

Your (**Environment Clearance**) application has been **Submitted** with following details

Proposal No	IA/OR/MIN/100679/2016
Compliance ID	26605403
Compliance Number(For Tracking)	EC/M/COMPLIANCE/26605403/2024
Reporting Year	2024
Reporting Period	01 Jun(01 Oct - 31 Mar)
Submission Date	24-05-2024
IRO Name	ARTATRANA MISHRA
IRO Email	jhk109@ifs.nic.in
State	ODISHA
IRO Office Address	Integrated Regional Offices, Bhubaneswar
Note:- SMS and E-Mail has been sent to ARTATRANA MISHRA, ODISHA with Notification to Project Proponent.	

LQ/MOEFCC/002/2024-030
May 24, 2024.

To,
**The Addl. Principal Chief Conservator of Forests (C),
Ministry of Environment, Forest & Climate Change,
Integrated Regional Office (EZ),
A/3, Chandrasekharapur,
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-2023 to March-2024.**

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-2023 to March-2024.

Thanking you,

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



(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
2024
01 Jun(01 Oct - 31 Mar)**

Acknowledgment

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		
Proposal No.	IA/OR/MIN/100679/2016	Category	Non-Coal Mining
Plot / Survey / Khasra No.	N/A	Sub-District	N/A
State	ODISHA	Entity's PAN	NA
MoEF File No.	J-11015/202/2016-IA.II(M)	Entity name as per PAN	NA

Compliance Reporting Details

Reporting Year 2024
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	Annual Project Area in Possession
Private	0	0
Revenue Land	0	0
Forest	0	0
Others	0	0
Total	0	0

Production Capacity

Sr. no	Product Name	units	Valid Upto	Capacity	Production last year	Capacity as per CTO
1	Limestone	Tons per Annum (TPA)	31/03/2024	9500000	5463339	9500000
2	Dolomite	Tons per Annum (TPA)	31/03/2024	80000	3852	80000

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.

<p>PPs Submission: Complied The water consumption is well within the permitted quantity of 509 KLD and efforts are being taken to enhance water conservation by revamping the ETP based on the latest technology and adopting rainwater harvesting practices.</p>	<p>Date: 24/05/2024</p>
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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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<p>PPs Submission: Complied The Environment Management Plan/Program has been implemented at our Mines and environmental monitoring is being carried out periodically by 3rd party NABL accredited lab.</p>	<p>Date: 24/05/2024</p>
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General Conditions

Sr.No.	Condition Type	Condition Details
1	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.

<p>PPs Submission: Complied All statutory compliances are being adhered to w.r.t various circulars issued by DGMS and IBM from time to time.</p>	<p>Date: 24/05/2024</p>
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2	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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<p>PPs Submission: Complied Noted.</p>	<p>Date: 24/05/2024</p>
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3	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
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		versus Union of India & Ors before commencing the mining operations.
PPs Submission: Complied All the statutory requirements are being complied from time to time.		Date: 24/05/2024
4	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 Noted.		Date: 24/05/2024
5	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 Not Applicable.		Date: 24/05/2024
6	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 CTO has been granted by Odisha State Pollution Control Board and valid till 31.03.2025.		Date: 24/05/2024
7	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 Requisite consents from the concerned landowners are in place for mining activity.		Date: 24/05/2024
8	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 All the mitigation measures are being followed.		Date: 24/05/2024
9	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.

PPs Submission: Complied Permission for ground water withdrawal has been obtained vide NOC No: - CGWA/NOC/MIN/REN/1/2024/9057 dated 08.02.2024.		Date: 24/05/2024
10	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 A copy of EC letter has been submitted to the concerned Panchayat.		Date: 24/05/2024
11	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 Noted.		Date: 24/05/2024
12	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 Newspaper advertisement was made in 'Manthan', Odia Newspaper and in 'Odisha Today', English newspaper on 09.03.2020 .		Date: 24/05/2024
13	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 Noted and will be complied in case of any change in ownership.		Date: 24/05/2024
14	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 Top soil removed is being utilized for plantation and green belt development.		Date: 24/05/2024
15	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 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: 24/05/2024
16	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.
PPs Submission: Complied PPEs are provided to the workers and have been made mandatory with necessary training on safety, health and environment aspects.		Date: 24/05/2024
17	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 generation of fugitive dust emissions.
PPs Submission: Complied Water sprinkling 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.		Date: 24/05/2024
18	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: Complied Green Cover has been developed as stipulated in the approved mining plan. Around 14500 saplings have been planted this year.		Date: 24/05/2024
19	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.
<p>PPs Submission: Complied As on 31.03.2024, total cumulative of 3,49,736 plantations have been done with 14500 saplings planted in this year with an average survival rate of 75%. Efforts are being taken to increase the survival rate to more than 90%.</p>		Date: 24/05/2024
20	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.
<p>PPs Submission: Complied Noted and will be taken care in due course of time.</p>		Date: 24/05/2024
21	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.
<p>PPs Submission: Complied 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 has been deposited as per demand raised by the State Forest Department.</p>		Date: 24/05/2024
22	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.
<p>PPs Submission: Complied The approved wildlife conservation plan is being implemented in consultation with State Forest & wildlife department.</p>		Date: 24/05/2024
23	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 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: 24/05/2024
24	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 Periodical medical examination of workers engaged in mining activities is being done as per DGMS guidelines, records maintained properly and submitted to the statutory bodies. An OHS specialist has been deputed in mines dispensary.		Date: 24/05/2024
25	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 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: 24/05/2024
26	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 SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/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.
PPs Submission: Complied Since the mines area is longitudinal in shape, hence 2 nos. of online CAAQMS stations have been installed in discussion with OSPCB as mentioned in the CTO order. The air quality data is being digitally displayed in front of main gate for the public view.		Date: 24/05/2024
27	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.
<p>PPs Submission: Complied Water sprinkling on haulage roads is done on a regular basis for dust suppression. Dust suppression systems have been installed at all source emission points and the air quality conforms to the prescribed standards.</p>		<p>Date: 24/05/2024</p>
28	<p>WATER QUALITY MONITORING AND PRESERVATION</p>	<p>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.</p>
<p>PPs Submission: Complied Permission for ground water withdrawal has been obtained vide NOC No: - CGWA/NOC/MIN/REN/1/2024/9057 dated 08.02.2024.</p>		<p>Date: 24/05/2024</p>
29	<p>WATER QUALITY MONITORING AND PRESERVATION</p>	<p>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.</p>
<p>PPs Submission: Complied Regular monitoring of the nearby surface water bodies as well as the water table is done in and around the mines lease area. The report of ground water quality and level is submitted to MoEF & CC, CGWA and SPCB on regular basis.</p>		<p>Date: 24/05/2024</p>
30	<p>WATER QUALITY MONITORING AND PRESERVATION</p>	<p>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 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.</p>
<p>PPs Submission: Complied 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.</p>		<p>Date: 24/05/2024</p>
31	<p>WATER QUALITY MONITORING AND PRESERVATION</p>	<p>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</p>

		<p>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.</p>
<p>PPs Submission: Complied 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.</p>		<p>Date: 24/05/2024</p>
32	<p>WATER QUALITY MONITORING AND PRESERVATION</p>	<p>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</p>
<p>PPs Submission: Complied 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 2023 to March 2024 is attached.</p>		<p>Date: 24/05/2024</p>
33	<p>WATER QUALITY MONITORING AND PRESERVATION</p>	<p>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.</p>
<p>PPs Submission: Complied The village ponds are being restored by cleaning during pre-monsoon to harvest and recharge groundwater to the maximum extent possible. Additionally, roof top rainwater harvesting system with ground recharge system has been installed near office premises.</p>		<p>Date: 24/05/2024</p>
34	<p>WATER QUALITY MONITORING AND PRESERVATION</p>	<p>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.</p>
<p>PPs Submission: Complied Effluent Treatment Plant has been installed and water quality at the inlet and outlet is being analyzed through 3rd party NABL accredited lab, conforming to OSPCB prescribed standards. The effluent</p>		<p>Date: 24/05/2024</p>

generated is passed through Oil & Grease trap at the inlet for better treatment.		
35	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 Efforts are being taken to reduce the water consumption by recycling and reuse of treated water.		Date: 24/05/2024
36	Human Health Environment	<p>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).</p>
PPs Submission: Complied Occupational health surveillance is carried out periodically.		Date: 24/05/2024
37	Human Health Environment	<p>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 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.</p>
PPs Submission: Complied Records of health performance Indicators w.r.t workers engaged in the mining activities are maintained.		Date: 24/05/2024
38	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.
PPs Submission: Complied Necessary basic infrastructure facilities have been provided for mine workers at site.		Date: 24/05/2024
39	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.
PPs Submission: Being Complied Action Plan addressing the issues raised during the public hearing is under implementation as per budgetary provision and within stipulated time frame and status report being submitted to the concerned statutory bodies.		Date: 24/05/2024
40	Corporate Environmental Responsibility	The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.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
PPs Submission: Complied The budget earmarked for Corporate Environmental Responsibility has been kept aside and is utilized for the said purpose only.		Date: 24/05/2024
41	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 Funds earmarked for environmental protection measures are used only for environmental aspects and is not being diverted for any other purpose.		Date: 24/05/2024
42	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 Noted and will be complied in due course of time.		Date: 24/05/2024
43	MISCELLANEOUS	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEF&CC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.

