| Your (Half Yearly Compliance Report) has been Submitted with following details | |
|---|---|
| **Proposal No** | IA/OR/MIN/100679/2016 |
| **Compliance ID** | 125689952 |
| **Compliance Number(For Tracking)** | EC/M/COMPLIANCE/125689952/2025 |
| **Reporting Year** | 2025 |
| **Reporting Period** | 01 Jun(01 Oct - 31 Mar) |
| **Submission Date** | 28-04-2025 |
| **RO/SRO Name** | ARTATRANA MISHRA |
| **RO/SRO Email** | jhk109@ifs.nic.in |
| **State** | ODISHA |
| **RO/SRO Office Address** | Integrated Regional Offices, Bhubaneswar |
| **Note:-** SMS and E-Mail has been sent to ARTATRANA MISHRA, ODISHA with Notification to Project Proponent. | |

Dalmia cement
FUTURE TODAY

*cement! sugar! refractories! power!*

LQ/MOEFCC/002/2025-26/021
April 28, 2025.

**Deputy Director General of Forests (C),**
**Ministry of Environment, Forest & Climate Change,**
**Integrated Regional Office (EZ),**
**A/3, Chandrasekharpur,**
**Bhubaneswar – 751 023**

Sub: **Submission of Six-Monthly Compliance Report of the Environmental Clearance of Lanjiberna Limestone & Dolomite Mines of M/s Dalmia Cement Bharat Limited for the period October 2024 to March 2025.**

**Ref:** Environmental clearance ref. F. No. J-11015/202/2016-IA. II (M) dated 04.03.2020.

Dear Sir,

With reference to above captioned subject matter, we are submitting herewith the six-monthly compliance report of the conditions laid down in above Environmental clearance for the period October 2024 to March 2025.

Thanking you,

Yours sincerely,
For **Dalmia Cement Bharat Limited,**

Akmishra.

Ashok Kumar Mishra
**Head - Environment**

**Encl:** As above.

**CC:**
1. The Director, Impact Assessment Division, MoEF&CC, New Delhi.
2. The Member Secretary, CPCB, New Delhi.
3. The Member Secretary, OSPCB, Bhubaneswar, Odisha.

**Half Yearly Compliance Report**
**2025**
**01 Jun(01 Oct - 31 Mar)**

# Acknowledgement

| | |
|---|---|
| **Proposal Name** | Lanjiberna Limestone and Dolomite Mine of M/s Dalmia Cement Bharat Limited with expansion in production of limestone from 4.2 Million TPA to 9.5 Million TPA, 0.08 Million TPA of Dolomite and Rejects/Wastes 7.42 Million TPA (Total Excavation: 17 MTPA) in the mine lease area of 873.057 Ha located at villages - Alanda, Bihabandh, Jhagarpur, kesramal, Raiberna, Katang, Dhauraada, Lanjiberna and Kukuda, Tehsil - Rajgangpur and Kutra, District - Sundargarh, Odisha |
| **Name of Entity / Corporate Office** | Dalmia Cement (Bharat) Limited |
| **Village(s)** | N/A |
| **District** | SUNDARGARH |

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| **Proposal No.** | IA/OR/MIN/100679/2016 |
| **Plot / Survey / Khasra No.** | N/A |
| **State** | ODISHA |
| **MoEF File No.** | J-11015/202/2016-IA.II(M) |

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| **Category** | Non-Coal Mining |
| **Sub-District** | N/A |
| **Entity's PAN** | *****9414C |
| **Entity name as per PAN** | DALMIA CEMENT (BHARAT) LIMITED |

## Compliance Reporting Details

**Reporting Year** 2025

**Remarks (if any)**

**Reporting Period** 01 Jun(01 Oct - 31 Mar)

## Details of Production and Project Area

**Name of Entity / Corporate Office** Dalmia Cement (Bharat) Limited

| | Project Area as per EC Granted | Actual Project Area in Possession |
|---|---|---|
| Private | 745.097 | 250.382 |
| Revenue Land | 65.40 | 23.09 |
| Forest | 62.56 | 62.56 |
| Others | 0 | 0 |
| Total | 873.0569999999999 | 336.032 |

## Production Capacity

| Sr. no | Product Name | units | Valid Upto | Capacity | Production last year | Capacity as per CTO |
|---|---|---|---|---|---|---|
| 1 | Limestone | Tons per Annum (TPA) | 31/03/2030 | 9500000 | 7164908 | 950000 |
| 2 | Dolomite | Tons per Annum (TPA) | 31/03/2030 | 80000 | 49803 | 80000 |
| 3 | Rejects/Aggregates | Tons per Annum (TPA) | 31/03/2030 | 7420000 | 7039951 | 7420000 |

## Conditions

### Specific Conditions

| Sr.No. | Condition Type | Condition Details |
|---|---|---|
| 1 | WATER QUALITY MONITORING AND PRESERVATION | Water requirement will be restricted to 509 KLD and PP to improvise on the water uses and adopt better technology for water use along with enhances water conservation practices. |

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| **PPs Submission:** Complied<br>Water consumption is well within the permitted quantity. ETP and STP have been installed and operated to maximize water recycling. Rain water harvesting system has been installed at office building roof top and recharge into the ground is being done through 2 nos. of ground water recharge pits. | Date: 26/04/2025 |

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| 2 | AIR QUALITY MONITORING AND PRESERVATION | PP to ensure that the necessary EMP should be implemented and monitored properly to ensure better compliance in order to contain the vehicular emission to minimum. |

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| **PPs Submission:** Complied<br>The Environment Management Plan/Program has been implemented at our mines and is continuously monitored. Environmental monitoring is being carried out periodically by 3rd party NABL accredited lab. | Date: 26/04/2025 |

### General Conditions

| Sr.No. | Condition Type | Condition Details |
|---|---|---|
| 1 | Statutory compliance | This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable. |

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| **PPs Submission:** Complied<br>Noted. | Date: 26/04/2025 |

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| 2 | Statutory compliance | The Project proponent complies with all the statutory requirements and judgment of Hon’ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations. |

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| **PPs Submission:** Complied<br>All the statutory requirements are being complied from time to time including the judgement of Honble Supreme Court. | | Date: 26/04/2025 |
| 3 | Statutory compliance | The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors. |
| **PPs Submission:** Complied<br>Noted. | | Date: 26/04/2025 |
| 4 | Statutory compliance | This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF & CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project. |
| **PPs Submission:** Complied<br>Not Applicable. | | Date: 26/04/2025 |
| 5 | Statutory compliance | The PP shall adhere to the provision of the Mines Act,1952, Mines and Mineral (Development & Regulation), Act,2015 and rules & regulations Made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time. |
| **PPs Submission:** Complied<br>We are adhering to the provision of the Mines Act, 1952 and the Mineral (Development and Regulation) Act, 2015 from time to time. All statutory compliances are being adhered to various circulars issued by DGMS and IBM from time to time. | | Date: 26/04/2025 |
| 6 | Statutory compliance | The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it. |
| **PPs Submission:** Complied<br>Requisite consents from the concerned landowners are in place for mining activity | | Date: 26/04/2025 |
| 7 | Statutory compliance | The Project Proponent shall follow the mitigation measures provided in MoEF & CC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area". |
| **PPs Submission:** Complied<br>Mitigation measures w.r.t impact of mining activities on Habitations have been followed and implemented at our mines. | | Date: 26/04/2025 |
| 8 | Statutory compliance | The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project. |

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| **PPs Submission:** Complied<br>Permission for ground water withdrawal has been obtained vide NOC No: - CGWA/NOC/MIN/REN/2/2025/11501 dated 24.04.2025. | | Date: 26/04/2025 |
| 9 | Statutory compliance | A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal. |
| **PPs Submission:** Complied<br>A copy of EC letter has been submitted to the concerned Panchayat. | | Date: 26/04/2025 |
| 10 | Statutory compliance | State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days. |
| **PPs Submission:** Complied<br>Noted. | | Date: 26/04/2025 |
| 11 | Statutory compliance | The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site Of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEF & CC Regional Office for compliance and record |
| **PPs Submission:** Complied<br>Newspaper advertisement about the grant of this EC letter was made in Manthan, Odia Newspaper and in Odisha Today, English newspaper on 09.03.2020. | | Date: 26/04/2025 |
| 12 | Statutory compliance | The Project Proponent shall inform the MoEF &CC for any change in Ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para11 of EIA Notification,2006 as amended from time to time. |
| **PPs Submission:** Complied<br>Noted and the same will be intimated in case of the change in ownership of the mining lease. | | Date: 26/04/2025 |
| 13 | AIR QUALITY MONITORING AND PRESERVATION | The Project Proponent shall install a minimum of 3(three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and 502 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCl/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site. |

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| **PPs Submission:** Complied<br>2 nos. of online CAAQMS stations one in upwind and another in downwind directions have been installed. The air quality data is being digitally displayed in front of main gate for the public view as attached. | | Date: 26/04/2025 |
| 14 | AIR QUALITY MONITORING AND PRESERVATION | Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metaled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipment's /machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF CC/ Central Pollution Control Board. |
| **PPs Submission:** Complied<br>Water sprinkling on haulage roads by truck tankers is done on a regular basis for dust suppression. Dust suppression systems have been installed at all source emission points. One no. of truck mounted mist cannon has been deployed at haulage roads for dust suppression. | | Date: 26/04/2025 |
| 15 | WATER QUALITY MONITORING AND PRESERVATION | In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF & CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area. |
| **PPs Submission:** Complied<br>Permission for ground water withdrawal has been obtained vide NOC No: - CGWA/NOC/MIN/REN/2/2025/11501 dated 24.04.2025. | | Date: 26/04/2025 |
| 16 | WATER QUALITY MONITORING AND PRESERVATION | Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board. |
| **PPs Submission:** Complied<br>Regular monitoring of the nearby surface water bodies as well as the water table is done in and around the mines lease area by 3rd party NABL accredited laboratory. The report of ground water quality and level is submitted to MoEF CC, CGWA and SPCB on regular basis. | | Date: 26/04/2025 |
| 17 | WATER QUALITY MONITORING AND PRESERVATION | Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The |

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| | | Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board. |

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| **PPs Submission:** Complied<br>The ground water level and quality in and around the mines lease area are being monitored and analyzed by 3rd party NABL accredited lab. The reports are being submitted periodically to the statutory bodies. | Date: 26/04/2025 |

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| 18 | WATER QUALITY MONITORING AND PRESERVATION | The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF & CC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data 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, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis. |

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| **PPs Submission:** Complied<br>Regular monitoring of surface water bodies such as nallahs, springs etc. in and around the mines lease area is being done and records maintained. The water quality monitoring and analysis is being done by 3rd party NABL accredited lab and reports are sent to statutory bodies regularly. | Date: 26/04/2025 |

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| 19 | WATER QUALITY MONITORING AND PRESERVATION | Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS).The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard |

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| **PPs Submission:** Complied<br>All monitoring and analysis data generated by 3rd party NABL accredited lab is being submitted to State Pollution Control Board on regular basis and displayed near main gate. The monitoring results for the period October 2024 to March 2025 is attached. | Date: 28/04/2025 |

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| 20 | WATER QUALITY MONITORING AND PRESERVATION | Project Proponent shall plan, develop and implement rainwater harvesting Measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEF & CC annually. |

