Gmail Satya Brata Sahoo <satyasahoo@starcement.co.in>

Submission of Six-Monthly Compliance Report of Conditions of Environmental Clearance for mining lease area of 42.051 Ha by Star Cement Meghalaya Limited at Vill- Brishyrnot, Dist.- East Jaintia Hills, Meghalaya-793210.

1 message

Satya Brata Sahoo <satyasahoo@starcement.co.in> Fri, Nov 28, 2025 at 11:27 PM
To: moefro.shillong@gov.in
Cc: megspcb <megspcb@rediffmail.com>, zoshillong.cpcb@nic.in, "Plant Head, Lokesh Bahety" <lokeshbahety@starcement.co.in>, Devender Kumar Bansal <dbansal@starcement.co.in>, Rajendra Kumar Joshi <rajendrajoshi@starcement.co.in>, Dv Ramanayya <dvramanayya@starcement.co.in>, Raghuvansh Kumar <raghuvanshkumar@starcement.co.in>, "Star, Mines, Hijam Rakesh Rakesh Singh" <hijamsingh@starcement.co.in>, Patel Suraj Singh <patelsingh@starcement.co.in>, Esh Lab <ehslab_lums@starcement.co.in>, Esh Mis <ehslums@starcement.co.in>, Satya Brata Sahoo <satyasahoo@starcement.co.in>, Shailendra Kumar <shailendrakumar@starcement.co.in>

Reference: MoEF&CC, New Delhi Environment Clearance F. No J-11015/17/2019-IA.II(M), Dated: 08.06.2021

Dear Sir,
This is in reference to the above cited subject, we are submitting the **Six-Monthly Compliance Report of Conditions of Environmental Clearance for the period of 1st April 2025 to 30th September 2025.**

Project: Star Cement Meghalaya Limited
(Brishyrnot Limestone Deposit-I with Limestone capacity of 2.507 MTPA and Shale production capacity of 0.217 MTPA in the MLA 42.51 Ha)

We trust you find the compliance in order and assure you to comply with all your directions as always. Kindly acknowledge the receipt of the same for our record.

Thanks & Regards

Satya Brata Sahoo
9615448660
Environment Department
Star Cement Limited
Lumshnong, Meghalaya.

SCML 42.051 Ha Mines-6 Monthly EC Compliance report (Apr-Sept 25) & Annexures.pdf
8845K

STAR CEMENT MEGHALAYA LIMITED

CIN : U63090ML2005PLC008011

Corporate Office : Century House, P-15/1, Taratala Road, 2nd Floor, Kolkata - 700088 e-mail: kolkata@starcement.co.in

No: SCML/EHS/LUMS/2025-26/67 **Dated: 28/11/2025**

To,
The Deputy Director General of Forests (C),
Ministry of Environment Forest & Climate Change,
Integrated Regional Office, Law-U-Sib,
Lumbatngen, Shillong, Meghalaya-793021.
Email: moefro.shillong@gov.in

Subject: Submission of Six-Monthly Compliance Report of Conditions of Environmental Clearance for mining lease area of 42.051 Ha by Star Cement Meghalaya Limited at Vill- Brishyrnot, Dist.- East Jaintia Hills, Meghalaya-793210.

Reference: MoEF&CC, New Delhi Environment Clearance F. No J-11015/17/2019-IA.II(M), Dated: 08.06.2021

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Project: Star Cement Meghalaya Limited
Brishyrnot Limestone Deposit-I with Limestone capacity of 2.507 MTPA and Shale production capacity of 0.217 MTPA in the MLA 42.51 Ha

The compliance report will be uploaded in our company website **www.starcement.co.in** within 15 days.

We trust you find the compliance in order and assure you to comply with all your direction as always. Kindly acknowledge the receipt of the same for our record.

Thanking You,

Yours truly,
For **STAR CEMENT MEGHALAYA LIMITED**

Lokesh Kumar Bahety
Unit Head

STAR CEMENT MEGHALAYA LIMITED

Enclose: a/a

Copy to:

1. The Chairman, Meghalaya State Pollution Control Board, 'ARDEN' Lumpyngngad, Shillong-793014. Email: megspcb@rediffmail.com
2. The Regional Director Central Pollution Control Board (CPCB), Opp. Government Press, Ground Floor, CTO Building, BSNL Shillong- 793001. Email: zoshillong.cpcb@nic.in

STAR CEMENT MEGHALAYA LIMITED

Brishyrnot Limestone Deposit-I (42.051 Ha.)

Production capacity Limestone:2.507 MTPA & Shale:0.217 MTPA

Village - Lumshnong, Tehsil Khliehriat

District - East Jaintia Hills, Meghalaya-793210

Compliance Period

1st April 2025 to 30th September 2025

SIX MONTHLY ENVIRONMENTAL COMPLIANCE STATUS REPORT

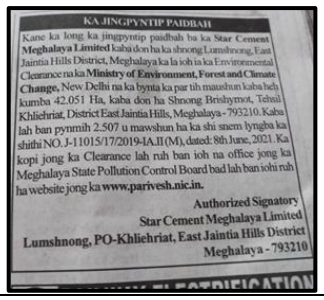
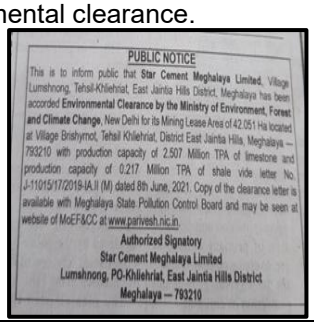
Environmental Clearance No.: F. No. J-11015/17/2019-IA.II(M) Date: 8th June, 2021

Sl. No.	Condition	Compliance Status
A.	**SPECIFIC CONDITIONS**	
a)	Since the project is in close vicinity of eco-sensitive area, mining should be carried out strictly as per the approved mining plan with all safety measures in place particularly during blasting to avoid impacts due to noise and vibration, impacts on movement on the road as well as on natural disturbance to the hilly area. Noise and vibration will be monitored at the lease boundary every time during blasting and the record will be kept. It should never exceed the noise limits set for the wildlife as well as vibration should be brought to zero at the mine lease boundary.	**Complied** Mining is being carried out as per the approved mining plan by Indian Bureau of Mines vide Letter No. MCDR-MPCP0CaFl/4/2023-GUH-IBM_RO_GUH, Dated :09.06.2023. Noise monitoring and vibration monitoring are carried out and under the prescribed limit. Noise monitoring report is enclosed as **Annexure-I** and the vibration monitoring report is enclosed as **Annexure-II**.
b)	Conservation plan must include a study by a Government recognized agency to study the impact of mining on the Schedule-1 species and arboreal species as well. Collect the data on number of animals and the species diversity. The conservation plan must include the propagation of specie's number in the Narpuh Wildlife Sanctuary as global conservation is highly significant in India.	**Complied and agreed to comply as stipulated.** The company has got approval of conservation plan of Rs.107.80 Lakh & supplementary plan of Rs. 15 Lakh from Government of Meghalaya totaling to Rs. 122.80 Lakh. Out of this 122.80 lakh, Rs. 110.95 lakh has already been spent by the company. Implementation report is enclosed as **Annexure III**. Further during the meeting held on 09.08.21 by the Chief Wildlife warden with Industries and Government departments, it was decided that a Regional Conservation plan for the East Jaintia Hills district would be prepared under the supervision and guidance of CWLW, Meghalaya and the cost for preparation and implementation of the Regional Conservation Plan may be shared by various project proponents on a proportionate basis keeping in view the likely impacts of each project on the wild life and their habitat. SCML has confirmed to be part of the conservation plan and will contribute the fee as determined for our project/ mining lease.
c)	The protection of slopes by advanced technologies to ensure that mine operation does not cause any landslide in future.	**Complied** Adopted the state-of-the-art technologies in mining operation and slopes are being maintained as per approved mining plan.
d)	The budget for addressing public concerns i.e. 32 Lakhs will be spent on capital items as mentioned during the presentation.	**Complied** The budgeted amount Rs. 32 Lakhs for addressing public concerns has been expended. Details of the amount spent is given below; **Education – 5 Lacs** **Health – 6 Lacs** Transport support to serious patient – 5 Lac Assistance in providing lifesaving drugs - 1 Lac **Water Sanitation**

Sl. No.	Condition	Compliance Status
		Drinking water supply to nearby villages – **5 Lacs** **Environment – 8 Lac** Plantation community areas – 2 Lac Avenue Plantation – 1 Lac Waste disposal management – 5 Lac **Community Development – 8 Lac** Assistance in community for use of solar power - 2 L Women empowerment & skill development – 2 L Drip irrigation to increase yield & quality of crop beside saving precious water – 4 L
(e)	Peripheral plantation must be completed in 3 years using the capital budget indicated in the EIA report.	**Being Complied** Star Cement is an environment conscious organization and committed to comply with all rules and regulations. Plantation is a continuous ongoing process. Total area of the periphery, considering 7.5 mtrs width, is 1.703 ha, out of which 1.04 ha is periphery is covered under plantation. with approx. 5100 plant saplings. Plantation in balance area of 0.663 ha will be completed by next monsoon. Though EC Condition No. 8(i) states to complete the greenbelt in 5 years. Plantation photographs are given below for your reference please.
	   	
(f)	The mining operation will start from western side of the mine as it is close to the plant and progressive mining and back filling should be adopted.	**Complied** Mining operation started from the Western side of the mine.

Sl. No.	Condition	Compliance Status
(g)	Since the stream is passing adjacent to the eastern boundary, protective measures should be in place before mining operation to protect the water body. Monitoring should be carried out for water quality in the stream whenever it is flowing and in the river at the confluence point to assess impact of mining on the water quality.	**Complied** Surface Water quality monitoring is conducted once in three months. All test results are found within the prescribed limits. Surface water monitoring report is enclosed as **Annexure – IV**.
(h)	Monitoring station should be located near the mine dump so that any impact due to mining on the environmental and ecologically sensitive locations such as forest; school etc. can be assessed regularly. Intermittently, air quality should also be monitored near the school.	**Complied** AAQ Monitoring stations have been provided and report is enclosed as **Annexure – V**. All test results are found within the prescribed limits.
B.	**Standard Conditions**	
I.	**Statutory Compliance**	
1	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.	**Noted & complied**
2	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.	**Complied.**
3	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.	**Noted & complied**
4	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.	**Not Applicable** MoEF&CC have notified the Narpuh Wildlife Sanctury vide their notification No. S.O. 2942 (E), dated 06.09.2017 wherein, the boundary of Narpuh Wildlife Sanctury and Eco-sensitive zone of the same have been earmarked and defined. It is clearly mentioned in the Para 2 (Page No. 1) of EC of above mentioned mine (Ref:1) that Mine lease area is

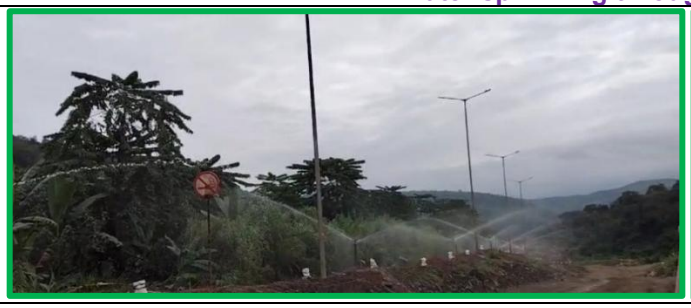
Sl. No.	Condition	Compliance Status
		situated at a distance of 1.46 KM from Narpuh Wildlife Sanctury and at a distance of 0.25 KM from the Eco-sensitive Zone of Narpuh Wildlife Sanctury. It is already clarified in para 4 (ii) of OM No. F. No. 22-43 /2018-IA.III dated 08.08.2019 issued by MoEF&CC regarding consideration of development projects within 10 KM of National Park, Wildlife Sanctury seeking EC under provision of EIA Notification that "**Proposals involving developmental activity/project located outside the stipulated boundary limit of notified ESZ and located within 10 km of National Park/Wildlife Sanctuary, prior clearance from Standing Committee of the National Board for Wildlife (SCNBWL) may not be applicable.** However, such proposals from environmental angle including impact of developmental activity/project on the wildlife habitat, if any, would be examined by the sector specific Expert Appraisal Committee and appropriate conservation measures in the form of recommendations shall be made". Copy of the OM dated 08.08.2019 is attached herewith as **Annexure-VI** for your reference. Hence, NBWL clearance is not applicable to us.
5	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.	**Not Applicable** It is non-forest land. Non-Forest Certificate has been received on 29/08/2018, vide letter memo no. MFG.16/50/CMCL/Vol-III/7849-855. A copy of non-forest certificate has been submitted to Regional Office MoEF&CC, Shillong.
6	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.	**Being Complied** The Consent to Operate (CTO) has been obtained from Meghalaya Pollution Control Board vide no. MPCB/ONLINE/RCTO(R-I)/EJHD/2021/2023-2024/30, dated Shillong, the 27th September, 2023 and valid up to 31st July, 2026. The conditions stipulated in CTO are being implemented effectively. CTO copy is enclosed as **Annexure – VII**.
7	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.	**Complied**
8	The Project Proponent shall obtain consents from all the concerned land owners, before start of	**Not applicable**, as the land is owned by the company

Sl. No.	Condition	Compliance Status
	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.	
9	The Project Proponent shall follow the mitigation measures provided in MoEFCC'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".	**Not Applicable** Habitations and villages are not part of the mining lease area nor surrounding the mining lease area.
10	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.	**Complied** A Detailed Comprehensive Hydrological and Hydro-geological study of Core and Buffer Zones has already been carried out by NABET accredited consultant i.e. Hydro-Geosurvey Consultants Pvt. Ltd. It is clearly mentioned in Table- 6 (Page No. 12) that no ground water intersection is envisaged. Further, Para No. 9.1 (Page No. 40) also states that As the mining is not going to intersect ground water table, no impact on ground water is expected. Copy of the report is enclosed as **Annexure-VIII.**
11	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.	**Complied**
12	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.	**Complied**
13	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 MoEFCC Regional Office for compliance and record.	**Complied** Advertisement was published in two local newspapers widely circulated, one of which was in the vernacular language and other in English informing that the project has been accorded environmental clearance.  KA JINGPYNTIP PAIDBAH Kane ka long ka jingpyntip paidbah ba ka Star Cement Meghalaya Limited kaba don ha ka shnong Lumshnong, East Jaintia Hills District, Meghalaya ka la ioh ia ka Environmental Clearance na ka Ministry of Environment, Forest and Climate Change, New Delhi na ka bynta ka par tih mausdun kaba bah kumba 42.051 Ha, kaba don ha Shnong Brishymot, Tehsil Khliehriat, District East Jaintia Hills, Meghalaya - 793210. Kaba lah ban pynmih 2.507 u mawshun ha ka shi snem lyngba ka shithi NO. J-11015/17/2019-IA.II (M), dated: 8th June, 2021. Ka kopi jong ka Clearance lah ruh ban ioh na office jong ka Meghalaya State Pollution Control Board bad lah ban ioh ruh ha website jong ka www.parivesh.nic.in. Authorized Signatory Star Cement Meghalaya Limited Lumshnong, PO-Khliehriat, East Jaintia Hills District Meghalaya - 793210  PUBLIC NOTICE This is to inform public that Star Cement Meghalaya Limited, Village Lumshnong, Tehsil-Khliehriat, East Jaintia Hills District, Meghalaya has been accorded Environmental Clearance by the Ministry of Environment, Forest and Climate Change, New Delhi for its Mining Lease Area of 42.051 Ha located at Village Brishymot, Tehsil Khliehriat, District East Jaintia Hills, Meghalaya – 793210 with production capacity of 2.507 Million TPA of limestone and production capacity of 0.217 Million TPA of shale vide letter No. J-11015/17/2019-IA.II (M) dated 8th June, 2021. Copy of the clearance letter is available with Meghalaya State Pollution Control Board and may be seen at website of MoEF&CC at www.parivesh.nic.in. Authorized Signatory Star Cement Meghalaya Limited Lumshnong, PO-Khliehriat, East Jaintia Hills District Meghalaya – 793210
14	The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In	**Noted & complied**

Sl. No.	Condition	Compliance Status
	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 para 11 of EIA Notification, 2006 as amended from time to time.	
II.	**Air quality monitoring and preservation**	
1	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.	**Noted and agreed to comply** The installation of all three online Ambient Air Quality Monitoring Stations is not viable/feasible at this moment as the area is fully undulated and yet to reach the stable ground. The company has submitted a letter to the Deputy Director General MoEFCC vide letter No. SCML/MLA/EHS/LUM/2024-25/14 dated August 01, 2024 regarding installation of one station immediately until a stable area achieved. One online Ambient Air Quality Monitoring Station is under installation. However, the parameters PM10, PM2.5, NO2, SO2 & CO are being monitored on periodical basis. Ambient Air Quality Monitoring report is enclosed as **Annexure – IX.**

Sl. No.	Condition	Compliance Status
2	Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled 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 equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.	**Complied** Effective safeguard measures to control dust and PM10, PM2.5 generation include the following: • Ensuring blasting is done only in the daytime when no strong winds are blowing or there is no overcast or lightening event. • Loading /unloading of limestone from an optimum height and use of sharp teeth for shovel to reduce dust blow. • Avoid overloading haul trucks to eliminate spillage during transit on haul road. • Water sprinkling on haul road, loading, unloading and transfer points through fixed sprinklers supplemented with water tankers in active mine pit area. • Preventive maintenance of mine machinery and regular fine-tuning of engines of HEMMs in use to ensure that the emission levels remain within the stipulated norms and maintain Pollution Under Control (PUC) Certificates for HEMMs. • Personnel working in dusty areas are provided with protective gears such as dust masks.

