.55**	**2.96**	**1.22**	**57.73**	**12.84**	**130.40**	**41.40**	**3.61**	**1.33**	**28.81**	**4.26**	**321.09**	**37.89**	**168.87**	**21.34**	**619.49**	**41.62**	**25.08**	**23.52**	**124.18**	**36.62**	**0.00**	**0.00**	**389.13**	**68.95**	**2240.03**	**28.87**
SETTLEMENTS	Urban Settlement	0.96	0.24	0.33	0.05	0.08	0.03	1.02	0.42	0.77	0.17	0.92	0.28	0.76	0.28	0.62	0.09	1.56	0.19	4.32	0.55	0.27	0.03	1.03	0.96	0.53	0.16	1.23	0.37	3.86	0.68	18.26	0.23
	Rural Settlement	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.13	1.67	0.53	0.00	0.00	0.00	0.00	3.71	0.44	0.00	0.00	6.01	0.40	0.00	0.00	0.00	0.00	0.00	0.00	2.81	0.50	14.78	0.19
	Industrial Settlement	1.73	0.44	0.00	0.00	0.70	0.26	0.95	0.39	1.05	0.22	0.55	0.17	0.78	0.29	1.94	0.28	1.51	0.18	1.58	0.20	9.48	0.64	0.00	0.00	0.66	0.19	0.14	0.04	0.51	0.09	21.58	0.28
	Total Settlement	**2.69**	**0.68**	**0.33**	**0.05**	**0.78**	**0.29**	**1.97**	**0.81**	**2.40**	**0.52**	**3.14**	**0.98**	**1.54**	**0.57**	**2.56**	**0.37**	**6.78**	**0.81**	**5.90**	**0.75**	**15.76**	**1.07**	**1.03**	**0.96**	**1.19**	**0.35**	**1.37**	**0.41**	**7.18**	**1.27**	**54.62**	**0.70**
	Grand Total	**397.52**	**100.00**	**664.80**	**100.00**	**278.68**	**100.00**	**242.64**	**100.00**	**449.63**	**100.00**	**315.00**	**100.00**	**271.91**	**100.00**	**676.53**	**100.00**	**847.37**	**100.00**	**791.40**	**100.00**	**1488.42**	**100.00**	**106.68**	**100.00**	**339.10**	**100.00**	**325.87**	**100.00**	**564.40**	**100.00**	**7759.95**	**100.00**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78°51'0"E
19°58'0"N
19°57'0"N
N
S
W
E
To Ghonsa Village
To Dahegaon Village
North quarry
Central Quarry
South Quarry
Leasehold Boundary
CHP
Workshop
Ghonsa OCP
Coal Dump
WESTERN COALFIELD LIMITED
Land Reclamation monitoring of OC Projects
Job No: 561410027
Activity
Name
Designation
Signature
Date
Prepared
B.K.Choudhary
CMRSO
Checked
Rakesh Ranjan
CMRSO
Approved
Rajneesh Kumar
GM(Geomatics)
cmpdi
Sheet 1 of 1
HO REM A4 20 03
Rev No:0
Plate -3
INDEX
Road
Leasehold Boundary
AREA STATISTICS
Classes
Level -I
Level -II
RGB Colour
Area Statistics
Ha
%
Scrubs
Scrubs (A)
61.00
21.89
Plantation
Social Forestry
04.65
01.67
Plantation on OB Dump
02.55
00.92
Total Plantation (B)
07.20
02.59
Total Vegetation (A+B)
68.20
24.48
Agriculture Land
Fallow Land
65.62
23.55
Total Agriculture
65.62
23.55
Mining Area
Barren OB Dump
23.50
08.43
Area Under Backfilling
07.28
02.61
Coal Quarry
50.89
18.26
Coal Dump
03.17
01.14
Waterfilled Quarry
09.40
03.37
Total Mining Area
94.24
33.81
Settlement
Urban
00.08
00.03
Industrial
00.70
00.26
Total Settlement
00.78
00.29
Waste Land
Waste Land
49.53
17.77
Total Waste Land
49.53
17.77
Water Body
River, Nala, Stream etc
00.31
00.10
Total Leasehold area
278.68
100.00