<p>PPs Submission: Complied Six monthly compliance reports are being submitted periodically to the statutory bodies.</p>		<p>Date: 24/05/2024</p>
44	MISCELLANEOUS	<p>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.</p>
<p>PPs Submission: Complied An Environment Management Cell is in place with designated HSE officer who functionally reports to the Head of Environment and administratively to the Head of Mines.</p>		<p>Date: 24/05/2024</p>
45	MISCELLANEOUS	<p>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.</p>
<p>PPs Submission: Complied Noted and full cooperation will be extended.</p>		<p>Date: 24/05/2024</p>
46	MISCELLANEOUS	<p>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.</p>
<p>PPs Submission: Complied Digital Map of the entire lease area (LULC Map) has been prepared in March 2024.</p>		<p>Date: 24/05/2024</p>
47	Noise Monitoring & Prevention	<p>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.</p>
<p>PPs Submission: Complied The orientation of floodlights is maintained away from the villagers and noise levels are maintained within the prescribed standard limits for day and night.</p>		<p>Date: 24/05/2024</p>
48	Noise Monitoring & Prevention	<p>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.</p>
<p>PPs Submission: Complied All necessary precautionary measures have been taken such as controlled blasting to control the noise levels as per stipulated standard. Workers engaged in high noise operation areas have been provided with ear plugs/muffs. All personnel have been provided with adequate training, awareness and information on safety and health aspects.</p>		<p>Date: 24/05/2024</p>

49	MINING PLAN	<p>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, overburden, interburden 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 of Short Term Permit (STP), Query license or any other name.</p>
<p>PPs Submission: Complied All the working parameters are as per the approved mining plan. No such change is envisaged. In case of any change, the same will be carried out with prior approval of the Ministry.</p>		<p>Date: 24/05/2024</p>
50	MINING PLAN	<p>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.</p>
<p>PPs Submission: Complied Noted and will be complied with in due course of time.</p>		<p>Date: 24/05/2024</p>
51	MINING PLAN	<p>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.</p>
<p>PPs Submission: Complied 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.</p>		<p>Date: 24/05/2024</p>
52	LAND RECLAMATION	<p>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.</p>
<p>PPs Submission: Complied The Overburden (O.B.) generated during the mining operations is being stacked at earmarked OB dump site as per approved mining plan. Safety in mining operations is being adhered to maintain slope stability and top soil is used for land reclamation and plantation.</p>		<p>Date: 24/05/2024</p>
53	LAND RECLAMATION	<p>The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical</p>

		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 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 mining plan.		Date: 24/05/2024
54	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 The reclamation of waste dump sites will be done as per the approved Mining Plan cum Progressive Mine Closure Plan.		Date: 24/05/2024
55	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 Vegetation on slope of dumps will be done with local species to maintain the slope stability thereby preventing erosion and surface run off.		Date: 24/05/2024
56	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 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: 24/05/2024
57	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 Catch drains, settling tanks and siltation ponds have been constructed as per approved mining plan. The drains/ sedimentation sumps etc. are de-silted regularly and maintained properly.		Date: 24/05/2024
58	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 Check dams, garland drain and retaining wall have been constructed around mine pit and OB dumps.		Date: 24/05/2024
59	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 Peak particle velocity is being monitored periodically as per DGMS guidelines.		Date: 24/05/2024
Visit Remarks		
Last Site Visit Report Date:		N/A
Additional Remarks:		The detailed environment monitoring report of Lanjiberna Mines for the period October 2023 to March 2024 is attached as additional attachment.

ENVIRONMENTAL MONITORING REPORT

BASED ON DATA GENERATED

FROM

OCTOBER 2023 – MARCH 2024

OF

LANJIBERNA LIMESTONE & DOLOMITE MINES (DCBL)

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



Prepared By:

Cleenviron Private Limited

D-124, KOELNAGAR, ROURKELA, ODISHA

Tele fax: 0661 – 2475746

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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 4395 no. of data are recorded by the instrument and after interpretation of the collected data it was found that Calm condition prevailed over 36.85%, while considering the 24 hourly data. 37.15% calm condition prevailed from morning 6 hrs to 14hrs for the entire study period, 36.49% calm condition prevailed from 14hrs to 22hrs and 35.46% calm condition prevailed from 22hrs to 06hrs. The predominant wind directions were from North, NE & E with average wind speed 0.76 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 seasons and early summer season also. The Minimum temperature during the post-monsoon season was found to be 14.24°C and the Maximum temperature was found to be 34.23°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 9.66°C and 32.44°C. During the month of March the minimum and maximum temperature was found to be 14.83°C and 37.45°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 164.4 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

SI No	Parameters	From October – March 2024
1	Predominant Wind Direction	From North, North-East & East
2	Calm Condition %	36.85%
3	Average Wind Speed m/sec	0.76
4	Temperature °C	
	Post-monsoon Season	
	Minimum	14.24
	Maximum	34.23
	Winter Season	
	Minimum	9.66
	Maximum	32.44
	Early Summer Season	
	Minimum	14.83
	Maximum	37.45
5	Rain Fall in mm	
	October	113.4
	November	2.6
	December	3.8

SI No	Parameters	From October – March 2024
	January	8.2
	February	11.6
	March	24.8
	Total	164.4