Water sprinkling through auto sprinklers



Sl. No.	Condition	Compliance Status
III.	**Water quality monitoring and preservation**	
1	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 MoEFCC 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.	**Noted & complied** As per Mining plan and **Hydrogeological study report**, minging operation will not intersect the ground water table. Report is enclosed as **Annexure-VIII.**
2	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.	**Complied** Natural water springs and perennial nallahs are not flowing within the mine area. No natural water bodies and streams are being disturbed due to mining operations. Mining operation will not intersect the ground water table. Open dug well is not available in village to monitor the ground water table & quality of ground water. However, Star Cement is regularly monitoring the seasonal nallahs around the mines area which are flowing during rainy season (May to September) and record for the same is maintained and submitted to SPCB monthly. Surface water flow rate and quality monitoring report is enclosed as **Annexure – IV.** Company is providing water facility to the villagers for their use through CSR.
3	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	**Complied** As per Mining plan and Hydrogeological study report, Mining operation will not intersect the ground water table and ground water is not used for mining operation. Hydrogeological study report is enclosed as **Annexure-VIII.** There is no well in and around the mine lease. However, Piezometers have been installed in and around the mine lease area. The report of ground water levels is enclosed as **Annexure-X** and the ground water quality report is enclosed as **Annexure-XI**.

Sl. No.	Condition	Compliance Status
	Control Board.	
4	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 shaft 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-à-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 Around Water Board, State Pollution Control Board and Central Pollution Control board. Clearly showing the trend analysis on six-monthly basis.	**Complied** No natural water springs and perennial nallahs flows within the mine area. However, regular monitoring of seasonal nallahs around the mines area flowing during rainy season (May to September) conducted and record for the same being maintained and submitted to SPCB on monthly basis. Surface water quality monitoring report is enclosed as **Annexure – IV**. Water quality analysis conducted on the upstream & downstream of water bodies passing nearby to the mine lease carried out on quarterly basis and records maintained. The mining operations provided with Silt traps/siltation ponds to arrest the silt before water releases. Regular cleaning of silt traps and check dams are in place. Monitoring of pH of the water discharging from the siltation ponds during monsoon season being conducted regularly.
5	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.	**Not Applicable** No polluted water is generated from mining operations. All protective measures are adopted. Water quality is monitored on regular basis as stipulated.

Sl. No.	Condition	Compliance Status
6	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.	**Complied** Mining operation will not intersect the ground water table and ground water is not used for mining operation. Water is being sourced from cement plant through tankers. Source of water for cement plant is surface water. Rain water harvesting structure has been made and photograph is given below.
		 
7	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.	**Being Complied** There is no industrial waste water generation from the mining operation. Company has provided a common workshop for vehicle maintenance at cement plant. ETP is operational at Automobile workshop at Cement plant area with oil and grease trap. All the test results are under the prescribed limits. Test results are enclosed as **Annexure-XII**. 
8	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.	**Complied** The total water required for the mine is 40 KLD, and the water is sourced from the clinker plant. Further, it is also state in Para 8 of the said EC that total water requirement for mining operation is 40 KLD (25 KLD for dust suppression, 10 KLD for drinking and 5 KLD for greenbelt development). Out of 40 KL, 30 KLD (25 KLD for dust suppression and 5 KLD for greenbelt development) water requirement will be fulfilled from STP Treated water of SCML and rest 10 KLD (for drinking purpose) will be met from SCML plant through

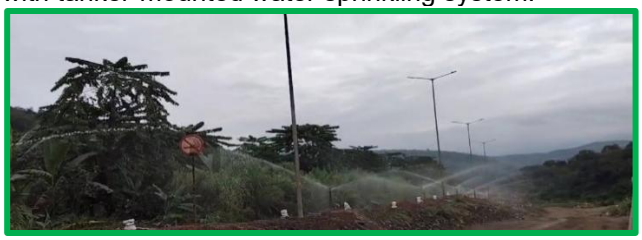
Sl. No.	Condition	Compliance Status
		water tankers. As per the Gazette of India, vide No. S.O. 3289(E), dated 4.09.2020 issued by the Ministry of Jal Shakti Department Of Water Resources, River Development And Ganga Rejuvenation) (Central Ground Water Authority), all industries abstracting less than 100m3/d is not required for Water Audit. Copy of Gazette is enclosed as **Annexure-XIII.** Considering, very small quantity of water requirement, we have prepared water balance. Copy of the same is attached herewith as **Annexure-XIV** for your kind consideration.
IV.	**Noise and vibration monitoring and prevention**	
1	The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.	**Complied** Peak particle velocity (i.e. ground vibrations) is being measured with every blast. All the measured values remained less than 5 mm/sec at the distance of 200 m to 300 m, which is well within the standard of 10 mm/sec (for dominant frequency range of 8 to 25 Hz) as prescribed by Directorate General of Mines Safety – DGMS (Tech.) Circular No.7 dated 29 September 1997). Report is enclosed as **Annexure – II.**
2	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 floodlight's/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.	**Complied** Measures have been adopted to minimize disturbance to human settlements due to illumination and noise levels. The mine operates for two shifts i.e. 06:00 AM to 02:00 PM and 02:00 PM to 10:00 PM. The day and nighttime noise level is within the prescribed limit and monitored and reported to MSPCB & MoEF&CC regularly. Ambient Noise monitoring report is enclosed as **Annexure-I.**
3	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 provided 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.	**Complied** Mitigations measures are in place to minimize noise levels. All working areas is being maintained within 85 dB(A) of noise levels in the work environment area. BS6 high efficiency and less noise generation vehicles in Mining area. All the HEMM provided with acoustic cabins. Workers engaged in operations of HEMM have been provided with ear plugs/ muffs and adequate training & awareness.

Sl. No.	Condition	Compliance Status
V. Mining Plan		
1	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.	**Complied** Mine is being worked as per approved mining plan by Indian Bureau of Mines vide letter no. MCDR-MPCP0CaFl/4/2023-GUH-IBM_RO_GUH Dated: 09.06.2023 The mining plan submitted at the time of Environmental Clearance appraisal was based on LOI order No. MG.63/2012/128, dated 4th May, 2018 granted under Section 10A(2)(b) of MMDR Amendment Act, 2015. In view of Supreme Court Judgment dated 03.07.2019, Star Cement Meghalaya Limited applied for grant of authorization to grant Mining Lease (ML) on dated 30.06.2022 over that particular area of 42.051 Ha under rule 27(1) to State Government under Chapter-IX (Procedure for obtaining a Prospecting License or Mining Lease in respect of Land in which the Minerals Vest in a Person other than the Government) of the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016. State Government vide order No. MG.54/2022/104, dated 01.07.2022 issued by the Mining & Geology Department, Government of Meghalaya, granted the authorization for grant of Mining Lease to Star Cement Meghalaya Limited., East Jaintia Hills district being the land owner (as Grantor) to grant Mining Lease in favour of Star Cement Meghalaya Limited (as Lessee) under rule 27(3) of the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 for Limestone and Shale over an area of 42.051 ha of land at Brishyrnot Village, East Jaintia Hills District. Hence, Mining Plan with no change in any area & other working parameters/technical details in line with earlier approved Mining Plan was prepared & submitted to the Indian Bureau of Mines, Guwahati Region on 04.07.2022 & got approval of the same over an area of 42.051 hectares, vide letter No. IBM/GHY/MEG/EJH/LST/MP-88 on 14.09.2022. Mining plan was subsequently modified on dated: 09.06.2023.
2	The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance	**Noted and agreed to company as stipulated.**

Sl. No.	Condition	Compliance Status
	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.	It is a running mine, so final mine closure plan is not applicable at this stage. However, copy of approved Mining plan along with Progressive mine closure plan dated 09/06/2023 duly approved by Indian Bureau of Mines Office of The Regional Controller of Mines, Guwahati is enclosed as **Annexure-XV**. (Page No 68 to be referred).
3	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.	**Noted and agreed to comply as stipulated** After end of the mining, all the measures will be taken as per approved Final Mine Closure Plan and the compliance report will be submitted accordingly.
VI. Land reclamation		
1	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.	**Not applicable** There is no overburden generation in the mining lease area. Top soil generated is being used for greenbelt development purpose.
2	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.	**Not applicable** There is no reject/waste generation from this mine.

Sl. No.	Condition	Compliance Status
3	The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.	**Not Applicable** There will be no waste dump in the area due to non-availability of waste.
4	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.	**Not applicable** There is no overburden generation in the mining lease area.
5	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.	**Not Applicable**
6	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.	**Complied** We have already constructed garland drain, retaining wall.
	 	

Sl. No.	Condition	Compliance Status
7	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.	**Complied** Check dams have been constructed, garland drain and the retaining wall will be further improved as the mine progresses.  **Check Dam**
	 **Retaining wall**	
8	The top soil, if any, shall temporarily be stored at earmarked site(s) within 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.	**Complied** Topsoil generated is being used for greenbelt development purpose.

Sl. No.	Condition	Compliance Status
VII. Transportation		
1	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 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.	**Complied** Transportation of mineral is not passing through any village road, dedicated haul road has been provided. Water sprinkling is carried out regularly on haul roads and other working areas for dust suppression. Vehicular emissions are being checked & monitored regularly. PUC certificates are enclosed as **Annexure-XVI.**
2	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 equipments 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.	**Being complied & agreed to comply as stipulated** Installation of permanent water sprinkler system have been done. However, water sprinkling on haul road and other roads within the mine lease are wetted regularly with tanker-mounted water sprinkling system.  

Sl. No.	Condition	Compliance Status
	 Water sprinkling through auto sprinklers	
VIII. Greenbelt		
1	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.	**Being Complied** We have started plantation in 7.5 mtr safety zone for greenbelt by using "**Akira Miyawaki Method"** under CPCB guidance. Total greenbelt area in safety zone is 1.703 Ha and we have covered 1.04 Ha till March, 2025. As plantation is a continuous process the remaining area will be completed as stipulated.
	   	

Sl. No.	Condition	Compliance Status
2	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.	**Noted and being complied.**
3	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.	**Not applicable.** There is no grazing land within the mining lease area.
4	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.	**Being Complied** The company has got approval of conservation plan of Rs.107.80 Lakh & supplementary plan of Rs. 15 Lakh from Government of Meghalaya totaling to Rs. 122.80 Lakh. Out of this 122.80 lakh, Rs. 110.95 lakh has already been spent by the company. Implementation report is enclosed as **Annexure III**. Further during the meeting held on 09.08.21 by the Chief Wildlife warden with Industries and Government departments, it was decided that a Regional Conservation plan for the East Jaintia Hills district would be prepared under the supervision and guidance of CWLW, Meghalaya and the cost for preparation and implementation of the Regional Conservation Plan may be shared by various project proponents on a proportionate basis keeping in view the likely impacts of each project on the wild life and their habitat. We also confirmed that we shall be part of the conservation plan and will pay the fee as determined for our project.

Sl. No.	Condition	Compliance Status
5	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.	**Being complied** The company has got approval of conservation plan of Rs.107.80 Lakh & supplementary plan of Rs. 15 Lakh from Government of Meghalaya totaling to Rs. 122.80 Lakh. Out of this 122.80 lakh, Rs. 110.95 lakh has already been spent by the company. Implementation report is enclosed as **Annexure III**. Further during the meeting held on 09.08.21 by the Chief Wildlife warden with Industries and Government departments, it was decided that a Regional Conservation plan for the East Jaintia Hills district would be prepared under the supervision and guidance of CWLW, Meghalaya and the cost for preparation and implementation of the Regional Conservation Plan may be shared by various project proponents on a proportionate basis keeping in view the likely impacts of each project on the wild life and their habitat. We also confirmed that we shall be part of the conservation plan and will pay the fee as determined for our project.
IX. Public hearing and human health issues		
1	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.	**Complied** Qualified Occupational Health Specialist available at site for Regular and Periodical medical examination of the workers engaged in the mine. Records of periodical medical examinations done in the recent past are being maintained for all employees (including contract workers) as per the requirement of Mines Rules, 1955: Treatment for the identified ailments is being provided to the workers having ailments BP, diabetes, etc. Health records are enclosed as **Annexure-XVII.**
2	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 bio mass cooking. The	**Complied** Health Risk Assessment (HRA) has been done and enclosed as **Annexure-XVIII**.

Sl. No.	Condition	Compliance Status
	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.	
3	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).	**Complied** We are conducting the annual medical examination. Reports are enclosed as **Annexure-XIX.**
4	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 sevcnd \FEV1),Forced Vital Capacity (FVC), a.ad 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	**Complied** A well-established Occupational Health Centre headed by MBBS practitioners is in full function and the examinations are being conducted in-house. Reports are enclosed as **Annexure-XIX.**

Sl. No.	Condition	Compliance Status
	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.	
5	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.	**Complied** Personnel working in the mine area are provided with personal protective equipment (PPE). Use of PPEs including dust masks, ear plugs, safety shoes, illuminating jacket and hard hats are compulsory for all workers working in the mine. Toolbox talk is held daily. Refresher training on safety and information on health aspects is provided on monthly basis to all the workers.
	  	
6	Project Proponent shall make provision for the housing for workers/labors 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, créche 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.	**Complied** It is operating mines. Permanent housing & labour camps for workers have been provided outside the mine area (company owned land) with all necessary provisions. The domestic waste water is being treated in STP in order to avoid contamination of underground water.
7	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	**Complied** All the activities proposed in the action plan for addressing the issues raised during the Public Hearing implemented and enclosed as **Annexure-XX.**

Sl. No.	Condition	Compliance Status
	with District Administration.	
X. Corporate Environment Responsibility (CER)		
1	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.	**Complied.** All the activities and budget earmarked for Corporate Environmental Responsibility (CER) have been implemented. Details report is enclosed as **Annexure-XX.**
2	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 funds should be reported to the MoEF&CC and its concerned Regional Office.	**Being complied** We have kept the funds earmarked for environmental protection measures in a separate account. The environmental protection measures for the period of April 2025 to September 2025 is enclosed as **Annexure-XXI.**
XI. Miscellaneous		
1	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.	**Noted and agreed to comply** as stipulated.
2	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.	**Complied** For this project we are not taking any separate bank loan, we are executing this project from our internal accruals and hence there will be no date of financial closure as such. Mine was opened on 21st October'22 and the notice was sent to DGMS & other authorities. CTO was also obtained on 30th August 2022.
3	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.	**Complied** Last EC compliance was submitted in all concerned offices on 29.05.2025 vide letter No.SCML/EHS/LUMS/2025-26/10 Dated 28.05.2025.
4	A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The	**Complied** A well set up Environmental Management Cell already

Environmental Clearance No.: F. No. J-11015/17/2019-IA.II(M) Date: 8th June, 2021

Sl. No.	Condition	Compliance Status
	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.	exists in our company, which is headed by Sr. Manger EHS, who reports directly to the Unit Head. Adequate number of technically qualified Environment and Mining Engineers are available in the organization.
5	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 MoEFCC officer(s) by furnishing the requisite data / information / monitoring reports.	**Complied** Full cooperation will be extended to the officers in furnishing the requisite data / information / monitoring reports.

Annexures

Annexure Number	Annexure Details
Annexure-I	Noise monitoring report
Annexure-II	Vibration report
Annexure – III	Implementation Report of Conservation Plan (29.08.2022)
Annexure – IV	Surface water flow & quality monitoring report
Annexure – V	AAQ Monitoring report
Annexure – VI	Applicability of SCNBWL Clearance
Annexure – VII	CTO copy
Annexure – VIII	Hydrogeological study report
Annexure – IX	Ambient Air Quality Monitoring report (third Party)
Annexure – X	Piezometer water level data
Annexure – XI	Ground water quality test reports
Annexure – XII	ETP test report
Annexure-XIII	CGWA Gazette Notification
Annexure-XIV	Water balance chart
Annexure-XV	Progressive mine closure plan
Annexure-XVI	PUC certificates
Annexure-XVII	Records of periodical occupational health surveillance
Annexure-XVIII	Health Risk Assessment (HRA)
Annexure-XIX	Reports of occupational health surveillance
Annexure-XX	CER budget and Activities implemented
Annexure-XXI	Environmental protection measures for the period of April 2025 to September 2025

For **Star Cement Meghalaya Limited**

Lokesh Kumar Bahety
Unit Head

STAR CEMENT MEGHALAYA LIMITED

STAR CEMENT MEGHALAYA LIMITED

Brishyrnot Limestone Mine - I (MLA 42.051 Ha.)

Lumshnong, Meghalaya

Noise Level Monitoring Report (Average)

Month : April'25 to September'25

S. No.	Location	Day (dB) Avg.	Norms In dB(A)
1	**Excavator**		**75**
	A) Operator Cabin (Door Open)		
	a) At Low engine RPM	62.7	
	b) At High engine RPM	68.0	
	B) Operator Cabin(Door Close)		
	a) At Low engine RPM	59.8	
	b) At High engine RPM	64.9	
	C) Periphery of the Engine		
	a) At 1 mtr. Distance(At low RPM)	62.5	
	b) At 1 mtr. Distance (At high RPM)	67.2	
	c) At 5 mtr. Distance (At low RPM)	61.2	
	d) At 5 mtr. Distance (At high RPM)	66.1	
	D) Behind the Engine		
	a) At 1 mtr. Distance(At low RPM)	62.0	
	b) At 1 mtr. Distance (At high RPM)	66.7	
	c) At 5 mtr. Distance (At low RPM)	59.7	
	d) At 5 mtr. Distance (At high RPM)	64.5	
2	**Rock Breaker**		**75**
	A) Operator Cabin		
	a) At Low engine RPM	64.2	
	b) At High engine RPM	67.2	
	B) Rock Breaker Point (At 5 mtr. Distance)		
	a) Left Side	64.2	
	b) Right Side	64.3	
	c) Front Side	64.2	

Shailendra Kumar
Analyzed By

Checked By

Verified By

STAR CEMENT MEGHALAYA LIMITED

Brishyrnot Limestone Mine - I (MLA 42.051 Ha.)