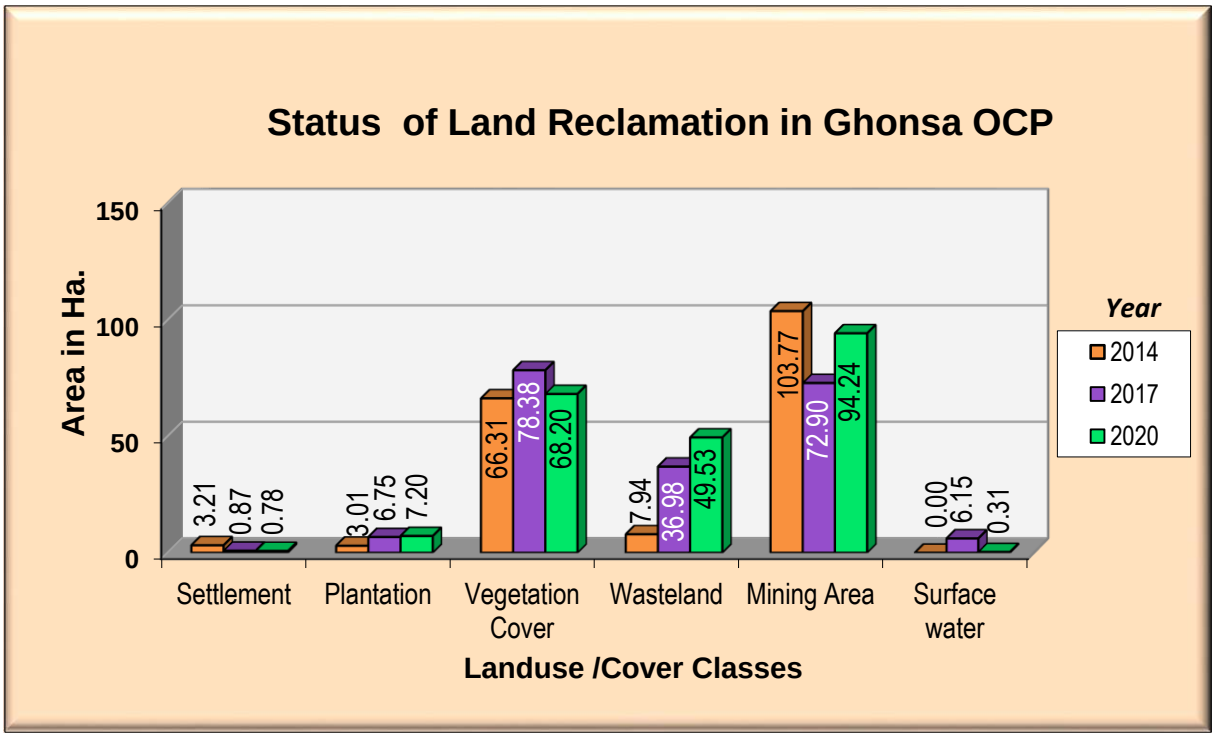

Figure-5

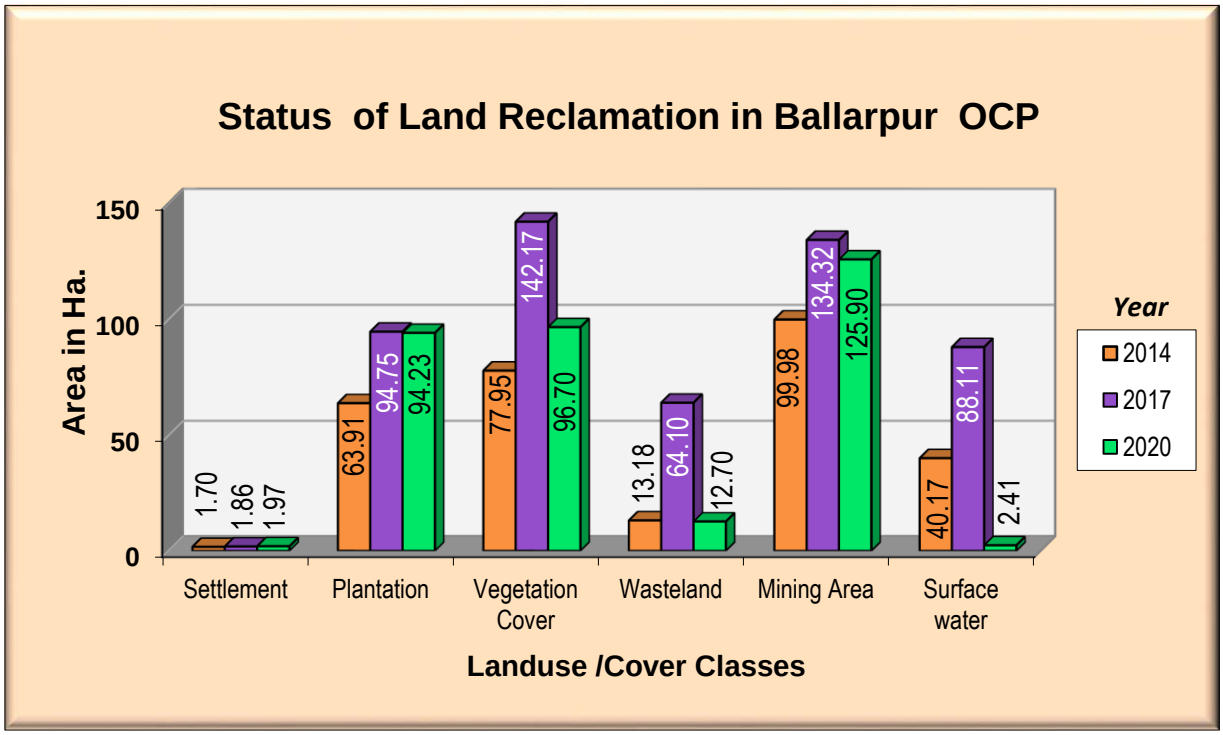

Figure-6

STRICTLY RESTRICTED
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ENVIRONMENTAL MONITORING REPORT

GHONSA OC

WANI NORTH AREA

WESTERN COALFIELDS LTD.

JOB NO. 4094423068

APRIL 2023

Environment Laboratory
NABL Accredited vide Cert. No. TC-7102
CMPDI
REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014

AN ISO 9001:2015 COMPANY

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

TEST REPORT NO.	RIN/TR/APRIL-23/23	DATE OF ISSUE	30-05-23
NAME OF CUSTOMER	GM(ENV.), WCL(HQ), NAGPUR		
TEST REQUIRED	SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017)		
SAMPLE DESCRIPTION	AIR SAMPLE	SAMPLING PLAN :	LQR 47
SAMPLING METHOD : LSOP 4	PERIOD OF PERFORMANCE OF LAB ACTIVITIES:		13-04-23 TO 15-05-23

PROJECT MANAGER OFFICE		WNGOA1					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
12-04-23	13-04-23	244	170	68	24	20	Clear Sky / Light Breeze
27-04-23	28-04-23	256	158	60	26	18	Cloudy Sky / Moderate Breeze
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

SAM OFFICE/ CANTEEN		WNKUA2					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
12-04-23	13-04-23	240	152	54	20	16	Clear Sky / Light Breeze
27-04-23	28-04-23	248	142	50	16	14	Cloudy Sky / Moderate Breeze
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

GHONSA VILLAGE		WNGOA3					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
12-04-23	13-04-23	122	62	38	14	12	Clear Sky / Light Breeze
27-04-23	28-04-23	120	68	30	12	10	Cloudy Sky / Moderate Breeze
NAAQS, 2009		**-**	**100**	**60**	**80**	**80**	

GUEST HOUSE/ COLONY		WNGOA4					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
12-04-23	13-04-23	210	132	50	16	14	Clear Sky / Light Breeze
27-04-23	28-04-23	200	140	46	14	12	Cloudy Sky / Moderate Breeze
NAAQS, 2009		**-**	**100**	**60**	**80**	**80**	

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

SAMPLE DESCRIPTION	Water sample	
Test Required	pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019)	
SAMPLING METHOD	LSOP 5	PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 13-04-23 TO 15-05-23

MINE WATER DISCHARGE:	WNGOW1			
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS (in mg/l)	COD(in mg/l)	O & G(in mg/l)
DETECTION LIMIT	2	10	4	2
12-04-23	7.36	28	56	BDL
27-04-23	7.6	40	72	BDL
STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000	5.5 - 9.0	100	250	10

Analysed by

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

NOISE LEVEL MONITORING DATA

SAMPLE DESCRIPTION	NOISE SAMPLE
Test Required	CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, JUNE-2015
SAMPLING METHOD	LSOP 6

MANAGER OFFICE:		WNGON1	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
APRIL'23	13-04-23	59.8	58.2
APRIL'23	27-04-23	58.9	57.4
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

COLONY (GHONSA)		WNGON2	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
APRIL'23	13-04-23	47.4	46.8
APRIL'23	27-04-23	46.3	45.2
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

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ENVIRONMENTAL MONITORING REPORT

GHONSA OC

WANI NORTH AREA

WESTERN COALFIELDS LTD.

JOB NO. 4094423068

MAY 2023

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

TEST REPORT NO.	RIN/TR/MAY-23/23	DATE OF ISSUE	30-06-2023
NAME OF CUSTOMER	GM(ENV.), WCL(HQ), NAGPUR		
TEST REQUIRED	SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017)		
SAMPLE DESCRIPTION	AIR SAMPLE	SAMPLING PLAN :	LQR 47
SAMPLING METHOD : LSOP 4	PERIOD OF PERFORMANCE OF LAB ACTIVITIES:		16-05-23 TO 15-06-23

PROJECT MANAGER OFFICE		WNGOA1					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	PM_{10}	$PM_{2.5}$	NO_2	SO_2	
FROM	TO	5	5	2	6	10	
13-05-2023	14-05-2023	250	166	70	22	18	Cloudy Sky / Light Breeze
27-05-2023	28-05-2023	243	170	64	20	16	Clear Sky / Calm
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

SAM OFFICE/ CANTEEN		WNKUA2					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	PM_{10}	$PM_{2.5}$	NO_2	SO_2	
FROM	TO	5	5	2	6	10	
13-05-2023	14-05-2023	234	157	60	22	16	Cloudy Sky / Light Breeze
27-05-2023	28-05-2023	240	141	57	17	14	Clear Sky / Calm
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

GHONSA VILLAGE		WNGOA3					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	PM_{10}	$PM_{2.5}$	NO_2	SO_2	
FROM	TO	5	5	2	6	10	
13-05-2023	14-05-2023	118	56	40	14	10	Cloudy Sky / Light Breeze
27-05-2023	28-05-2023	122	60	35	12	11	Clear Sky / Calm
NAAQS, 2009		**-**	**100**	**60**	**80**	**80**	

GUEST HOUSE/ COLONY		WNGOA4					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	PM_{10}	$PM_{2.5}$	NO_2	SO_2	
FROM	TO	5	5	2	6	10	
13-05-2023	14-05-2023	200	130	47	19	14	Cloudy Sky / Light Breeze
27-05-2023	28-05-2023	187	147	52	14	10	Clear Sky / Calm
NAAQS, 2009		**-**	**100**	**60**	**80**	**80**	

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Environment Laboratory CMPDI RI-IV, NAGPUR	**Test Report**	TC-7102

SAMPLE DESCRIPTION	Water sample	
Test Required	pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019)	
SAMPLING METHOD	LSOP 5	PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 16-05-23 TO 15-06-23

MINE WATER DISCHARGE:	**WNGOW1**			
DATE OF SAMPLE COLLECTION	**ANALYSIS RESULTS**			
	pH	TSS (in mg/l)	COD(in mg/l)	O & G(in mg/l)
DETECTION LIMIT	2	10	4	2
13-05-2023	7.8	34	44	BDL
27-05-2023	8.14	28	56	BDL
STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000	5.5 - 9.0	100	250	10

Analysed by

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

NOISE LEVEL MONITORING DATA

SAMPLE DESCRIPTION	NOISE SAMPLE
Test Required	CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, JUNE-2015
SAMPLING METHOD	LSOP 6

MANAGER OFFICE:		WNGON1	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
MAY'23	13-05-2023	59.8	58.6
MAY'23	29-05-2023	59.7	58.4
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

COLONY (GHONSA)		WNGON2	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
MAY'23	13-05-2023	46.5	45.3
MAY'23	29-05-2023	48.1	47.6
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**55**	**45**

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ENVIRONMENTAL MONITORING REPORT

GHONSA OC

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JUNE 2023

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

TEST REPORT NO.	RIN/TR/JUNE-23/23	DATE OF ISSUE	31-07-23
NAME OF CUSTOMER	GM(ENV.), WCL(HQ), NAGPUR		
TEST REQUIRED	SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017)		
SAMPLE DESCRIPTION	AIR SAMPLE	SAMPLING PLAN :	LQR 47
SAMPLING METHOD : LSOP 4	PERIOD OF PERFORMANCE OF LAB ACTIVITIES:		16-06-23 TO 15-07-23

PROJECT MANAGER OFFICE		WNGOA1					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
03-06-23	04-06-23	256	160	64	24	18	Clear Sky / Calm
19-06-23	20-06-23	241	158	63	22	16	Clear Sky / Calm
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