Figure No: 1.2 Wind Rose Diagram for 24 Hours

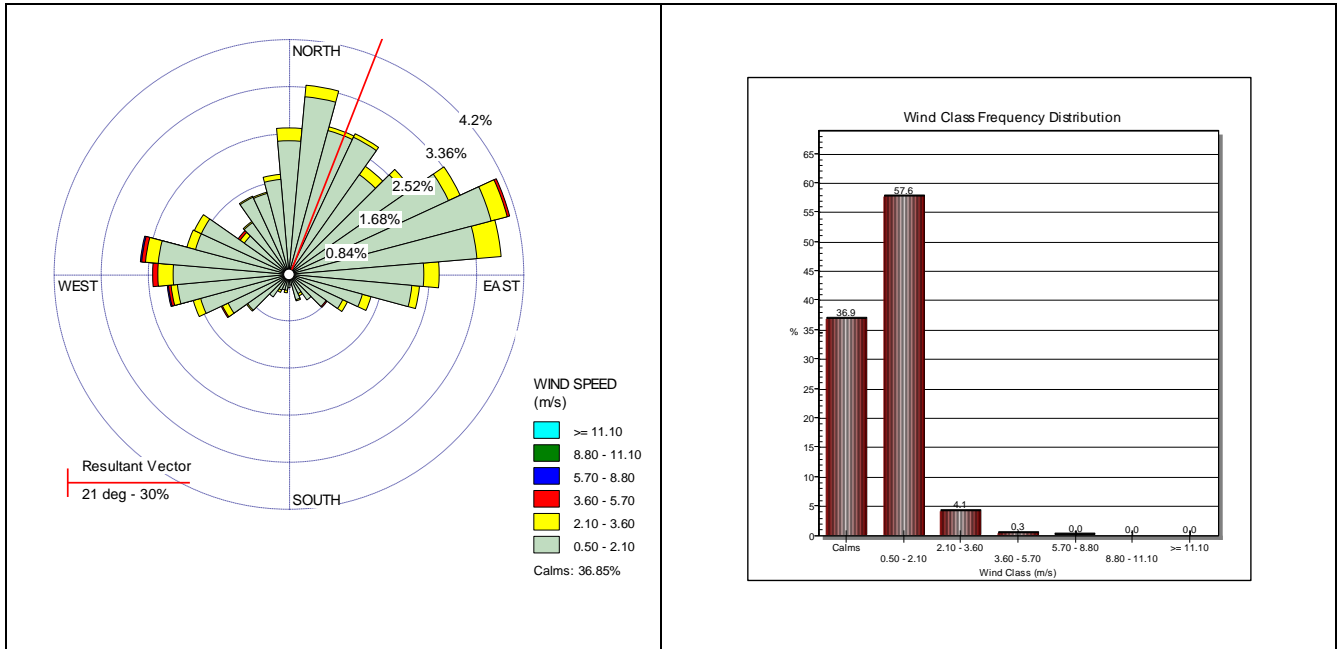


Figure No: 1.2 Wind Rose Diagram from 06 – 14 Hours

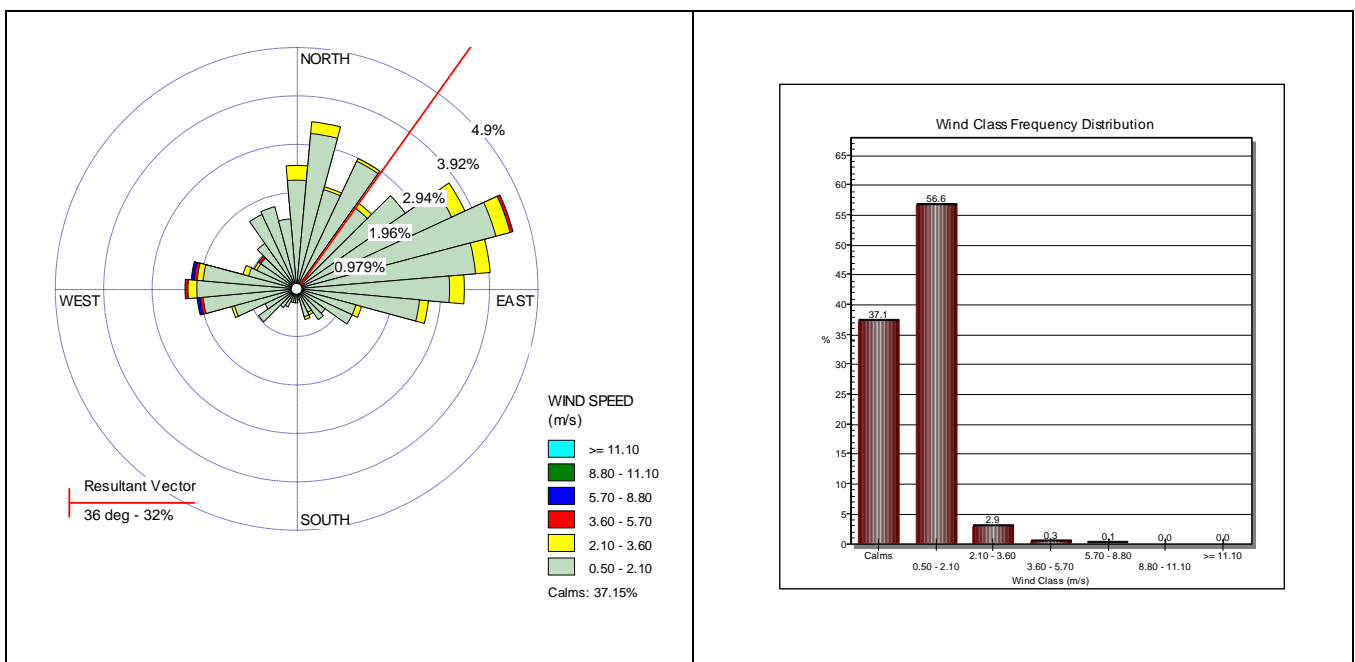


Figure No: 1.3 Wind Rose Diagram from 14 – 22 Hours

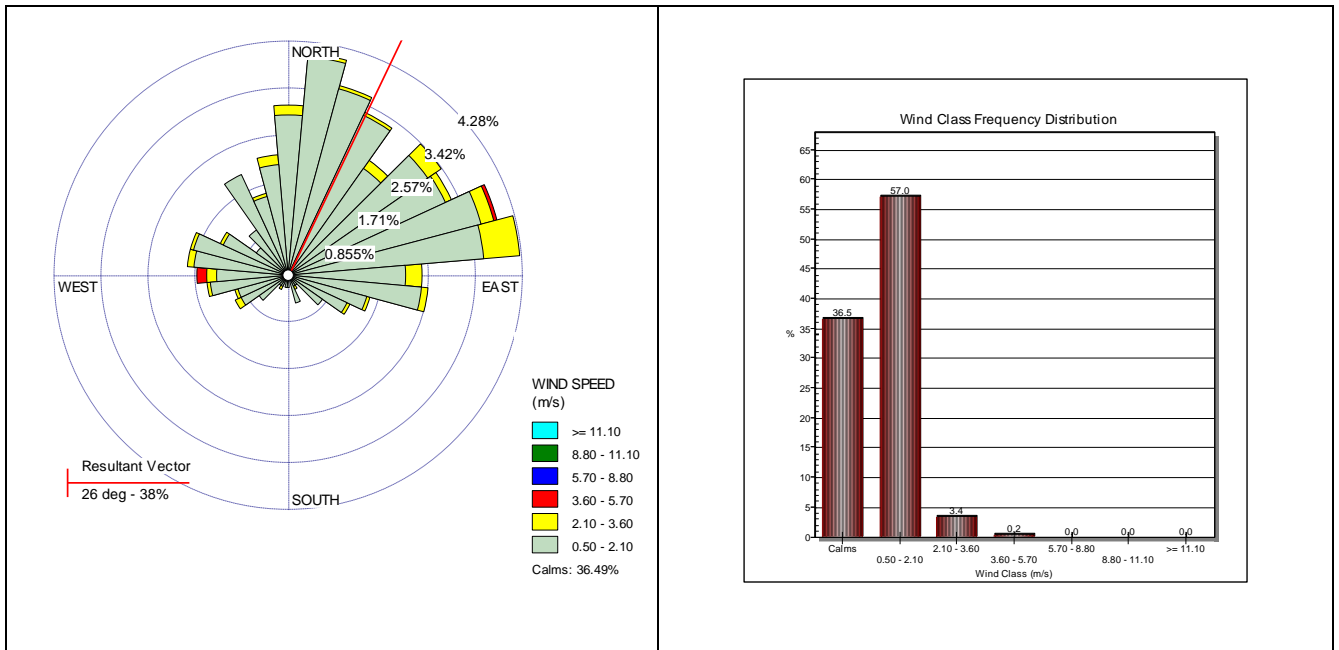


Figure No: 1.4 Wind Rose Diagram from 22 – 06 Hours

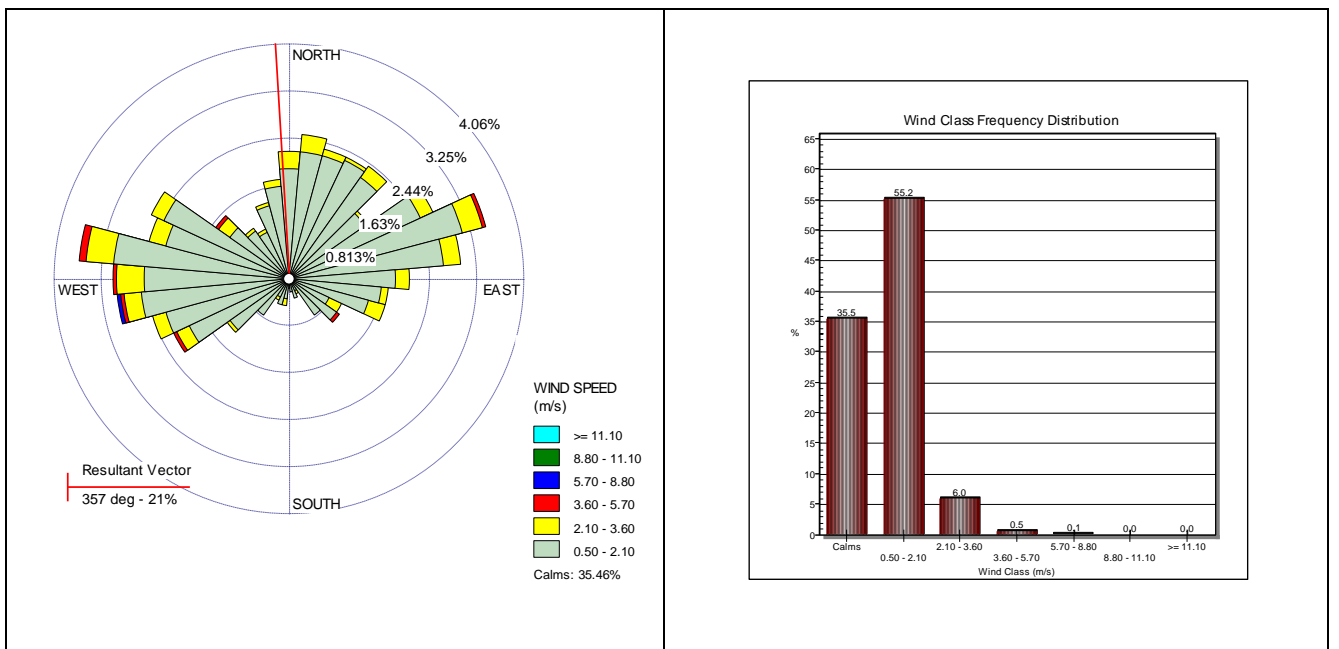


Table No: 2

AMBIENT AIR QUALITY DATA
From 01.10.2023 to 31.03.2024

Station: A-1 (HEMM Workshop Area)

Months	PM2.5 µg/m ³	PM10 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
October	17	50	07	25	< 0.1
	11	31	04	30	< 0.1
	24	66	09	27	< 0.1
	23	66	05	23	< 0.1
	28	81	09	34	< 0.1
	26	79	08	26	< 0.1
	15	43	08	25	< 0.1
	21	66	05	20	< 0.1
	25	71	06	22	< 0.1
November	20	58	05	22	< 0.1
	21	60	07	28	< 0.1
	20	59	08	30	< 0.1
	25	70	06	25	< 0.1
	14	42	07	26	< 0.1
	18	58	07	22	< 0.1
	23	78	08	26	< 0.1
	24	73	09	12	< 0.1
December	23	68	10	32	< 0.1
	19	54	06	21	< 0.1
	18	52	07	28	< 0.1
	21	68	07	22	< 0.1
	22	65	04	24	< 0.1
	20	62	05	23	< 0.1
	24	70	08	25	< 0.1
	29	78	11	20	< 0.1
	22	60	09	20	< 0.1
January	24	71	03	14	< 0.1
	27	78	06	21	< 0.1
	22	64	05	25	< 0.1
	25	73	07	25	< 0.1
	23	66	04	16	< 0.1
	26	73	08	23	< 0.1
	21	60	08	21	< 0.1
	24	69	06	20	< 0.1
	26	75	07	26	< 0.1
February	22	73	07	21	< 0.1
	24	68	08	26	< 0.1
	24	70	03	12	< 0.1
	20	62	05	18	< 0.1
	23	66	05	28	< 0.1
	21	64	04	30	< 0.1
	25	72	06	27	< 0.1
	22	63	04	17	< 0.1

Months	PM2.5 µg/m ³	PM10 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
March	28	79	07	24	< 0.1
	25	72	04	18	< 0.1
	27	77	05	30	< 0.1
	23	74	08	22	< 0.1
	20	62	03	24	< 0.1
	27	75	08	28	< 0.1
	21	69	09	29	< 0.1
	24	76	06	25	< 0.1
	22	68	07	28	< 0.1

Table No: 3

AMBIENT AIR QUALITY DATA
From 01.10.2023 to 31.03.2024
Station: A-2 (Magazine Hill Top Area)

Months	PM2.5 µg/m ³	PM10 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
October	10	29	08	29	< 0.1
	14	45	07	32	< 0.1
	11	35	04	23	< 0.1
	10	33	07	33	< 0.1
	12	38	08	27	< 0.1
	11	34	04	15	< 0.1
	13	37	10	30	< 0.1
	10	28	04	16	< 0.1
	16	43	06	20	< 0.1
November	15	44	04	12	< 0.1
	18	54	03	13	< 0.1
	16	47	04	32	< 0.1
	16	46	08	15	< 0.1
	21	62	05	14	< 0.1
	17	50	06	18	< 0.1
	14	45	07	25	< 0.1
	19	56	09	20	< 0.1
December	15	47	03	12	< 0.1
	12	32	05	20	< 0.1
	10	32	06	29	< 0.1
	18	51	07	22	< 0.1
	15	49	02	11	< 0.1
	17	45	04	24	< 0.1
	19	54	08	24	< 0.1
	11	34	09	21	< 0.1
	13	40	06	23	< 0.1
January	14	38	07	32	< 0.1
	17	46	10	35	< 0.1
	16	50	08	26	< 0.1
	18	52	04	24	< 0.1
	17	49	06	18	< 0.1