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| **PPs Submission:** Complied<br>The ponds in the nearby villages are desilted before monsoon to harvest maximum rain water. Additionally, roof top rainwater harvesting system with ground recharge system has been installed near Mines office premises. | | Date: 26/04/2025 |
| 21 | WATER QUALITY MONITORING AND PRESERVATION | Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap. |
| **PPs Submission:** Complied<br>Effluent Treatment Plant has been installed and treated water quality is being analyzed through 3rd party NABL accredited lab. The results obtained conform to OSPCB prescribed standards. Oil and Grease trap has been installed in the ETP to remove oil and grease. | | Date: 26/04/2025 |
| 22 | WATER QUALITY MONITORING AND PRESERVATION | The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF &CC and State Pollution Control Board/Committee. |
| **PPs Submission:** Complied<br>ETP and STP has been installed for recyclin and reuse of treated water and efforts are being taken to reduce the fresh water consumption. | | Date: 26/04/2025 |
| 23 | Noise Monitoring & Prevention | The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines. |
| **PPs Submission:** Complied<br>Peak particle velocity is being monitored periodically within the nearest habitation as per DGMS guidelines. | | Date: 26/04/2025 |
| 24 | Noise Monitoring & Prevention | The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours. |
| **PPs Submission:** Complied<br>The orientation of floodlights is maintained away from the villagers to avoid disturbance and noise levels are continuously monitored to maintain the same within the prescribed norms. | | Date: 26/04/2025 |
| 25 | Noise Monitoring & Prevention | The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs. All personnel including laborers working in dusty areas shall be provide with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment. |
| **PPs Submission:** Complied<br>All necessary precautionary measures such as controlled blasting have been taken to control the | | Date: 26/04/2025 |

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| noise levels as per stipulated standard. Workers engaged in high noise operation areas have been provided with proper PPEs such as ear plugs/muffs. All personnel have been provided with adequate training, awareness and information on safety and health aspects. | | |
| 26 | MINING PLAN | The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. Quantum of mineral, waste, over burden, inter burden and top soil etc. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name. |
| **PPs Submission:** Complied<br>All the working parameters are as per the approved mining plan. No such change in basic mining proposal is envisaged. In case of any change, the same will be carried out with prior approval of the Ministry. | | Date: 26/04/2025 |
| 27 | MINING PLAN | The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification. |
| **PPs Submission:** Complied<br>Noted and will be complied with in due course of time. | | Date: 26/04/2025 |
| 28 | MINING PLAN | The land-use of the mine lease area at various stages of mining scheme As well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office. |
| **PPs Submission:** Complied<br>The land use at various stages of mining is as per the approved mining plan. The compliance status of the same is submitted periodically to the statutory body. The present land-use is attached. | | Date: 26/04/2025 |
| 29 | LAND RECLAMATION | The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation. |
| **PPs Submission:** Complied | | Date: |

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| The Overburden (O.B.) generated during the mining operations is being stacked at earmarked OB dump site as per approved mining plan. All safety aspects w.r.t slope stability is being adhered to and the top soil is used for land reclamation and plantation purposes. | | 26/04/2025 |
| 30 | LAND RECLAMATION | The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps. |
| **PPs Submission:** Complied<br>The rejects/wastes generated during mining operations are stacked at waste dump site as per approved mining plan where in the physical parameters such as height, width and angle of slope are maintained as stipulated in approved mining plan. | | Date: 26/04/2025 |
| 31 | LAND RECLAMATION | The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan, |
| **PPs Submission:** Complied<br>The reclamation of waste dump sites will be done as per the approved Mining Plan cum Progressive Mine Closure Plan. | | Date: 26/04/2025 |
| 32 | LAND RECLAMATION | The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump. |
| **PPs Submission:** Complied<br>The waste dumps are currently in active state and will be stabilized with vegetation on the slopes thereby preventing erosion and slope stability will be maintained. | | Date: 26/04/2025 |
| 33 | LAND RECLAMATION | The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC. |
| **PPs Submission:** Complied<br>The last slope stability study was conducted in Feb 2024 by IIT Bhubaneswar, and the report has been submitted to the concerned regional office of MoEF CC. | | Date: 26/04/2025 |
| 34 | LAND RECLAMATION | Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly. |
| **PPs Submission:** Complied<br>Catch drains, settling tanks and siltation ponds have been constructed around the working mines. | | Date: 26/04/2025 |

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| The collected water is utilized for dust suppression, green cover development. | | |
| 35 | LAND RECLAMATION | Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains. |
| **PPs Submission:** Complied<br>Check dams, garland drain and retaining wall have been constructed around mine pit and OB dumps. | | Date: 26/04/2025 |
| 36 | LAND RECLAMATION | The top soil, if any, shall temporarily be stored at earmarked site(s) with in the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose. |
| **PPs Submission:** Complied<br>Top soil removed is being utilized for plantation and green belt development. | | Date: 26/04/2025 |
| 37 | Human Health Environment | No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers. |
| **PPs Submission:** Complied<br>Transportation of limestone from mines to plant is done through fully covered belt conveyor system (CCBC). Only PUC certified vehicles are allowed to operate within the mining lease hold area. | | Date: 26/04/2025 |
| 38 | Human Health Environment | The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipment’s like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid |

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| | | generation of fugitive dust emissions. |
| **PPs Submission:** Complied<br>Water sprinkling by truck mounted tankers is being done regularly on haulage roads. Dust suppression systems such as dry fog system is in place at receiving hopper, transfer towers etc. Bag filters have been installed at crusher houses. One truck mounted mist cannon has been deployed at haulage roads for dust suppression. | | Date: 26/04/2025 |
| 39 | GREENBELT | The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan. |
| **PPs Submission:** Being Complied<br>Green cover development is under progress in the active mining area and plantation is done around the colony. Around 4000 saplings have been planted this year. | | Date: 28/04/2025 |
| 40 | GREENBELT | The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees. |
| **PPs Submission:** Being Complied<br>Around 4000 saplings have been planted in this year with an average survival rate of 85 percent. Efforts are being taken to increase the survival rate to more than 90 percent. | | Date: 26/04/2025 |
| 41 | GREENBELT | The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted. |
| **PPs Submission:** Complied<br>Noted and will be taken care in due course of time. | | Date: 26/04/2025 |
| 42 | GREENBELT | The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt. |
| **PPs Submission:** Being Complied<br>Site specific wildlife conservation plan has been approved by chief conservator of forest (WL), Odisha having letter No -4313/CWLW-FDWC-FD-0040-2022, Dated 03rd March 2023 and fund | | Date: 28/04/2025 |

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| has been deposited as per demand raised by the State Forest Department on 21.03.2024 | | |
| 43 | GREENBELT | And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry. |
| **PPs Submission:** Being Complied<br>The approved wildlife conservation plan is under implementation in consultation with State Forest and wildlife department | | Date: 28/04/2025 |
| 44 | Human Health Environment | The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to biomass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years. |
| **PPs Submission:** Complied<br>Health Risk assessment has been done and necessary control measures are being taken to protect the health and well being of workers and nearby community from time to time. | | Date: 26/04/2025 |
| 45 | Human Health Environment | The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality). |
| **PPs Submission:** Complied<br>Occupational health surveillance is carried out periodically. | | Date: 26/04/2025 |
| 46 | Human Health Environment | The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 - 24.9, (b) the Final Chest X-Ray compared with the base line X-Ray |

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| | | should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1),Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEFCC annually along with details of the relief and compensation paid to workers having above indications. |

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| **PPs Submission:** Complied<br>Records of health performance Indicators w.r.t workers engaged in the mining activities are maintained. | Date: 26/04/2025 |

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| 47 | Human Health Environment | The Project Proponent shall ensure that 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. |

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| **PPs Submission:** Complied<br>PPEs are provided to the workers and have been made mandatory with necessary training on safety, health and environment aspects. | Date: 26/04/2025 |

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| 48 | Human Health Environment | Project Proponent shall make provision for the housing for workers/labours or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water. |

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| **PPs Submission:** Complied<br>All necessary and basic amenities have been provided for mine workers at site. | Date: 26/04/2025 |

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| 49 | Human Health Environment | The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration. |

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| **PPs Submission:** Being Complied<br>Action Plan addressing the issues raised during the public hearing is under implementation as per budgetary provision. | Date: 28/04/2025 |

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| 50 | Corporate Environmental Responsibility | The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's 0.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude &longitude of infrastructure developed & road constructed needs to be submitted to Regional Office, MoEF&CC annually along with audited statement |

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| **PPs Submission:** Complied<br>The budget earmarked for Corporate Environmental Responsibility has been kept aside and is utilized for the said purpose only. | | Date: 26/04/2025 |
| 51 | Corporate Environmental Responsibility | Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such fund should be reported to the MoEF&CC and its concerned Regional Office. |
| **PPs Submission:** Complied<br>Funds earmarked for environmental protection measures are used only for environmental aspects and is not being diverted for any other purpose. | | Date: 26/04/2025 |
| 52 | MISCELLANEOUS | The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work. |
| **PPs Submission:** Complied<br>Noted and will be complied in due course of time. | | Date: 26/04/2025 |
| 53 | MISCELLANEOUS | The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board. |
| **PPs Submission:** Complied<br>Six monthly compliance reports are being submitted periodically to the statutory bodies. | | Date: 26/04/2025 |
| 54 | MISCELLANEOUS | A separate Environmental Management Cell with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC. |
| **PPs Submission:** Complied<br>An Environment Management Cell is in place with designated HSE officer who directly reports to Mines Head and functionally to Head-Environment. Third Party NABL accredited lab has been engaged to carry out all environmental monitoring activities. | | Date: 26/04/2025 |
| 55 | MISCELLANEOUS | The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports. |
| **PPs Submission:** Complied<br>Noted and full cooperation will be extended. | | Date: 26/04/2025 |
| 56 | MISCELLANEOUS | The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC. |
| **PPs Submission:** Complied<br>Digital Map of the entire lease area (LULC Map) was last prepared and updated in March 2024 and | | Date: 26/04/2025 |

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| the same has been submitted to regional office of MOEF CC on 23rd May 2024 vide Letter No.DCBL/LM/39. | | |
| 57 | Human Health Environment | The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF & CC Regional Office and DGMS on half-yearly basis. |
| **PPs Submission:** Complied<br>Periodical medical examination of workers engaged in mining activities is being done as per DGMS guidelines, records being maintained and submitted to the statutory bodies. An OHS specialist has been deputed in mines dispensary. | | Date: 26/04/2025 |
| 58 | Statutory compliance | This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC under the provision of Forest Conservation Act, 1980, if applicable to the Project. |
| **PPs Submission:** Complied<br>Forest Clearance for diversion of 62.56 Ha forest land for mining has been obtained vide File No. 8-56/1994-FC (pt) dated 30.09.2013. | | Date: 26/04/2025 |
| 59 | Statutory compliance | Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee. |
| **PPs Submission:** Complied<br>CTO has been granted by Odisha State Pollution Control Board and valid till 31.03.2030 and conditions as stipulated in CTO have been implemented. The mining activity has commenced post obtaining Consent to Establish (CTE) and Consent to Operate (CTO) from Odisha State Pollution Control Board. | | Date: 26/04/2025 |

## Visit Remarks

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| **Last Site Visit Report Date:** | N/A |
| **Additional Remarks:** | The detailed environment monitoring report of Lanjiberna Mines for the period October 2024 to March 2025 is attached as additional attachment. |

**Note:** This acknowledgement is as per the details submitted by project proponent. In no way is this document to be considered as conclusion on any action on the compliance of the project. This is strictly for the project proponent's reference purpose.

# ENVIRONMENTAL MONITORING REPORT

BASED ON DATA GENERATED

FROM

## OCTOBER 2024 – MARCH 2025

OF

## LANJIBERNA LIMESTONE & DOLOMITE MINES (DCBL)

At/Po: LANJIBERNA – 770023, Dist: SUNDARGARH, ODISHA

Prepared By:


**Cleenviron Private Limited**

PLOT NO: 689/17, INDUSTRIAL ESTATE, KALUNGA – 770031, ROURKELA, ODISHA

Tele: 0661 – 2475746

Email:cleenviron@gmail.com

## 1. DATA ANALYSIS

### 1.1 Micro-meteorological Study:

#### 1.1.1 Wind Speed & Wind Direction

During the entire period from 1st October to 31st March all total 4370 no. of data are recorded by the instrument and after interpretation of the collected data it was found that Calm condition prevailed over 4.33%, while considering the 24 hourly data. 0.9% calm condition prevailed from morning 6 hrs to 14hrs for the entire study period, 8.5% calm condition prevailed from 14hrs to 22hrs and 3.0% calm condition prevailed from 22hrs to 06hrs. The predominant wind directions were from NW, NW, NE & NW with average wind speed 2.58 m/sec. The wind rose diagram for the entire study period are depicted on the **Figure No: 1.1, 1.2, 1.3 & 1.4.**

#### 1.1.2 Temperature

The maximum & minimum temperature during the entire study period were divided in to three parts as the study period was covering post monsoon, winter as well as early summer seasons. The Minimum temperature during the post monsoon season was found to be 12.76°C and the Maximum temperature was found to be 35.39°C up to the end of 30th November.