SAM OFFICE/ CANTEEN		WNKUA2					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
03-06-23	04-06-23	240	136	62	22	14	Clear Sky / Calm
19-06-23	20-06-23	237	140	55	20	17	Clear Sky / Calm
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

GHONSA VILLAGE		WNGOA3					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
03-06-23	04-06-23	116	58	37	12	10	Clear Sky / Calm
19-06-23	20-06-23	120	60	32	15	12	Clear Sky / Calm
NAAQS, 2009		**-**	**100**	**60**	**80**	**80**	

GUEST HOUSE/ COLONY		WNGOA4					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
03-06-23	04-06-23	194	128	57	20	16	Clear Sky / Calm
19-06-23	20-06-23	200	132	60	21	15	Clear Sky / Calm
NAAQS, 2009		**-**	**100**	**60**	**80**	**80**	

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

SAMPLE DESCRIPTION	Water sample	
Test Required	pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019)	
SAMPLING METHOD	LSOP 5	PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 16-06-23 TO 15-07-23

MINE WATER DISCHARGE:	WNGOW1			
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS (in mg/l)	COD(in mg/l)	O & G(in mg/l)
DETECTION LIMIT	2	10	4	2
03-06-23	8.16	36	56	BDL
19-06-23	8.18	32	52	BDL
STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000	5.5 - 9.0	100	250	10

Analysed by

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

NOISE LEVEL MONITORING DATA

SAMPLE DESCRIPTION	NOISE SAMPLE
Test Required	CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, JUNE-2015
SAMPLING METHOD	LSOP 6

MANAGER OFFICE:		WNGON1	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
JUNE'23	11-06-23	54.7	54.0
JUNE'23	24-06-23	54.3	53.6
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

COLONY (GHONSA)		WNGON2	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
JUNE'23	11-06-23	46.7	45.2
JUNE'23	24-06-23	45.6	44.8
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

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JULY 2023

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

TEST REPORT NO.	RIN/TR/JULY-23/23	DATE OF ISSUE	31-08-2023
NAME OF CUSTOMER	GM(ENV.), WCL(HQ), NAGPUR		
TEST REQUIRED	SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017)		
SAMPLE DESCRIPTION	AIR SAMPLE	SAMPLING PLAN :	LQR 47
SAMPLING METHOD : LSOP 4	PERIOD OF PERFORMANCE OF LAB ACTIVITIES:		16-07-23 TO 14-08-23

PROJECT MANAGER OFFICE		WNGOA1					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	PM_{10}	$PM_{2.5}$	NO_2	SO_2	
FROM	TO	5	5	2	6	10	
04-07-2023	05-07-2023	218	137	40	13	BDL	CLEAR /CALM
19-07-2023	20-07-2023	197	122	31	15	10	RAINY /CALM
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

SAM OFFICE/ CANTEEN		WNKUA2					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	PM_{10}	$PM_{2.5}$	NO_2	SO_2	
FROM	TO	5	5	2	6	10	
04-07-2023	05-07-2023	231	157	34	14	11	CLEAR /CALM
19-07-2023	20-07-2023	197	137	27	12	BDL	RAINY /CALM
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

GHONSA VILLAGE		WNGOA3				
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)				ENVIRONMENT CONDITIONS (Sky/Wind)
		PM_{10}	$PM_{2.5}$	NO_2	SO_2	
FROM	TO	5	2	6	10	
04-07-2023	05-07-2023	59	19	8	BDL	CLEAR /CALM
19-07-2023	20-07-2023	62	26	9	BDL	RAINY /CALM
NAAQS, 2009		**100**	**60**	**80**	**80**	

GUEST HOUSE/ COLONY		WNGOA4				
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)				ENVIRONMENT CONDITIONS (Sky/Wind)
		PM_{10}	$PM_{2.5}$	NO_2	SO_2	
FROM	TO	5	2	6	10	
04-07-2023	05-07-2023	60	22	9	BDL	CLEAR /CALM
19-07-2023	20-07-2023	67	29	10	BDL	RAINY /CALM
NAAQS, 2009		**100**	**60**	**80**	**80**	

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

SAMPLE DESCRIPTION	Water sample	
Test Required	pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019)	
SAMPLING METHOD	LSOP 5	PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 16-07-23 TO 14-08-23

MINE WATER DISCHARGE:	WNGOW1			
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS (in mg/l)	COD(in mg/l)	O & G(in mg/l)
DETECTION LIMIT	2	10	4	2
04-07-2023	7.22	28	36	BDL
19-07-2023	7.10	24	32	BDL
STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000	5.5 - 9.0	100	250	10

Analysed by

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

NOISE LEVEL MONITORING DATA

SAMPLE DESCRIPTION	NOISE SAMPLE
Test Required	CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, JULY-2015
SAMPLING METHOD	LSOP 6

MANAGER OFFICE:		WNGON1	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
JULY'23	12-07-2023	55.5	54.6
JULY'23	21-07-2023	59.6	58.7
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

COLONY (GHONSA)		WNGON2	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
JULY'23	12-07-2023	46.7	45.8
JULY'23	21-07-2023	42.6	40.8
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

TEST REPORT NO.	RIN/TR/AUG-23/23	DATE OF ISSUE	30-09-2023
NAME OF CUSTOMER	GM(ENV.), WCL(HQ), NAGPUR		
TEST REQUIRED	SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017)		
SAMPLE DESCRIPTION	AIR SAMPLE	SAMPLING PLAN :	LQR 47
SAMPLING METHOD : LSOP 4	PERIOD OF PERFORMANCE OF LAB ACTIVITIES:		15-08-23 TO 15-09-23

PROJECT MANAGER OFFICE		WNGOA1					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
03-08-2023	04-08-2023	224	138	38	14	11	RAINY /CALM
18-08-2023	19-08-2023	181	127	31	13	BDL	RAINY /CALM
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

SAM OFFICE/ CANTEEN		WNKUA2					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
03-08-2023	04-08-2023	221	148	32	13	BDL	RAINY /CALM
18-08-2023	19-08-2023	179	131	27	15	11	RAINY /CALM
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

GHONSA VILLAGE		WNGOA3				
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)				ENVIRONMENT CONDITIONS (Sky/Wind)
		PM_{10}	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	2	6	10	
03-08-2023	04-08-2023	54	29	7	BDL	RAINY /CALM
18-08-2023	19-08-2023	60	24	8	BDL	RAINY /CALM
NAAQS, 2009		**100**	**60**	**80**	**80**	

GUEST HOUSE/ COLONY		WNGOA4				
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)				ENVIRONMENT CONDITIONS (Sky/Wind)
		PM_{10}	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	2	6	10	
03-08-2023	04-08-2023	78	24	9	BDL	RAINY /CALM
18-08-2023	19-08-2023	59	29	8	BDL	RAINY /CALM
NAAQS, 2009		**100**	**60**	**80**	**80**	

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

SAMPLE DESCRIPTION	Water sample	
Test Required	pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019)	
SAMPLING METHOD	LSOP 5	PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 15-08-23 TO 15-09-23

MINE WATER DISCHARGE:	WNGOW1			
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS (in mg/l)	COD(in mg/l)	O & G(in mg/l)
DETECTION LIMIT	2	10	4	2
04-08-2023	7.09	26	36	BDL
18-08-2023	6.99	22	32	BDL
STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000	5.5 - 9.0	100	250	10

Analysed by

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

NOISE LEVEL MONITORING DATA

SAMPLE DESCRIPTION	NOISE SAMPLE
Test Required	CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, AUG-2015
SAMPLING METHOD	LSOP 6

MANAGER OFFICE:		WNGON1	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
AUG'23	07-08-2023	55.6	54.6
AUG'23	18-08-2023	55.7	54.4
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

COLONY (GHONSA)		WNGON2	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
AUG'23	07-08-2023	46.7	45.8
AUG'23	18-08-2023	45.6	44.5
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

Ashwin B Wasnik
Reviewed by

Deepanshu Sahu
Authorised by

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ENVIRONMENTAL MONITORING REPORT

GHONSA OC

WANI NORTH AREA

WESTERN COALFIELDS LTD.