Months	PM2.5 µg/m ³	PM10 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
	15	44	04	18	< 0.1
	17	49	05	17	< 0.1
	18	51	06	22	< 0.1
	17	53	04	19	< 0.1
February	18	54	04	14	< 0.1
	16	47	06	22	< 0.1
	15	42	04	12	< 0.1
	13	40	05	16	< 0.1
	12	42	08	25	< 0.1
	19	52	03	15	< 0.1
	14	44	07	24	< 0.1
March	17	49	< 3	26	< 0.1
	15	47	03	25	< 0.1
	17	50	04	07	< 0.1
	16	49	05	25	< 0.1
	19	55	05	16	< 0.1
	18	59	05	20	< 0.1
	15	42	06	20	< 0.1
	17	55	06	18	< 0.1
	14	45	07	26	< 0.1
19	53	04	20	< 0.1	

Table No: 4

AMBIENT AIR QUALITY DATA
From 01.10.2023 to 31.03.2024
Station: A-3 (Near Old Brick Plant Colony Area)

Months	PM2.5 µg/m ³	PM10 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
October	11	26	05	24	< 0.1
	12	39	03	10	< 0.1
	16	49	04	14	< 0.1
	20	57	09	30	< 0.1
	16	52	08	27	< 0.1
	17	55	16	22	< 0.1
	24	70	12	41	< 0.1
	09	30	10	33	< 0.1
	19	53	07	25	< 0.1
November	14	40	06	16	< 0.1
	13	39	07	21	< 0.1
	23	66	03	21	< 0.1
	27	76	04	18	< 0.1
	25	70	05	22	< 0.1
	21	61	08	20	< 0.1
	24	68	05	23	< 0.1
	22	62	09	25	< 0.1
December	16	48	08	29	< 0.1
	19	55	05	18	< 0.1

Months	PM2.5 µg/m ³	PM10 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
	14	40	03	22	< 0.1
	14	44	08	27	< 0.1
	28	76	03	15	< 0.1
	20	62	06	30	< 0.1
	22	67	04	25	< 0.1
	15	45	07	24	< 0.1
	17	50	07	23	< 0.1
January	27	75	06	23	< 0.1
	25	71	07	28	< 0.1
	24	74	04	22	< 0.1
	26	70	03	21	< 0.1
	27	77	08	25	< 0.1
	23	68	05	20	< 0.1
	23	65	05	16	< 0.1
February	27	78	09	27	< 0.1
	25	72	06	18	< 0.1
	23	68	06	20	< 0.1
	25	70	05	23	< 0.1
	19	60	06	24	< 0.1
	22	65	03	22	< 0.1
	20	63	07	26	< 0.1
March	24	69	04	21	< 0.1
	21	62	05	22	< 0.1
	22	64	03	25	< 0.1
	26	78	04	24	< 0.1
	25	72	09	29	< 0.1
	26	74	06	25	< 0.1
	22	68	05	20	< 0.1
21	61	04	21	< 0.1	
12	31	09	27	< 0.1	
29	81	06	19	< 0.1	
24	76	07	28	< 0.1	
23	70	06	25	< 0.1	

Table No: 5

AMBIENT AIR QUALITY DATA
From 01.10.2023 to 31.03.2024

Station: A-4 (Village Bihabandh)

Months	PM2.5 µg/m ³	PM10 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
October	18	55	06	21	< 0.1
	12	35	06	22	< 0.1
	14	48	06	34	< 0.1
	11	24	07	15	< 0.1
	16	51	07	33	< 0.1
	19	58	< 3	13	< 0.1

Months	PM2.5 µg/m ³	PM10 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
	15	43	05	29	< 0.1
	11	30	04	18	< 0.1
	17	49	03	12	< 0.1
November	13	39	03	11	< 0.1
	13	41	03	10	< 0.1
	19	57	06	31	< 0.1
	10	35	03	22	< 0.1
	17	44	< 3	18	< 0.1
	12	37	07	13	< 0.1
	14	41	10	30	< 0.1
December	12	36	09	32	< 0.1
	12	38	04	24	< 0.1
	17	46	04	17	< 0.1
	14	42	03	22	< 0.1
	15	43	08	26	< 0.1
	16	50	04	16	< 0.1
	19	52	06	20	< 0.1
	13	39	07	25	< 0.1
January	20	57	08	26	< 0.1
	18	54	05	23	< 0.1
	12	35	04	18	< 0.1
	15	47	03	16	< 0.1
	17	46	05	21	< 0.1
	16	45	04	20	< 0.1
	13	42	03	13	< 0.1
	13	38	05	17	< 0.1
February	13	40	05	20	< 0.1
	15	43	03	18	< 0.1
	17	50	04	14	< 0.1
	17	49	04	17	< 0.1
	13	42	03	12	< 0.1
	08	22	04	14	< 0.1
	15	45	< 3	18	< 0.1
	10	32	05	20	< 0.1
March	16	47	06	15	< 0.1
	15	39	07	22	< 0.1
	14	41	03	16	< 0.1
	15	34	04	20	< 0.1
	17	51	< 3	26	< 0.1
	12	39	05	19	< 0.1
	13	38	03	16	< 0.1
	17	48	06	24	< 0.1
	20	57	06	25	< 0.1
	18	53	10	38	< 0.1
	16	49	03	22	< 0.1
	15	42	07	30	< 0.1

Table No: 6

STACK EMISSION MONITORING DATA

Location	Month	Particulate Matter Concentration in mg/Nm ³
Crusher plant – 2	Oct	89
	Nov	86
	Dec	78
	Jan	79
	Feb	77
	Mar	81
Crusher plant – 4	Oct	23
	Nov	27
	Dec	24
	Jan	28
	Feb	32
	Mar	28

Table No: 7

QUARRY – 1 DISCHARGE WATER QUALITY DATA

SI No	Parameters	Results Obtained				Unit	General Standards As per Schedule - VI of EPA, G.S.R.422(E), 1993
		Oct	Nov	Dec	Jan		
1.	Total Suspended Solids	5.4	3.4	3.4	3.4	mg/l	200
2.	pH Value	7.85	6.69	6.69	7.41	-	5.5 – 9.0
3.	Oil & Grease	< 2.0	< 2.0	< 2.0	< 2.0	mg/l	10
4.	BOD (5 days at 20°C)	01	01	01	01	mg/l	100
5.	COD	3.8	< 4.0	< 4.0	< 4.0	mg/l	-

Table No: 8

QUARRY – 2 DISCHARGE WATER QUALITY DATA

SI No	Parameters	Results Obtained				Unit	General Standards As per Schedule - VI of EPA, G.S.R.422(E), 1993
		Oct	Nov	Dec	Jan		
1.	Total Suspended Solids	2.5	2.5	2.8	2.9	mg/l	200
2.	pH Value	7.99	7.83	8.09	7.85	-	5.5 – 9.0
3.	Oil & Grease	< 2.0	< 2.0	< 2.0	< 2.0	mg/l	10
4.	BOD (5 days at 20°C)	01	01	01	01	mg/l	100
5.	COD	3.2	< 4.0	< 4.0	< 4.0	mg/l	-

Table No: 9

QUARRY – 3 DISCHARGE WATER QUALITY DATA

SI No	Parameters	Results Obtained				Unit	General Standards As per Schedule - VI of EPA, G.S.R.422(E), 1993
		Oct	Nov	Dec	Jan		
1.	Total Suspended Solids	2.5	< 2.5	< 2.5	2.6	mg/l	200
2.	pH Value	7.20	7.49	7.96	7.83	-	5.5 – 9.0
3.	Oil & Grease	< 2.0	< 2.0	< 2.0	< 2.0	mg/l	10
4.	BOD (5 days at 20°C)	01	01	01	01	mg/l	100
5.	COD	3.6	< 4.0	< 4.0	< 4.0	mg/l	-

Table No: 10

QUARRY – 6 DISCHARGE WATER QUALITY DATA

SI No	Parameters	Results Obtained				Unit	General Standards As per Schedule - VI of EPA, G.S.R.422(E), 1993
		Oct	Nov	Dec	Jan		
1.	Total Suspended Solids	6.6	5.2	4.9	3.6	mg/l	200
2.	pH Value	7.92	7.72	8.16	7.86	-	5.5 – 9.0
3.	Oil & Grease	< 2.0	< 2.0	< 2.0	< 2.0	mg/l	10
4.	BOD (5 days at 20°C)	01	01	01	01	mg/l	100
5.	COD	4.2	4.06	4.01	< 4.0	mg/l	-

Table No: 11

**QUARRY DISCHARGE WATER QUALITY DATA
(PIT – 1)**

SI No	Parameters	Results Obtained		Unit	General Standards As per Schedule - VI of EPA, G.S.R.422(E), 1993
		Feb	Mar		
1.	Total Suspended Solids	2.8	2.6	mg/l	200
2.	pH Value	7.97	7.73	-	5.5 – 9.0
3.	Oil & Grease	< 2.0	< 2.0	mg/l	10
4.	BOD (5 days at 20°C)	01	01	mg/l	100
5.	COD	3.2	3.2	mg/l	-

Table No: 12

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

SI No	Parameters	Results Obtained		Unit	General Standards As per Schedule - VI of EPA, G.S.R.422(E), 1993
		Feb	Mar		
1.	Total Suspended Solids	2.5	2.8	mg/l	200
2.	pH Value	7.72	7.53	-	5.5 – 9.0
3.	Oil & Grease	< 2.0	< 2.0	mg/l	10
4.	BOD (5 days at 20°C)	01	01	mg/l	100
5.	COD	3.0	3.1	mg/l	-