Lumshnong, Meghalaya

Noise Level Monitoring Report (Average)

Month : April'25 to September'25

S. No.	Location	Day (dB) Avg.	Norms In dB(A)
3	**Drill Machine**		**75**
	A) Compressor		
	a) At 1 mtr. Distance	66.2	
	b) At 5 mtr. Distance	65.1	
	B) Drilling Point (At 5 mtr. Distance)		
	a) Left Side	66.2	
	b) Right Side	64.7	
	c) Front Side	65.8	
4	**Dozer**		**75**
	A) Operator Cabin		
	a) At Low engine RPM	60.6	
	b) At High engine RPM	68.3	
	B) Periphery of the Engine		
	a) At 1 mtr. Distance(At low RPM)	65.9	
	b) At 1 mtr. Distance (At high RPM)	69.6	
	c) At 5 mtr. Distance (At low RPM)	64.2	
	d) At 5 mtr. Distance (At high RPM)	66.6	
	c) Behind the Engine		
	a) At 1 mtr. Distance(At low RPM)	63.9	
	b) At 1 mtr. Distance (At high RPM)	68.2	
	c) At 5 mtr. Distance (At low RPM)	62.5	
	d) At 5 mtr. Distance (At high RPM)	65.8	
5	**Dumper**		
	A) Empty Dumper		
	a) Open Window	66.0	
	b) Close Window	60.7	
	B) Loaded Dumper		
	a) Open Window	65.9	
	b) Close Window	61.5	

Shailendra Kumar
Analyzed by

Checked by

Verified By

Event Report

Annexure-II

Date/Time	Tran at 13:17:33 June 11, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	AMIT RANA/BRISHYRNOT LS MINE.MMB

Serial Number	UM22719 V 10-90GC Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	July 3, 2024 by UES New Delhi
File Name	UM22719_20250611131733.IDFW
Scaled Distance	60.0 (300.0 m, 25.0 kg)

Notes

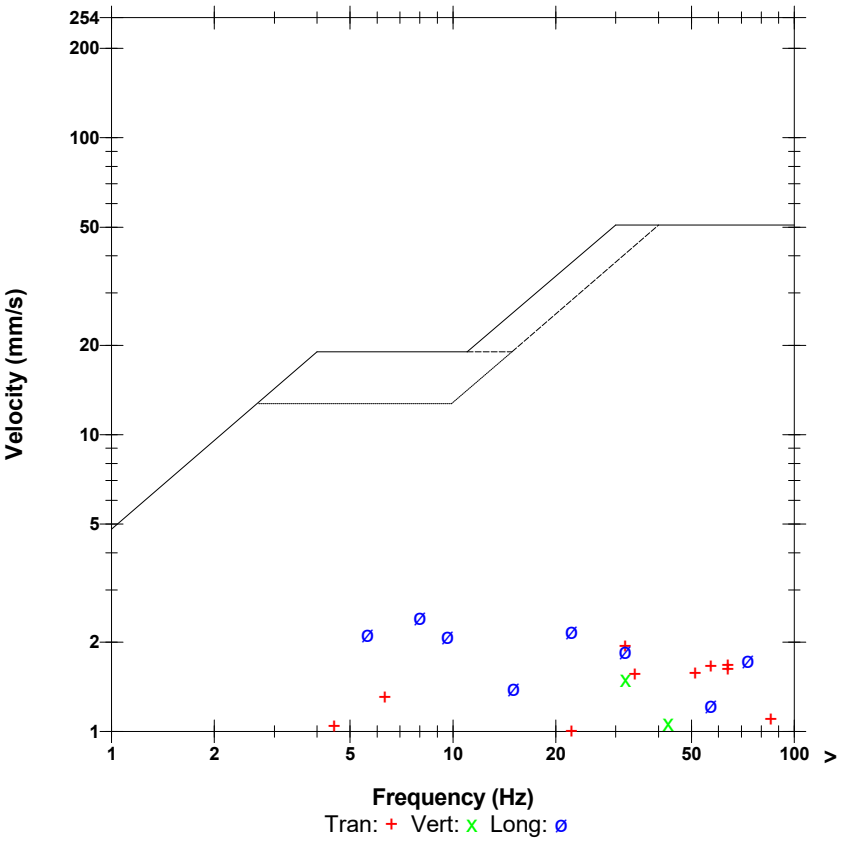
Location: BRISHYRNOT LIMESTONE MINE
Client: SCML
User Name: SCML
General: P2 WEST

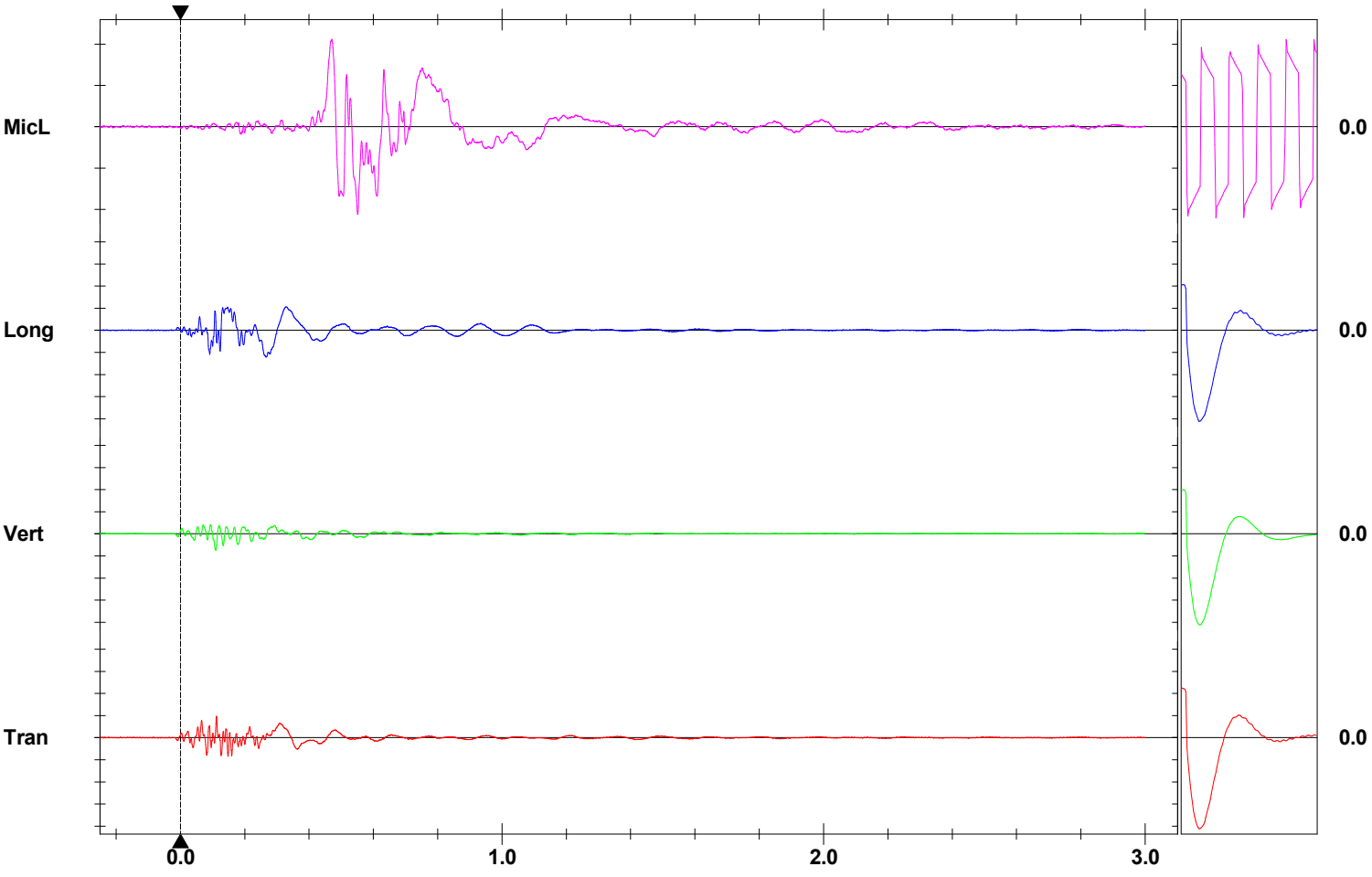
Microphone	Linear Weighting
PSPL	10.63 pa.(L) at 0.471 sec
ZC Freq	6.2 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1206 mv)

	Tran	Vert	Long	
PPV	1.947	1.505	2.428	mm/s
ZC Freq	32	32	8.0	Hz
Time (Rel. to Trig)	0.111	0.110	0.267	sec
Peak Acceleration	0.105	0.067	0.142	g
Peak Displacement	0.027	0.013	0.050	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.1	7.3	Hz
Overswing Ratio	4.0	5.3	4.6	

Peak Vector Sum 2.661 mm/s at 0.147 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div

Sensor Check

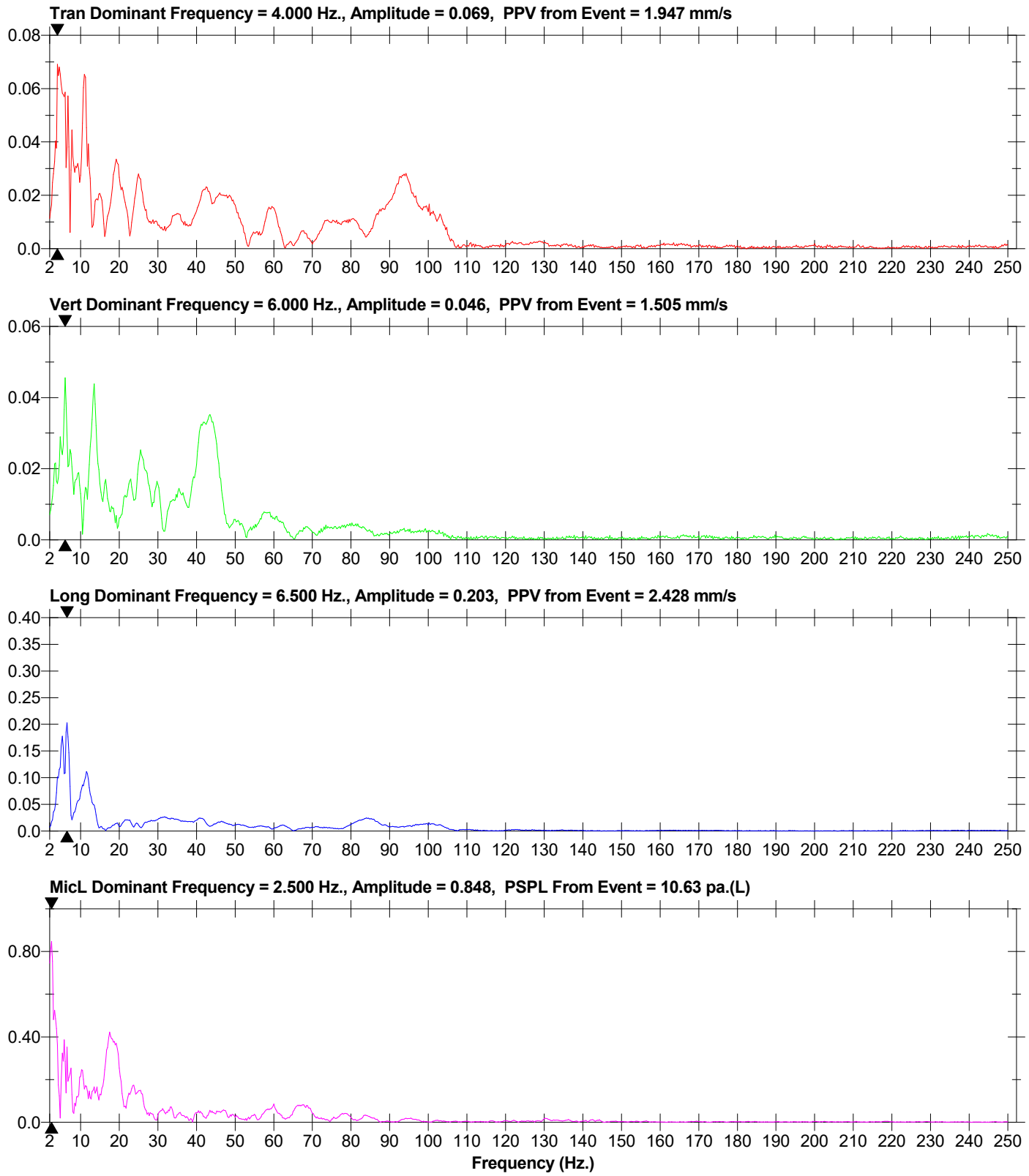
Trigger = ▶----------◀

FFT Report

Date/Time	Tran at 13:17:33 June 11, 2025	**Serial Number**	UM22719 V 10-90GC Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)	**Battery Level**	3.5 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	July 3, 2024 by UES New Delhi
Record Time	3.0 sec at 1024 sps	**File Name**	UM22719_20250611131733.IDFW
Operator/Setup:	AMIT RANA/BRISHYRNOT LS MINE.MMB	**Scaled Distance**	60.0 (300.0 m, 25.0 kg)

Notes

Location: BRISHYRNOT LIMESTONE MINE
Client: SCML
User Name: SCML
General: P2 WEST



Event Report

Date/Time	Vert at 13:21:18 June 24, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	AMIT RANA/BRISHYRNOT LS MINE.MMB

Serial Number	UM22719 V 10-90GC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	July 3, 2024 by UES New Delhi
File Name	UM22719_20250624132118.IDFW
Scaled Distance	109.5 (300.0 m, 7.5 kg)

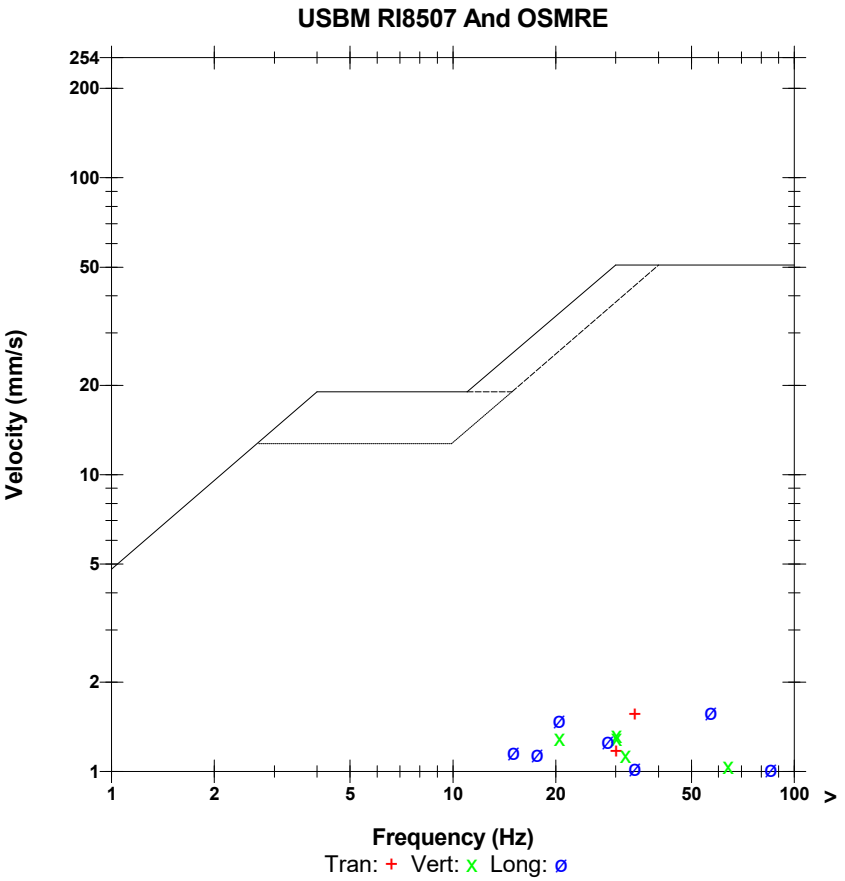
Notes

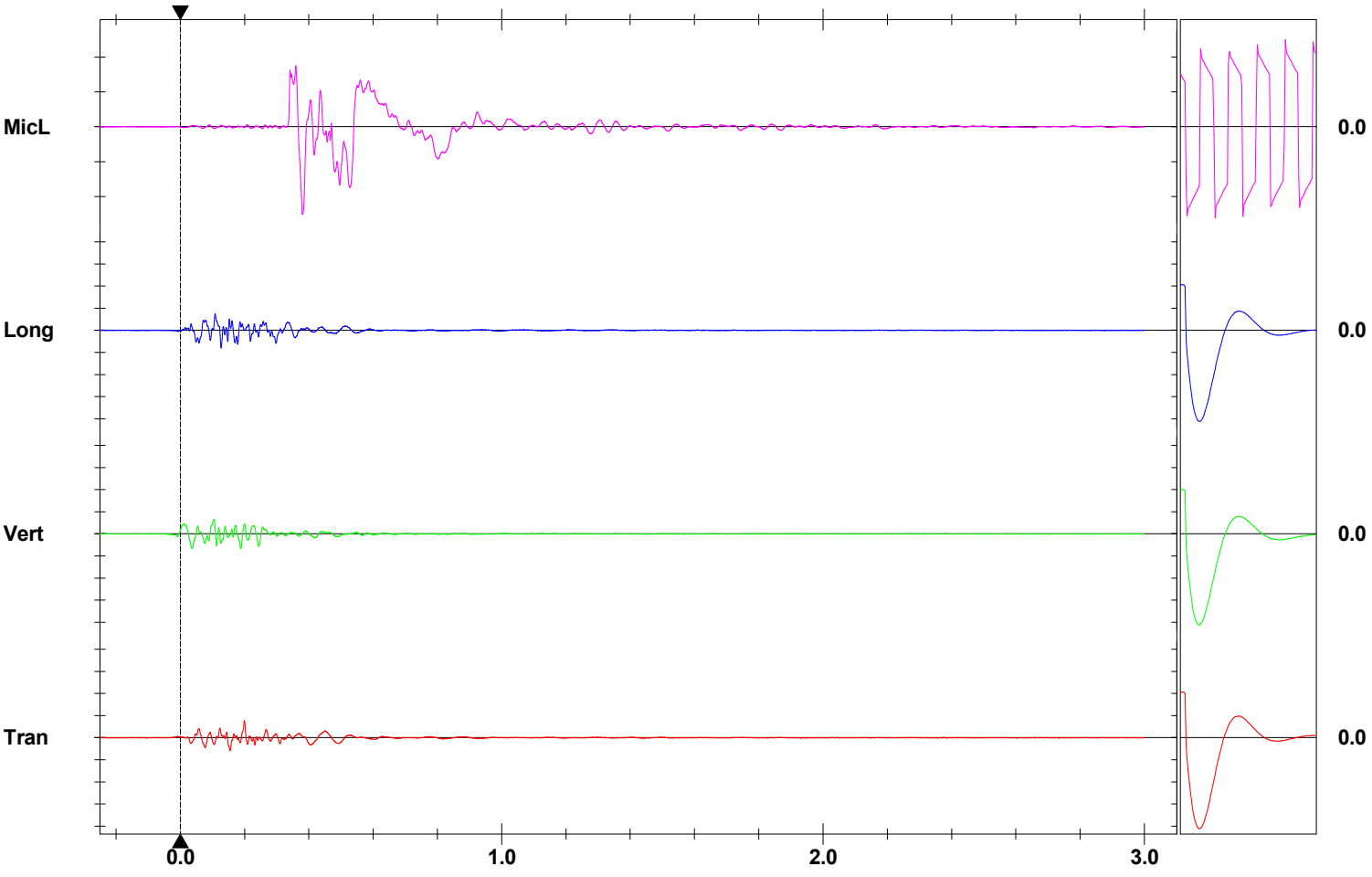
Location:	BRISHYRNOT LIMESTONE MINE
Client:	SCML
User Name:	SCML
General:	P2 S-E