JOB NO. 4094423068

SEPTEMBER 2023

Environment Laboratory
NABL Accredited vide Cert. No. TC-7102
CMPDI
REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014

AN ISO 9001:2015 COMPANY

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report		TC-7102
TEST REPORT NO.	RIN/TR/SEPT-23/23	DATE OF ISSUE	27-10-23
NAME OF CUSTOMER	GM(ENV.), WCL(HQ), NAGPUR		
TEST REQUIRED	SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017)		
SAMPLE DESCRIPTION	AIR SAMPLE	SAMPLING PLAN :	LQR 47
SAMPLING METHOD : LSOP 4	PERIOD OF PERFORMANCE OF LAB ACTIVITIES:		15-09-23 TO 15-10-23

PROJECT MANAGER OFFICE		WNGOA1					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
03-09-23	04-09-23	257	188	39	15	11	CLOUDY / CALM
18-09-23	19-09-23	268	201	33	16	11	RAINY SKY / KIGHT BREEZE
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

SAM OFFICE/ CANTEEN		WNKUA2					
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)					ENVIRONMENT CONDITIONS (Sky/Wind)
		SPM	**PM_{10}**	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	5	2	6	10	
03-09-23	04-09-23	221	145	35	13	BDL	CLOUDY / CALM
18-09-23	19-09-23	241	168	44	15	12	RAINY SKY / KIGHT BREEZE
STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000		**600**	**300**	**-**	**120**	**120**	

GHONSA VILLAGE		WNGOA3				
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)				ENVIRONMENT CONDITIONS (Sky/Wind)
		PM_{10}	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	2	6	10	
03-09-23	04-09-23	78	24	8	BDL	CLOUDY / CALM
18-09-23	19-09-23	88	29	9	BDL	RAINY SKY / KIGHT BREEZE
NAAQS, 2009		**100**	**60**	**80**	**80**	

GUEST HOUSE/ COLONY		WNGOA4				
DATE(dd:mm:yy) OF SAMPLING		PARAMETERS (24 hourly values in µg/m^3)				ENVIRONMENT CONDITIONS (Sky/Wind)
		PM_{10}	**$PM_{2.5}$**	**NO_2**	**SO_2**	
FROM	TO	5	2	6	10	
03-09-23	04-09-23	71	26	8	BDL	CLOUDY / CALM
18-09-23	19-09-23	79	30	10	BDL	RAINY SKY / KIGHT BREEZE
NAAQS, 2009		**100**	**60**	**80**	**80**	

Analysed by

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

SAMPLE DESCRIPTION	Water sample	
Test Required	pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019)	
SAMPLING METHOD	LSOP 5	PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 15-09-23 TO 15-10-23

MINE WATER DISCHARGE:	WNGOW1			
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS (in mg/l)	COD(in mg/l)	O & G(in mg/l)
DETECTION LIMIT	2	10	4	2
03-09-23	7.12	24	36	BDL
19-09-23	7.09	26	32	BDL
STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000	5.5 - 9.0	100	250	10

Analysed by

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report	TC-7102

NOISE LEVEL MONITORING DATA

SAMPLE DESCRIPTION	NOISE SAMPLE
Test Required	CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, SEPT-2015
SAMPLING METHOD	LSOP 6

MANAGER OFFICE:		WNGON1	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
SEPT'23	03-09-23	56.2	55.4
SEPT'23	18-09-23	55.7	54.4
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

COLONY (GHONSA)		WNGON2	
MONTH	DATE OF SAMPLE COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
	DETECTION LIMIT	20	20
SEPT'23	03-09-23	45.6	44.2
SEPT'23	18-09-23	44.7	43.5
NOISE POLLUTION (REGULATION AND CONTROL) RULES		**75**	**70**

Ashwin B Wasnik
Reviewed by

Deepanshu Sahu
Authorised by

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ENVIRONMENTAL MONITORING REPORT w.r.t. HEAVY METALS IN AMBIENT AIR

WANI NORTH AREA

WESTERN COALFIELDS LTD.

APRIL 2023 TO JUNE 2023

Environment Laboratory

CMPDI

REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014

AN ISO 9001:2015 COMPANY

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report Ambient Air quality monitoring data for heavy metals

TEST REPORT NO.	RIN/TR/JUNE /HM87	DATE OF ISSUE	31-08-2023
NAME OF CUSTOMER	GM(ENV.),WCL(HQ), NAGPUR	SAMPLE DESCRIPTION	AIR SAMPLE
TEST REQUIRED	Heavy metals (As, Pb, Ni, Cr & Cd) in air samples (ASTM D 4185)		
NAME OF AREA	WANI NORTH	SAMPLING METHOD : LSOP 4	
NAME OF PROJECT	GHONSA OC EXPN	SAMPLING PLAN : LQR 47	
No. of Pages	1		

Sl No.	Name of location	Location Code	Date of sampling
1	PROJECT MANAGER OFFICE	WNKUA-1	13-04-2023
2	SAM OFFICE /CANTEEN	WNKUA-2	13-04-2023
3	GUEST HOUSE /COLONY	WNKUA-3	13-04-2023
4	GHONSA VILLAGE	WNGOA-4	13-04-2023

Sl. No.	Parameter	Method of analysis	Detection limit	Observed Value				National Ambient Air Quality Standard NAAQS, 2009
				WNKUA-1	WNKUA-2	WNKUA-3	WNGOA-4	
1	Arsenic, µg/m^3	ASTM D 4185	0.0007 µg/m^3	BDL	BDL	BDL	BDL	0.006 µg/m^3 (Annual average)
2	Lead, µg/m3	IS 5182 PART 22	7.0 µg/m^3	BDL	BDL	BDL	BDL	1.0 µg/m^3 (24 Hourly average)
3	Nickle, µg/m^3	ASTM D 4185	0.007 µg/m^3	0.0071	BDL	BDL	BDL	0.02 µg/m3 (Annual average)
4	Total Chromium, µg/m^3	ASTM D 4185	0.0045 µg/m^3	0.0047	BDL	BDL	BDL	**
5	Cadmium, µg/m^3	ASTM D 4185	0.0015 µg/m^3	BDL	BDL	BDL	BDL	**
6	Mercury, µg/m3	ASTM D 4185	0.0007 µg/m^3	BDL	BDL	BDL	BDL	**

BDL: BELOW DETECTION LIMIT

SCIENTIFIC ASSISTANT

DEEPANSHU SAHU
AUTHORIZED SIGNATORY

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3 ** This parameter not regulated as per NAAQS

REPORT ON

MONITORING OF GROUND WATER LEVEL

OF

GHONSA OC EXPN. MINE,

WANI NORTH AREA

WESTERN COALFIELDS LTD.

PERIOD- DEC 2022 (POST-MONSOON), JAN-FEB -2023 (WINTER) & MAY-2023 (PRE-MONSOON)

M/s Anacon Laboratories Pvt. Ltd., Nagpur

MoEF&CC (GOI) and NABL Recognized Laboratory
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018
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Email: ***ngp@anacon.in***
Website: ***www.anaconlaboratories.com***

Report No. ANqr /PD/20A/2023/199

2022-23 & 2023-24

Certificate

The Ground water Level monitoring has been carried out with due diligence and the Monitoring of Ground Water Level of all observation wells Report have been prepared as per the scope of work order no. वेकोलि/मुख्यालय/पर्यावरण/14-L/77 on date: 08.12.2022.

The report encompasses the Monitoring of Ground water level reports of observation wells pertaining to the GHONSA OC EXPN. MINE, Wani North area of Yeotmal District, M.S.

Anacon Laboratories Pvt. Ltd. gratefully acknowledges the full cooperation rendered by concerned WCL Officials for timely completion of the project.

Ajinkya Nakod
(Geologist)

Gyanchand Bohra
NABET Accredited EIA Expert
for Hydrogeology & Geology

ANACON LABORATORIES PVT. LTD. NAGPUR

Nagpur.
August-2023

(Dr. D. G. Garway)
Head of Organization
Anacon Laboratories Pvt. Ltd., Nagpur

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INTRODUCTION

Western Coalfields Limited (WCL) is one of the eight Subsidiary Companies of Coal India Limited (CIL) which is under administrative control of Ministry of Coal. The Company incorporated under the Companies Act, 1956 has its registered office at Coal Estate, Civil Lines, Nagpur–440001. WCL has been conferred "Mini-ratna" status on 15 March 2008. It has mining operation spread over the states of Maharashtra (in Nagpur, Chandrapur & Yeotmal Districts) and Madhya Pradesh (in Betul and Chhindwara Districts). It has been divided into 10 administrative areas. The Company is a major source of supplies of coal to the industries located in Western India in the States of Maharashtra, Madhya Pradesh, Gujarat and also in Southern India in the States of Andhra Pradesh, Tamil Nadu, Karnataka and Kerala. A large numbers of Power Houses under Maharashtra, Madhya Pradesh, Gujarat, Karnataka, Punjab and Uttar Pradesh - Electricity Boards are major consumers of its coal along with cement, steel, chemical, fertilizer, paper and brick Industries in these states.