Table No: 13

GROUND WATER QUALITY RESULT FOR THE MONTH OF OCTOBER 2023

SI No	Parameter	Results Obtained					Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Garvana TubeWell	Kutra Tubewell	Kahtkurbaha I Tube well	Rajgangpur Tubewell	Juaramunda Tube well		
1	Turbidity	0.20	0.40	0.20	0.20	0.30	NTU	5.0
2	pH Value	6.56	7.20	7.31	6.92	6.79	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	104	240	252	612	316	mg/l	600
4	Iron (as Fe)	0.25	0.29	0.28	0.21	0.29	mg/l	0.3
5	Chlorides (as Cl)	29.56	15.77	15.77	84.75	42.38	mg/l	1000
6	Total Dissolved Solids	184	271	270	806	463	mg/l	2000
7	Electrical Conductivity	321	467	450	1429	785	µS/cm	-
8	Calcium (as Ca)	25.65	68.94	46.49	129.86	76.95	mg/l	200
9	Magnesium (as Mg)	9.72	16.52	33.05	69.98	30.13	mg/l	100
10	Copper (as Cu)	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	mg/l	1.5
11	Manganese (as Mn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	mg/l	0.3
12	Sulfate (as SO ₄)	2.90	7.42	< 0.50	95.85	68.20	mg/l	400
13	Total Nitrate (as NO ₃)	35.44	10.34	8.86	34.52	4.39	mg/l	45
14	Total Alkalinity (as CaCO ₃)	60	164	192	368	204	mg/l	600
15	Acidity	16	06	08	16	24	mg/l	-

16	Sulphide (as H ₂ S)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	13.42	3.52	4.08	29.57	25.45	mg/l	-
18	Potassium (as K)	5.87	2.77	0.94	2.14	14.35	mg/l	-
19	Fluoride (as F)	0.70	0.90	0.80	1.0	0.60	mg/l	1.5
20	Cadmium (as Cd)	ND	ND	ND	ND	ND	mg/l	0.003
21	Lead (as Pb)	ND	ND	ND	ND	ND	mg/l	0.01
22	Arsenic (as As)	ND	ND	ND	ND	ND	mg/l	0.05
23	Mercury (as Hg)	ND	ND	ND	ND	ND	mg/l	0.001
24	Selenium (as Se)	ND	ND	ND	ND	ND	mg/l	0.01
25	Nickel (as Ni)	ND	ND	ND	ND	ND	mg/l	0.02
26	Zinc (as Zn)	ND	ND	ND	ND	ND	mg/l	15.0
27	Total Chromium (as Cr)	ND	ND	ND	ND	ND	mg/l	0.05
28	Colour	< 5	< 5	< 5	< 5	< 5	Hazen	15
29	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
30	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
31	Temperature	28.9	30.2	30.2	30.2	29.1	°C	-
32	Residual Free Chlorine	0.14	0.10	0.14	0.16	0.11	mg/l	1.0 (min)
33	Total Bacterial Count	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent
34	E coli	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent

Table No: 14

GROUND WATER QUALITY RESULT FOR THE MONTH OF NOVEMBER 2023

Sl No	Parameter	Results Obtained					Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Datarampur Tubewell	Katang tube well	Dauradha Tubewell	Lanjiberna Tubewell	Garage Tubewell		
1	Turbidity	0.1	4.1	0.1	0.1	0.8	NTU	5.0
2	pH Value	6.64	7.90	6.52	7.04	6.58	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	212	88	324	292	68	mg/l	600
4	Iron (as Fe)	0.29	0.26	0.26	0.19	0.26	mg/l	0.3
5	Chlorides (as Cl)	8.86	14.78	11.83	37.44	18.72	mg/l	1000
6	Total Dissolved Solids	220	129	320	395	94	mg/l	2000
7	Electrical Conductivity	391	198.4	529	630	153.4	µS/cm	-
8	Calcium (as Ca)	59.32	22.44	67.33	84.96	22.44	mg/l	200
9	Magnesium (as Mg)	15.55	7.78	37.91	19.44	2.92	mg/l	100
10	Copper (as Cu)	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	mg/l	1.5
11	Manganese (as Mn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	mg/l	0.3
12	Sulfate (as SO ₄)	< 0.50	1.29	11.43	38.33	2.32	mg/l	400
13	Total Nitrate (as NO ₃)	6.63	5.96	5.80	18.56	< 2.20	mg/l	45
14	Total Alkalinity (as CaCO ₃)	230	92	212	180	44	mg/l	600
15	Acidity	12	14	12	24	16	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	1.37	3.24	3.12	15.13	5.65	mg/l	-
18	Potassium (as K)	1.09	0.39	1.20	6.58	0.75	mg/l	-
19	Fluoride (as F)	0.7	0.2	0.6	0.9	0.2	mg/l	1.5
20	Cadmium (as Cd)	ND	ND	ND	ND	ND	mg/l	0.003
21	Lead (as Pb)	ND	ND	ND	ND	ND	mg/l	0.01
22	Arsenic (as As)	ND	ND	ND	ND	ND	mg/l	0.05
23	Mercury (as Hg)	ND	ND	ND	ND	ND	mg/l	0.001
24	Selenium (as Se)	ND	ND	ND	ND	ND	mg/l	0.01
25	Nickel (as Ni)	ND	ND	ND	ND	ND	mg/l	0.02
26	Zinc (as Zn)	ND	ND	ND	ND	ND	mg/l	15.0
27	Total Chromium (as Cr)	ND	ND	ND	ND	ND	mg/l	0.05
28	Colour	< 5	< 5	< 5	< 5	< 5	Hazen	15
29	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
30	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
31	Temperature	27.3	27.6	27.2	27.3	27.3	°C	-
32	Residual Free Chlorine	0.19	0.09	0.18	0.20	0.10	mg/l	1.0 (min)
33	Total Bacterial Count	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent
34	E coli	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent

Table No: 15

GROUND WATER QUALITY RESULT FOR THE MONTH OF DECEMBER 2023

Sl No	Parameter	Results Obtained					Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Bihabandh Tubewell	Gyanpali Tubewell	Laxmiposh Tube well	Kesarmal Tube well	Litibeda Tubewell		
1	Turbidity	1.1	2.4	2.0	3.4	3.0	NTU	5.0
2	pH Value	7.29	6.53	6.56	7.24	6.90	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	224	44	324	288	184	mg/l	600
4	Iron (as Fe)	0.24	0.22	0.29	0.22	0.20	mg/l	0.3
5	Chlorides (as Cl)	13.99	5.99	81.97	14.99	6.99	mg/l	1000
6	Total Dissolved Solids	250	55	440	323	210	mg/l	2000
7	Electrical Conductivity	406	90.6	720	526	343	µS/cm	-
8	Calcium (as Ca)	46.49	12.83	78.55	81.76	44.89	mg/l	200
9	Magnesium (as Mg)	26.24	2.92	31.10	20.41	17.49	mg/l	100
10	Copper (as Cu)	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	mg/l	1.5
11	Manganese (as Mn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	mg/l	0.3
12	Sulfate (as SO ₄)	< 0.50	< 0.50	10.04	< 2.20	< 0.50	mg/l	400
13	Total Nitrate (as NO ₃)	22.23	< 2.20	20.42	10.07	< 2.20	mg/l	45
14	Total Alkalinity (as CaCO ₃)	140	32	216	200	124	mg/l	600
15	Acidity	06	22	36	12	14	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	12.60	3.90	10.76	15.69	8.98	mg/l	-
18	Potassium (as K)	2.14	0.60	5.06	3.81	2.22	mg/l	-
19	Fluoride (as F)	0.50	0.80	0.90	1.0	0.60	mg/l	1.5
20	Cadmium (as Cd)	ND	ND	ND	ND	ND	mg/l	0.003
21	Lead (as Pb)	ND	ND	ND	ND	ND	mg/l	0.01
22	Arsenic (as As)	ND	ND	ND	ND	ND	mg/l	0.05
23	Mercury (as Hg)	ND	ND	ND	ND	ND	mg/l	0.001
24	Selenium (as Se)	ND	ND	ND	ND	ND	mg/l	0.01
25	Nickel (as Ni)	ND	ND	ND	ND	ND	mg/l	0.02
26	Zinc (as Zn)	ND	ND	ND	ND	ND	mg/l	15.0
27	Total Chromium (as Cr)	ND	ND	ND	ND	ND	mg/l	0.05
29	Colour	< 5	< 5	< 5	< 5	< 5	Hazen	15
30	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
31	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
32	Temperature	23.2	23.3	22.9	23.1	22.9	°C	-
33	Residual Free Chlorine	0.10	0.06	0.16	0.12	0.15	mg/l	1.0 (min)
34	Total Bacterial Count	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent
35	E coli	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent

Table No: 16

GROUND WATER QUALITY RESULT FOR THE MONTH OF JANUARY 2024

Sl No	Parameter	Results Obtained					Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Katang Tubewell	Kunumuru tubewell	Gariamunda Tube well	Kesarmal Tubewell	Litibeda Tube well		
1	Turbidity	1.1	2.4	2.0	3.4	3.0	NTU	5.0
2	pH Value	7.29	6.53	6.56	7.24	6.90	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	224	44	324	288	184	mg/l	600
4	Iron (as Fe)	0.24	0.22	0.29	0.22	0.20	mg/l	0.3
5	Chlorides (as Cl)	13.99	5.99	81.97	14.99	6.99	mg/l	1000
6	Total Dissolved Solids	250	55	440	323	210	mg/l	2000
7	Electrical Conductivity	406	90.6	720	526	343	µS/cm	-
8	Calcium (as Ca)	46.49	12.83	78.55	81.76	44.89	mg/l	200
9	Magnesium (as Mg)	26.24	2.92	31.10	20.41	17.49	mg/l	100
10	Copper (as Cu)	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	mg/l	1.5
11	Manganese (as Mn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	mg/l	0.3
12	Sulfate (as SO ₄)	< 0.50	< 0.50	10.04	< 2.20	< 0.50	mg/l	400
13	Total Nitrate (as NO ₃)	22.23	< 2.20	20.42	10.07	< 2.20	mg/l	45
14	Total Alkalinity (as CaCO ₃)	140	32	216	200	124	mg/l	600