The minimum and maximum temperature during the winter season i.e. from December to February was found to be 9.03°C and 34.48°C. During the month of March the minimum and maximum temperature were 14.17°C and 39.59°C. **Table No 1.1** shows a summary of micro-meteorological data collected for the entire period.

#### 1.1.3 Rainfall

The total rain fall from 1st October to 31st March was observed to be 53.2 mm during the study period. A month wise rainfall data recorded at the site is depicted in **Table No 1.1.**

**Table No: 1.1**

**A SUMMARY OF THE MICRO-METEOROLOGICAL DATA**

**Project Site : Lanjiberna Limestone & Dolomite Mines**
**Location : Magazine Hill Top**

| Sl No | Parameters | From October 2024 – March 2025 |
|---|---|---|
| 1 | Predominant Wind Direction | From NE & N |
| 2 | Calm Condition % | 4.33% |
| 3 | Average Wind Speed m/sec | 2.58 |
| 4 | Temperature °C | |
| | **Post Monsoon Season** | |
| | Minimum | 12.76 |
| | Maximum | 35.39 |
| | **Winter Season** | |
| | Minimum | 9.03 |
| | Maximum | 34.48 |
| | **Early Summer** | |
| | Minimum | 14.17 |
| | Maximum | 39.59 |
| 5 | **Rain Fall in mm** | |
| | October | 8.4 |
| | November | 4.0 |
| | December | 6.6 |

| Sl No | Parameters | From October 2024 – March 2025 |
|---|---|---|
| | January | 0.0 |
| | February | 1.0 |
| | March | 33.2 |
| | **Total** | **53.2** |