M/s Anacon Laboratories Pvt. Ltd. has been awarded the Work of "Groundwater level Monitoring (i.e. bore well / piezometer Water levels) and Water quality analysis (as per IS10500) for 76 projects / mines of WCL (situated in the state of Madhya Pradesh – Chhindwara & Betul districts and Maharashtra – Nagpur, Chandrapur & Yeotmal districts) for one year as per condition stipulated in Environmental Clearance letters issued by MoEF & CC & NOC issued by CGWA" vide work order वेकोलि/मुख्यालय/पर्यावरण/14-L/77 on date: 08.12.2022.

This Ground Water Level Monitoring report is prepared GHONSA OC EXPN. MINE,,of Wani North area of WCL for 3 seasons i.e. Post-monsoon (Dec 2022), Winter (Jan –Feb 2023) & Pre-monsoon (May-2023). These mines are located in Wani North Area of Yeotmal District, Maharashtra.

GENERAL HYDROGEOLOGICAL CONDITION

Deccan Trap Basalt is the predominant water bearing formation, followed by Gondwana formation having Sandstone and Shale sequence. Penganga and Quaternary Alluvium aquifers are spread in limited areas. Archean aquifers are limited and have less significance in the area.

ARCHEAN

Achaeans, which comprise granites, granitic gneisses and schists, occur in Umarkhed taluka. These rocks as such have limited ground water potential. In these rocks only weathered portions and jointed zones possess water-bearing capacity and ground water occurs under unconfined condition in the area.

VINDHYAN

In Vindhyans, Limestones are water bearing formation while Sandstone, due to their hard and compact nature, have poor ground water potential and occur in southeastern peripheral parts of Wani taluka. The Limestones as such are massive but wherever they are cavernous they are capable of holding water. The ground water occurs under unconfined condition in the area.

GONDWANA

The Gondwana consists of Kamthi and Barakar Sandstone and Shale and occupy north-south extending elongated stretch in parts of Maregaon and Wani talukas. Sandstone is usually friable

and possesses primary porosity due to its granular nature. They are most productive water bearing formations in the district. The ground water occurs under semi confined to confined conditions in the area and water bearing zones have been encountered down to depth of 470 m.

DECCAN TRAP BASALT

Deccan Trap Basalt is widely spread and forms important water bearing formation, which occupies almost entire district except south eastern part. On the whole, Deccan Trap Basalt exhibits a multi aquifer system. Based on the Litholog of 51 exploratory wells and Piezometers, it is observed that weathered Vesicular Basalt mainly forms the predominant shallow aquifer down to the depth of 20 m bgl. Massive Basalt is also encountered at the top thereby forming poor yielding aquifer and also restricting the ground water recharge to the underlying porous Vesicular Basalt. Fractured Basalt is also observed in certain places with limited to significant thickness. In Deccan Trap Basalt phreatic aquifer generally occurs down to 25 m, however, fracture zones have occurred within 80 m range except at few places where it occurs down to 158 m also.

ALLUVIUM

Alluvium occurs in patches along the banks of Wardha and Penganga rivers and their major tributaries and consists of clay and silt with lenticular bodies of sand and gravel. In Ralegaon area, it is observed that sand zones are found in the depth range of 20-25 m bgl, while the top 15-16 m is full of clay and silt. Ground water in Alluvium occurs both under unconfined and 8 semi-confined conditions.

GHONSA OC EXPN. MINE,
WANI NORTH AREA
WESTERN COALFIELDS LTD.

PERIOD- DEC 2022(POST-MONSOON), JAN-FEB 2023 (WINTER) & MAY-2023 (PRE-MONSOON)

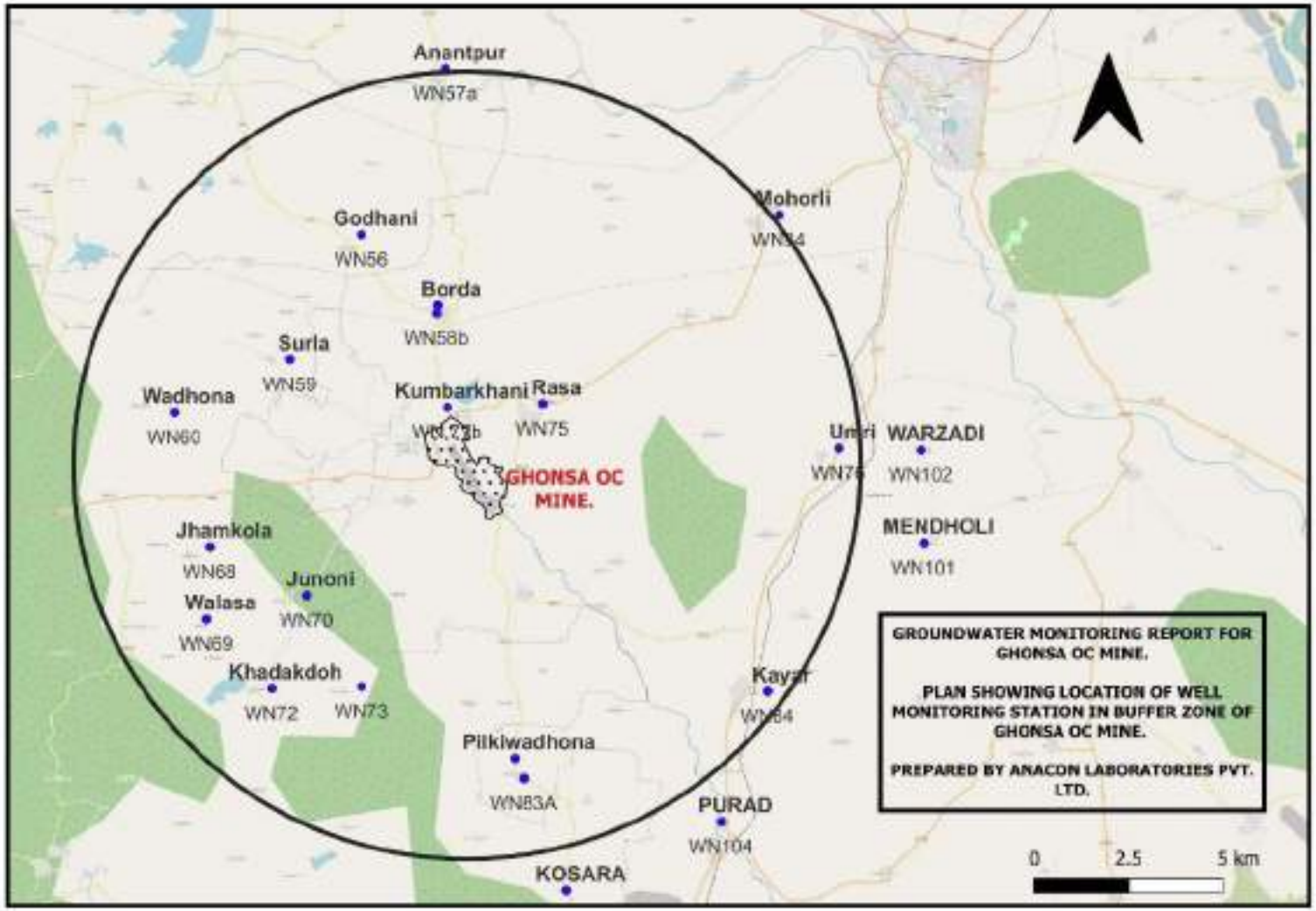

FIGURE-I: GROUND WATER MONITORING STATION (OBSERVATION WELLS IN AND AROUND OF GHONSA OC EXPN. MINE)

Table-IIA: Groundwater level monitoring data of dugwells in buffer zone of Expn. of Ghonsa OC, Wani North Area, WCL

Sr.No	Well No.	Name of village	Well location	Latitude	Longitude	R.L. in m	Well dia (m)	Well depth (m bmp)	Height of measuring point (m agl)	Depth to Water Level (m bgl)			Utility / Owner	Formation Tapped
										Dec-22	JAN-FEB-23	May-23		
1	WN23	Wehegaon	Back side of Vittal Mandir	20°3'51.5967154742725''	78°49'44.0181968167315''	197	4.57	16	0.6	1.90	3.60	6.0	IRRIGATION	SHELLY LIMESTONE
2	WN34	Mohorli	Near Hanuman temple and 60m E of Wani Rd.	20°1'37.7528239480725''	78°54'49.4794349217079''	199	2.68	6.69	0.42	2	4.7	5.8	IRRIGATION	BASALT
3	WN56	Godhani	About 400 m NW o village, adjacent to nala	20°1'19.8599825450415''	78°48'27.2972958728768''	195	7.4	5.61	0.3	2.1	2.4	4.1	IRRIGATION	BASALT
4	WN57a	Anantpur	About 70 m N of village, adjacent to nala	20°3'51.5967154742725''	78°49'44.0181968167315''	195	3.17	5.37	0.42	1.5	2.65	4.0	IRRIGATION	SHELLY LIMESTONE
5	WN58a	Borda	About 150 m W of village, 25 m N of Godhani road	20°0'15.1446979078372''	78°49'36.8423795429954''	212	3.17	7.68	0.7	3.45	4.35	6.2	DOMESTIC	BASALT