15	Acidity	06	22	36	12	14	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	12.60	3.90	10.76	15.69	8.98	mg/l	-
18	Potassium (as K)	2.14	0.60	5.06	3.81	2.22	mg/l	-
19	Fluoride (as F)	0.50	0.80	0.90	1.0	0.60	mg/l	1.5
20	Cadmium (as Cd)	ND	ND	ND	ND	ND	mg/l	0.003
21	Lead (as Pb)	ND	ND	ND	ND	ND	mg/l	0.01
22	Arsenic (as As)	ND	ND	ND	ND	ND	mg/l	0.05
23	Mercury (as Hg)	ND	ND	ND	ND	ND	mg/l	0.001
24	Selenium (as Se)	ND	ND	ND	ND	ND	mg/l	0.01
25	Nickel (as Ni)	ND	ND	ND	ND	ND	mg/l	0.02
26	Zinc (as Zn)	ND	ND	ND	ND	ND	mg/l	15.0
27	Total Chromium (as Cr)	ND	ND	ND	ND	ND	mg/l	0.05
29	Colour	< 5	< 5	< 5	< 5	< 5	Hazen	15
30	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
31	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
32	Temperature	23.2	23.3	22.9	23.1	22.9	°C	-
33	Residual Free Chlorine	0.10	0.06	0.16	0.12	0.15	mg/l	1.0 (min)
34	Total Bacterial Count	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent
35	E coli	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent

Table No: 17

GROUND WATER QUALITY RESULT FOR THE MONTH OF FEBRUARY 2024

Sl No	Parameter	Results Obtained					Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Lanjiberna Dugwell	Lanjiberna Colony Dugwell	Khatkurba hal Tubewell	Kutra Tubewell	Juaramunda Tubewell		
1	Turbidity	0.1	0.1	0.2	0.4	0.6	NTU	5.0
2	pH Value	7.74	7.01	7.36	7.12	6.72	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	329.31	321.28	248.99	257.02	369.47	mg/l	600
4	Iron (as Fe)	0.04	0.10	0.49	0.52	0.42	mg/l	0.3
5	Chlorides (as Cl)	21.99	23.99	9.99	14.99	56.98	mg/l	1000
6	Total Dissolved Solids	383	375	283	307	482	mg/l	2000
7	Electrical Conductivity	608	595	450	487	762	µS/cm	-
8	Calcium (as Ca)	51.51	51.51	61.16	72.43	98.18	mg/l	200
9	Magnesium (as Mg)	48.79	46.84	23.42	18.54	30.25	mg/l	100
10	Copper (as Cu)	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	mg/l	1.5
11	Manganese (as Mn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	mg/l	0.3
12	Sulfate (as SO ₄)	41.58	60.16	< 0.50	2.51	37.12	mg/l	400
13	Total Nitrate (as NO ₃)	5.74	6.0	8.86	9.86	4.76	mg/l	45
14	Total Alkalinity (as CaCO ₃)	224	212	220	224	256	mg/l	600
15	Acidity	10	18	10	14	20	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	16.24	11.11	4.35	4.18	16.54	mg/l	-
18	Potassium (as K)	1.18	0.55	1.85	3.72	13.24	mg/l	-
19	Fluoride (as F)	0.8	0.9	0.8	0.9	0.5	mg/l	1.5
20	Cadmium (as Cd)	ND	ND	ND	ND	ND	mg/l	0.003
21	Lead (as Pb)	ND	ND	ND	ND	ND	mg/l	0.01
22	Arsenic (as As)	ND	ND	ND	ND	ND	mg/l	0.05
23	Mercury (as Hg)	ND	ND	ND	ND	ND	mg/l	0.001
24	Selenium (as Se)	ND	ND	ND	ND	ND	mg/l	0.01
25	Nickel (as Ni)	ND	ND	ND	ND	ND	mg/l	0.02
26	Zinc (as Zn)	ND	ND	ND	ND	ND	mg/l	15.0
27	Total Chromium (as Cr)	ND	ND	ND	ND	ND	mg/l	0.05
28	Colour	< 5	< 5	< 5	< 5	< 5	Hazen	15
29	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
30	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
31	Temperature	24.7	24.8	24.4	24.5	24.2	°C	-
32	Residual Free Chlorine	0.10	0.18	0.19	0.20	0.20	mg/l	1.0 (min)
33	Total Bacterial Count	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent
34	E coli	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent

Table No: 18

GROUND WATER QUALITY RESULT FOR THE MONTH OF MARCH 2024

Sl No	Parameter	Results Obtained					Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Katang Dugwell	Dhauradha Dugwell	Kukudamu nda Tubewell	Garvana Tubewell	Rajgangpur Tibewell		
1	Turbidity	0.10	0.10	0.20	0.20	0.20	NTU	5.0
2	pH Value	7.02	6.98	6.57	7.16	6.92	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	408	408	85.68	167.28	591.76	mg/l	600
4	Iron (as Fe)	0.28	0.19	0.14	0.28	0.21	mg/l	0.3
5	Chlorides (as Cl)	75.88	31.54	9.86	9.86	79.83	mg/l	1000
6	Total Dissolved Solids	590	562	84	242	826	mg/l	2000
7	Electrical Conductivity	937	895	133.1	382	1424	µS/cm	-
8	Calcium (as Ca)	81.76	65.41	24.53	47.42	132.45	mg/l	200
9	Magnesium (as Mg)	49.57	59.49	5.94	11.89	65.44	mg/l	100
10	Copper (as Cu)	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	mg/l	1.5
11	Manganese (as Mn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	mg/l	0.3
12	Sulfate (as SO ₄)	60.75	124.61	< 0.50	7.84	97.14	mg/l	400
13	Total Nitrate (as NO ₃)	23.74	11.22	< 2.20	26.41	33.56	mg/l	45
14	Total Alkalinity (as CaCO ₃)	252	256	60	116	388	mg/l	600
15	Acidity	18	20	22	08	16	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	37.94	9.98	1.52	25.13	30.11	mg/l	-
18	Potassium (as K)	10.06	3.59	0.55	2.77	12.76	mg/l	-
19	Fluoride (as F)	0.60	0.60	< 0.05	0.70	0.90	mg/l	1.5
20	Cadmium (as Cd)	ND	ND	ND	ND	ND	mg/l	0.003
21	Lead (as Pb)	ND	ND	ND	ND	ND	mg/l	0.01
22	Arsenic (as As)	ND	ND	ND	ND	ND	mg/l	0.05
23	Mercury (as Hg)	ND	ND	ND	ND	ND	mg/l	0.001
24	Selenium (as Se)	ND	ND	ND	ND	ND	mg/l	0.01
25	Nickel (as Ni)	ND	ND	ND	ND	ND	mg/l	0.02
26	Zinc (as Zn)	ND	ND	ND	ND	ND	mg/l	15.0
27	Total Chromium (as Cr)	ND	ND	ND	ND	ND	mg/l	0.05
28	Colour	< 5	< 5	< 5	< 5	< 5	Hazen	15
29	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
30	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-	Agreeable
31	Temperature	24.7	26.2	27.6	27.4	27.1	°C	-
32	Residual Free Chlorine	0.10	0.09	0.10	0.20	0.26	mg/l	1.0 (min)
33	Total Bacterial Count	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent
34	E coli	Absent	Absent	Absent	Absent	Absent	Nos/100ml	Absent

Table No:19

DRINKING WATER QUALITY RESULT FOR THE MONTH OF OCTOBER 2023

Sl No	Parameter	Results Obtained		Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Near Crusher – 4 Drinking Water	Near Dispensary Drinking Water		
1	Turbidity	0.60	0.50	NTU	5.0
2	pH Value	8.01	8.22	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	180	188	mg/l	600
4	Iron (as Fe)	0.24	0.30	mg/l	0.3
5	Chlorides (as Cl)	8.86	9.86	mg/l	1000
6	Total Dissolved Solids	228	215	mg/l	2000
7	Electrical Conductivity	379	357	µS/cm	-
8	Calcium (as Ca)	40.08	36.87	mg/l	200
9	Magnesium (as Mg)	19.44	23.33	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)	47.37	51.65	mg/l	400

SI No	Parameter	Results Obtained		Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Near Crusher – 4 Drinking Water	Near Dispensary Drinking Water		
13	Total Nitrate (as NO ₃)	5.82	7.19	mg/l	45
14	Total Alkalinity (as CaCO ₃)	108	100	mg/l	600
15	Acidity	04	< 2.0	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	3.59	3.44	mg/l	-
18	Potassium (as K)	1.12	1.09	mg/l	-
19	Fluoride (as F)	0.80	0.90	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	30.4	30.4	°C	-
32	Residual Free Chlorine	0.10	0.09	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 NOVEMBER 2023