**Figure No: 1.2** **Wind Rose Diagram for 24 Hours**

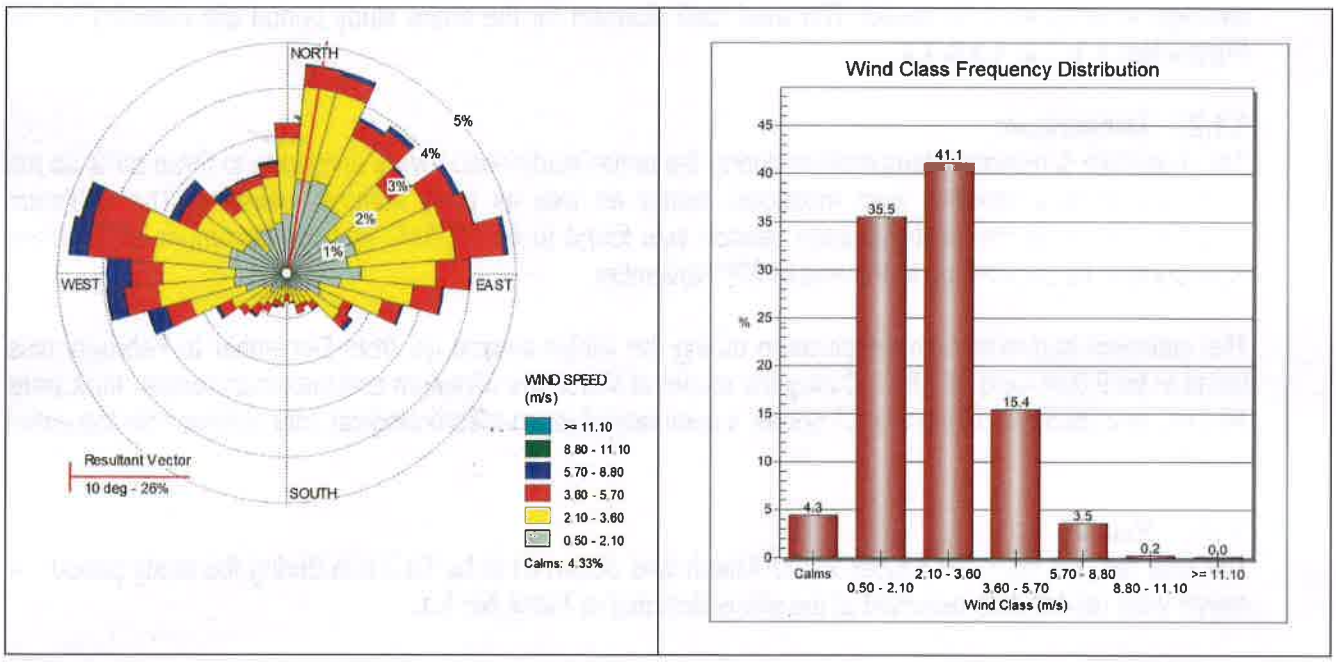


**Figure No: 1.2** **Wind Rose Diagram from 06 – 14 Hours**

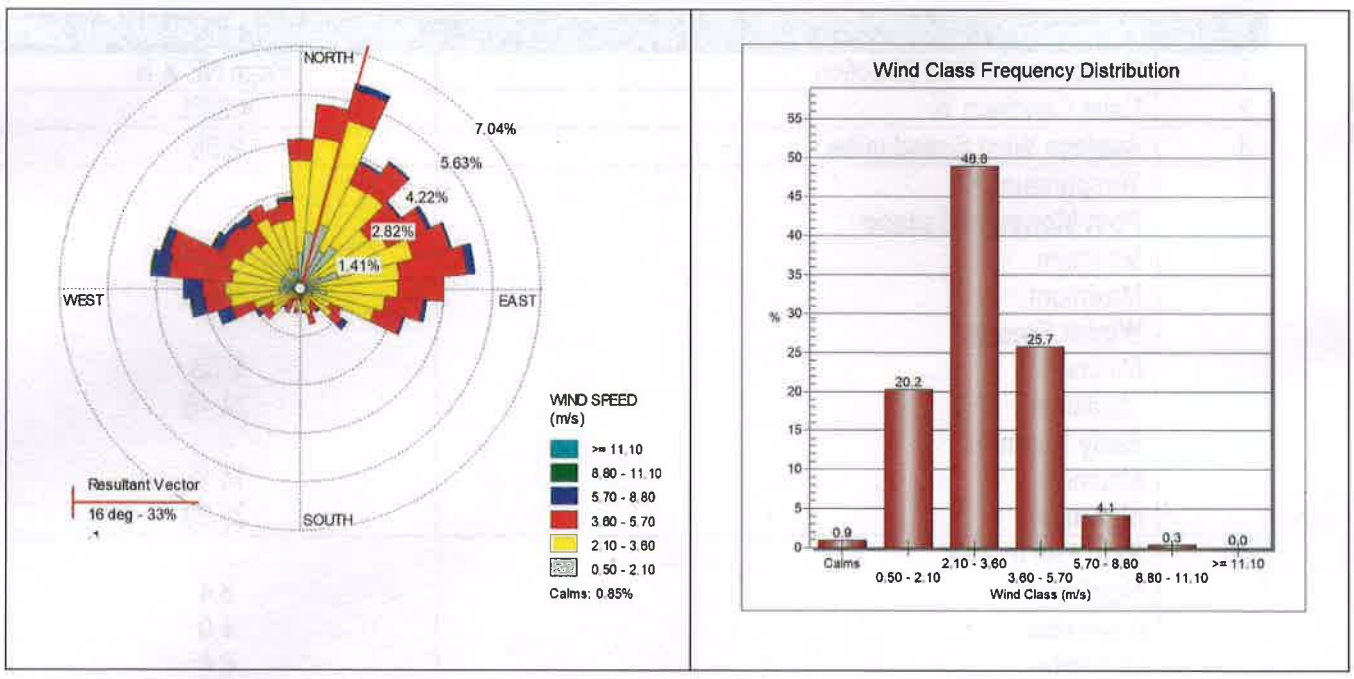

**Figure No: 1.3** **Wind Rose Diagram from 14 – 22 Hours**

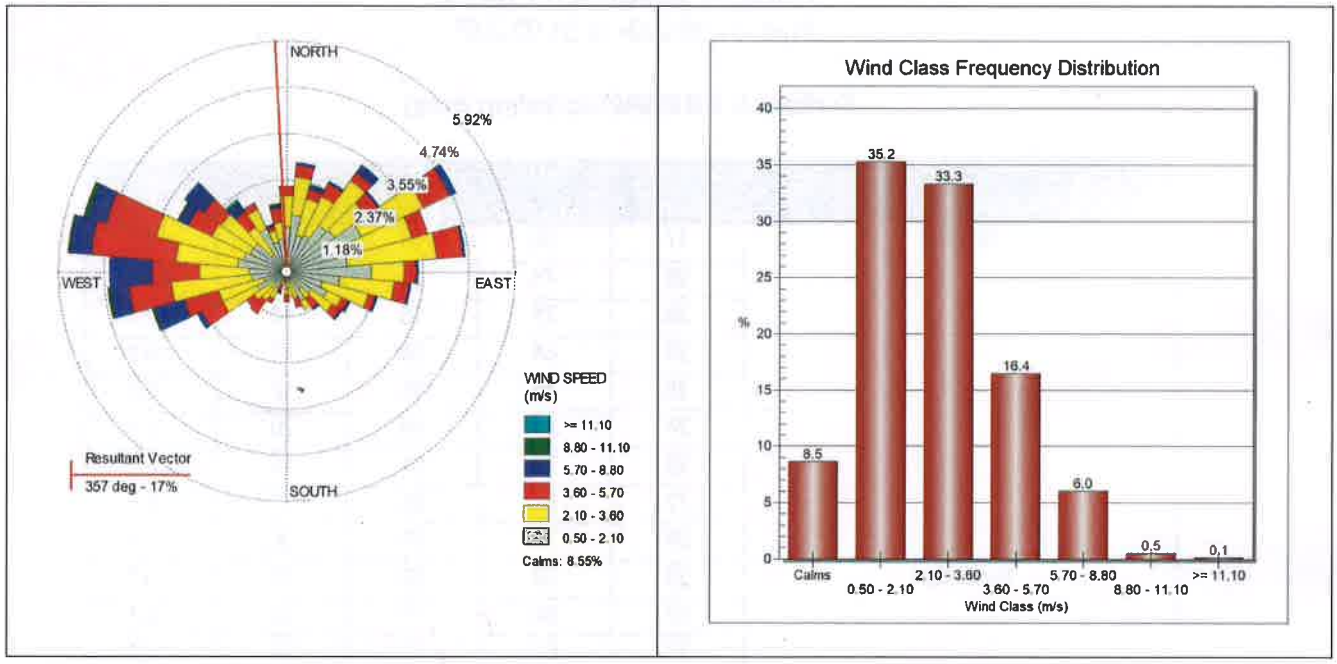


**Figure No: 1.4** **Wind Rose Diagram from 22 – 06 Hours**

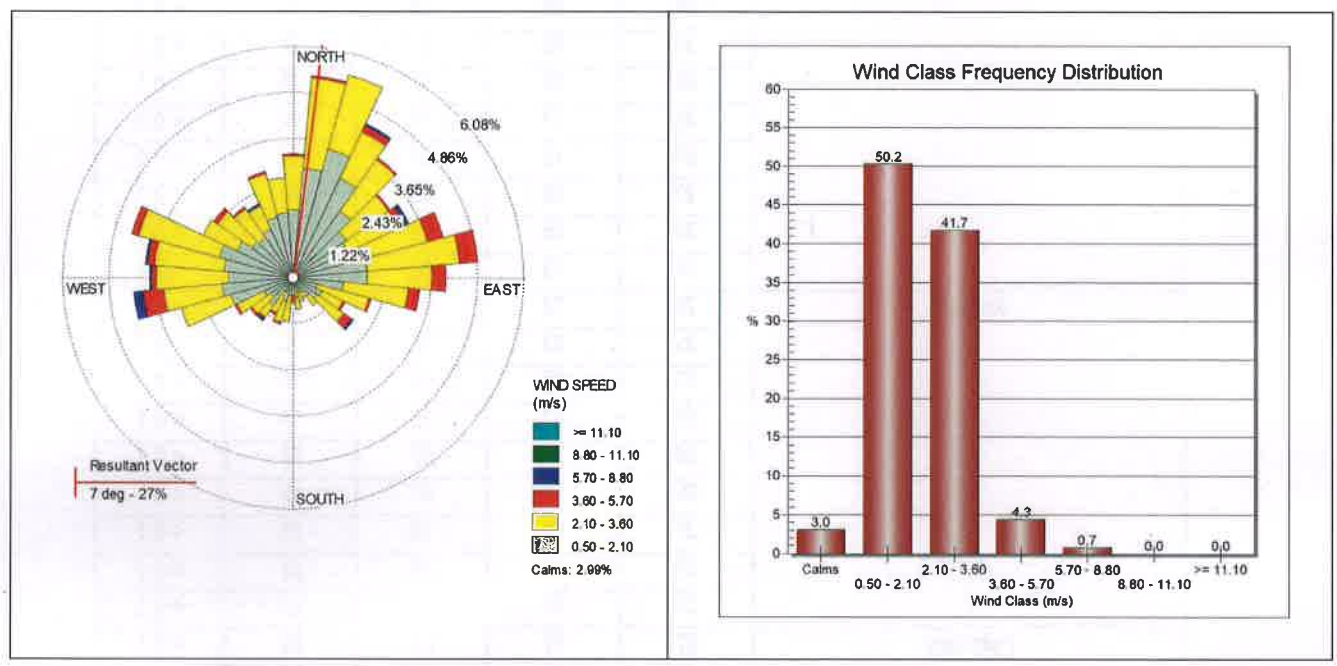

**Table No: 2**

## AMBIENT AIR QUALITY DATA

From 01.10.2024 to 31.03.2025

### Station: A-1 (HEMM Workshop Area)

| Months | PM2.5 µg/m³ | PM10 µg/m³ | $SO_2$ µg/m³ | $NO_2$ µg/m³ | CO mg/m³ |
|---|---|---|---|---|---|
| October | 17 | 50 | 06 | 18 | < 0.1 |
| | 26 | 76 | 04 | 16 | < 0.1 |
| | 26 | 75 | 06 | 16 | < 0.1 |
| | 29 | 84 | 06 | 21 | < 0.1 |
| | 26 | 75 | 06 | 19 | < 0.1 |
| | 24 | 69 | 06 | 20 | < 0.1 |
| | 26 | 76 | 04 | 15 | < 0.1 |
| | 22 | 64 | 05 | 17 | < 0.1 |
| | 24 | 71 | 06 | 20 | < 0.1 |
| November | 20 | 58 | 03 | 15 | < 0.1 |
| | 22 | 64 | 03 | 16 | < 0.1 |
| | 22 | 67 | 07 | 24 | < 0.1 |
| | 25 | 70 | 05 | 13 | < 0.1 |
| | 24 | 68 | 06 | 13 | < 0.1 |
| | 22 | 68 | 06 | 20 | < 0.1 |
| | 23 | 69 | 04 | 23 | < 0.1 |
| | 25 | 73 | 07 | 26 | < 0.1 |
| December | 14 | 40 | 04 | 15 | < 0.1 |
| | 24 | 69 | 06 | 19 | < 0.1 |
| | 23 | 66 | 07 | 21 | < 0.1 |
| | 24 | 70 | 07 | 23 | < 0.1 |
| | 26 | 77 | 03 | 12 | < 0.1 |
| | 25 | 72 | 04 | 13 | < 0.1 |
| | 20 | 58 | 05 | 20 | < 0.1 |
| | 22 | 65 | 05 | 22 | < 0.1 |
| | 25 | 73 | 05 | 20 | < 0.1 |
| January | 25 | 72 | 04 | 24 | < 0.1 |
| | 22 | 62 | 05 | 20 | < 0.1 |
| | 23 | 66 | 03 | 20 | < 0.1 |
| | 23 | 67 | 03 | 14 | < 0.1 |
| | 24 | 70 | 07 | 22 | < 0.1 |
| | 20 | 58 | 07 | 19 | < 0.1 |
| | 21 | 68 | 06 | 23 | < 0.1 |
| | 22 | 65 | 04 | 21 | < 0.1 |
| | 20 | 60 | 05 | 22 | < 0.1 |
| February | 27 | 77 | 06 | 22 | < 0.1 |
| | 29 | 81 | 05 | 20 | < 0.1 |
| | 26 | 73 | 04 | 26 | < 0.1 |
| | 24 | 70 | 06 | 26 | < 0.1 |
| | 29 | 79 | 05 | 18 | < 0.1 |
| | 28 | 73 | 03 | 18 | < 0.1 |
| | 16 | 45 | 07 | 27 | < 0.1 |
| | 26 | 70 | 03 | 21 | < 0.1 |

| Months | PM2.5 µg/m³ | PM10 µg/m³ | $SO_2$ µg/m³ | $NO_2$ µg/m³ | CO mg/m³ |
|---|---|---|---|---|---|
| March | 22 | 62 | 04 | 13 | < 0.1 |
| | 23 | 66 | 03 | 16 | < 0.1 |
| | 20 | 60 | 03 | 21 | < 0.1 |
| | 27 | 71 | 07 | 22 | < 0.1 |
| | 21 | 61 | 05 | 20 | < 0.1 |
| | 23 | 67 | 06 | 18 | < 0.1 |
| | 22 | 65 | 07 | 21 | < 0.1 |
| | 26 | 74 | 07 | 26 | < 0.1 |
| | 27 | 77 | 06 | 24 | < 0.1 |

**Table No: 3**

## AMBIENT AIR QUALITY DATA

From 01.10.2024 to 31.03.2025

### Station: A-2 (Magazine Hill Top Area)

| Months | PM2.5 µg/m³ | PM10 µg/m³ | $SO_2$ µg/m³ | $NO_2$ µg/m³ | CO mg/m³ |
|---|---|---|---|---|---|
| October | 19 | 55 | 04 | 14 | < 0.1 |
| | 14 | 42 | 03 | 11 | < 0.1 |
| | 23 | 66 | 05 | 16 | < 0.1 |
| | 16 | 47 | 04 | 15 | < 0.1 |
| | 17 | 51 | 04 | 13 | < 0.1 |
| | 17 | 49 | 05 | 15 | < 0.1 |
| | 18 | 53 | < 03 | 17 | < 0.1 |
| | 16 | 48 | 07 | 21 | < 0.1 |
| | 19 | 55 | 04 | 13 | < 0.1 |
| November | 15 | 45 | 03 | 15 | < 0.1 |
| | 14 | 42 | 03 | 10 | < 0.1 |
| | 17 | 49 | 05 | 18 | < 0.1 |
| | 12 | 36 | 04 | 14 | < 0.1 |
| | 16 | 47 | 06 | 12 | < 0.1 |
| | 19 | 50 | 04 | 18 | < 0.1 |
| | 18 | 51 | 03 | 16 | < 0.1 |
| | 13 | 40 | 06 | 17 | < 0.1 |
| December | 15 | 43 | 03 | 10 | < 0.1 |
| | 20 | 57 | 04 | 13 | < 0.1 |
| | 15 | 45 | 03 | 10 | < 0.1 |
| | 13 | 38 | 04 | 14 | < 0.1 |
| | 17 | 49 | 04 | 14 | < 0.1 |
| | 14 | 41 | 04 | 14 | < 0.1 |
| | 18 | 50 | 04 | 17 | < 0.1 |
| | 16 | 47 | 05 | 12 | < 0.1 |
| | 17 | 51 | 06 | 15 | < 0.1 |
| January | 16 | 50 | 04 | 22 | < 0.1 |
| | 16 | 45 | 07 | 22 | < 0.1 |
| | 17 | 50 | 07 | 24 | < 0.1 |
| | 12 | 35 | 04 | 15 | < 0.1 |

| Months | PM2.5 µg/m³ | PM10 µg/m³ | $SO_2$ µg/m³ | $NO_2$ µg/m³ | CO mg/m³ |
|---|---|---|---|---|---|
| | 11 | 31 | 05 | 16 | < 0.1 |
| | 15 | 44 | 06 | 21 | < 0.1 |
| | 14 | 40 | 03 | 20 | < 0.1 |
| | 13 | 38 | 08 | 23 | < 0.1 |
| | 20 | 60 | 05 | 20 | < 0.1 |
| February | 19 | 56 | 04 | 20 | < 0.1 |
| | 21 | 61 | 03 | 16 | < 0.1 |
| | 20 | 65 | 05 | 18 | < 0.1 |
| | 20 | 62 | 05 | 25 | < 0.1 |
| | 20 | 54 | < 03 | 11 | < 0.1 |
| | 17 | 44 | 07 | 25 | < 0.1 |
| | 24 | 66 | 04 | 16 | < 0.1 |
| | 20 | 58 | 03 | 18 | < 0.1 |
| March | 20 | 58 | 03 | 16 | < 0.1 |
| | 18 | 52 | 06 | 20 | < 0.1 |
| | 18 | 54 | 03 | 13 | < 0.1 |
| | 21 | 55 | 04 | 15 | < 0.1 |
| | 17 | 50 | 05 | 21 | < 0.1 |
| | 16 | 48 | 04 | 15 | < 0.1 |
| | 18 | 56 | 03 | 18 | < 0.1 |
| | 16 | 45 | 08 | 25 | < 0.1 |
| | 17 | 48 | 08 | 24 | < 0.1 |

**Table No: 4**

**AMBIENT AIR QUALITY DATA**

From 01.10.2024 to 31.03.2025

**Station: A-3 (Near Old Brick Plant Colony Area)**

| Months | PM2.5 µg/m³ | PM10 µg/m³ | $SO_2$ µg/m³ | $NO_2$ µg/m³ | CO mg/m³ |
|---|---|---|---|---|---|
| October | 21 | 60 | 04 | 13 | < 0.1 |
| | 23 | 68 | 05 | 16 | < 0.1 |
| | 18 | 52 | 04 | 20 | < 0.1 |
| | 23 | 66 | 03 | 12 | < 0.1 |
| | 25 | 73 | 06 | 21 | < 0.1 |
| | 29 | 83 | 05 | 18 | < 0.1 |
| | 24 | 70 | 07 | 22 | < 0.1 |
| | 20 | 59 | 07 | 23 | < 0.1 |
| | 21 | 60 | 06 | 21 | < 0.1 |
| November | 25 | 72 | 03 | 10 | < 0.1 |
| | 21 | 62 | 06 | 19 | < 0.1 |
| | 23 | 67 | 05 | 18 | < 0.1 |
| | 26 | 68 | 04 | 15 | < 0.1 |
| | 24 | 69 | 07 | 17 | < 0.1 |
| | 22 | 58 | 04 | 12 | < 0.1 |
| | 23 | 65 | 06 | 14 | < 0.1 |
| | 20 | 64 | 05 | 23 | < 0.1 |

| Months | PM2.5 µg/m³ | PM10 µg/m³ | $SO_2$ µg/m³ | $NO_2$ µg/m³ | CO mg/m³ |
|---|---|---|---|---|---|
| December | 24 | 69 | 03 | 12 | < 0.1 |
| | 23 | 65 | 05 | 30 | < 0.1 |
| | 25 | 72 | 06 | 20 | < 0.1 |
| | 22 | 65 | 04 | 15 | < 0.1 |
| | 21 | 62 | 03 | 11 | < 0.1 |
| | 24 | 70 | 05 | 17 | < 0.1 |
| | 18 | 50 | 04 | 15 | < 0.1 |
| | 20 | 60 | 04 | 18 | < 0.1 |
| | 17 | 48 | 04 | 12 | < 0.1 |
| January | 27 | 79 | 04 | 13 | < 0.1 |
| | 26 | 77 | 03 | 15 | < 0.1 |
| | 24 | 70 | 07 | 25 | < 0.1 |
| | 27 | 79 | 05 | 17 | < 0.1 |
| | 25 | 73 | 05 | 20 | < 0.1 |
| | 23 | 66 | 04 | 18 | < 0.1 |
| | 22 | 68 | 06 | 22 | < 0.1 |
| | 20 | 62 | 04 | 25 | < 0.1 |
| | 24 | 71 | 07 | 23 | < 0.1 |
| February | 26 | 78 | 05 | 25 | < 0.1 |
| | 24 | 72 | 03 | 21 | < 0.1 |
| | 23 | 68 | 05 | 19 | < 0.1 |
| | 22 | 65 | 04 | 16 | < 0.1 |
| | 27 | 71 | 03 | 15 | < 0.1 |
| | 18 | 53 | 04 | 16 | < 0.1 |
| | 20 | 52 | 08 | 26 | < 0.1 |
| | 24 | 62 | 05 | 22 | < 0.1 |
| March | 25 | 73 | 06 | 21 | < 0.1 |
| | 27 | 77 | 04 | 16 | < 0.1 |
| | 23 | 66 | 05 | 22 | < 0.1 |
| | 23 | 69 | 03 | 12 | < 0.1 |
| | 28 | 80 | 07 | 23 | < 0.1 |
| | 26 | 75 | 06 | 20 | < 0.1 |
| | 27 | 78 | 08 | 22 | < 0.1 |
| | 22 | 61 | 05 | 17 | < 0.1 |
| | 25 | 72 | 05 | 21 | < 0.1 |