Microphone	Linear Weighting
PSPL	25.09 pa.(L) at 0.381 sec
ZC Freq	20 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1157 mv)

	Tran	Vert	Long	
PPV	1.561	1.332	1.592	mm/s
ZC Freq	34	30	57	Hz
Time (Rel. to Trig)	0.199	0.104	0.127	sec
Peak Acceleration	0.036	0.044	0.066	g
Peak Displacement	0.008	0.009	0.009	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.1	7.1	Hz
Overswing Ratio	4.2	5.3	4.8	

Peak Vector Sum 1.849 mm/s at 0.127 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div

Sensor Check

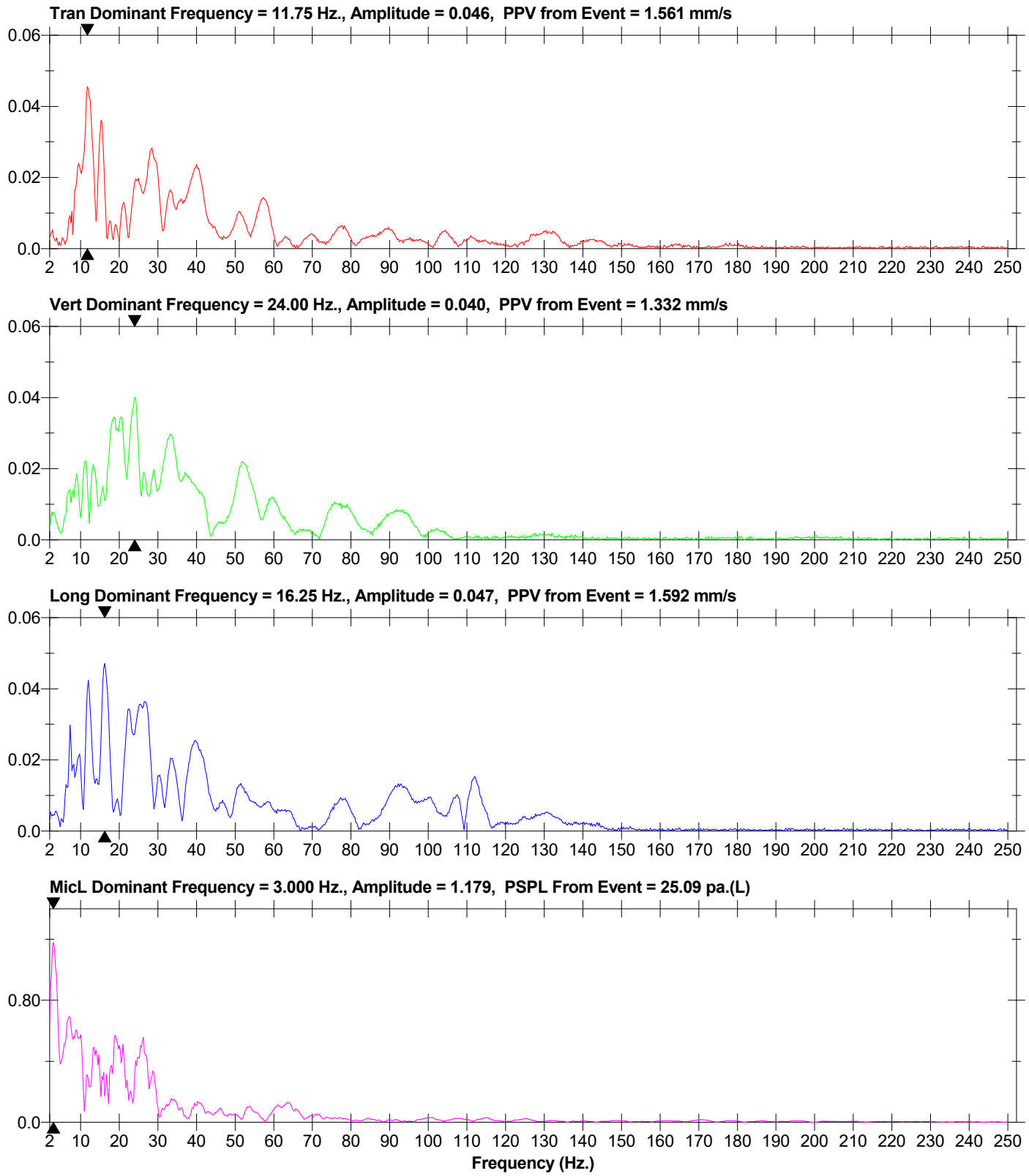
Trigger =

FFT Report

Date/Time	Vert at 13:21:18 June 24, 2025	**Serial Number**	UM22719 V 10-90GC Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)	**Battery Level**	3.8 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	July 3, 2024 by UES New Delhi
Record Time	3.0 sec at 1024 sps	**File Name**	UM22719_20250624132118.IDFW
Operator/Setup:	AMIT RANA/BRISHYRNOT LS MINE.MMB	**Scaled Distance**	109.5 (300.0 m, 7.5 kg)

Notes

Location: BRISHYRNOT LIMESTONE MINE
Client: SCML
User Name: SCML
General: P2 S-E



Event Report

Date/Time	Vert at 13:10:28 July 2, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec (Auto=3Sec) at 1024 sps
Operator/Setup:	AMIT RANA/BRISHYRNOT LS MINE.MMB

Serial Number	UM22719 V 10-90GC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	July 3, 2024 by UES New Delhi
File Name	UM22719_20250702131028.IDFW
Scaled Distance	82.3 (300.0 m, 13.3 kg)

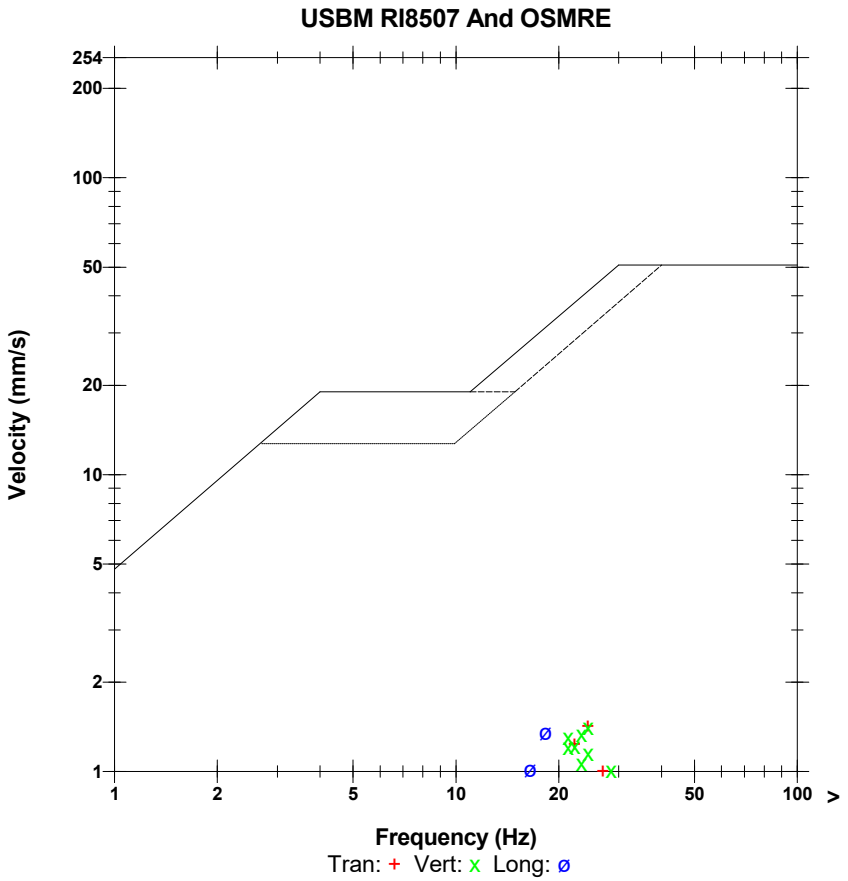
Notes

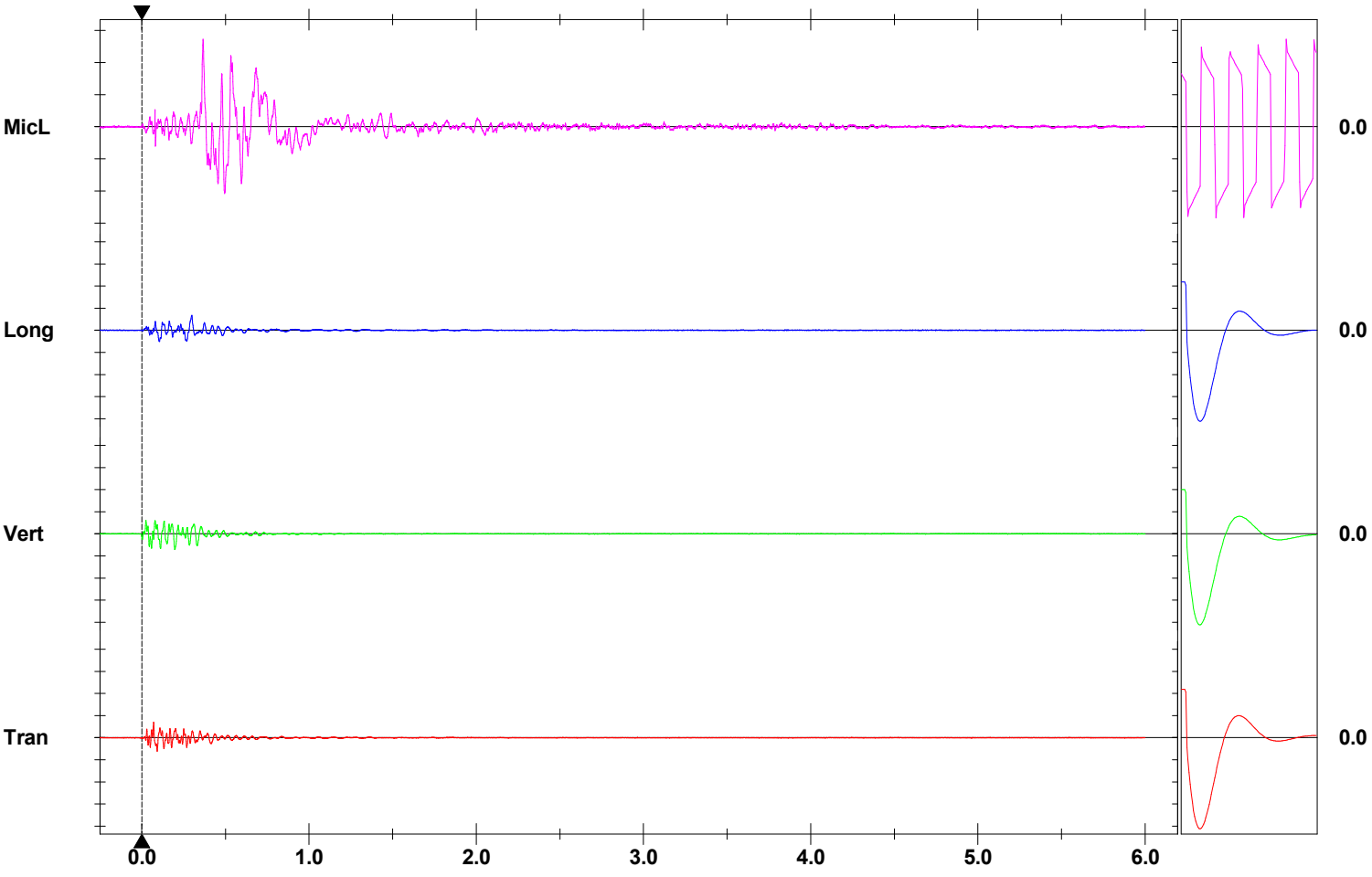
Location:	BRISHYRNOT LIMESTONE MINE
Client:	SCML
User Name:	SCML
General:	P2 WEST

Microphone	Linear Weighting
PSPL	5.461 pa.(L) at 0.366 sec
ZC Freq	12 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1168 mv)

	Tran	Vert	Long	
PPV	1.419	1.411	1.356	mm/s
ZC Freq	24	24	18	Hz
Time (Rel. to Trig)	0.070	0.197	0.299	sec
Peak Acceleration	0.041	0.039	0.030	g
Peak Displacement	0.007	0.009	0.010	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.3	Hz
Overswing Ratio	4.2	5.2	4.8	

Peak Vector Sum 1.632 mm/s at 0.111 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 2.000 pa.(L)/div Sensor Check

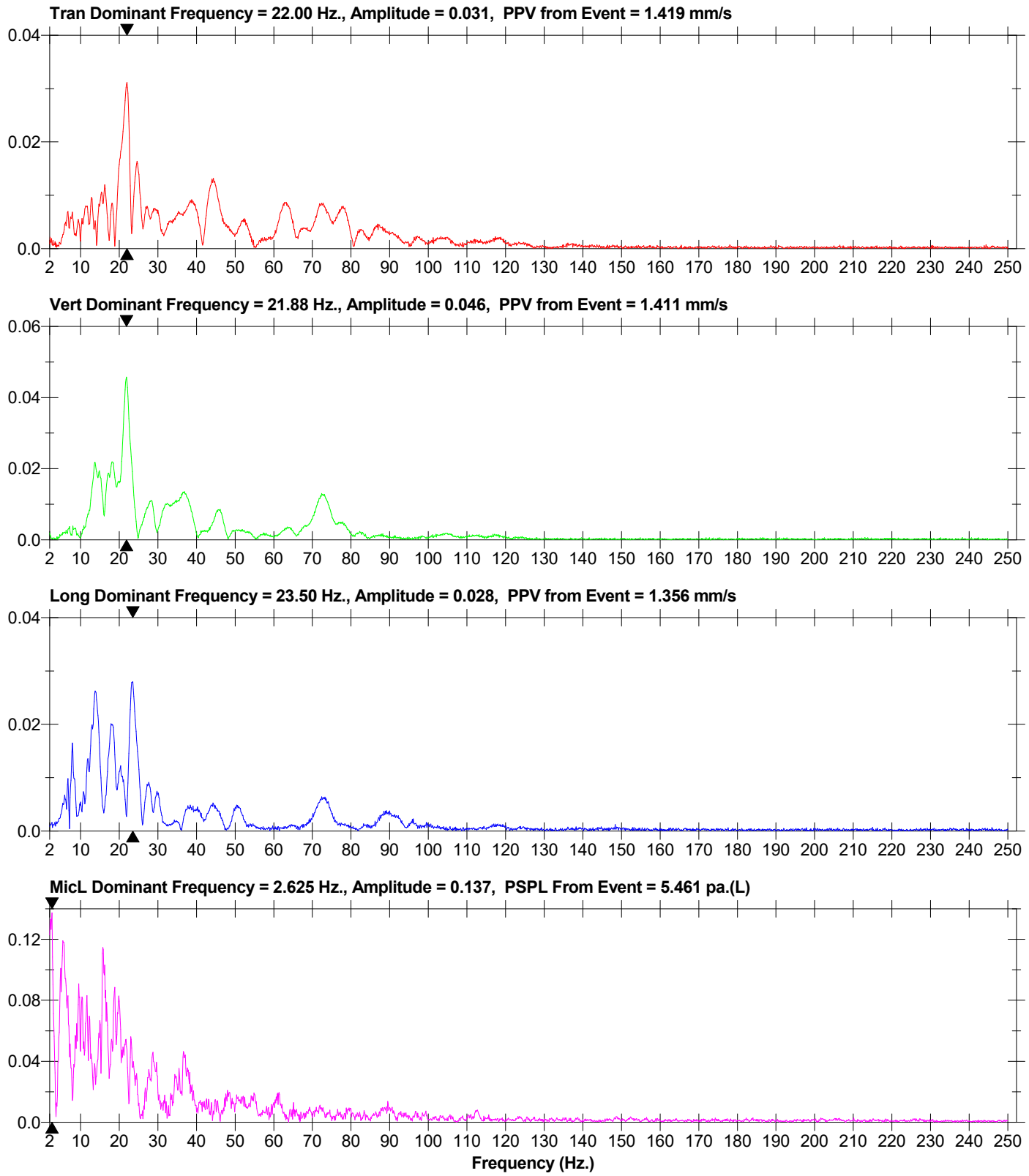
Trigger = ▶----------◀

FFT Report

Date/Time	Vert at 13:10:28 July 2, 2025	**Serial Number**	UM22719 V 10-90GC Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)	**Battery Level**	3.8 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	July 3, 2024 by UES New Delhi
Record Time	6.0 sec (Auto=3Sec) at 1024 sps	**File Name**	UM22719_20250702131028.IDFW
Operator/Setup:	AMIT RANA/BRISHYRNOT LS MINE.MMB	**Scaled Distance**	82.3 (300.0 m, 13.3 kg)