SI No	Parameter	Results Obtained		Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Near Operative Rest shelter Drinking Water Point	General Store Drinking Water		
1	Turbidity	0.8	0.1	NTU	5.0
2	pH Value	7.87	7.56	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	220	220	mg/l	600
4	Iron (as Fe)	0.29	0.28	mg/l	0.3
5	Chlorides (as Cl)	10.84	10.84	mg/l	1000
6	Total Dissolved Solids	246	241	mg/l	2000
7	Electrical Conductivity	414	408	µS/cm	-
8	Calcium (as Ca)	44.88	40.08	mg/l	200
9	Magnesium (as Mg)	26.24	29.16	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)	54.02	40.18	mg/l	400
13	Total Nitrate (as NO ₃)	3.98	3.19	mg/l	45
14	Total Alkalinity (as CaCO ₃)	100	112	mg/l	600
15	Acidity	04	4.0	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	3.69	3.10	mg/l	-
18	Potassium (as K)	1.07	1.57	mg/l	-
19	Fluoride (as F)	0.6	0.5	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
29	Colour	< 5	< 5	Hazen	15

30	Odour	Agreeable	Agreeable	-	Agreeable
31	Taste	Agreeable	Agreeable	-	Agreeable
32	Temperature	27.3	27.3	°C	-
33	Residual Free Chlorine	0.14	0.17	mg/l	1.0 (min)
34	Total Bacterial Count	Absent	Absent	Nos/100ml	Absent
35	E coli	Absent	Absent	Nos/100ml	Absent

Table No: 21
DRINKING WATER QUALITY RESULT FOR THE MONTH OF DECEMBER 2023

SI No	Parameter	Results Obtained		Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Near Mines Office Main Gate Drinking Water Point	Lanjiberna Colony Dinking Water		
1	Turbidity	0.40	0.10	NTU	5.0
2	pH Value	7.94	7.14	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	228	308	mg/l	600
4	Iron (as Fe)	0.26	0.09	mg/l	0.3
5	Chlorides (as Cl)	11.99	23.99	mg/l	1000
6	Total Dissolved Solids	254	350	mg/l	2000
7	Electrical Conductivity	417	577	µS/cm	-
8	Calcium (as Ca)	48.09	68.94	mg/l	200
9	Magnesium (as Mg)	26.24	33.05	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)	34.70	57.59	mg/l	400
13	Total Nitrate (as NO ₃)	3.39	6.36	mg/l	45
14	Total Alkalinity (as CaCO ₃)	132	156	mg/l	600
15	Acidity	06	18	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	8.51	10.12	mg/l	-
18	Potassium (as K)	2.52	0.61	mg/l	-
19	Fluoride (as F)	0.90	0.90	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	23.0	23.2	°C	-
32	Residual Free Chlorine	0.11	0.14	mg/l	1.0 (min)
33	Total Bacterial Count	Absent	Absent	Nos/100ml	Absent
34	E coli	Absent	Absent	Nos/100ml	Absent

Table No: 22
DRINKING WATER QUALITY RESULT FOR THE MONTH OF JANUARY 2024

SI No	Parameter	Results Obtained		Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Mines Canteen Drinking Water	Near Crusher – 2 Dinking Water Point		
1	Turbidity	0.5	0.3	NTU	5.0
2	pH Value	7.66	7.88	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	236.94	208.83	mg/l	600
4	Iron (as Fe)	0.26	0.29	mg/l	0.3

Sl No	Parameter	Results Obtained		Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Mines Canteen Drinking Water	Near Crusher – 2 Dinking Water Point		
5	Chlorides (as Cl)	11.99	9.99	mg/l	1000
6	Total Dissolved Solids	263	247	mg/l	2000
7	Electrical Conductivity	412	395	µS/cm	-
8	Calcium (as Ca)	41.85	46.68	mg/l	200
9	Magnesium (as Mg)	32.20	22.44	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)	35.96	53.82	mg/l	400
13	Total Nitrate (as NO ₃)	3.59	4.19	mg/l	45
14	Total Alkalinity (as CaCO ₃)	156	104	mg/l	600
15	Acidity	< 2.0	< 2.0	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	4.72	5.37	mg/l	-
18	Potassium (as K)	2.38	1.82	mg/l	-
19	Fluoride (as F)	0.8	0.8	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	22.3	22.3	°C	-
32	Residual Free Chlorine	0.12	0.19	mg/l	1.0 (min)
33	Total Bacterial Count	Absent	Absent	Nos/100ml	Absent
34	E coli	Absent	Absent	Nos/100ml	Absent

Table No: 23
DRINKING WATER QUALITY RESULT FOR THE MONTH OF FEBRUARY 2024

Sl No	Parameter	Results Obtained		Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Near Lanjiberna Colony Gate Drinking Water Point	HEMM Workshop Drinking Water Point		
1	Turbidity	0.30	0.60	NTU	5.0
2	pH Value	7.94	7.86	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	172	180	mg/l	600
4	Iron (as Fe)	0.26	0.29	mg/l	0.3
5	Chlorides (as Cl)	7.88	8.87	mg/l	1000
6	Total Dissolved Solids	223	222	mg/l	2000
7	Electrical Conductivity	346	361	µS/cm	-
8	Calcium (as Ca)	40.08	28.89	mg/l	200
9	Magnesium (as Mg)	17.49	1.94	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)	49.59	38.08	mg/l	400
13	Total Nitrate (as NO ₃)	2.46	3.05	mg/l	45
14	Total Alkalinity (as CaCO ₃)	100	152	mg/l	600
15	Acidity	< 2.0	< 2.0	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	6.07	8.75	mg/l	-
18	Potassium (as K)	1.27	2.76	mg/l	-
19	Fluoride (as F)	0.50	0.70	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

Sl No	Parameter	Results Obtained		Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Near Lanjiberna Colony Gate Drinking Water Point	HEMM Workshop Drinking Water Point		
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
29	Colour	< 5	< 5	Hazen	15
30	Odour	Agreeable	Agreeable	-	Agreeable
31	Taste	Agreeable	Agreeable	-	Agreeable
32	Temperature	27.9	28.0	°C	-
33	Residual Free Chlorine	0.11	0.10	mg/l	1.0 (min)
34	Total Bacterial Count	Absent	Absent	Nos/100ml	Absent
35	E coli	Absent	Absent	Nos/100ml	Absent

Table No: 24

DRINKING WATER QUALITY RESULT FOR THE MONTH OF MARCH 2024

Sl No	Parameter	Results Obtained		Unit	Permissible Limit in absence of Alternate Source as per IS 10500: 2012
		Near Mines Office Main Gate Drinking Water Point	Near Crusher – 2 Drinking Water Point		
1	Turbidity	0.30	0.30	NTU	5.0
2	pH Value	7.61	7.22	-	6.5 – 8.5
3	Total Hardness (as CaCO ₃)	232.56	204	mg/l	600
4	Iron (as Fe)	0.28	0.18	mg/l	0.3
5	Chlorides (as Cl)	14.78	12.81	mg/l	1000
6	Total Dissolved Solids	271	255	mg/l	2000
7	Electrical Conductivity	430	404	µS/cm	-
8	Calcium (as Ca)	44.15	40.88	mg/l	200
9	Magnesium (as Mg)	29.74	24.79	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)	25.29	0.18	mg/l	400
13	Total Nitrate (as NO ₃)	6.98	11.05	mg/l	45
14	Total Alkalinity (as CaCO ₃)	164	124	mg/l	600
15	Acidity	< 2.0	< 2.0	mg/l	-
16	Sulphide (as H ₂ S)	< 0.02	< 0.02	mg/l	0.05
17	Sodium (as Na)	3.12	3.25	mg/l	-
18	Potassium (as K)	2.74	2.41	mg/l	-
19	Fluoride (as F)	0.50	0.40	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
20	Odour	Agreeable	Agreeable	-	Agreeable
30	Taste	Agreeable	Agreeable	-	Agreeable
31	Temperature	26.2	26.1	°C	-
32	Residual Free Chlorine	0.19	0.22	mg/l	1.0 (min)
33	Total Bacterial Count	Absent	Absent	Nos/100ml	Absent
34	E coli	Absent	Absent	Nos/100ml	Absent

Table No: 25

25.1 EFFLUENT WATER QUALITY RESULT OF WORKSHOP INLET

SI No	Parameters	Results Obtained of Inlet						Unit
		OCT	NOV	DEC	JAN	FEB	MAR	
1	pH Value	8.08	7.03	8.24	6.89	8.01	7.52	-
2.	Total Suspended Solids	32.8	42.5	14.4	18.9	13.6	49.3	mg/l
3.	Oil & Grease	3.8	2.1	2.2	2.0	2.4	2.2	mg/l

25.2 EFFLUENT WATER QUALITY RESULT OF WORKSHOP OUTLET

SI No	Parameters	Results Obtained of Outlet						Permissible Limit as per Schedule 6 of EPA 1986, (GSR – 422E, Rule 1998)	Unit
		OCT	NOV	DEC	JAN	FEB	MAR		
1	pH Value	8.01	7.25	8.05	7.47	7.45	7.60	5.5 – 9.0	-
2.	Total Suspended Solids	< 2.5	< 2.5	6.8	7.2	6.4	< 2.5	200	mg/l
3.	Oil & Grease	2.4	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	10	mg/l

Table No: 26

SOIL QUALITY RESULT FOR THE MONTH OF OCTOBER 2023

Sl. No.	Parameter	Unit	Lanjiberna Colony	ETP Area	Crusher – 4 Area	Mine Office 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	-	Loamy	Clay Loam	Silty Clay Loam	Silty
4.	Bulk Density	gm/cm ³	1.62	1.52	1.45	1.48
5.	pH (1:2 Suspension)	-	7.86	8.04	8.14	7.41
6.	Iron	mg/kg	5.14	4.88	4.90	3.56
7.	Calcium	mg/kg	160	168	226	185
8.	Available Potassium (as K ₂ O)	Kg/ha	390.96	32.16	159.48	173.16
9.	Organic Carbon	%	1.58	1.63	< 0.5	1.01
10.	Available Nitrogen (as N)	Kg/ha	87.80	25.08	75.26	112.89
11.	Manganese	mg/kg	8.42	6.51	7.85	8.65
12.	Infiltration Rate	cm/hr	4.80	7.65	7.85	6.78
13.	Porosity	mg/m ³	0.22	0.25	0.28	0.20
14.	Moisture Content	%	20.8	22.4	21.6	20.4
16.	Chloride	mg/kg	1.46	0.95	0.88	1.28
17.	Sulphate	mg/kg	0.35	0.28	0.68	0.45