Sr.No	Well No.	Name of village	Well location	Latitude	Longitude	R.L. in m	Well dia (m)	Well depth (mbmp)	Height of measuring point (m agl)	Depth to Water Level (m bgl)			Utility / Owner	Formation Tapped
										Dec-22	JAN-FEB-23	May-23		
6	WN58b	Borda	About 450 m S of village, adjacent to Godhani road(Well of Tulsiram Lole)	20°0'8''	78°49'36''	215	2.78	6.4	0.76	2.6	4.5	6.3	DOMESTIC	LIMESTONE
7	WN59	Surla	C of village	19°59'25.6751442248344''	78°47'21.9261318028248''	221	3.29	7.84	0.82	3	3.3	5.2	IRRIGATION	SHELLY LIMESTONE
8	WN60	Wadhona	E of village, about 70 m N of road	19°58'37.3556918002976''	78°45'36.3902026899154''	196	6.13	7.56	0.58	3.4	5	6.8	IRRIGATION	BASALT
9	WN68	Jhamkola	200m SE of village near nalla	19°56'34.3338805208361''	78°46'8.77943275894704''	202	8.53	6.68	0.39	2.7	3.9	4.9	IRRIGATION	BASALT
10	WN69	Walasa	About 800 m N of village in low lying area, 25 m N of Jhamkola road	19°55'28.600091765621''	78°46'5.56862034878445''	205	2.44	6.04	0.67	2.1	2.85	4.2	IRRIGATION	SHELLY LIMESTONE

Sr.No	Well No.	Name of village	Well location	Latitude	Longitude	R.L. in m	Well dia (m)	Well depth (mbmp)	Height of measuring point (m agl)	Depth to Water Level (m bgl)			Utility / Owner	Formation Tapped
										Dec-22	JAN-FEB-23	May-23		
11	WN70	Junoni	About 100 m W of village in the field, about 30 m N of Walasa road	19°55'50.1201565183621''	78°47'37.0672438566931''	209	3.51	5.27	0.64	2.6	4.75	5.0	DOMESTIC	BASALT
12	WN72	Khadakdoh	300 m SE of village, 15 m W of Jhari road	19°54'24.9923786805596''	78°47'5.10921171036673''	211	7.22	5.64	0.61	2.8	3.6	5.2	DOMESTIC	BASALT
13	WN73	Chinchghat	C of village one well only	19°54'26.873392867364''	78°48'27.4712307620244''	218	4.27	6.98	0.18	3.1	4.7	5.9	IRRIGATION	SHELLY LIMESTONE
14	WN75	Rasa	S edge of village, adjacent to Sakra road	19°58'45.1282324667417''	78°51'13.1054994562215''	218	4.27	6.98	0.18	2.2	3.6	4.2	IRRIGATION	SHELLY LIMESTONE
15	WN76	Umri	About 150m NW of village near school, adjacent to nala	19°58'4.58213032590891''	78°55'44.1082006743899''	212	4.36	8.85	0.6	4.4	6.2	7.2	IRRIGATION	BASALT

Sr.No	Well No.	Name of village	Well location	Latitude	Longitude	R.L. in m	Well dia (m)	Well depth (mbmp)	Height of measuring point (m agl)	Depth to Water Level (m bgl)			Utility / Owner	Formation Tapped
										Dec-22	JAN-FEB-23	May-23		
16	WN 77b	Kumbarkhani	near Vidarbh River, near road from Kumbarkhani to Sakra	19°58'42''	78°49'46''	213	5.18	7.87	0.33	2.8	5.3	6.2	IRRIGATION	SHELLY LIMESTONE
17	WN103	KOSARA	SOUTH 150 FROM MANDIR NEAR ROAD JUNCTION .	19°51'20.42''	78°51'34.72''	215	6	13	0.5	4.65	6.80	7.1	—	—
18	WN104	PURAD	NORTH-WEST 200M FROM MEGRAJ PANDHARI LEDANGE HOUSE	19°52'23.14''	78°53'56.47''	205	4.2	9.5	0.3	4.1	5.4	8.2	—	—
19	WN83A	Pilkiwadhona	20 m S of road, C of village Near Hanuman Mandir	19°53'2.66869877438864''	78°50'55.7634485273353''	207	3.01	8.29	0.55	3.3	4	6.8	DOMESTIC	BASALT

Sr.No	Well No.	Name of village	Well location	Latitude	Longitude	R.L. in m	Well dia (m)	Well depth (mbmp)	Height of measuring point (m agl)	Depth to Water Level (m bgl)			Utility / Owner	Formation Tapped
										Dec-22	JAN-FEB-23	May-23		
20	WN83B	Pilkiwadhona	About 700m N of village adjacent to nalla on W side	19°53'21''	78°50'48''	208	4.88	7.47	0.76	3.05	4.8	6.1	IRRIGATION	SHELLY LIMESTONE
21	WN84	Kayar	About 10 m E of main road in Railway Colony	19°54'22.374535689346''	78°54'38.8706174765252''	222	5.02	4.56	0.46	2.1	3.3	4.2	DOMESTIC	BASALT
22	WN101	MENDHOLI	ABOUT 150m ADJACENT TO ROAD NEAR ZP SCHOOL	19°56'37.89''	78°57'2.35"	200	3.6	8.4	0.6	3.5	3.1	5.8	—	—
23	WN102	WARZADI	IN THE FIELD OF AGRICULTURE	19°58'2.88"	78°56'59.33"	222	4.6	9.2	0.2	3.8	5.3	8.5	—	—
24	WN103	KOSARA	SOUTH 150 FROM MANDIR NEAR ROAD JUNCTION .	19°51'20.42"	78°51'34.72"	215	6	13	0.5	4.65	6.8	7.1	—	—

Sr.No	Well No.	Name of village	Well location	Latitude	Longitude	R.L. in m	Well dia (m)	Well depth (mbmp)	Height of measuring point (m agl)	Depth to Water Level (m bgl)			Utility / Owner	Formation Tapped
										Dec-22	JAN-FEB-23	May-23		
25	WN104	PURAD	NORTH-WEST 200M FROM MEGRAJ PANDHARI LEDANGE HOUSE	19°52'23.14"	78°53'56.47"	205	4.2	9.5	0.3	4.1	5.4	8.2	—	—
26	WN96	HIWRA	Outside the village in W.infront of School	20°12’42.138”	78°53’32.0676”	220	5.2	11.00	0.35	4.00	5.7	8.2	D/I	26

ANALYSIS REPORT

Anacon Laboratories

TC 5458

Test Report

ULR No.- TC5458230000001677F
Test Report No.: ALPL/29062023/06- 5

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-5 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name Water	**Sample Particulars/Details** Water (Well No.- WN23) (Wani North Area)	**Purpose of analysis** Drinking	**Quantity Received** 1 Ltr
Sample Collected By Mr. Mahesh Mohurle	**Sampling Date** 14.05.2023 **Sampling Time** Not Mentioned	**Sampling Location** Wahegaon	

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	274.75
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	165.90
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	115.2
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL - 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.83
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	52.59
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	BDL(DL - 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.10
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	15.28
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	964
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.2
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	504
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.75
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.5	0.27
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL - 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

NOTE: ● Please see watermark 'Original Test Report' to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 7, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Garday
Deputy Quality Manager

----------END OF REPORT----------

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Anacon Laboratories

TC 5458

Test Report

ULR No.- TC545823000001677F

Test Report No.: ALPL/29062023/D6- 6 Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-6 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN34) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Moburle	14.05.2023 Not Mentioned	Mohorli

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	227.65
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	134.01
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	153.6
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.73
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	17.53
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.52
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	15.28
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	837
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.2
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	456
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.25
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.17
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be related to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● "Permissible limit in absence of an alternate source for drinking water. ● "mg/l" is equivalent to "ppm". ● **BDL- Below detection limit. ● DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By **Authorized Signatory**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Chinmay Garway
Deputy Quality Manager

END OF REPORT

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Anacon Laboratories

TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 7

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-7 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name Water	**Sample Particulars/Details** Water (Well No.- WN56) (Wani North Area)	**Purpose of analysis** Drinking	**Quantity Received** 1 Ltr
Sample Collected By Mr. Mahesh Mohurle	**Sampling Date** 14.05.2023 **Sampling Time** Not Mentioned	**Sampling Location** Godhani	

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	157
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	172.28
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	91.2
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.73
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	17.53
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	19.50
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	7.50
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	39.38
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	867
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	384
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL (DL - 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.07
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.14
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL - 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL indicates detection limit of instrument /method and shall be considered as 'absent'.**

REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 4, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Funde
Technical Manager

Suchal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Gadway
Deputy Quality Manager

----------END OF REPORT----------

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Anacon Laboratories

TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 8

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-8 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN57a) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	14.05.2023 Not Mentioned	Anantpar

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	248.35
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	185.04
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	168
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL (DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.84
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	14.61
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	5.87
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	7.74
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	18.58
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	939
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.2
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	480
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL (DL - 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.18
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.14
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Garway
Deputy Quality Manager

END OF REPORT

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Anacon Laboratories

TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 9

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-9 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN58a) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Moharle	14.05.2023 Not Mentioned	Borda

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	235.5
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	185.04
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	105.6
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.75
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	26.29
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	4.14
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.37
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	51.88
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	851.56
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.2
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	372
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.45
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.17
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Gartidy
Deputy Quality Manager

End of Report

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Anacon Laboratories

TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 10

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-10 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN58b) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	14.05.2023 Not Mentioned	Borda

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	157
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	165.90
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	120
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.69
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	20.45
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.92
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	51.89
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	761.92
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.2
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	384
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.22
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.19
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test no. 4, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Finde
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Garyay
Deputy Quality Manager

----------END OF REPORT----------

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 11

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-11 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name Water	**Sample Particulars/Details** Water (Well No.- WN59) (Wani North Area)	**Purpose of analysis** Drinking	**Quantity Received** 1 Ltr
Sample Collected By Mr. Mahesh Mohurle	**Sampling Date** 14.05.2023 **Sampling Time** Not Mentioned	**Sampling Location** Surla	

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	172.7
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	172.28
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	120
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.64
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	14.61
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	8.49
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.47
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	55.09
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	769.26
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.2
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	360
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.45
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.22
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 4, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Garway
Deputy Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 12

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-12 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN60) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	14.05.2023 Not Mentioned	Wadhona

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	211.95
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	146.76
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	139.2
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.75
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	20.45
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition; 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.92
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	42.58
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	838.29
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.2
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	432
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.28
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.28
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Gadway
Deputy Quality Manager

END OF REPORT

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 13

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-13 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN68) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	14.05.2023 Not Mentioned	Jhamkola

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	235.5
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	159.52
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	129.6
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.74
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	14.61
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	3.74
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.47
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	51.67
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	837.43
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	384
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.74
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.28
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By		Authorized Signatory
Mangesh Fande Technical Manager	Snehal Raut Deputy Technical Manager	Chinmay Garway Deputy Quality Manager

END OF REPORT

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 14

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-14 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN69) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	14.05.2023 / Not Mentioned	Walasa

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	243.35
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	185.04
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	124.8
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.82
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	49.67
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	4.09
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.72
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	31.44
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	981.92
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	516
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.38
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.28
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 7, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Garway
Deputy Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 15 Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-15 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN70) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	14.05.2023 Not Mentioned	Junoni

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	251.2
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	185.04
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	100.8
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.74
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	35.06
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.51
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	40.22
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	877.46
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	396
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.03
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.15
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 7, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Garway
Deputy Quality Manager

END OF REPORT

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 16

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-16 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name Water	**Sample Particulars/Details** Water (Well No.- WN72) (Wani North Area)	**Purpose of analysis** Drinking	**Quantity Received** 1 Ltr
Sample Collected By Mr. Mahesh Mohurle	**Sampling Date** 15.05.2023 **Sampling Time** Not Mentioned	**Sampling Location** Khadakdoh	

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	235.5
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	153.14
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	110.14
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.72
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	35.06
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	42.24
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.42
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	39.67
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	896.55
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	420
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.26
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.10
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 7, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Garwey
Deputy Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000001677F

Test Report No.: ALPL/29062023/06- 17 Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-17 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN73) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	15.05.2023 Not Mentioned	Chinchghat

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing I. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	243.35
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	185.04
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	124.8
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.87
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	49.67
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	8.23
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.21
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	21.64
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	976.26
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	516
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.74
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.25
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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Verified By **Authorized Signatory**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Chinmay Garway
Deputy Quality Manager

END OF REPORT

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 18

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-18 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN75) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	15.05.2023 Not Mentioned	Rasa

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	227.65
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	140.38
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	115.2
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.77
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	37.98
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.27
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	21.17
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	838.2
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	444
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	BDL(DL- 0.01)
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.08
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs ● Liability of Anacon Labs is limited to invoiced amount only ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 7, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By		Authorized Signatory
Mangesh Fande Technical Manager	Snehal Raut Deputy Technical Manager	Chinmay Gurway Deputy Quality Manager

END OF REPORT

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TC 5458

Test Report

ULR No.- TC545823000001677F

Test Report No.: ALPL/29062023/06- 19 Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-19 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN76) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	15.05.2023 Not Mentioned	Umri

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminum, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	274.75
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	178.66
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	115.2
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.83
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	43.83
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	7.78
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.43
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	34.48
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	967.67
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	468
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.47
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.13
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos.1, 4, 7, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By **Authorized Signatory**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Chinmay Garway
Deputy Quality Manager

END OF REPORT

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TC 5458

Test Report

ULR No.- TC545823000001677F

Test Report No.: ALPL/29062023/06- 20 Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-20 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN77b) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	15.05.2023 Not Mentioned	Kumbarkhani

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	227.65
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	153.14
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	134.4
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.79
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	17.53
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	9.94
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.28
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	33.44
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	839.17
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	408
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.52
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.16
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By		Authorized Signatory
Mangesh Fande Technical Manager	Snehal Raut Deputy Technical Manager	Chinmay Garway Deputy Quality Manager

END OF REPORT

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 21

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-21 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN83a) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	15.05.2023 Not Mentioned	Pilkiwadhona

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	117.75
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	165.9
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	72
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.46
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	17.53
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.83
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	26.24
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	568
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	252
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.37
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.23
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chhanky Garway
Deputy Quality Manager

END OF REPORT

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Anacon Laboratories

TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 22

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-22 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN83b) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	15.05.2023 Not Mentioned	Pilkiwadhona

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	219.8
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	140.38
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	67.2
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.58
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	32.14
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	7.21
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	26.79
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	685
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	300
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.21
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.15
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 7, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Garway
Deputy Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000001677F

Test Report No.: ALPL/29062023/06- 23 Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-23 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN84) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	15.05.2023 Not Mentioned	Kayar

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing I. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	290.45
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	197.81
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	57.6
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.69
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	20.45
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	7.51
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	34.24
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	749
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.4
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	228
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.52
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.25
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Gadway
Deputy Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 46

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-46 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name Water	**Sample Particulars/Details** Water (Well No.- WN96) (Wani North Area)	**Purpose of analysis** Drinking	**Quantity Received** 1 Ltr
Sample Collected By Mr. Mahesh Mohurle	**Sampling Date** 16.05.2023 **Sampling Time** Not Mentioned	**Sampling Location** Hiwra	

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	243.35
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	146.76
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	57.6
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.69
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	58.44
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.98
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	33.51
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	804
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	384
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.25
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.29
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 7, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Gadway
Deputy Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 48

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-48 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name Water	**Sample Particulars/Details** Water (Well No.- WN101) (Wani North Area)	**Purpose of analysis** Drinking	**Quantity Received** 1 Ltr
Sample Collected By Mr. Mahesh Mohurle	**Sampling Date** 17.05.2023 **Sampling Time** Not Mentioned	**Sampling Location** Mendholi	

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	227.65
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	191.43
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	76.8
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.73
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	32.14
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	12.97
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	7.21
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	47.70
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	801
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	324
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.04
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.29
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 7, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Gadway
Deputy Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: AL.PL/29062023/06- 49

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** AL.PL/09062023/W-1/59-49 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name Water	**Sample Particulars/Details** Water (Well No.- WN102) (Wani North Area)	**Purpose of analysis** Drinking	**Quantity Received** 1 Ltr
Sample Collected By Mr. Mahesh Mohurle	**Sampling Date** 17.05.2023 **Sampling Time** Not Mentioned	**Sampling Location** Warzadi	

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1, Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	259.05
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	153.14
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	57.6
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.59
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	26.29
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	7.80
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	32.31
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	696
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	252
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.16
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.18
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Gadway
Deputy Quality Manager

.....END OF REPORT.....