Notes

Location: BRISHYRNOT LIMESTONE MINE
Client: SCML
User Name: SCML
General: P2 WEST



Event Report

Date/Time	Vert at 13:33:41 August 19, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec (Auto=3Sec) at 2048 sps
Operator/Setup:	AMIT RANA/BRISHYRNOT LS MINE.MMB

Serial Number	UM22719 V 10-90GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	August 1, 2025 by UES New Delhi
File Name	UM22719_20250819133341.IDFW
Scaled Distance	104.1 (300.0 m, 8.3 kg)

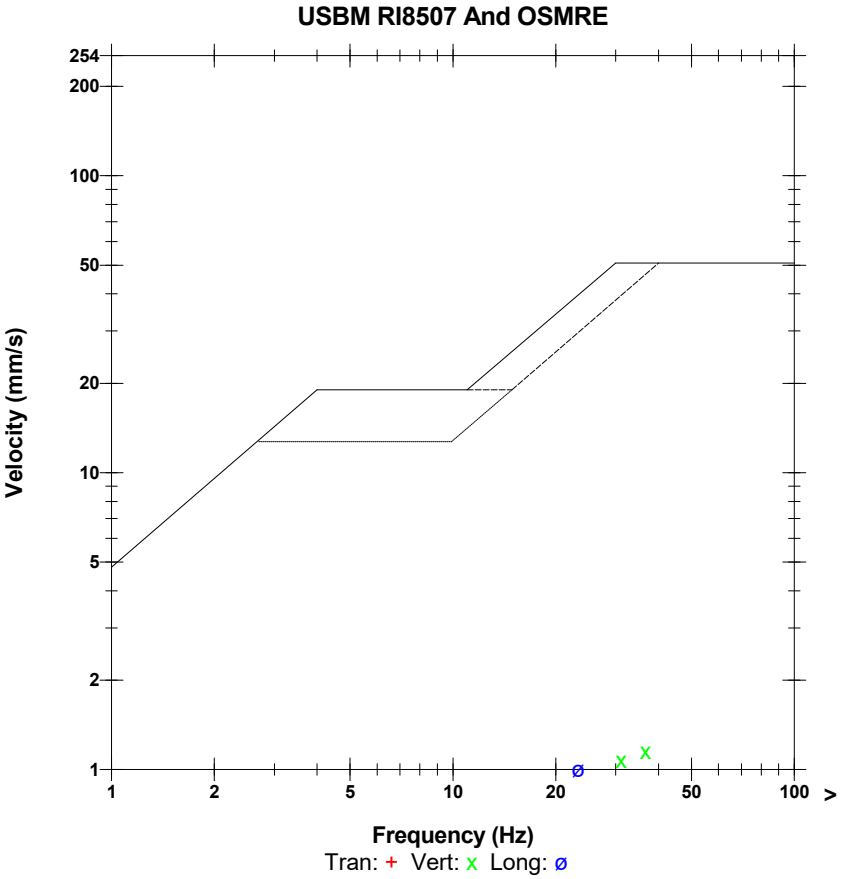
Notes

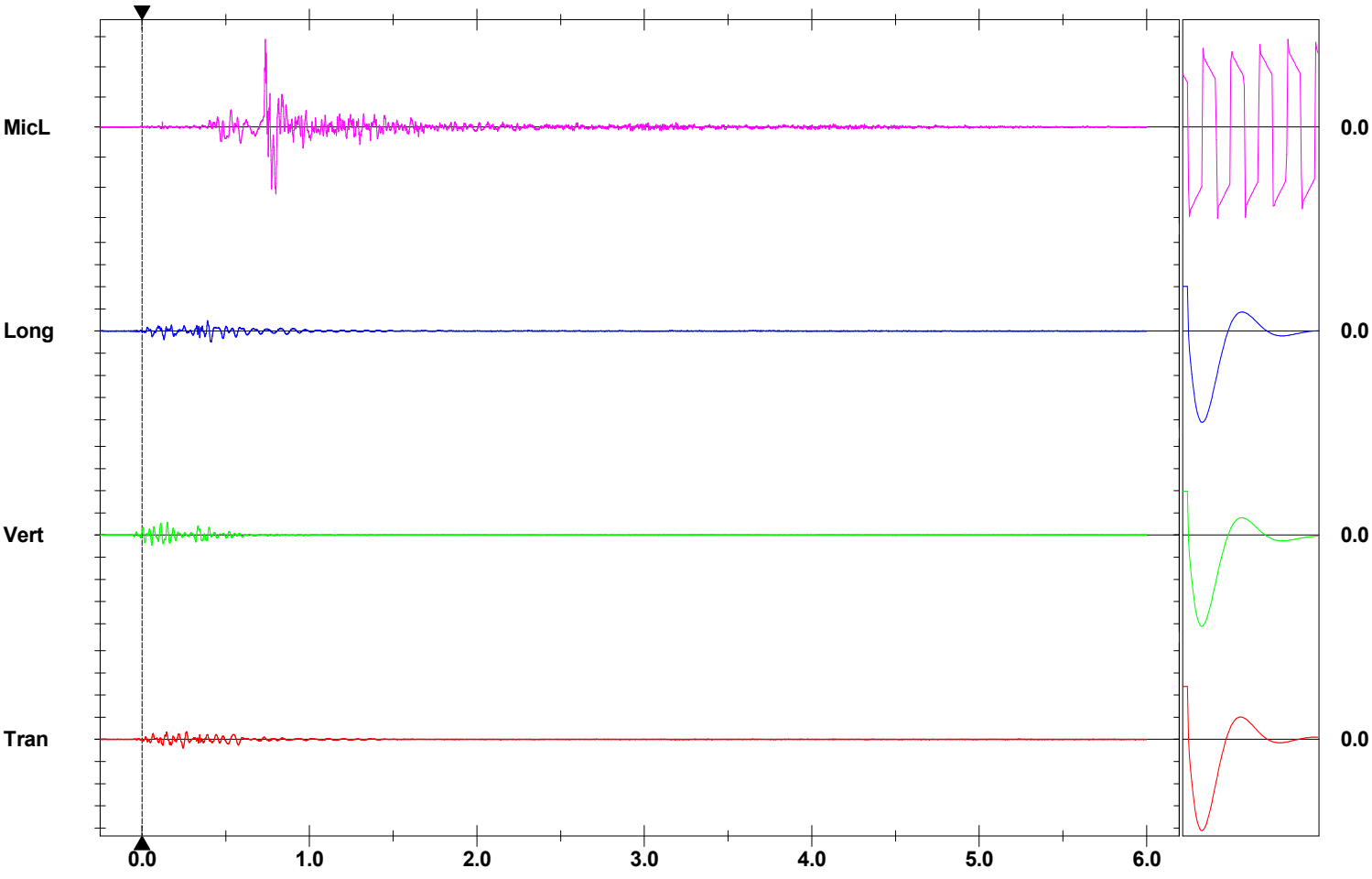
Location:	BRISHYRNOT LIMESTONE MINE
Client:	SCML
User Name:	SCML
General:	P2 WEST

Microphone	Linear Weighting
PSPL	14.55 pa.(L) at 0.736 sec
ZC Freq	10.9 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1167 mv)

	Tran	Vert	Long	
PPV	0.788	1.159	1.001	mm/s
ZC Freq	20	37	23	Hz
Time (Rel. to Trig)	0.245	0.150	0.411	sec
Peak Acceleration	0.021	0.043	0.028	g
Peak Displacement	0.005	0.006	0.007	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.1	7.1	Hz
Overswing Ratio	4.1	5.3	4.8	

Peak Vector Sum 1.237 mm/s at 0.150 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div Sensor Check

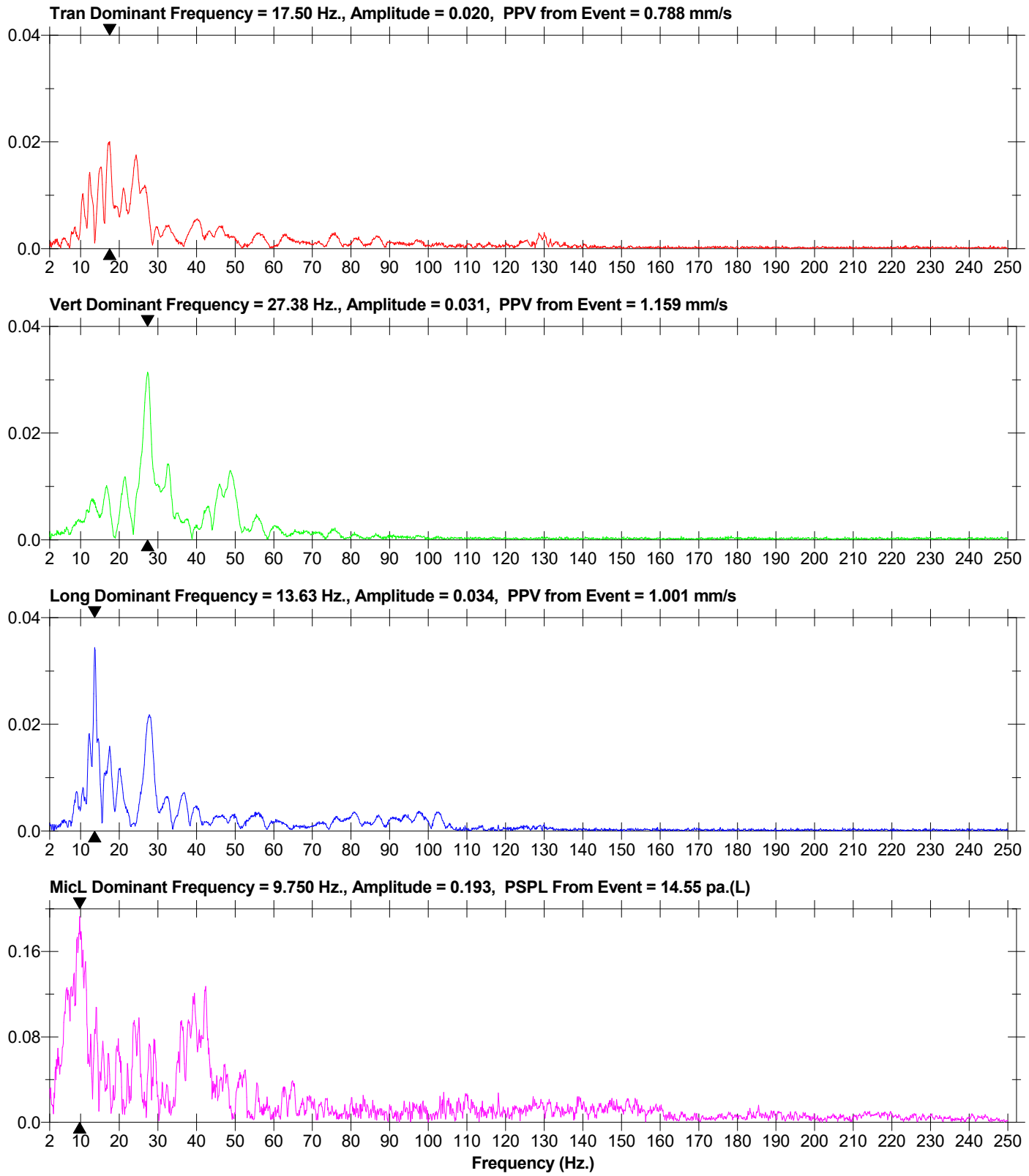
Trigger = ▶----------◀

FFT Report

Date/Time	Vert at 13:33:41 August 19, 2025	**Serial Number**	UM22719 V 10-90GC Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)	**Battery Level**	3.7 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	August 1, 2025 by UES New Delhi
Record Time	6.0 sec (Auto=3Sec) at 2048 sps	**File Name**	UM22719_20250819133341.IDFW
Operator/Setup:	AMIT RANA/BRISHYRNOT LS MINE.MMB	**Scaled Distance**	104.1 (300.0 m, 8.3 kg)

Notes

Location: BRISHYRNOT LIMESTONE MINE
Client: SCML
User Name: SCML
General: P2 WEST



Instantel

Event Report

Date/Time	Vert at 13:29:58 September 8, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	4.3 sec (Auto=3Sec) at 4096 sps
Operator/Setup:	VISHWANATH/BRISHYRNOT LS MINE.MMB

Serial Number	UM22719 V 10-90GC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	August 1, 2025 by UES New Delhi
File Name	UM22719_20250908132958.IDFW
Scaled Distance	68.6 (350.0 m, 26.0 kg)

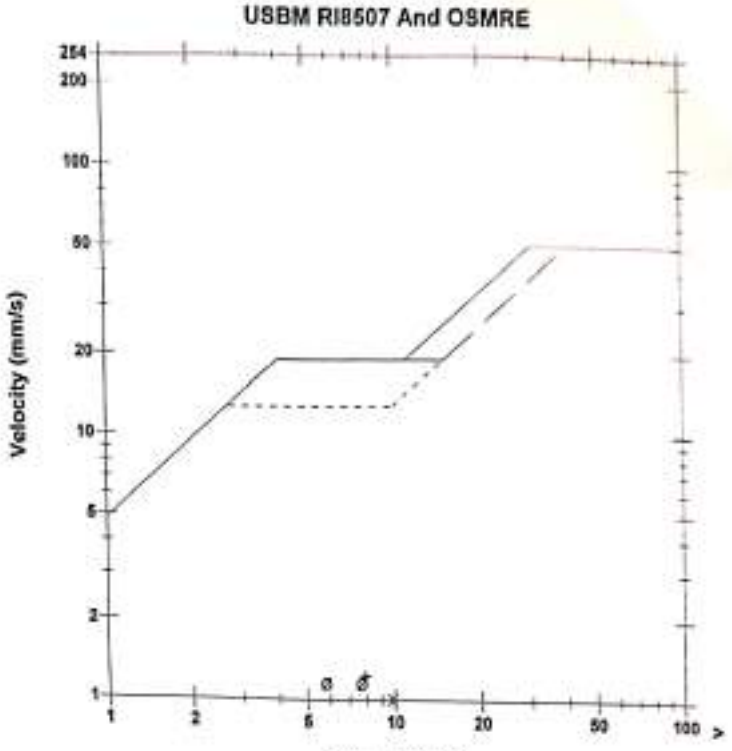
Notes

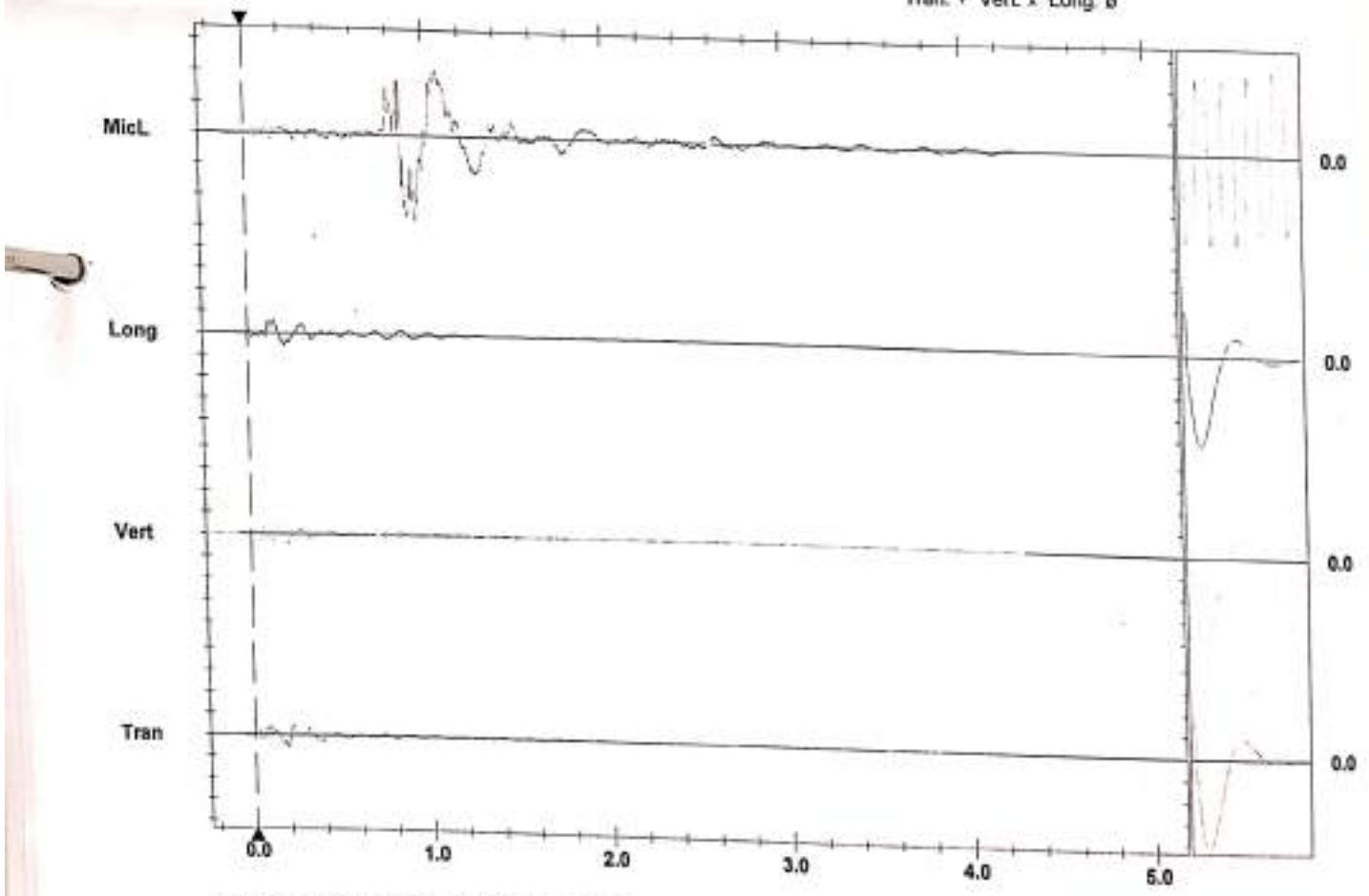
Location:	BRISHYRNOT LIMESTONE MINE
Client:	SCML
User Name:	SCML
General:	P2 SOUTH