Table No: 27

SOIL QUALITY RESULT FOR THE MONTH OF NOVEMBER 2023

Sl. No.	Parameter	Unit	General Store Area	Crusher – 2 Area	Near Dispensary	Magazine Hill Top Area
1.	Colour	-	Brownish	Greyish	Greyish	Greyish
2.	Type of Soil	-	Fine Grained Soil	Fine Grained Soil	Fine Grained Soil	Fine Grained Soil
3.	Texture	-	Loamy	Clay Loam	Silty Clay Loam	Silty
4.	Bulk Density	gm/cm ³	1.4	1.3	1.3	1.20

Sl. No.	Parameter	Unit	General Store Area	Crusher – 2 Area	Near Dispensary	Magazine Hill Top Area
5.	pH (1:2 Suspension)	-	7.93	7.82	7.95	7.46
6.	Iron	mg/kg	5.31	4.18	4.25	5.88
7.	Calcium	mg/kg	156	179	218	186
8.	Available Potassium (as K ₂ O)	Kg/ha	275.28	260.04	198.6	141.72
9.	Organic Carbon	%	1.20	1.17	0.88	0.69
10.	Available Nitrogen (as N)	Kg/ha	100.35	100.35	125.44	100.35
11.	Manganese	mg/kg	9.22	10.81	9.43	10.14
12.	Infiltration Rate	cm/hr	3.42	5.62	6.15	5.84
13.	Porosity	mg/m ³	0.2210	0.1947	0.2415	0.1992
14.	Moisture Content	%	21.43	21.61	22.30	20.45
16.	Chloride	mg/kg	0.10	0.29	0.21	0.15
17.	Sulphate	mg/kg	0.31	0.39	0.54	0.77

Table No: 28

SOIL QUALITY RESULT FOR THE MONTH OF DECEMBER 2023

Sl. No.	Parameter	Unit	General Store Area	Crusher – 2 Area	Near Dispensary	Magazine Hill Top Area
1.	Colour	-	Brownish	Greyish	Greyish	Greyish
2.	Type of Soil	-	Fine Grained Soil	Fine Grained Soil	Fine Grained Soil	Fine Grained Soil
3.	Texture	-	Loamy	Clay Loam	Silty Clay Loam	Silty
4.	Bulk Density	gm/cm ³	1.6	1.6	1.3	1.20
5.	pH (1:2 Suspension)	-	7.23	7.97	8.02	8.14
6.	Iron	mg/kg	5.27	4.21	4.18	3.88
7.	Calcium	mg/kg	165	173	210	194
8.	Available Potassium (as K ₂ O)	Kg/ha	122.04	96.72	224.64	193.32
9.	Organic Carbon	%	0.53	1.13	0.69	< 0.50
10.	Available Nitrogen (as N)	Kg/ha	50.176	125.44	75.26	62.72
11.	Manganese	mg/kg	10.22	8.81	9.43	10.04
12.	Infiltration Rate	cm/hr	3.42	5.62	6.15	5.84
13.	Porosity	mg/m ³	0.1994	0.1898	0.2215	0.2505
14.	Moisture Content	%	20.34	21.16	22.78	20.54
16.	Chloride	mg/kg	0.10	0.29	0.21	0.15
17.	Sulphate	mg/kg	0.48	0.32	0.58	0.74

Table No: 29

SOIL QUALITY RESULT FOR THE MONTH OF JANUARY 2024

Sl. No.	Parameter	Unit	ETP Area	Lanjiberna Colony	Crusher – 4 Area	Village Dhauradha
1.	Colour	-	Greyish	Brownish	Brownish	Brownish
2.	Type of Soil	-	Fine Grained Soil	Fine Grained Soil	Fine Grained Soil	Fine Grained Soil
3.	Texture	-	Loamy	Clay Loam	Silty Clay Loam	Silty
4.	Bulk Density	gm/cm ³	1.53	1.40	1.47	1.38
5.	pH (1:2 Suspension)	-	8.04	8.25	8.13	8.35
6.	Iron	mg/kg	5.27	4.21	4.18	3.88
7.	Calcium	mg/kg	165	173	210	194
8.	Available Potassium (as K ₂ O)	Kg/ha	315	238.04	52.44	345.44
9.	Organic Carbon	%	< 0.5	1.07	1.47	0.84
10.	Available Nitrogen (as N)	Kg/ha	50.17	188.16	238.33	37.63

Sl. No.	Parameter	Unit	ETP Area	Lanjiberna Colony	Crusher – 4 Area	Village Dhouradha
11.	Manganese	mg/kg	10.22	8.81	9.43	10.04
12.	Infiltration Rate	cm/hr	5.21	6.72	7.23	6.48
13.	Porosity	mg/m ³	0.24	0.19	0.24	0.19
14.	Moisture Content	%	28.34	29.16	25.78	27.45
16.	Chloride	mg/kg	1.10	0.87	0.76	1.15
17.	Sulphate	mg/kg	0.22	0.17	0.54	0.44

Table No: 30

SOIL QUALITY RESULT FOR THE MONTH OF FEBRUARY 2024

Sl. No.	Parameter	Unit	Magazine Hill Top	Village Katang	Mine Office Area	HEMM Work Shop
1.	Colour	-	Brownish	Greyish	Greyish	Greyish
2.	Type of Soil	-	Fine Grained Soil	Fine Grained Soil	Fine Grained Soil	Fine Grained Soil
3.	Texture	-	Silty	Loamy	Clay Loam	Silty Clay Loam
4.	Bulk Density	gm/cm ³	1.78	1.63	1.72	1.55
5.	pH (1:2 Suspension)	-	7.40	7.40	7.56	7.90
6.	Iron	mg/kg	4.56	5.31	5.76	4.97
7.	Calcium	mg/kg	167	152	174	184
8.	Available Potassium (as K ₂ O)	Kg/ha	159.48	300.72	173.16	258.48
9.	Organic Carbon	%	0.88	1.65	1.20	1.23
10.	Available Nitrogen (as N)	Kg/ha	125.44	163.07	100.35	188.16
11.	Manganese	mg/kg	8.65	8.42	6.51	7.85
12.	Infiltration Rate	cm/hr	6.78	4.80	7.65	7.85
13.	Porosity	mg/m ³	0.2543	0.2042	0.27	0.1984
14.	Moisture Content	%	20.5	22.8	25.4	21.6
16.	Chloride	mg/kg	1.19	1.28	1.95	1.88
17.	Sulphate	mg/kg	0.57	0.46	0.37	0.78

Table No: 31

SOIL QUALITY RESULT FOR THE MONTH OF MARCH 2024

Sl. No.	Parameter	Unit	Magazine Hill Top	Village Katang	Mine Office Area	HEMM Work Shop
1.	Colour	-	Brownish	Greyish	Greyish	Brownish
2.	Type of Soil	-	Fine Grained Soil	Fine Grained Soil	Fine Grained Soil	Fine Grained Soil
3.	Texture	-	Silty	Loamy	Clay Loam	Silty Clay Loam
4.	Bulk Density	gm/cm ³	1.8	1.9	2.0	2.1
5.	pH (1:2 Suspension)	-	7.52	7.86	7.89	8.10
6.	Iron	mg/kg	5.17	5.84	7.05	7.21
7.	Calcium	mg/kg	184	188	208	169
8.	Available Potassium (as K ₂ O)	Kg/ha	332.88	311.04	277.44	149.52
9.	Organic Carbon	%	1.11	1.17	0.59	0.31
10.	Available Nitrogen (as N)	Kg/ha	112.9	125.44	137.98	50.176
11.	Manganese	mg/kg	0.71	0.41	0.93	1.4
12.	Infiltration Rate	cm/hr	10.58	9.54	9.54	11.23
13.	Porosity	mg/m ³	4.62	5.58	5.34	7.62
14.	Moisture Content	%	0.2125	0.2321	0.2458	0.2876
16.	Chloride	mg/kg	18.34	18.88	16.43	15.73
17.	Sulphate	mg/kg	0.09	0.10	0.14	0.27

Table No: 32

NOISE LEVEL MONITORING DATA
From 01.10.2023 to 31.03.2024

Month	Location	L _{eq} dB(A) Day Time	L _{eq} dB(A) Night Time
Oct	Mines View Point	58.6	57.1
	Crusher Plant – 2	59.4	57.6
	Mine Colony Area	50.3	48.7
	Mines Office Area	59.2	61.2
	Magazine Hill Top Area	48.8	56.4
Nov	Mines View Point	57.7	54.7
	Crusher Plant – 2	60.2	58.1
	Mine Colony Area	46.9	44.0
	Mines Office Area	49.5	45.9
	Magazine Hill Top Area	36.7	35.1
Dec	Mines View Point	57.6	52.6
	Crusher Plant – 2	59.7	56.6
	Mine Colony Area	50.5	43.5
	Mines Office Area	48.1	39.8
	Magazine Hill Top Area	35.8	32.4
Jan	Mines View Point	59.0	55.2
	Crusher Plant – 4	58.7	61.6
	Mine Colony Area	46.7	42.7
	Mines Office Area	55.0	41.5
	Magazine Hill Top Area	35.0	33.0
Feb	Mines View Point	55.3	53.1
	Crusher Plant – 2	62.6	66.6
	Mine Colony Area	57.4	54.6
	Mines Office Area	52.0	54.2
	Magazine Hill Top Area	41.9	36.3
Mar	Mines View Point	57.5	53.0
	Crusher Plant – 4	66.2	68.9
	Mine Colony Area	55.9	51.9
	Mines Office Area	54.4	57.4
	Magazine Hill Top Area	39.5	35.4