Thanks For putting in your faith and trust in our services, We at Anacon Laboratories cherish our relationship. We put in a lot of hard work to ensure that you have a seamless experience at every step of our relationship. In order to ensure that your next experiance will be significantly better, we welcome your feedback over email on feedback@anacon.in

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Anacon Laboratories

TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06- 50

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-50 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name	Sample Particulars/Details	Purpose of analysis	Quantity Received
Water	Water (Well No.- WN103) (Wani North Area)	Drinking	1 Ltr

Sample Collected By	Sampling Date / Sampling Time	Sampling Location
Mr. Mahesh Mohurle	17.05.2023 Not Mentioned	Kosara

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	251.2
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	250	1000	191.43
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	81.6
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.71
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	35.06
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	9.14
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.82
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	32.52
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	831
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	348
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.03
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.22
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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REMARKS: As requested by the client, sample was tested for above parameters only. **As per IS 10500 : 2012, for test nos. 1, 4, 7, 12, 14 & 22 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.**

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Garway
Deputy Quality Manager

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Anacon Laboratories

TC 5458

Test Report

ULR No.- TC545823000001677F
Test Report No.: ALPL/29062023/06-51

Dated 29.06.2023

Issued To : **M/s Western Coalfields Limited (WCL)** Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001	**Sample Inward No.** ALPL/09062023/W-1/59-51 **Inward Date** 09.06.2023 **Reference** -	**Analysis Start** 09.06.2023 **Analysis End** 26.06.2023 **Sample Category** Water

Sample Name Water	**Sample Particulars/Details** Water (Well No.- WN104) (Wani North Area)	**Purpose of analysis** Drinking	**Quantity Received** 1 Ltr
Sample Collected By Mr. Mahesh Mohurle	**Sampling Date** 17.05.2023 **Sampling Time** Not Mentioned	**Sampling Location** Purad	

Tests Required: Alkalinity, Colour, Chloride, Calcium, Residual Chlorine, Fluoride, Magnesium, Nitrate, Odour, pH, Sulphate, TDS, Turbidity, Total Hardness, Arsenic, Aluminium, Boron, Copper, Cadmium, Iron, Lead, Manganese, Nickel, Selenium, Total Chromium, Zinc

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	**Chemical Testing 1. Water**					
1	Alkalinity	mg/l	IS 3025 (Part 23) : 1986	200	600	227.65
2	Colour	Hazen	IS 3025 (Part 4) : 2021	5	15	1
3	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	250	1000	185.04
4	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	91.2
5	Residual Chlorine	mg/l	IS 3025 (Part 26) : 2021	0.2	1	BDL(DL- 0.1)
6	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.63
7	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	17.53
8	Nitrate (as NO_3)	mg/l	APHA method 23rd edition; 2017	45	No relaxation	BDL(DL- 2)
9	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
10	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.98
11	Sulphate (as SO_4)	mg/l	IS 3025 (Part 24) : 2022	200	400	41.94
12	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	753
13	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.1
14	Total hardness (as $CaCO_3$)	mg/l	IS 3025 (Part 21) : 2009	200	600	300
II	**Chemical Testing 2. Residues In Water**					
15	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
16	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL(DL- 0.01)
17	Boron	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
18	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
19	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
20	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.07
21	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	0.26
23	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	0.02	No relaxation	BDL (DL - 0.01)
24	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL- 0.001)
25	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
26	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)

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Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Chinmay Garway
Deputy Quality Manager

END OF REPORT

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Maharashtra Pollution Control Board

महाराष्ट्र प्रदूषण नियंत्रण मंडळ

FORM V

(See Rule 14)

Environmental Audit Report for the financial Year ending the 31st March 2023

Unique Application Number	Submitted Date
MPCB-ENVIRONMENT_STATEMENT-0000058677	21-09-2023

PART A

Company Information

Company Name	Application UAN number
Western Coalfields Limited, Ghonsa Opencast Mine	-

Address

Office of the Sub Area Manager, Ghonsa-Kumbharkhani, Po.- Rasa, Tal.- Wani, Distt. - Yavatmal, Maharashtra

Plot no	Taluka	Village
25/1,2,3	Wani	-
Capital Investment (In lakhs)	**Scale**	**City**
12235.44	L.S.I	Yavatmal
Pincode	**Person Name**	**Designation**
445304	Uday Kumar Mehta	Sub Area Manager, Ghonsa Sub Area
Telephone Number	**Fax Number**	**Email**
9112330975	07239241357	samghonsa@gmail.com
Region	**Industry Category**	**Industry Type**
SRO-Chandrapur	Red	R35 Mining and ore beneficiation
Last Environmental statement submitted online	**Consent Number**	**Consent Issue Date**
yes	Format1.0/CAC/UAN No.MPCBCONSENT-0000107029/CR/2203000019	2022-03-01
Consent Valid Upto	**Establishment Year**	**Date of last environment statement submitted**
2023-03-31	2008	Sep 26 2022 12:00:00:000AM

Industry Category Primary (STC Code) & Secondary (STC Code)

Product Information

Product Name	Consent Quantity	Actual Quantity	UOM
Coal	0.60	0.46	MT/A

By-product Information

By Product Name	Consent Quantity	Actual Quantity	UOM
NA	0	0	MT/A

Part-B (Water & Raw Material Consumption)

1) Water Consumption in m3/day

Water Consumption for	Consent Quantity in m3/day	Actual Quantity in m3/day
Process	652.00	652.00
Cooling	0.00	0.00
Domestic	18.00	18.00
All others	50.00	0.00
Total	720.00	670.00

2) Effluent Generation in CMD / MLD

Particulars	Consent Quantity	Actual Quantity	UOM
Daily Trade Effluent (including mine discharge)	4363	3711	CMD

2) Product Wise Process Water Consumption (cubic meter of process water per unit of product)

Name of Products (Production)	During the Previous financial Year	During the current Financial year	UOM
Mining	0.574	0.5316	CMD

3) Raw Material Consumption (Consumption of raw material per unit of product)

Name of Raw Materials	During the Previous financial Year	During the current Financial year	UOM
Explosive	2.78	2.58	Kg/Annum

4) Fuel Consumption

Fuel Name	Consent quantity	Actual Quantity	UOM
Diesel	0	2039	KL/A

Part-C

Pollution discharged to environment/unit of output (Parameter as specified in the consent issued)

[A] Water

Pollutants Detail	Quantity of Pollutants discharged (kL/day)	Concentration of Pollutants discharged(Mg/Lit) Except PH,Temp,Colour	Percentage of variation from prescribed standards with reasons		
	Quantity	Concentration	%variation	Standard	Reason
-	0	0	-	-	-

[B] Air (Stack)

Pollutants Detail	Quantity of Pollutants discharged (kL/day)	Concentration of Pollutants discharged(Mg/NM3)	Percentage of variation from prescribed standards with reasons		
	Quantity	Concentration	%variation	Standard	Reason
-	0	0	-	-	-

Part-D

HAZARDOUS WASTES

1) From Process

Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
5.1 Used or spent oil	25	10.365	KL/A

5.2 Wastes or residues containing oil	1	0.2	Ton/Y

2) From Pollution Control Facilities

Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
0	0	0	Ton/Y

Part-E

SOLID WASTES

1) From Process

Non Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
-	0	0	Ton/Y

2) From Pollution Control Facilities

Non Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
-	0	0	Ton/Y

3) Quantity Recycled or Re-utilized within the unit

Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
0	0	0	Ton/Y

Part-F

Please specify the characteristics(in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

1) Hazardous Waste

Type of Hazardous Waste Generated	Qty of Hazardous Waste	UOM	Concentration of Hazardous Waste
5.1 Used or spent oil	10.365	KL/A	-
5.2 Wastes or residues containing oil	0.2	Ton/Y	-

2) Solid Waste

Type of Solid Waste Generated	Qty of Solid Waste	UOM	Concentration of Solid Waste
-	0	Ton/Y	-

Part-G

Impact of the pollution Control measures taken on conservation of natural resources and consequently on the cost of production.

Description	Reduction in Water Consumption (M3/day)	Reduction in Fuel & Solvent Consumption (KL/day)	Reduction in Raw Material (Kg)	Reduction in Power Consumption (KWH)	Capital Investment(in Lacs)	Reduction in Maintenance(in Lacs)
Impact of the pollution control measures taken	0	2.443	197000	0	0	0

Part-H

Additional measures/investment proposal for environmental protection abatement of pollution, prevention of pollution.

[A] Investment made during the period of Environmental Statement

Detail of measures for Environmental Protection	Environmental Protection Measures	Capital Investment (Lacks)
Revenue Expenditure on pollution control measures	-	13.80

[B] Investment Proposed for next Year

Detail of measures for Environmental Protection	Environmental Protection Measures	Capital Investment (Lacks)
Piezometer	Piezometer	10.75
CAAQMS	CAAQMS	79
Trolley mounted fog cannon	Trolley mounted fog cannon	33.05

Part-I

Any other particulars for improving the quality of the environment.

Particulars

-

Name & Designation

Uday Kumar Mehta, Sub Area Manager, Ghonsa Sub Area

UAN No:

MPCB-ENVIRONMENT_STATEMENT-0000058677

Submitted On:

21-09-2023