Microphone	Linear Weighting
PSPL	5.570 pa.(L) at 0.949 sec
ZC Freq	4.0 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1206 mv)

	Tran	Vert	Long	
PPV	1.230	1.017	1.167	mm/s
ZC Freq	7.9	9.8	7.7	Hz
Time (Rel. to Trig)	0.187	0.203	0.148	sec
Peak Acceleration	0.023	0.023	0.023	g
Peak Displacement	0.022	0.010	0.028	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.1	7.1	Hz
Overswing Ratio	4.2	5.3	4.8	

Peak Vector Sum 1.612 mm/s at 0.187 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 2.000 pa.(L)/div

Trigger = ▶—— ——◀

Sensor Check

Printed: September 16, 2025 (V 10.72 - 10.72)

Printed: September 10, 2025 (V 10.72 - 10.72)

Instantel

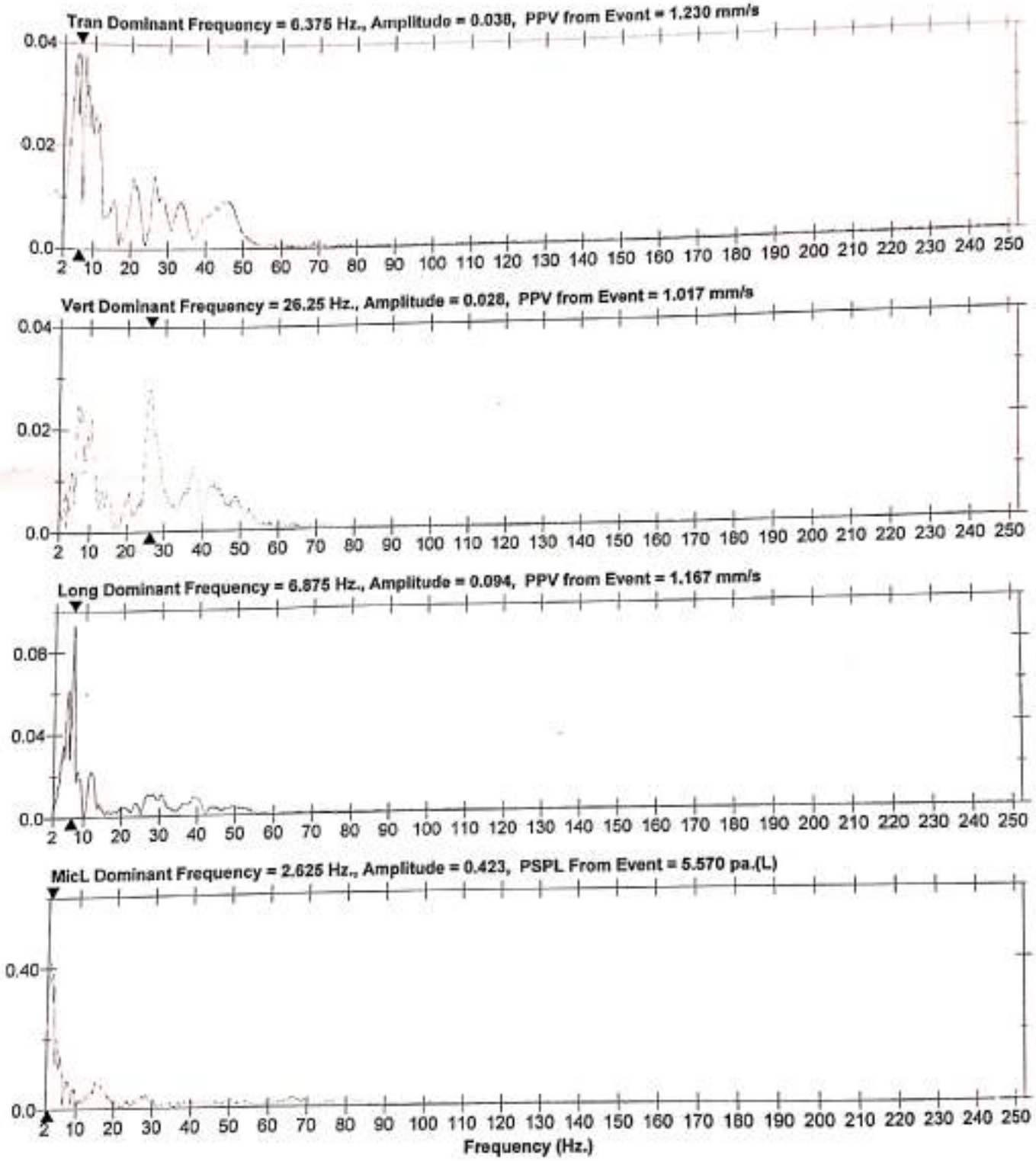
FFT Report

Date/Time	Vert at 13:29:58 September 8, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	4.3 sec (Auto=3Sec) at 4096 sps
Operator/Setup:	VISHWANATH/BRISHYRNOT LS MINE.MMB

Serial Number	UM22719 V 10-90GC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	August 1, 2025 by UES New Delhi
File Name	UM22719_20250908132958.IDFW
Scaled Distance	68.6 (350.0 m, 26.0 kg)

Notes

Location:	BRISHYRNOT LIMESTONE MINE
Client:	SCML
User Name:	SCML
General:	P2 SOUTH



Event Report

Date/Time	Vert at 13:37:02 October 10, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	4.176 sec (Auto=3Sec) at 4096 sps
Operator/Setup:	AMIT RANA/BRISHYRNOT LS MINE.MMB

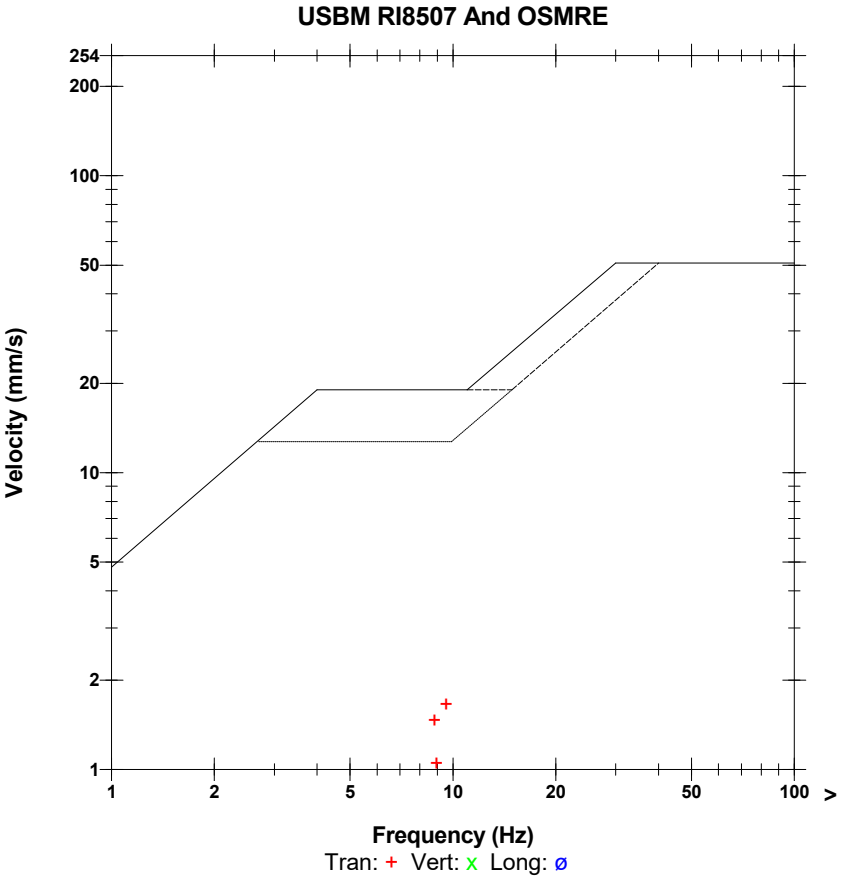
Serial Number	UM22719 V 10-90GC Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	August 1, 2025 by UES New Delhi
File Name	UM22719_20251010133702.IDFW
Scaled Distance	85.9 (350.0 m, 16.6 kg)

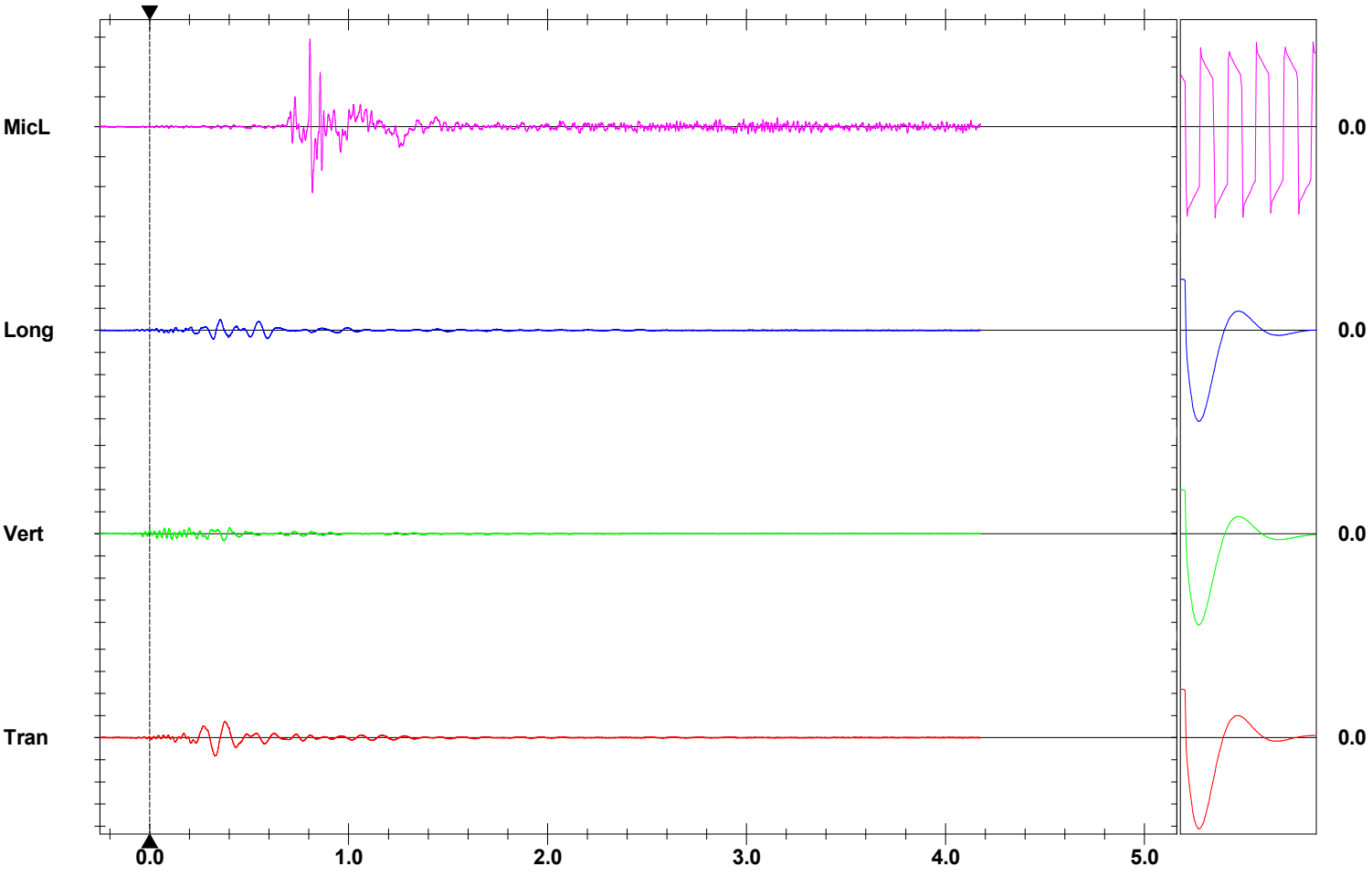
Notes
Location: BRISHYRNOT LIMESTONE MINE
Client: SCML
User Name: SCML
General: P2 EAST

Microphone	Linear Weighting
PSPL	14.69 pa.(L) at 0.805 sec
ZC Freq	28.4 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1178 mv)

	Tran	Vert	Long	
PPV	1.655	0.631	0.985	mm/s
ZC Freq	9.6	14.6	12.4	Hz
Time (Rel. to Trig)	0.328	0.372	0.355	sec
Peak Acceleration	0.023	0.030	0.023	g
Peak Displacement	0.027	0.008	0.012	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.3	Hz
Overswing Ratio	4.1	5.3	4.8	

Peak Vector Sum 1.770 mm/s at 0.327 sec





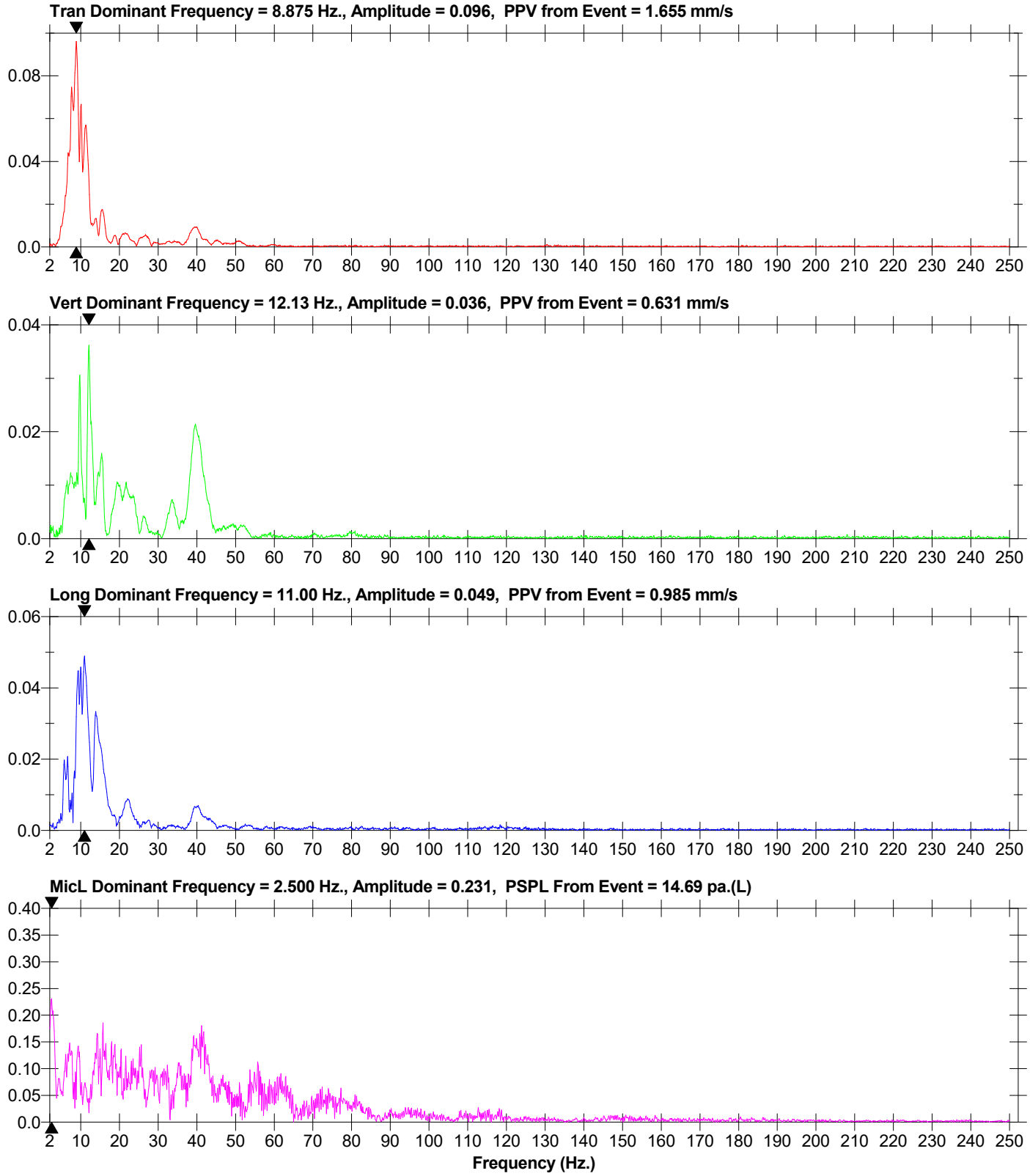
Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div Sensor Check
Trigger =

FFT Report

Date/Time	Vert at 13:37:02 October 10, 2025	**Serial Number**	UM22719 V 10-90GC Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)	**Battery Level**	3.5 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	August 1, 2025 by UES New Delhi
Record Time	4.176 sec (Auto=3Sec) at 4096 sps	**File Name**	UM22719_20251010133702.IDFW
Operator/Setup:	AMIT RANA/BRISHYRNOT LS MINE.MMB	**Scaled Distance**	85.9 (350.0 m, 16.6 kg)

Notes

Location: BRISHYRNOT LIMESTONE MINE
Client: SCML
User Name: SCML
General: P2 EAST



Annexure-III

GOVERNMENT OF MEGHALAYA
OFFICE OF THE DIVISIONAL FOREST OFFICER (TERRITORIAL),
JAINTIA HILLS DIVISION: JOWAI.

No. JH/C.P/2015-16/847/A/ 945 Dated, Jowai, the 29th August, 2022.

From: The Divisional Forest Officer
Jaintia Hills Territorial Division, Jowai

To: M/s. Star Cement Ltd.
Lumshnong,
East Jaintia Hills District.