**Table No: 5**

**AMBIENT AIR QUALITY DATA**
From 01.10.2024 to 31.03.2025

**Station: A-4 (Village Bihabandh)**

| Months | PM2.5 µg/m³ | PM10 µg/m³ | $SO_2$ µg/m³ | $NO_2$ µg/m³ | CO mg/m³ |
|---|---|---|---|---|---|
| October | 15 | 46 | 03 | 17 | < 0.1 |
| | 08 | 25 | 04 | 16 | < 0.1 |
| | 16 | 43 | 06 | 31 | < 0.1 |
| | 14 | 42 | 05 | 17 | < 0.1 |

| Months | PM2.5 µg/m³ | PM10 µg/m³ | $SO_2$ µg/m³ | $NO_2$ µg/m³ | CO mg/m³ |
|---|---|---|---|---|---|
| | 15 | 46 | 04 | 15 | < 0.1 |
| | 14 | 40 | 07 | 30 | < 0.1 |
| | 17 | 46 | 03 | 20 | < 0.1 |
| | 10 | 34 | < 03 | 18 | < 0.1 |
| | 15 | 44 | 04 | 16 | < 0.1 |
| November | 12 | 40 | 03 | 10 | < 0.1 |
| | 13 | 37 | 04 | 13 | < 0.1 |
| | 10 | 31 | < 03 | 06 | < 0.1 |
| | 14 | 31 | 05 | 08 | < 0.1 |
| | 26 | 73 | 04 | 15 | < 0.1 |
| | 17 | 53 | 07 | 17 | < 0.1 |
| | 11 | 32 | 05 | 10 | < 0.1 |
| | 12 | 32 | 03 | 12 | < 0.1 |
| December | 09 | 32 | 03 | 11 | < 0.1 |
| | 14 | 39 | < 03 | 18 | < 0.1 |
| | 11 | 31 | 04 | 12 | < 0.1 |
| | 14 | 41 | 06 | 26 | < 0.1 |
| | 12 | 37 | 09 | 28 | < 0.1 |
| | 11 | 34 | 05 | 18 | < 0.1 |
| | 13 | 40 | 03 | 20 | < 0.1 |
| | 14 | 45 | 04 | 16 | < 0.1 |
| | 16 | 41 | 03 | 14 | < 0.1 |
| January | 13 | 40 | 05 | 21 | < 0.1 |
| | 13 | 38 | 04 | 12 | < 0.1 |
| | 12 | 35 | 03 | 22 | < 0.1 |
| | 13 | 39 | 04 | 12 | < 0.1 |
| | 15 | 44 | 03 | 23 | < 0.1 |
| | 10 | 32 | < 03 | 16 | < 0.1 |
| | 14 | 42 | 06 | 19 | < 0.1 |
| | 12 | 24 | 05 | 19 | < 0.1 |
| | 17 | 47 | 07 | 22 | < 0.1 |
| February | 18 | 48 | 03 | 15 | < 0.1 |
| | 15 | 45 | 04 | 15 | < 0.1 |
| | 18 | 49 | 05 | 18 | < 0.1 |
| | 15 | 46 | 06 | 18 | < 0.1 |
| | 13 | 39 | 04 | 16 | < 0.1 |
| | 22 | 58 | 05 | 22 | < 0.1 |
| | 21 | 53 | 03 | 20 | < 0.1 |
| | 22 | 55 | 04 | 19 | < 0.1 |
| March | 16 | 46 | 04 | 24 | < 0.1 |
| | 14 | 43 | 05 | 27 | < 0.1 |
| | 22 | 68 | 06 | 21 | < 0.1 |
| | 18 | 47 | 07 | 25 | < 0.1 |
| | 14 | 42 | 03 | 12 | < 0.1 |
| | 17 | 47 | 04 | 18 | < 0.1 |
| | 19 | 50 | 05 | 20 | < 0.1 |
| | 18 | 51 | 04 | 17 | < 0.1 |
| | 19 | 52 | 06 | 20 | < 0.1 |

**Table No: 6**

## STACK EMISSION MONITORING DATA

| Location | Month | Particulate Matter Concentration in mg/Nm$^3$ |
|---|---|---|
| Crusher plant – 2 | Oct | 82 |
| | Nov | 82 |
| | Dec | 89 |
| | Jan | 57 |
| | Feb | 31 |
| | Mar | 58 |
| Crusher plant – 4 | Oct | 22 |
| | Nov | 23 |
| | Dec | 20 |
| | Jan | 22 |
| | Feb | 22 |
| | Mar | 32 |

**Table No: 7**

## QUARRY DISCHARGE WATER QUALITY DATA (PIT -1)

| Sl No | Parameters | Results Obtained | | | | | | Unit | General Standards As per Schedule - VI of EPA, G.S.R.422(E), 1993 |
|---|---|---|---|---|---|---|---|---|---|
| | | Oct | Nov | Dec | Jan | Feb | Mar | | |
| 1. | Total Suspended Solids | 2.8 | < 2.5 | < 2.5 | < 2.5 | < 2.5 | < 2.5 | mg/l | 200 |
| 2. | pH Value | 7.88 | 8.15 | 7.77 | 7.98 | 7.68 | 7.34 | - | 5.5 – 9.0 |
| 3. | Oil & Grease | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | mg/l | 10 |
| 4. | BOD (5 days at 20°C) | 01 | 01 | 01 | 01 | 01 | 01 | mg/l | 100 |
| 5. | COD | 3.2 | 3.29 | 3.69 | 3.60 | < 4.0 | < 4.0 | mg/l | - |

**Table No: 8**

## QUARRY DISCHARGE WATER QUALITY DATA (PIT – 2 )

| Sl No | Parameters | Results Obtained | | | | | | Unit | General Standards As per Schedule - VI of EPA, G.S.R.422(E), 1993 |
|---|---|---|---|---|---|---|---|---|---|
| | | Oct | Nov | Dec | Jan | Feb | Mar | | |
| 1. | Total Suspended Solids | 2.6 | < 2.5 | < 2.5 | < 2.5 | < 2.5 | < 2.5 | mg/l | 200 |
| 2. | pH Value | 7.79 | 8.08 | 7.92 | 7.95 | 8.06 | 7.69 | - | 5.5 – 9.0 |
| 3. | Oil & Grease | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | mg/l | 10 |
| 4. | BOD (5 days at 20°C) | 01 | 01 | 01 | 01 | 01 | 01 | mg/l | 100 |
| 5. | COD | 3.1 | 3.31 | 3.72 | 3.84 | < 4.0 | < 4.0 | mg/l | - |

## Table No: 9

## GROUND WATER QUALITY RESULT FOR THE MONTH OF OCTOBER 2024

| Sl No | Parameter | Results Obtained | | | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|---|---|
| | | DugWell Lanjiberna Village | DugWell Kheramuta Village | DugWell Village Bihabandh Chowk | Tube Well Village Gyanpali | | |
| 1 | Turbidity | 0.80 | 0.60 | 0.50 | 1.0 | NTU | 5.0 |
| 2 | pH Value | 6.79 | 7.18 | 7.13 | 7.86 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 395.14 | 249.98 | 225.79 | 149.18 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.04 | 0.29 | 0.24 | 0.23 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 28.37 | 21.52 | 14.68 | 9.78 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 378 | 266 | 250 | 159 | mg/l | 2000 |
| 7 | Electrical Conductivity | 674 | 428 | 416 | 255 | µS/cm | - |
| 8 | Calcium (as Ca) | 90.49 | 56.56 | 46.86 | 29.09 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 41.15 | 26.45 | 26.45 | 18.61 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 25.67 | 15.13 | < 0.50 | 1.71 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | 5.44 | < 2.20 | 3.66 | 3.85 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 188 | 120 | 164 | 116 | mg/l | 600 |
| 15 | Acidity | 12 | 14 | 08 | 04 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 11.62 | 27.18 | 14.68 | 2.19 | mg/l | - |
| 18 | Potassium (as K) | 6.01 | 6.22 | 2.24 | 0.87 | mg/l | - |
| 19 | Fluoride (as F) | 0.79 | 0.84 | 0.76 | 0.62 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 27.7 | 27.8 | 27.8 | 27.8 | oC | - |
| 32 | Residual Free Chlorine | 0.16 | 0.18 | 0.12 | 0.19 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Absent | Absent | Nos/100ml | Absent |

## Table No: 10

## GROUND WATER QUALITY RESULT FOR THE MONTH OF NOVEMBER 2024

| Sl No | Parameter | Results Obtained | | | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|---|---|
| | | DugWell Dhauradha Village | DugWell Lanjiberna Village | Tube Well Village Laxmiposh | Tube Well Village Kesarmal | | |
| 1 | Turbidity | 0.50 | 0.40 | 0.40 | 0.30 | NTU | 5.0 |
| 2 | pH Value | 8.01 | 7.53 | 7.96 | 7.34 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 340 | 376 | 340 | 180 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.19 | 0.12 | 0.16 | 0.23 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 20.99 | 31.99 | 23.99 | 13.99 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 434 | 512 | 438 | 263 | mg/l | 2000 |
| 7 | Electrical Conductivity | 699 | 801 | 755 | 426 | µS/cm | - |
| 8 | Calcium (as Ca) | 59.32 | 81.76 | 60.92 | 48.09 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 46.66 | 41.79 | 45.68 | 14.58 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 84.26 | 53.81 | 89.27 | 4.81 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | < 2.20 | < 2.20 | < 2.20 | 3.84 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 208 | 280 | 204 | 160 | mg/l | 600 |
| 15 | Acidity | < 2.0 | 06 | 02 | 02 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 9.22 | 17.07 | 9.32 | 13.28 | mg/l | - |
| 18 | Potassium (as K) | 4.57 | 1.83 | 4.53 | 3.12 | mg/l | - |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19 | Fluoride (as F) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 24.9 | 24.6 | 24.9 | 25.0 | oC | - |
| 32 | Residual Free Chlorine | 0.08 | 0.18 | 0.07 | 0.09 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Absent | Absent | Nos/100ml | Absent |