Sub: *Implementation of Conservation Action Plan for Wild Flora and Fauna and Green Belt Development Plan- reg*

Sir,

With reference to the subject cited above, I am submitting herewith the implementation status on Conservation Plan and Green Belt Development Plan as received from the office of the Divisional Forest Officer, wildlife Division, Jowai vide letter :-

(1) No. MWL/JH/228/Cons.Plan.Cement/2015-16/81dt-5th May/2017,
(2) MWL/JH/228/Cons.Plan.Cement/2015-16/707 dt-1st March/2019
(3) No. MWL/JH/228/Cons.Plan.Cement/2020-21/600 dt-22nd February, 2021
(4) No. MWL/JH/228/Cons.Plan.Cement/2020-21/601 dt-22nd February, 2021
(5) No. MWL/JH/228/Cons.Plan.Cement/2020-21/349 dt-24th Sept. 2021

This is for favour of your kind information and necessary action.

Enclosed: as stated above.

Yours Faithfully

Divisional Forest Officer
Jaintia Hills Territorial Division, Jowai

Annexure - 1

Implementation status

Sl. No.	Year	Amount Allotted	Item of Works	Amount	Status
1	2014-15	4,50,000.00	1. Awareness Programme	Rs. 50,000.00	Completed
			2. Construction of Water Holes	Rs. 1,00,000.00	Completed
			3. Construction of Check Dam	Rs. 1,78,350.00	Completed
			4. Raising of Polypot Nursery at Khliehriat/ Sonapur	Rs. 1,21,650.00	Completed
2	2015-16	4,70,000.00	1. Plantation	Rs. 40,000.00	Completed
			2. Conducting Studies on Identification of Fauna in the areas adjoining the Sanctuary especially the Corridor areas and Compilation of Report	Rs. 1,20,000.00	Completed
			3. Consturction of Patrolling Footpath	Rs. 40,000.00	Completed
			4. Purchase of Camera Trap and Cover - 4 Nos.	Rs. 1,00,000.00	Completed
			5. Awareness at Sunapur and Lumshnong	Rs. 70,000.00	Completed
			6. Consturction of Check Dam across Nala Wah	Rs. 1,00,000.00	Completed
3	2016-17	4,25,000.00	1. Construction of Water Tower inside the	Rs. 2,00,000.00	Completed
			2. Creation of Salt Licks 2 Nos.	Rs. 20,000.00	Completed
			3. Creation of Water Holes 2 Nos.	Rs. 30,000.00	Completed
			4. Study of Funna inside the Sanctuary in Compartment No. 5,6,7,9,10,11,12,13 and 14	Rs. 1,50,000.00	Completed
			5. Publicity Awareness Programme	Rs. 25,000.00	Completed
4	2017-18	4,50,000.00	1. Consturction of Camp Hut inside the Sanctuary	Rs. 2,00,000.00	Completed
			2. Awareness Program in 5 Nos. Village	Rs. 50,000.00	Completed
			3. Renovation of 3Nos. Existing Watch Tower inside Narpuh Wildlife Sanctuary	Rs. 2,00,000.00	Pending

The amount Rs. 4,50,000.00 (FY 2018-19) received from the Divisional Forest Officer, Jaintia Hills Territorial Division, Jowai vide Cheque No. 071271, Dated 5th March 2021 is kept unutilized as per instruction received from the DCF Wildlife.

Divisional Forest Officer
Jaintia Hills Territorial Division, Jowai

GOVERNMENT OF MEGHALAYA
OFFICE OF THE DIVISIONAL FOREST OFFICER JAINTIA HILLS WILDLIFE DIVISION :::::::::::::::::::::::::::::::::::: JOWAI.

NO.MWL/JH/228/Cont.Plant.Cement/2015-16/ 81 **Dated Jowai, the 5th May, 2017.**

From:- The Divisional Forest Officer,
Jaintia Hills Wildlife Division,
Jowai.

To,

The Divisional Forest Officer,
Jaintia Hills Territorial Division,
Jowai.

Sub:- Implementation of Conservation Plan for Wild Flora and Fauna and Green Belt Development Plan stipulated in the Environment Clearance granted by the Ministry Of the Environment Forest & Climate change to Star Cement Meghalaya Limited for The cement clinker unit (1.75 million) TPA and captive power plant.

Sir,

With reference to the subject above , I am submitting the photo of the following works completed for the amount of Rs 4,50,000.00 allotted vide cheque No.043591 st 19.10.2015 details as below:

Sl no.	Item of works	Amount allotted	Unit	Location	Remarks
1	Awareness Programme	50,000.00	3	1.Maulian 2.khaddum 3.Sunapur	Photo enclosed
2	Construction of water Holes	1,00,000.00	2	Narpuh Wildlife sanctuary	
3	Construction of Check Dam	1,78,350.00	2	1.Merilang -1 2.Merilang -2	Photo enclosed
4	Raising of polypot Nursery at Khliehriat/Sunapur	1,21,624.00	23Beds	Khliehriat/Sunapur	Photo enclosed
	Total	4,50,000.00			

Yours faithfully,
Divisional Forest Officer,
Jaintia Hills Wildlife Division, Jowai.

NO.MWL/JH/228/Cont.Plant.Cement/2015-16/ **Dated Jowai, the** **2016.**

Copy to : The Conservator of Forest Khasi& Jaintia hills for information and the works was implemented as per Additional Principal Chief Conservator of Forests Wildlife approval vide letter No.FWC/G/253/122 dt 19.4.2016

Divisional Forest Officer,
Jaintia Hills Wildlife Division, Jowai.

246/B.
5/5/17.

GOVERNMENT OF MEGHALAYA
OFFICE OF THE DIVISIONAL FOREST OFFICER JAINTIA HILLS WILDLIFE
DIVISION :::::::::::::::::::::::::::::::::::: JOWAI.

NO.MWL/JH/228/Cont.Plant.Cement/2015-16/ 707 Dated Jowai, the 1st March, 2019.

From: The Divisional Forest Officer,
Jaintia Hills Wildlife Division, Jowai.

To,

The Divisional Forest Officer,
Jaintia Hills Territorial Division, Jowai.

Sub:- Implementation of Conservation Plan for Wild Flora and Fauna and Green Belt Development Plan stipulated in the Environment Clearance granted by the Ministry Of the Environment Forest & Climate change to Star Cement Meghalaya Limited for The cement clinker unit (1.75 million) TPA and captive power plant.

Sir,

With reference to the subject above , I am submitting the photo of the following works completed for the amount of Rs 4,70,000.00 allotted vide cheque No.043595 dt 13.9.2017 details as below:

Sl no.	Item of works	Amount allotted	Unit	Location	Remarks
1	Plantation	40,000.00	1	Inside the Sanctuary	Photo enclosed
2	Conducting studies on identification of Fauna in the areas adjoining the sanctuary especially the corridor areas and Compilation of Report	1,20,000.00	1	Narpuh Wildlife sanctuary	hoto enclosed
3	Construction of Patrolling Footpath	40,0000	4km	Sunapur beat to Wahtarong	Photo enclosed
4.	Purchase of Camera trap and cover 4nos	1,00,000.00	4nos		
5	Awareness at Sunapur and at Lumshnong.	70,0000.00		Sunapur and Lumshnong	photo enclosed
6	Construction of Check Dam across nala wah bhoo	1,00,000.00	2nos	Wah bho, sunapur	Photo enclosed.
	Total	4,70,000.00			

Yours faithfully,

Divisional Forest Officer,
Jaintia Hills Wildlife Division, Jowai.

NO.MWL/JH/228/Cont.Plant.Cement/2015-16/ Dated Jowai, the 1st March, 2019.

Copy to : The Conservator of Forest Khasi& Jaintia hills for information and the works was implemented as per Additional Principal Chief Conservator of Forests Wildlife approval vide letter No.FWC/G/253/122 dt 19.4.2016

Divisional Forest Officer,
Jaintia Hills Wildlife Division, Jowai.

1

Office of the D.F.O. (T)
Jaintia Hills Division Jowai
Regd No 2536/B
Date 1/3/19

22/2/21

GOVERNMENT OF MEGHALAYA
OFFICE OF THE DIVISIONAL FOREST OFFICER JAINTIA HILLS WILDLIFE DIVISION ::::::::::::::::: JOWAI.

NO.MWL/JH/228/Cons.Plan. Cement/2020-21/ 601 **Dated Jowai, the** 22nd **February, 2021.**

From:- **The Divisional Forest Officer,**
Jaintia Hills Wildlife Division, Jowai

To, **The Divisional Forest Officer,**
Jaintia Hills Territorial Division, Jowai.

Sub:- **Implementation of Conservation Plan for Wild Flora and Fauna and Green Belt Development Plan stipulated in the Environment Clearance granted by the Ministry of the Environment Forest & Climate change to Star Cement Meghalaya Limited for the cement clinker unit (1.75 million) TPA and captive power plant.**

Sir,

With reference to the subject above, I am submitting the photo of the following works completed for the amount of Rs. 4,50,000.00 allotted Vide Cheque No. 043598, Dated 06.09.2019 detail as below:

Sl. No.	Name of Works	Amount Allotted	Unit	Location	Remarks
1	Construction of Camp Hut inside Narpuh Wildlife Sanctuary	2.00	1	Inside Narpuh Wildlife Sanctuary	Photo Enclosed
2	Awareness Program 1. Khaddum 2. Sakhri 3. Artan	0.50	3	1. Khaddum 2. Sakhri 3. Artan	Photo Enclosed
3	Renovation of 3 Nos. Existing Watch Tower inside Narpuh Wildlife Sanctuary	2.00	1	Inside Narpuh Wildlife Sanctuary	Pending
	Grand Total	**4.50**			

Yours faithfully

Divisional Forest Officer,
Jaintia Hills Wildlife Division, Jowai.

Memo NO.MWL/JH/228/Cons.Plan. Cement/2020-21/ **Dated Jowai, the** 9 **February, 2021.**

Copy to:

1. **The Additional Principal Chief Conservator of Forests,** Wildlife & Chief Wildlife Warden, Meghalaya, Shillong for information and necessary action.

Divisional Forest Officer,
Jaintia Hills Wildlife Division, Jowai.

Office of the ... (T)
Jaintia ... Jowai
Regd. No. 1939/B
Date 22/2/2021

GOVERNMENT OF MEGHALAYA
OFFICE OF THE DIVISIONAL FOREST OFFICER JAINTIA HILLS WILDLIFE DIVISION :::::::::::::::::: JOWAI.

NO.MWL/JH/228/Cons.Plan. Cement/2020-21/ 600 **Dated Jowai, the** 22nd **February, 2021.**

From:- **The Divisional Forest Officer,**
Jaintia Hills Wildlife Division, Jowai

To, **The Divisional Forest Officer,**
Jaintia Hills Territorial Division, Jowai.

Sub:- **Implementation of Conservation Plan for Wild Flora and Fauna and Green Belt Development Plan stipulated in the Environment Clearance granted by the Ministry of the Environment Forest & Climate change to Star Cement Meghalaya Limited for the cement clinker unit (1.75 million) TPA and captive power plant.**

Sir,

With reference to the subject above, I am submitting the photo of the following works completed for the amount of Rs. 4,25,000.00 allotted Vide Cheque No. 043597, Dated 18.06.2018 detail as below:

Sl. No.	Name of Works	Amount Allotted	Unit	Location	Remarks
1	Construction of watch Tower inside the Sanctuary	2.00	1	Inside Narpuh Wildlife Sanctuary	Photo Enclosed
2	Creation of salt lick 2nos @10,000.00	0.20	2	Inside Narpuh Wildlife Sanctuary	Photo Enclosed
3	Creation of water Holes 2nos @15,000.00	0.30	2	Inside Narpuh Wildlife Sanctuary	Photo Enclosed
4.	Studies on the Fauna inside the sanctuary in Compartment No-5,6,7,9,10,11,12,13 & 14.	1.50	1	Inside Narpuh Wildlife Sanctuary	Report Enclosed
5	Awareness programme at Pahar	0.07	1	Pahar	Photo Enclosed
6	Awareness Programme at Khoingoi	0.08	1	Khoingoi	Photo Enclosed
7	Awreness programme at Rattacherra.	0.05	1	Ratacherra	Photo Enclosed
8	Awreness programme at Saitual.	0.05	1	Saitual	Photo Enclosed
Grand Total		**4.25**			

Yours faithfully

Divisional Forest Officer,
Jaintia Hills Wildlife Division, Jowai.

Memo NO.MWL/JH/228/Cons.Plan. Cement/2020-21/ **Dated Jowai, the** **February, 2021.**

Copy to:

1. **The Additional Principal Chief Conservator of Forests,** Wildlife & Chief Wildlife Warden, Meghalaya, Shillong for information and necessary action.

Divisional Forest Officer,
Jaintia Hills Wildlife Division, Jowai.

Office of the D.F.O.(T)
Jaintia Hills Division Jowai
Regd. No. 1940/B
Date 22/2/2021

dy 8/9/21

GOVERNMENT OF MEGHALAYA
OFFICE OF THE DIVISIONAL FOREST OFFICER JAINTIA HILLS WILDLIFE DIVISION :::::::::::::::::: JOWAI.

NO.MWL/JH/228/Cons.Plan. Cement/2020-21/ 349 Dated Jowai, the 8th Sept, 2021.

From:- **The Divisional Forest Officer,**
Jaintia Hills Wildlife Division,
Jowai

To, **The Divisional Forest Officer,**
Jaintia Hills Territorial Division,
Jowai.

Sub:- **Implementation Report of Wildlife Conservation Plan.**

Sir,

With reference to the subject above, I am submitting herewith the implementation Report of Wildlife Conservation Plan for the year 2014-15, 2015-16, 2016-17, 2017-18 and 2018-19 including photographs of the item of works implemented.

This is for favour of your kind information and necessary action.

Yours faithfully

Divisional Forest Officer,
Jaintia Hills Wildlife Division,
Jowai.

Office of the D.F.O. (T)
Jaintia Hills Division Jowai
Regd. No. 905/B
Date 9/9/21

STAR CEMENT MEGHALAYA LIMITED

Lumshnong, Meghalaya

Brishyrnot Limestone Mine - I (MLA 42.051 Ha.)

Month : April'25 to September'25

Surface Water Analysis Average Report

S.No.	Parameter	Unit	Umtyrngai Nallah		Umutha Nallah		Umso Nalah	Seshympa	Lunar	Lukha	Umbadoh	Tongseng	Lumshnong	Wahiajer	Standards norms as per IS 2296
			Up Stream	Down Stream	Up Stream	Down Stream	Down Stream				Seasonal Spring / Seasonal Nallah				
1	pH	-	7.5	7.4	7.4	7.5	7.5	7.4	7.5	7.5	7.6	7.6	7.5	7.5	**6.5 - 8.5**
2	Colour	Hazen	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	**10**
3	Odour	-	**Unobjectionable**												
4	Chloride	mg/L	21.4	23.7	25.4	25.0	27.8	26.4	24.8	23.3	23.3	22.2	24.5	23.3	**250**
5	Total Hardness as CaCO	mg/L	57.1	64.1	84.6	83.3	85.9	69.6	58.0	67.7	71.2	62.4	71.8	62.3	**300**
6	Suspended Solids	mg/L	41.5	48.3	47.4	48.1	51.6	46.4	44.2	50.0	46.9	49.9	44.3	45.8	-
7	Total Dissolve Solids	mg/L	271.8	267.0	264.3	290.6	302.0	263.0	235.5	187.6	163.2	183.8	172.1	224.0	**500**
8	Biochemical Oxygen Demand (For 3 days at 27 °C)	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.0**
9	Oil & Grease	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
10	Temperature	° C	25.2	24.8	24.4	24.7	25.0	24.9	25.1	24.9	25.1	24.7	24.7	25.1	-
11	Conductivity	µS/cm	235.6	244.4	240.4	294.1	299.1	263.8	251.1	165.1	172.4	184.9	188.0	252.0	-
12	Flow	L / Min	1723.2	2178.6	904.8	1072.4	1272.9	9883.9	2285.5	92902.0	948.3	970.4	1064.8	1026.0	-

Shailendra Kumar
Analyzed by

Checked by

Verified by

STAR CEMENT MEGHALAYA LIMITED

Lumshnong, Meghalaya

Brishyrnot Limestone Mine - I (MLA 42.051 Ha)

Ambient Air Quality Monitoring report (Average)

Month : April'25 to September'25

Locations→	Mines Entrance Haul Road				ROC Driling Point				Excavator Point				Star Public School			
Parameters→	AAQM in µg/m^3				AAQM in µg/m^3				AAQM in µg/m^3				AAQM in µg/m^3			
Month ↓	PM_{10}	$PM_{2.5}$	SO_2	NO_2	PM_{10}	$PM_{2.5}$	SO_2	NO_2	PM_{10}	$PM_{2.5}$	SO_2	NO_2	PM_{10}	$PM_{2.5}$	SO_2	NO_2
April'25	Rainfall	Rainfall	Rainfall	Rainfall	Rainfall	Rainfall	Rainfall	Rainfall	Rainfall	Rainfall	Rainfall	Rainfall	-	-	-	-
May'25	32.89	19.24	19.36	17.02	33.65	20.52	20.47	18.24	32.68	19.33	19.67	16.39	30.14	17.64	19.44	17.53
June'25	37.96	19.88	18.26	16.74	37.62	21.98	18.37	17.52	38.93	18.71	17.49	16.82	29.73	16.46	15.17	14.23
July'25	38.50	16.74	11.89	10.68	38.80	17.29	13.51	11.24	38.51	16.15	13.56	11.90	34.08	13.33	13.11	11.33
Locations→	Near Boundary Pillar no. 07				Near Boundary Pillar no.18				Between Boundary Pillar no.27 & 28				Star Public School			
August'25	35.87	14.98	12.65	11.46	33.98	14.87	12.54	10.87	34.01	14.25	12.28	11.87	33.19	16.95	12.98	10.57
September'25	35.66	15.21	11.97	9.59	33.37	14.55	11.58	9.68	34.94	17.09	13.08	10.88	42.61	18.48	10.96	8.65

Analyzed by

Checked by

Verified by

Annexure-VI

F.No. 22-43/2018-IA.III
Government of India
Ministry of Environment, Forest and Climate Change
(IA Division)

Indira ParyavaranBhawan
JorBagh Road, Aliganj,
New Delhi – 110003

Dated: 8th August, 2019

OFFICE MEMORANDUM

Subject: Procedure for consideration of developmental projects located within 10 km of National Park/Wildlife Sanctuary seeking environmental clearance under the provisions of the Environmental Impact Assessment (EIA) Notification, 2006 - regarding.