## Table No: 11

## GROUND WATER QUALITY RESULT FOR THE MONTH OF DECEMBER 2024

| Sl No | Parameter | Results Obtained | | | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|---|---|
| | | DugWell Kheramuta Village | DugWell Lanjiberna Village | Tube Well Village Kunumuru | Tube Well Village Gariamunda | | |
| 1 | Turbidity | 1.11 | < 0.1 | 6.40 | < 0.1 | NTU | 5.0 |
| 2 | pH Value | 7.84 | 6.97 | 5.73 | 7.68 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 204 | 308 | 48 | 176 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.27 | 0.10 | 0.08 | 0.23 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 9.99 | 31.99 | 22.99 | 12.99 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 298 | 430 | 92 | 270 | mg/l | 2000 |
| 7 | Electrical Conductivity | 486 | 745 | 154.1 | 465 | µS/cm | - |
| 8 | Calcium (as Ca) | 46.49 | 73.75 | 11.22 | 48.09 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 21.38 | 30.13 | 4.86 | 13.61 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 57.41 | 65.48 | 4.56 | 2.49 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | 20.55 | 4.24 | 3.27 | 9.50 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 120 | 212 | 24 | 164 | mg/l | 600 |
| 15 | Acidity | < 2.0 | 16 | 16 | 10 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 4.59 | 11.26 | 6.14 | 13.12 | mg/l | - |
| 18 | Potassium (as K) | 2.37 | 0.77 | 0.73 | 3.0 | mg/l | - |
| 19 | Fluoride (as F) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 23.9 | 23.7 | 23.9 | 23.8 | oC | - |
| 32 | Residual Free Chlorine | 0.18 | 0.14 | 0.10 | 0.15 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Absent | Absent | Nos/100ml | Absent |

## Table No: 12

## GROUND WATER QUALITY RESULT FOR THE MONTH OF JANUARY 2025

| Sl No | Parameter | Results Obtained | | | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|---|---|
| | | Dug Well Village Dhauradha | DugWell Kukudamunda Village | Tube Well Village Jharbeda | Tube Well Village Lanjiberna (U.P School) | | |
| 1 | Turbidity | 0.20 | 0.90 | 0.40 | 0.30 | NTU | 5.0 |
| 2 | pH Value | 7.04 | 4.90 | 5.43 | 6.44 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 485.52 | 28.56 | 28.5 | 273.36 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.23 | 0.11 | 0.10 | 0.26 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 35.98 | 9.99 | 10.99 | 35.98 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 584 | 30 | 32 | 388 | mg/l | 2000 |
| 7 | Electrical Conductivity | 844 | 46.8 | 52.6 | 646 | µS/cm | - |
| 8 | Calcium (as Ca) | 106.29 | 4.90 | 6.54 | 83.39 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 53.53 | 3.96 | 2.94 | 15.86 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 156.02 | < 0.50 | < 0.50 | 35.82 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | 11.48 | < 2.20 | < 2.20 | 17.50 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 88 | 08 | 08 | 168 | mg/l | 600 |
| 15 | Acidity | 18 | 22 | 18 | 18 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 14.12 | 1.86 | 1.94 | 14.45 | mg/l | - |
| 18 | Potassium (as K) | 3.25 | 0.38 | 0.35 | 11.86 | mg/l | - |
| 19 | Fluoride (as F) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 24.2 | 24.1 | 24.2 | 24.2 | oC | - |
| 32 | Residual Free Chlorine | 0.16 | 0.14 | 0.13 | 0.18 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Absent | Absent | Nos/100ml | Absent |

## Table No: 13

## GROUND WATER QUALITY RESULT FOR THE MONTH OF FEBRUARY 2025

| Sl No | Parameter | Results Obtained | | | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|---|---|
| | | Tube Well Bihabandh Village | Dug Well Lanjiberna Colony | Tube Well Village Litibeda | Tube Well Village Katang | | |
| 1 | Turbidity | 0.70 | 1.5 | 3.9 | 1.9 | NTU | 5.0 |
| 2 | pH Value | 6.61 | 6.54 | 6.65 | 5.82 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 224.4 | 314.16 | 191.76 | 118.32 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.22 | 0.23 | 0.29 | 0.28 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 18.99 | 31.99 | 4.99 | 13.99 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 270 | 429 | 228 | 125 | mg/l | 2000 |
| 7 | Electrical Conductivity | 439 | 667 | 354 | 193 | µS/cm | - |
| 8 | Calcium (as Ca) | 47.42 | 53.96 | 44.15 | 35.98 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 25.78 | 43.62 | 19.83 | 6.94 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 3.02 | 64.61 | 3.12 | 3.19 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | < 2.20 | 5.11 | 5.19 | < 2.20 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 160 | 216 | 148 | 125 | mg/l | 600 |
| 15 | Acidity | 08 | 18 | 14 | 193 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 2.60 | 9.27 | 1.60 | 3.05 | mg/l | - |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 18 | Potassium (as K) | 2.23 | 0.78 | 0.65 | 0.83 | mg/l | - |
| 19 | Fluoride (as F) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 26.7 | 26.7 | 26.7 | 26.7 | oC | - |
| 32 | Residual Free Chlorine | 0.10 | 0.14 | 0.12 | 0.04 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Absent | Absent | Nos/100ml | Absent |

## Table No: 14

## GROUND WATER QUALITY RESULT FOR THE MONTH OF MARCH 2025

| Sl No | Parameter | Results Obtained | | | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|---|---|
| | | Dug Well Lanjiberna Village | Dug Well Dhauradha Village | Tube Well Village Gyanpali | Tube Well Village Jharbeda | | |
| 1 | Turbidity | 0.4 | 0.8 | 0.9 | 0.3 | NTU | 5.0 |
| 2 | pH Value | 7.37 | 7.19 | 7.14 | 5.02 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 380.93 | 491.52 | 151.55 | 28.67 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.12 | 0.29 | 0.23 | 0.08 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 30.33 | 36.20 | 9.78 | 9.78 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 490 | 520 | 221 | 40 | mg/l | 2000 |
| 7 | Electrical Conductivity | 754 | 907 | 369 | 62.6 | µS/cm | - |
| 8 | Calcium (as Ca) | 82.08 | 106.71 | 31.19 | 6.56 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 42.79 | 54.74 | 17.92 | 2.98 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 54.85 | 164.78 | 2.48 | < 0.50 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | < 2.20 | 10.56 | 3.85 | < 2.20 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 260 | 124 | 120 | 12 | mg/l | 600 |
| 15 | Acidity | 08 | 18 | 04 | 20 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 18.09 | 16.48 | 2.42 | 1.88 | mg/l | - |
| 18 | Potassium (as K) | 1.73 | 3.32 | 0.91 | 0.39 | mg/l | - |
| 19 | Fluoride (as F) | < 0.05 | < 0.05 | < 0.05 | < 0.05 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 29.7 | 29.7 | 29.8 | 28.3 | oC | - |
| 32 | Residual Free Chlorine | 0.24 | 0.16 | 0.13 | 0.16 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Absent | Absent | Nos/100ml | Absent |

## Table No:15

## DRINKING WATER QUALITY RESULT FOR THE MONTH OF OCTOBER 2024

| Sl No | Parameter | Results Obtained | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|
| | | Mines Canteen Drinking Water Point | Colony Drinking Water | | |
| 1 | Turbidity | 0.40 | 0.30 | NTU | 5.0 |
| 2 | pH Value | 7.66 | 6.77 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 245.95 | 310.46 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.26 | 0.02 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 12.72 | 27.39 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 280 | 401 | mg/l | 2000 |
| 7 | Electrical Conductivity | 474 | 657 | µS/cm | - |
| 8 | Calcium (as Ca) | 45.25 | 63.02 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 32.33 | 37.23 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 38.98 | 69.92 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | 3.59 | 6.19 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 152 | 200 | mg/l | 600 |
| 15 | Acidity | 10 | 12 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 4.72 | 12.04 | mg/l | - |
| 18 | Potassium (as K) | 2.38 | 6.33 | mg/l | - |
| 19 | Fluoride (as F) | 0.74 | 0.69 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 27.7 | 27.7 | °C | - |
| 32 | Residual Free Chlorine | 0.12 | 0.18 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Nos/100ml | Absent |

## Table No: 16

## DRINKING WATER QUALITY RESULT FOR THE MONTH OF NOVEMBER 2024

| Sl No | Parameter | Results Obtained | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|
| | | Near Crusher – 2 Drinking Water Point | HEMM Workshop Drinking Water Point | | |
| 1 | Turbidity | 0.50 | 0.40 | NTU | 5.0 |
| 2 | pH Value | 8.08 | 8.08 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 240 | 244 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.23 | 0.26 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 14.99 | 11.99 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 310 | 286 | mg/l | 2000 |
| 7 | Electrical Conductivity | 476 | 482 | µS/cm | - |
| 8 | Calcium (as Ca) | 40.08 | 48.09 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 25.27 | 30.13 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 53.0 | 52.43 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | 16.75 | 17.19 | mg/l | 45 |

| Sl No | Parameter | Results Obtained | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|
| 14 | Total Alkalinity (as $CaCO_3$) | 152 | 116 | mg/l | 600 |
| 15 | Acidity | < 2.0 | < 2.0 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 4.59 | 4.26 | mg/l | - |
| 18 | Potassium (as K) | 2.87 | 2.90 | mg/l | - |
| 19 | Fluoride (as F) | 0.43 | 0.81 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 24.7 | 24.7 | °C | - |
| 32 | Residual Free Chlorine | 0.13 | 0.16 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Nos/100ml | Absent |

**Table No: 17**

## DRINKING WATER QUALITY RESULT FOR THE MONTH OF DECEMBER 2024

| Sl No | Parameter | Results Obtained | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|
| | | Near Mines Maingate Drinking Water Point | Near Crusher – 4 Drinking Water Point | | |
| 1 | Turbidity | < 0.1 | < 0.1 | NTU | 5.0 |
| 2 | pH Value | 7.66 | 7.92 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 232 | 200 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.22 | 0.24 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 11.99 | 10.99 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 326 | 295 | mg/l | 2000 |
| 7 | Electrical Conductivity | 544 | 486 | µS/cm | - |
| 8 | Calcium (as Ca) | 52.91 | 46.49 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 25.27 | 20.41 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 49.09 | 60.71 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | 12.64 | 20.55 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 144 | 124 | mg/l | 600 |
| 15 | Acidity | < 2.0 | < 2.0 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 4.28 | 4.67 | mg/l | - |
| 18 | Potassium (as K) | 3.10 | 2.39 | mg/l | - |
| 19 | Fluoride (as F) | < 0.05 | < 0.05 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 23.9 | 23.9 | °C | - |
| 32 | Residual Free Chlorine | 0.19 | 0.21 | mg/l | 1.0 (min) |

| Sl No | Parameter | Results Obtained | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|
| | | Near Mines Maingate Drinking Water Point | Near Crusher – 4 Drinking Water Point | | |
| 33 | Total Bacterial Count | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Nos/100ml | Absent |

**Table No: 18**

## DRINKING WATER QUALITY RESULT FOR THE MONTH OF JANUARY 2025

| Sl No | Parameter | Results Obtained | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|
| | | Near Operative Rest Shelter Drinking Water Point | Near Dispensary Drinking Water Point | | |
| 1 | Turbidity | 0.10 | 0.20 | NTU | 5.0 |
| 2 | pH Value | 7.78 | 7.92 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 220.32 | 232.56 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.19 | 0.22 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 14.99 | 10.99 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 268 | 280 | mg/l | 2000 |
| 7 | Electrical Conductivity | 447 | 466 | µS/cm | - |
| 8 | Calcium (as Ca) | 44.15 | 49.05 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 26.76 | 26.76 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 57.71 | 50.42 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | 17.02 | 14.66 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 100 | 120 | mg/l | 600 |
| 15 | Acidity | < 2.0 | 02 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 4.67 | 4.37 | mg/l | - |
| 18 | Potassium (as K) | 2.14 | 2.54 | mg/l | - |
| 19 | Fluoride (as F) | < 0.05 | < 0.05 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 24.2 | 24.2 | °C | - |
| 32 | Residual Free Chlorine | 0.20 | 0.21 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Nos/100ml | Absent |

**Table No: 19**

## DRINKING WATER QUALITY RESULT FOR THE MONTH OF FEBRUARY 2025

| Sl No | Parameter | Results Obtained | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|
| | | Drinking Water Point Near Crusher – 2 | HEMM Workshop Drinking Water Point | | |
| 1 | Turbidity | 0.50 | 0.20 | NTU | 5.0 |
| 2 | pH Value | 7.83 | 7.79 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 228.48 | 236.64 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.21 | 0.22 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 9.99 | 11.99 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 294 | 299 | mg/l | 2000 |
| 7 | Electrical Conductivity | 475 | 465 | µS/cm | - |

| Sl No | Parameter | Results Obtained | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|
| | | Drinking Water Point Near Crusher – 2 | HEMM Workshop Drinking Water Point | | |
| 8 | Calcium (as Ca) | 52.33 | 50.69 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 23.79 | 26.77 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 52.40 | 54.36 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | 4.28 | 4.52 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 144 | 144 | mg/l | 600 |
| 15 | Acidity | 04 | 02 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 4.25 | 4.09 | mg/l | - |
| 18 | Potassium (as K) | 2.22 | 2.44 | mg/l | - |
| 19 | Fluoride (as F) | < 0.05 | < 0.05 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | mg/l | 0.001 |
| 24 | Selenium (as Se) | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | Hazen | 15 |
| 29 | Odour | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 26.8 | 26.8 | °C | - |
| 32 | Residual Free Chlorine | 0.12 | 0.11 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Nos/100ml | Absent |

**Table No: 20**

## DRINKING WATER QUALITY RESULT FOR THE MONTH OF MARCH 2025

| Sl No | Parameter | Results Obtained | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|
| | | Drinking Water Point Near Mine Office Main Gate | Near Dispensary Drinking Water Point | | |
| 1 | Turbidity | < 0.10 | 0.2 | NTU | 5.0 |
| 2 | pH Value | 7.74 | 7.64 | - | 6.5 – 8.5 |
| 3 | Total Hardness (as $CaCO_3$) | 241.66 | 237.57 | mg/l | 600 |
| 4 | Iron (as Fe) | 0.22 | 0.22 | mg/l | 0.3 |
| 5 | Chlorides (as Cl) | 10.76 | 10.76 | mg/l | 1000 |
| 6 | Total Dissolved Solids | 305 | 289 | mg/l | 2000 |
| 7 | Electrical Conductivity | 464 | 463 | µS/cm | - |
| 8 | Calcium (as Ca) | 52.53 | 50.89 | mg/l | 200 |
| 9 | Magnesium (as Mg) | 26.87 | 26.87 | mg/l | 100 |
| 10 | Copper (as Cu) | < 0.10 | < 0.10 | mg/l | 1.5 |
| 11 | Manganese (as Mn) | < 0.05 | < 0.05 | mg/l | 0.3 |
| 12 | Sulfate (as $SO_4$) | 50.19 | 50.18 | mg/l | 400 |
| 13 | Total Nitrate (as $NO_3$) | 12.64 | < 2.20 | mg/l | 45 |
| 14 | Total Alkalinity (as $CaCO_3$) | 144 | 136 | mg/l | 600 |
| 15 | Acidity | < 2.0 | 02 | mg/l | - |
| 16 | Sulphide (as $H_2S$) | < 0.02 | < 0.02 | mg/l | 0.05 |
| 17 | Sodium (as Na) | 4.29 | 4.37 | mg/l | - |
| 18 | Potassium (as K) | 3.40 | 2.08 | mg/l | - |
| 19 | Fluoride (as F) | < 0.05 | < 0.05 | mg/l | 1.5 |
| 20 | Cadmium (as Cd) | ND | ND | mg/l | 0.003 |
| 21 | Lead (as Pb) | ND | ND | mg/l | 0.01 |
| 22 | Arsenic (as As) | ND | ND | mg/l | 0.05 |
| 23 | Mercury (as Hg) | ND | ND | mg/l | 0.001 |

| Sl No | Parameter | Results Obtained | | Unit | Permissible Limit in absence of Alternate Source as per IS 10500: 2012 |
|---|---|---|---|---|---|
| | | Drinking Water Point Near Mine Office Main Gate | Near Dispensary Drinking Water Point | | |
| 24 | Selenium (as Se) | ND | ND | mg/l | 0.01 |
| 25 | Nickel (as Ni) | ND | ND | mg/l | 0.02 |
| 26 | Zinc (as Zn) | ND | ND | mg/l | 15.0 |
| 27 | Total Chromium (as Cr) | ND | ND | mg/l | 0.05 |
| 28 | Colour | < 5 | < 5 | Hazen | 15 |
| 20 | Odour | Agreeable | Agreeable | - | Agreeable |
| 30 | Taste | Agreeable | Agreeable | - | Agreeable |
| 31 | Temperature | 29.6 | 29.4 | °C | - |
| 32 | Residual Free Chlorine | 0.20 | 0.21 | mg/l | 1.0 (min) |
| 33 | Total Bacterial Count | Absent | Absent | Nos/100ml | Absent |
| 34 | E coli | Absent | Absent | Nos/100ml | Absent |

**Table No: 21**

## 21.1 EFFLUENT WATER QUALITY RESULT OF WORKSHOP INLET

| Sl No | Parameters | Results Obtained of Inlet | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | OCT | NOV | DEC | JAN | FEB | MAR | |
| 1 | pH Value | 7.10 | 7.65 | 7.33 | 7.28 | 7.31 | 7.30 | - |
| 2. | Total Suspended Solids | 31 | 12.5 | 8.4 | 7.3 | 14.7 | 76.6 | mg/l |
| 3. | Oil & Grease | 2.4 | 2.2 | 2.0 | 2.4 | 2.4 | 4.2 | mg/l |
| 4. | BOD 5days at 20°C | 50 | 50 | 40 | 80 | 50 | 35 | |
| 5. | Chemical Oxygen Demand | 153.62 | 154.26 | 123.62 | 243.62 | 156.72 | 107.81 | |

## 21.2 EFFLUENT WATER QUALITY RESULT OF WORKSHOP OUTLET

| Sl No | Parameters | Results Obtained of Outlet | | | | | | Permissible Limit as per CTO Conditions | Unit |
|---|---|---|---|---|---|---|---|---|---|
| | | OCT | NOV | DEC | JAN | FEB | MAR | | |
| 1 | pH Value | 7.42 | 7.33 | 7.82 | 7.71 | 8.17 | 7.82 | 5.5 – 9.0 | - |
| 2. | Total Suspended Solids | 17 | < 2.5 | < 2.5 | < 2.5 | 6.8 | < 2.5 | 200 | mg/l |
| 3. | Oil & Grease | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | 10 | mg/l |
| 4. | BOD 5days at 20°C | 12 | 20 | 05 | 06 | 10 | 08 | - | |
| 5. | Chemical Oxygen Demand | 37.48 | 61.426 | 16.48 | 19.268 | 32.416 | 26.41 | 150 | |

**Table No: 22**

## 22.1 EFFLUENT WATER QUALITY RESULT OF STP INLET

| Sl No | Parameters | Results Obtained of Inlet | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | OCT | NOV | DEC | JAN | FEB | MAR | |
| 1 | pH Value | 6.89 | 6.93 | 6.88 | 7.20 | 6.89 | 6.88 | - |
| 2. | Total Suspended Solids | 47 | 320 | 36.2 | 40.6 | 13 | 8.4 | mg/l |
| 4. | BOD 5days at 20°C | 308.61 | 70 | 140 | 150 | 60 | 70 | |
| 5. | Chemical Oxygen Demand | 6.89 | 211.51 | 422.36 | 432.16 | 189.62 | 215.62 | |

## 22.2 EFFLUENT WATER QUALITY RESULT OF STP OUTLET

| Sl No | Parameters | Results Obtained of Outlet | | | | | | Permissible Limit as per CTO Conditions | Unit |
|---|---|---|---|---|---|---|---|---|---|
| | | OCT | NOV | DEC | JAN | FEB | MAR | | |
| 1 | pH Value | 7.42 | 7.46 | 7.46 | 7.44 | 7.07 | 7.20 | 6.5 – 9.0 | - |
| 2. | Total Suspended Solids | < 2.5 | 43 | < 2.5 | < 2.5 | 3.0 | < 2.5 | 100 | mg/l |
| 4. | BOD 5days at 20°C | 55.621 | 10 | 25 | 09 | 16 | 28 | 30 | |
| 5. | Chemical Oxygen Demand | 7.42 | 31.721 | 76.118 | 28.610 | 49.716 | 86.21 | - | |

**Table No: 23**

## SOIL QUALITY RESULT FOR THE MONTH OF OCTOBER 2024

| Sl. No. | Parameter | Unit | ETP Area | Crusher – 2 Area | Village Kheramuta Area | Dispensary Area |
|---|---|---|---|---|---|---|
| 1. | Colour | - | Greyish | Brownish | Brownish | Brownish |
| 2. | Type of Soil | - | Fine Grained Soil | Fine Grained Soil | Fine Grained Soil | Fine Grained Soil |
| 3. | Texture | - | Silty | Silty Loam | Clay Loam | Silty Clay Loam |
| 4. | Bulk Density | gm/cm$^3$ | 1.2 | 1.34 | 1.62 | 1.54 |
| 5. | pH (1:2 Suspension) | - | 7.82 | 8.39 | 8.32 | 8.27 |
| 6. | Iron | mg/kg | 3.27 | 3.56 | 2.94 | 3.26 |
| 7. | Calcium | mg/kg | 162 | 154 | 184 | 194 |
| 8. | Available Potassium (as $K_2O$) | Kg/ha | 187.44 | 254.52 | 354.6 | 246.24 |
| 9. | Organic Carbon | % | 0.78 | 0.94 | < 0.50 | 0.55 |
| 10. | Available Nitrogen (as N) | Kg/ha | 250.88 | 213.24 | 238.33 | 301.05 |
| 11. | Manganese | mg/kg | 9.22 | 7.42 | 8.52 | 6.84 |
| 12. | Infiltration Rate | cm/hr | 3.66 | 3.53 | 3.84 | 4.22 |
| 13. | Porosity | mg/m$^3$ | 0.19 | 0.22 | 0.25 | 0.28 |
| 14. | Moisture Content | % | 25.34 | 25.8 | 26.31 | 24.86 |
| 15. | Chloride | mg/kg | 0.15 | 0.46 | 1.25 | 1.31 |
| 16. | Sulphate | mg/kg | 0.48 | 0.35 | 0.74 | 0.68 |

**Table No: 24**

## SOIL QUALITY RESULT FOR THE MONTH OF NOVEMBER 2024

| Sl. No. | Parameter | Unit | Magazine Hill Top Area | STP Area | Village Katang Area | Near Store Area |
|---|---|---|---|---|---|---|
| 1. | Colour | - | Brownish | Greyish | Brownish | Greyish |
| 2. | Type of Soil | - | Fine Grained Soil | Fine Grained Soil | Fine Grained Soil | Fine Grained Soil |
| 3. | Texture | - | Silty Loam | Silty | Clay Loam | Silty Clay Loam |
| 4. | Bulk Density | gm/cm$^3$ | 1.35 | 1.20 | 1.65 | 1.54 |
| 5. | pH (1:2 Suspension) | - | 6.70 | 6.98 | 7.28 | 7.25 |
| 6. | Iron | mg/kg | 3.60 | 3.44 | 3.12 | 3.35 |
| 7. | Calcium | mg/kg | 158 | 140 | 188 | 196 |
| 8. | Available Potassium (as $K_2O$) | Kg/ha | 286.68 | 1236.12 | 307.56 | 407.28 |
| 9. | Organic Carbon | % | 2.32 | 0.57 | 2.01 | < 0.50 |
| 10. | Available Nitrogen (as N) | Kg/ha | 125.44 | 188.16 | 163.07 | 62.72 |
| 11. | Manganese | mg/kg | 5.42 | 4.35 | 3.55 | 4.56 |
| 12. | Infiltration Rate | cm/hr | 3.50 | 2.50 | 3.20 | 4.50 |
| 13. | Porosity | mg/m$^3$ | 0.25 | 0.35 | 0.26 | 0.30 |
| 14. | Moisture Content | % | 24.2 | 26.2 | 28.5 | 24.5 |

| Sl. No. | Parameter | Unit | Magazine Hill Top Area | STP Area | Village Katang Area | Near Store Area |
|---|---|---|---|---|---|---|
| 15. | Chloride | mg/kg | 0.55 | 0.65 | 1.34 | 1.45 |
| 16. | Sulphate | mg/kg | 0.60 | 0.46 | 0.88 | 0.76 |

**Table No: 25**

## SOIL QUALITY RESULT FOR THE MONTH OF DECEMBER 2024

| Sl. No. | Parameter | Unit | Mines Office Area | Near ETP Area | Village Bihabandh Area | Near Crusher – 4 Area |
|---|---|---|---|---|---|---|
| 1. | Colour | - | Greyish | Greyish | Greyish | Brownish |
| 2. | Type of Soil | - | Fine Grained Soil | Fine Grained Soil | Fine Grained Soil | Fine Grained Soil |
| 3. | Texture | - | Silty Loam | Silty | Loamy | Silty Loam |
| 4. | Bulk Density | $gm/cm^3$ | 1.78 | 1.59 | 1.6 | 1.20 |
| 5. | pH (1:2 Suspension) | - | 8.32 | 7.63 | 8.13 | 8.40 |
| 6. | Iron | mg/kg | 3.56 | 4.88 | 5.27 | 3.88 |
| 7. | Calcium | mg/kg | 185 | 168 | 165 | 194 |
| 8. | Available Potassium (as $K_2O$) | Kg/ha | 322.2 | 155.28 | 270.48 | 196.32 |
| 9. | Organic Carbon | % | 1.560 | 3.628 | 1.051 | < 0.50 |
| 10. | Available Nitrogen (as N) | Kg/ha | 112.9 | 188.16 | 62.72 | 75.26 |
| 11. | Manganese | mg/kg | 8.65 | 6.51 | 10.22 | 10.04 |
| 12. | Infiltration Rate | cm/hr | 6.78 | 7.65 | 3.42 | 5.84 |
| 13. | Porosity | $mg/m^3$ | 0.26 | 0.25 | 0.19 | 0.25 |
| 14. | Moisture Content | % | 20.4 | 22.4 | 21.34 | 20.54 |
| 15. | Chloride | mg/kg | 1.28 | 0.95 | 0.10 | 0.15 |
| 16. | Sulphate | mg/kg | 0.45 | 0.28 | 0.48 | 0.74 |

**Table No: 26**

## SOIL QUALITY RESULT FOR THE MONTH OF JANUARY 2025

| Sl. No. | Parameter | Unit | Mines Colony Area | Dispensary Area | Village Dhauradha | Near Crusher – 2 Area |
|---|---|---|---|---|---|---|
| 1. | Colour | - | Brownish | Reddish | Brownish | Yellowish |
| 2. | Type of Soil | - | Mixed Grained Soil | Granular Soil | Fine Grained Soil | Medium Grained Soil |
| 3. | Texture | - | Silty Loam | Silty Loam | Sandy Loam | Silty |
| 4. | Bulk Density | $gm/cm^3$ | 1.86 | 1.38 | 1.79 | 1.49 |
| 5. | pH (1:2 Suspension) | - | 8.35 | 8.45 | 8.42 | 8.59 |
| 6. | Iron | mg/kg | 4.82 | 4.49 | 3.58 | 4.73 |
| 7. | Calcium | mg/kg | 165.4 | 179.5 | 175 | 196 |
| 8. | Available Potassium (as $K_2O$) | Kg/ha | 289.32 | 187.44 | 246.72 | 246.48 |
| 9. | Organic Carbon | % | 0.88 | < 0.50 | 1.23 | 0.81 |
| 10. | Available Nitrogen (as N) | Kg/ha | 137.98 | 87.80 | 112.89 | 112.89 |
| 11. | Manganese | mg/kg | 9.34 | 8.04 | 5.82 | 7.37 |
| 12. | Infiltration Rate | cm/hr | 5.42 | 4.84 | 6.65 | 7.78 |
| 13. | Porosity | $mg/m^3$ | 0.29 | 0.21 | 0.23 | 0.25 |
| 14. | Moisture Content | % | 20.94 | 22.6 | 21.4 | 21.17 |
| 15. | Chloride | mg/kg | 0.26 | 1.15 | 1.95 | 2.04 |
| 16. | Sulphate | mg/kg | 0.88 | 0.68 | 0.54 | 0.76 |

**Table No: 27**

## SOIL QUALITY RESULT FOR THE MONTH OF FEBRUARY 2025

| Sl. No. | Parameter | Unit | STP Area | Village Kheramuta Area | Magazine Hill Top Area | Village Katang |
|---|---|---|---|---|---|---|
| 1. | Colour | - | Greyish | Brownish | Brownish | Brownish |
| 2. | Type of Soil | - | Medium Grained Soil | Fine Grained Soil | Mixed Grained Soil | Granular Soil |
| 3. | Texture | - | Silty | Sandy Loam | Silty Loam | Silty Loam |
| 4. | Bulk Density | $gm/cm^3$ | 1.20 | 1.3 | 1.78 | 1.63 |
| 5. | pH (1:2 Suspension) | - | 8.30 | 8.07 | 7.51 | 7.81 |
| 6. | Iron | mg/kg | 3.88 | 4.18 | 4.56 | 5.31 |
| 7. | Calcium | mg/kg | 194 | 210 | 167 | 152 |
| 8. | Available Potassium (as $K_2O$) | Kg/ha | 324.84 | 300.84 | 127.56 | 349.92 |
| 9. | Organic Carbon | % | 1.95 | < 0.50 | < 0.50 | 0.60 |
| 10. | Available Nitrogen (as N) | Kg/ha | 263.42 | 263.42 | 225.79 | 263.42 |
| 11. | Manganese | mg/kg | 9.43 | 9.43 | 10.5 | 12.8 |
| 12. | Infiltration Rate | cm/hr | 6.15 | 6.15 | 1.19 | 1.28 |
| 13. | Porosity | $mg/m^3$ | 0.29 | 0.29 | 0.57 | 0.46 |
| 14. | Moisture Content | % | 22.78 | 22.78 | 24.56 | 25.31 |
| 15. | Chloride | mg/kg | 0.21 | 0.21 | 0.29 | 0.32 |
| 16. | Sulphate | mg/kg | 0.58 | 0.58 | 0.84 | 0.92 |

**Table No: 28**

## SOIL QUALITY RESULT FOR THE MONTH OF MARCH 2025

| Sl. No. | Parameter | Unit | Village Bihabandh | Crusher – 2 Area | ETP Area | Mines Office Area |
|---|---|---|---|---|---|---|
| 1. | Colour | - | Brownish | Yellowish | Greyish | Greyish |
| 2. | Type of Soil | - | Small Grained Soil | Fine Grained Soil | Mixed Grained Soil | Granular Soil |
| 3. | Texture | - | Silty | Sandy Loam | Silty Loam | Silty Loam |
| 4. | Bulk Density | $gm/cm^3$ | 1.5 | 1.7 | 1.2 | 1.35 |
| 5. | pH (1:2 Suspension) | - | 7.74 | 8.17 | 8.11 | 8.30 |
| 6. | Electrical Conductivity | µS/cm | 479 | 367 | 1090 | 298 |
| 7. | Available Phosphorous (as $P_2O_5$) | Kg/ha | 3.614 | 3.184 | 4.627 | 5.67 |
| 8. | Available Potassium (as $K_2O$) | Kg/ha | 282.84 | 46.2 | 299.28 | 186.6 |
| 9. | Organic Carbon | % | 0.47 | 0.94 | < 0.50 | 0.60 |
| 10. | Available Nitrogen (as N) | Kg/ha | 62.72 | 238.33 | 263.42 | 150.53 |
| 11. | Iron | mg/kg | 4.05 | 3.84 | 3.27 | 3.60 |
| 12. | Calcium | mg/kg | 172 | 158 | 162 | 158 |
| 13. | Manganese | mg/kg | 0.93 | 0.41 | 9.22 | 5.42 |
| 14. | Infiltration Rate | cm/hr | 9.54 | 11.54 | 8.66 | 8.50 |
| 15. | Porosity | $mg/m^3$ | 5.34 | 5.58 | 0.19 | 0.25 |
| 16. | Moisture Content | % | 24.8 | 23.21 | 25.34 | 24.2 |
| 17. | Chloride | mg/kg | 0.28 | 1.88 | 0.15 | 0.55 |
| 18. | Sulphate | mg/kg | 0.14 | 0.10 | 0.48 | 0.60 |

**Table No: 29**

## NOISE LEVEL MONITORING DATA

From 01.10.2024 to 31.03.2025

| Month | Location | $L_{eq}$ dB(A) Day Time | $L_{eq}$ dB(A) Night Time |
|---|---|---|---|
| Oct | Mines View Point | 61.4 | 60.0 |
| | Crusher Plant – 2 | 60.9 | 60.4 |
| | Mine Colony Area | 51.3 | 52.5 |
| | Mines Office Area | 53.8 | 56.1 |
| | Magazine Hill Top Area | 40.6 | 46.7 |
| Nov | Mines View Point | 40.1 | 41.8 |
| | Crusher Plant – 4 | 57.5 | 48.8 |
| | Mine Colony Area | 50.0 | 45.2 |
| | Mines Office Area | 50.4 | 45.3 |
| | Magazine Hill Top Area | 38.9 | 32.8 |
| Dec | Mines View Point | 50.3 | 43.9 |
| | Crusher Plant – 2 | 57.0 | 57.9 |
| | Mine Colony Area | 49.6 | 40.7 |
| | Mines Office Area | 51.5 | 52.8 |
| | Magazine Hill Top Area | 34.0 | 32.2 |
| Jan | Mines View Point | 52.5 | 52.6 |
| | Crusher Plant – 2 | 52.8 | 69.0 |
| | Mine Colony Area | 52.0 | 49.2 |
| | Mines Office Area | 56.1 | 37.9 |
| | Magazine Hill Top Area | 37.8 | 32.4 |
| Feb | Mines View Point | 41.4 | 41.0 |
| | Crusher Plant – 2 | 54.3 | 55.4 |
| | Mine Colony Area | 53.6 | 53.8 |
| | Mines Office Area | 49.6 | 46.0 |
| | Magazine Hill Top Area | 38.7 | 33.5 |
| Mar | Mines View Point | 44.1 | 41.9 |
| | Crusher Plant – 2 | 66.0 | 70.5 |
| | Mine Colony Area | 52.0 | 39.6 |
| | Mines Office Area | 52.3 | 53.2 |
| | Magazine Hill Top Area | 37.5 | 35.1 |

***

**Rainwater Harvesting Pit-1**

**Rainwater Harvesting Pit-2**

**Digital Display Board**


**Truck Mounted Mist Cannon & Truck Tankers for Dust Suppression on Road.**

Truck Mounted Mist Cannon

ETP of Capacity 25 KLD

STP of Capacity 75 KLD

ETP of Capacity 25 KLD

**8.1.1: Lease Area Utilization**

| Sl. No. | Type of land use (in ha) | Area at the beginning of the proposal period | Area proposed under activity | Actual Area utilized in the proposal period |
|---|---|---|---|---|
| 1 | Mining | 144.01 | 166.19 | 147.15 |
| 2 | Mineral storage | 0.00 | 1.25 | 1.25 |
| 3 | Mineral Beneficiation plant | 0.00 | 0.00 | 0.00 |
| 4 | Township | 0.12 | 0.12 | 0.12 |
| 5 | Tailing Pond | 0.00 | 0.00 | 0.00 |
| 6 | Railways | 0.00 | 0.00 | 0.00 |
| 7 | Roads | 9.14 | 9.14 | 9.14 |
| 8 | Infrastructure (Workshop, administrative building etc.) | 10.72 | 10.82 | 9.47 |
| 9 | OB/waste dump | 60.16 | 72.02 | 50.15 |
| 10 | Top soil preservation | 0.00 | 0.00 | 0.00 |
| 11 | Others | 2.50 | 3.74 | 2.50 |
| 12 | Total area put to use | 226.65 | 263.28 | 219.78 |
| 13 | Excavated area reclaimed | 0.00 | 0.00 | 0.00 |
| 14 | Waste dump area reclaimed | 0.00 | 0.00 | 0.00 |
| 15 | Undisturbed Area | 646.41 | 609.78 | 653.28 |
| | Total | 873.06 | 873.06 | 873.06 |



**Land Area utilization Details**