The Hon'ble Supreme Court vide its Order dated 4.12.2006 in Writ Petition No. 460 of 2004 – Goa Foundation Vs. Union of India, has inter-alia directed that Ministry of Environment and Forests *"(MoEF) would also refer to the Standing Committee of the National Board for Wildlife, under section 5(b) & 5(c) (ii) of the Wildlife Protection Act, 1972, the cases where environmental clearances has already been granted where activities are within 10km. zone" of the boundaries of the Sanctuaries and National Parks."*

2. In this regard, the erstwhile MoEF vide Circular No. L-11011/7/2004-IAII (I)(Part) dated 27.02.2007 and Office Memorandum No. J-11013/41/2006-IA.II(I) dated 02.12.2009 delineated a procedure for consideration of developmental projects located within 10 km of National Park/Wildlife Sanctuary for grant of environmental clearance under EIA Notification, 2006. As per the stipulated procedure, prior clearance from Standing Committee of the National Board for Wildlife (SCNBWL) would be required for the developmental projects located within 10km of the National Park/Wildlife Sanctuary.

3. Over a period of time, Ministry has notified number of Eco-Sensitive Zones (ESZs) around Protected Areas (PAs). Many of developmental activities are prohibited/regulated in these ESZs *inter-alia* including mining operations to be carried out in accordance with the order of the Hon'ble Supreme Court dated 4.08.2006 in the matter of T.N. Godavarman Thirumulpad Vs. UOI in

W.P.(C) No. 202 of 1995 and dated 21.4.2014 in the matter of Goa Foundation Vs. UOI in W.P.(C) No. 435 of 2012 as per the notifications issued for their constitution.

4. In light of the aforesaid Orders passed by the Hon'ble Supreme Court, the issues related to the prior clearance from SCNBWL for the notified ESZs and the remaining areas have been examined in detail. In this regard, it has been decided by the Competent Authority in the Ministry to adopt a following procedure for consideration of developmental projects located within 10 km of National Park/Wildlife Sanctuary seeking environmental clearance under the provisions of the EIA Notification, 2006, in supersession of the earlier O.M.s dated 27.2.2007 and 2.12.2009:

i. Proposals involving developmental activity/project located within the notified Eco-Sensitive Zones (ESZ) shall be regulated and governed by the concerned ESZ notification. However, for the developmental project/activity located within the notified ESZ and covered under the schedule of the EIA Notification 2006, prior clearance from Standing Committee of the National Board for Wildlife (SCNBWL) is mandatory. In such cases, the project proponent shall submit the application simultaneously for grant of Terms of Reference as well as wildlife clearance.

ii. Proposals involving developmental activity/project located outside the stipulated boundary limit of notified ESZ and located within 10 km of National Park/Wildlife Sanctuary, prior clearance from Standing Committee of the National Board for Wildlife (SCNBWL) may not be applicable. However, such proposals from environmental angle including impact of developmental activity/project on the wildlife habitat, if any, would be examined by the sector specific Expert Appraisal Committee and appropriate conservation measures in the form of recommendations shall be made. These recommendations shall be explicitly mentioned in the environmental clearance letter and shall be ensured by the member secretary concerned.

iii. Proposals involving developmental activity/project located within 10 km of National Park/Wildlife Sanctuary wherein final ESZ notification is not notified (or) ESZ notification is in draft stage, prior clearance from Standing Committee of the National Board for Wildlife (SCNBWL) is mandatory. In such cases, the project proponent shall submit the application simultaneously for grant of Terms of Reference/environmental clearance as well as wildlife clearance.

iv. Proposals involving mining of minerals within the ESZ (or) one kilometer from the boundaries of National Parks and Sanctuaries whichever is higher is prohibited in accordance with the order of the Hon'ble Supreme Court dated 4.08.2006 in the matter of T.N. Godavarman Thirumulpad Vs. UOI in W.P.(C) No. 202 of 1995 and dated 21.4.2014 in the matter of Goa Foundation Vs. UOI in W.P.(C) No. 435 of 2012.

5. This issues with the approval of the Competent Authority.

(Sharath Kumar Pallerla)
Director

To

1. Chairman, Central Pollution Control Board (CPCB).
2. Chairman of all the Expert Appraisal Committees
3. Chairperson/Member Secretaries of all the SEIAAs/SEACs
4. All the Officers of I.A. Division
5. Chairpersons/Member Secretaries of all SPCBs/UTPCCs

Copy for information to:

1. PS to Hon'ble Minister for Environment, Forest and Climate Change
2. PS to Hon'ble MoS (EF&CC)
3. PPS to Secretary(EF&CC)
4. PPS to SS(AKJ)
5. PPS to AS (RSP)
6. PPS to JS (GM)/ JS(RS)/JS(AKN)
7. Website, MoEF&CC
8. Guard file.

F. No. 6-60/2020WL Part (1)
Government of India
Ministry of Environment, Forest and Climate Change
(Wildlife Division)

1st Floor, Agni Wing,
Indira Paryavaran Bhawan,
Jor Bagh Road,
Aliganj,
New Delhi — 1 10003

Dated 16 July, 2020

To
The Chief Secretary
All States/ UTs

Subject: Procedure for consideration of developmental projects located within 10 km of National Park/Wildlife Sanctuary by Standing Committee of the National Board for Wild Life seeking environmental clearance under the provisions of the Environmental Impact Assessment (EIA) Notification, 2006 - regarding.

The Ministry has received letters from States/UTs seeking clarifications regarding applicability of consideration by Standing Committee of the National Board for Wild Life for developmental projects/activities which do not require environmental clearance and are located outside the National Parks and Wildlife Sanctuaries.

2. This Ministry vide O.M. F. No. 22-43/ 2018-IA. III dated 08.08.2019 lays out detailed procedure to be adopted for consideration of developmental projects located within 10 km of National Park/Wildlife Sanctuary seeking environmental clearance under the provisions of the EIA Notification, 2006.

3. After careful consideration of the matter, it is clarified that prior clearance from the Standing Committee of the National Board of Wild Life will be required outside Protected Area in the following cases:

i. Proposals involving project/ activity located within the notified ESZ (not being draft notification) and listed in the Schedule of the EIA Notification 2006 and requiring environment clearance, prior clearance from Standing Committee of the National Board for Wild Life will be required.

ii. Proposals involving activity/project located within 10 km of National Park/Wildlife Sanctuary wherein ESZ has not been finally notified and listed in the Schedule of the EIA Notification 2006 and requiring environment clearance, prior clearance from Standing Committee of the National Board for Wild Life will be required.

iii. Proposals involving activity/project, falling outside the protected areas linking one protected area or tiger reserve with another protected area or tiger reserve, prior clearance from the Standing Committee of the National Board for Wild

Life as per the section 38 O(1)(g) of the Wild Life (Protection) Act, 1972 will be required.

4. Para 4(ii) and para 4(iv) of the OM dated 08.08.2019 supra shall however continue to apply.

5. State Governments are requested not to insist upon wildlife clearance for such developmental projects outside Protected Areas that are not covered under para 3 above.

6. This issues with the approval of the Competent Authority.

Yours faithfully,

16.7.2020

(Rakesh Kumar Jagenia)
Deputy Inspector General of Forests (Wildlife)
E-mail – digwl-mefcc@gov.in

Copy to

(1) Addl. Chief Secretary/ Principal Secretary / Secretary, Forest and Wildlife Department (All States/ UTs)

(2) Principal Chief Conservator of Forests & HoFF (All States/ UTs)/ Chief Wild Life Wardens (All States/UTs)

(3) Dy. Director General (Central), Regional Office, MoEFCC (All)

(4) Sr. PPS to Secretary MoEFCC/Sr. PPS to DGF&SS/Sr.PPS to ADG (FC)/ Sr PPS to ADG(WL)/ Sr. PPS to MS (NTCA) / Sr PPS to AS (RA)/ Sr. PPS to IGF (FC)/ Sr. PPS to IGF(WL)/Sr. PPS to IGF (FC)/ Sr. PPS to Adv (SCG)/ Sr. PPS to DIG (WL)/ Guard File

Annexure-VII

1596

No. MPCB/ONLINE/RCTO(R-1)/EJHD/2021/2023-2024/30 Dated Shillong, the 27th September, 2023.

RENEWAL OF CONSENT TO OPERATE

CONSENT TO OPERATE under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974, as amended and under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981, as amended (to be referred as Water Act and Air Act respectively) granted to **M/s STAR CEMENT MEGHALAYA LIMITED. Vide T.O** No. MPCB/ONLINE/CTO(R-1)/EJHD/2021/2023-2023/14, dated Shillong the 30th August 2022 for operating a **Limestone Deposit-1 with proposed production of limestone capacity 2.507 Million TPA and proposed shale production capacity of 0.217 Million TPA** in the mine lease area **42.051 Ha** located at **Brishyrnot Village, East Jaintia Hills District** of Meghalaya and a Project cost of Rs. **16,00,00,000/-** (Rupees sixteen crores) only and which expired on 31st July, 2023 is hereby renewed for a period of Three years i.e., upto 31st July, 2026 under the following terms and conditions:

1. This Consent has been accorded based on the particulars furnished by the applicant on behalf of **M/s STAR CEMENT MEGHALAYA LIMITED** and subject to addition of further or more conditions if so warranted by subsequent developments. The Consent will automatically become invalid if any change or alteration or deviation is made in actual practice;

2. The Consent to Operate is valid for a period up to **31st July, 2026** Application for renewal shall be made within three months prior to expiry of the Consent Order;

3. This Consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to the following:-
   (a) Violation of any Terms and Conditions of this Consent;
   (b) Obtaining the Consent by misrepresentation or failure to disclose fully all relevant facts;
   (c) A change in any condition that require temporary or permanent reduction or elimination of the authorized discharge/emission;

4. This Consent does not convey any property right in either real or personal property or any exclusive privileges, nor does it authorizes any injury to private property or any invasion of personal rights, nor any infringement of Central State or Local Laws or Regulation;

5. No air, water and soil pollution shall be created by the Industry beyond the prescribed permissible limits.

6. The industry shall take adequate measures for control of noise from all sources so as to comply with the Standards below:

LIMIT in dB (A) LEQ	
DAY TIME (6:00AM-9:00PM)	NIGHT TIME (9:00PM-6:00AM)
75	70

7. To maintained the environment and ecology of the area, development of green belt by planting selected species of trees in consultation with Forest Department along the 50m barrier zone to prevent run off, the height of which should not be less than 5 (five) metres when matured and at a spacing of 1 (one) metre should be made around the colony;

8. Green belt plantation shall be carried out in 7.5 m wide safety zone all along the mine boundary as per the guidelines of CPCB in order to arrest the pollution emanating from mining operations within the lease. The green belt shall be developed in 1.058Ha within first 5 years starting from windward side of the active mining area along the lease boundary.

1596

9. As per the provisions of the Water (Prevention and Control of Pollution) Act, 1974 as amended and the Air (Prevention and Control of Pollution) Act, 1981 as amended that any Officer empowered by the Board on its behalf shall have without interruption, the right at any time to enter the Plant/factory/for inspection, collection of sample for analysis and may call for any information as deemed necessary. Denial this right will cause withdrawal of the Consent Order;

10. The Company shall comply with all the environment protection measures and safeguards recommended in the approved mining plan.

11. The caves should be preserved, if encountered in the area shall have to be reported to the Board immediately.

12. The company shall comply with all the Terms & Conditions of the Environmental Clearance granted by the Ministry of Environmental, Forest and Climate Change, Impact Assessment Division, Government of India, vide No.F.No.J-11015/17/2019-IA.II(M), Dt. 8th June, 2021 and implement the Environment protection measures and safeguards incorporated in the EIA/EMP.

II. Specific Conditions:

A. Prevention and Control of Water Pollution:

The following measures should be taken up by the industry for prevention and control of water pollution:

1. Check dams/tailing dams should be provided wherever necessary to prevent the direct discharge of mine's effluent/run off etc. into the natural water courses.

2. Dumping of overburden, mine spoils etc. should be properly made in identified and demarcated Sites. Such dumping sites should be on impervious and stable ground to avoid percolation of contaminations into the water table and for prevention of landslides.

3. Proper planning should be made so that the dumps are to be done in steps for better stabilization and the dumping sequence should be planned in such a way that plantation over the dumps can be done simultaneously with dumping.

4. Continuous compacting of the dumps should be done to ensure its stability.

5. Facilities should be maintained for storing the top soil separately so that the same be utilized for afforestation/plantation over the dumps and excavated mines pits.

B. Prevention and Control of Air & Noise Pollution:

1. Setting up & operation of at least three ambient air quality monitoring station with 120^0 angle between stations for monitoring the ambient air quality including micro meteorological data should be done immediately. Selection of station should be done in consultation with this Board.

2. The Ambient Air Quality within the Plant premises and surrounding areas should be maintained within the National Ambient Air Quality Standards prescribed below:

Sl. No.	Pollutants	Time Weighted average	Concentration in Ambient Air (Industrial, Residential, Rural Areas) $\mu g/m^3$
1.	SO_2	Annual 24 hours	50 80
2.	NO_2	Annual 24 hours	40 80
3.	Particulate Matter, PM_{10} (size less than 10 µm)	Annual 24 hours	60 100
4.	Particulate Matter, $PM_{2.5}$ (size less than 2.5 µm)	Annual 24 hours	40 60

1596

3. Fuel/air burning ratio of all the HEMM is to maintained at an optimum condition so as to reduce air pollution from the exhaust emission of these machineries.

4. Regular checking of the exhaust emission from HEMM should be conducted by using requisite instruments for the purpose.

5. If dry drilling is to be employed, appropriate dust collectors should be provided to control the concentration of suspended particulate matters in the emission.

6. Plantation along the haul roads to reduce dust retention in the air should be maintained.

7. Proper maintenance, lubrication etc. of all moving machineries should be maintained and all engines should be provided with high efficiency silencers.

8. Primary blasting methods should be chosen in such a way so as to have a minimum impact of noise and vibration on the environment.

9. Usage of hydraulic rock breaker for limestone breaking instead of conventional secondary blasting to minimize noise pollution should be adopted as far as practicable.

10. Adequate measures taken should be made to minimize the air blast so that the blast size is kept at the optimum for less noise.

11. **A detailed Report of Compliance to all the Terms and Conditions stipulated in this Consent should be submitted along with the application for Renewal of Consent to Operate.**

(R. Nainamalai, IFS)
MEMBER SECRETARY
Meghalaya State Pollution Control Board
Shillong

Copy to: -

1. The Member Secretary, State Environment Impact Assessment Authority, Meghalaya, Shillong, East Khasi Hills District, for favour of information.
2. The Deputy Commissioner, East Jaintia Hills District for favour of information.
3. The Director of Mineral Resources, Meghalaya, Shillong for favour of information and necessary action.
4. The Division Forest Officer, Jaintia Hills (T) Division, Jowai for favour of information and necessary action.
5. **M/s STAR CEMENT MEGHALAYA LIMITED**, C/o Shri. Pankaj Kejriwal, Star Cement Meghalaya Ltd., East Jaintia Hills District for information and necessary action.
6. Guard File TB-ONLINE-RCTO(2023).

Comprehensive hydrological and hydrogeological studies of core and buffer zones of Brishyrnot Limestone Mine-I (area 42.051 ha.) near Brishyrnot, District East Jaintia Hills, Meghalaya

Sponsor:- Star Cement Meghalaya Limited

Studied by:

Estb: 1988

Studied for:

STAR CEMENT

Hydro-Geosurvey Consultants Private Limited

CERTIFICATE NO.: NABET/GWC0/IA/GW003

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August, 2023

Comprehensive Hydrological and Hydrogeological Studies of Core and Buffer Zones of Brishyrnot Limestone Mine-I (area 42.051 ha.) near Brishyrnot, District East Jaintia Hills, Meghalaya

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1.0 INTRODUCTION

Star Cement Meghalaya Limited (SCML) proposes to mine 2.507 MTPA of cement grade limestone from its lease area covering 42.051 ha. near village Brishyrnot as a captive mine for the Clinker production capacity of 1.75 MTPA.

SCML retained the services of Hydro-Geosurvey Consultants Private Ltd., (HCPL) to conduct hydrological and hydro-geological studies of said mines area vide P.O. No. 5300005723 dated 10.07.2023. The present comprehensive report on the ground water conditions in both core and buffer zones of Brishyrnot Limestone Mine-I.

The present report covers following scope of works:

1. Hydrological and drainage studies of study area, delineation of micro-water sheds based on imagery, its catchment area, catchment yields, identifying existing village ponds, its present water storage capacity and its present utilization.

2. Survey and hydrological data collection of30 key wells of 80 km^2 study area and plant and mines piezometer/coal shafts/coal pits and existing wells and determine and record the location including determination of coordinates of the points by GPS and its plotting on map and water levels, pre & post monsoon levels, yield, use, aquifer tapped etc.

3. Comprehensive hydrogeological assessment studies of study area, its present groundwater development status, long term ground water recharge and present ground water development and inflow of ground water.

4. Conducting a pump test on existing plant/private bore well in the study area tapping the limestone along with recuperation test. The pump will be installed by the client. The test is required to find out the aquifer parameters like Permeability (K) and Transmissivity (T). Data logger will be installed by HCPL in the pumping well. Interpretation of pump test data by software is included.

5. Interpretation of surface and ground water samples from the study area. The results of chemical analysis to be provided by the client.

6. Preparation of ground water contour map of study area showing the ground water flow direction and hydraulic gradient.

7. Information on site elevation, working depth, ground water table etc to be provided both in AMSL and Below Ground Level along with Schematic diagram.

8. Impact of project on surface and ground water resources and ground water quality to be assessed by the Brishyrnot mine necessary safe guards may be suggested. Quality of surface and ground water will be provided by the client.

9. Designing rain water harvesting program and its ground water recharge in the study area by identifying the existing village water ponds, its catchment area, catchment yield, its deepening.

2.0 HYDROLOGY

2.1 Physiography of the study area

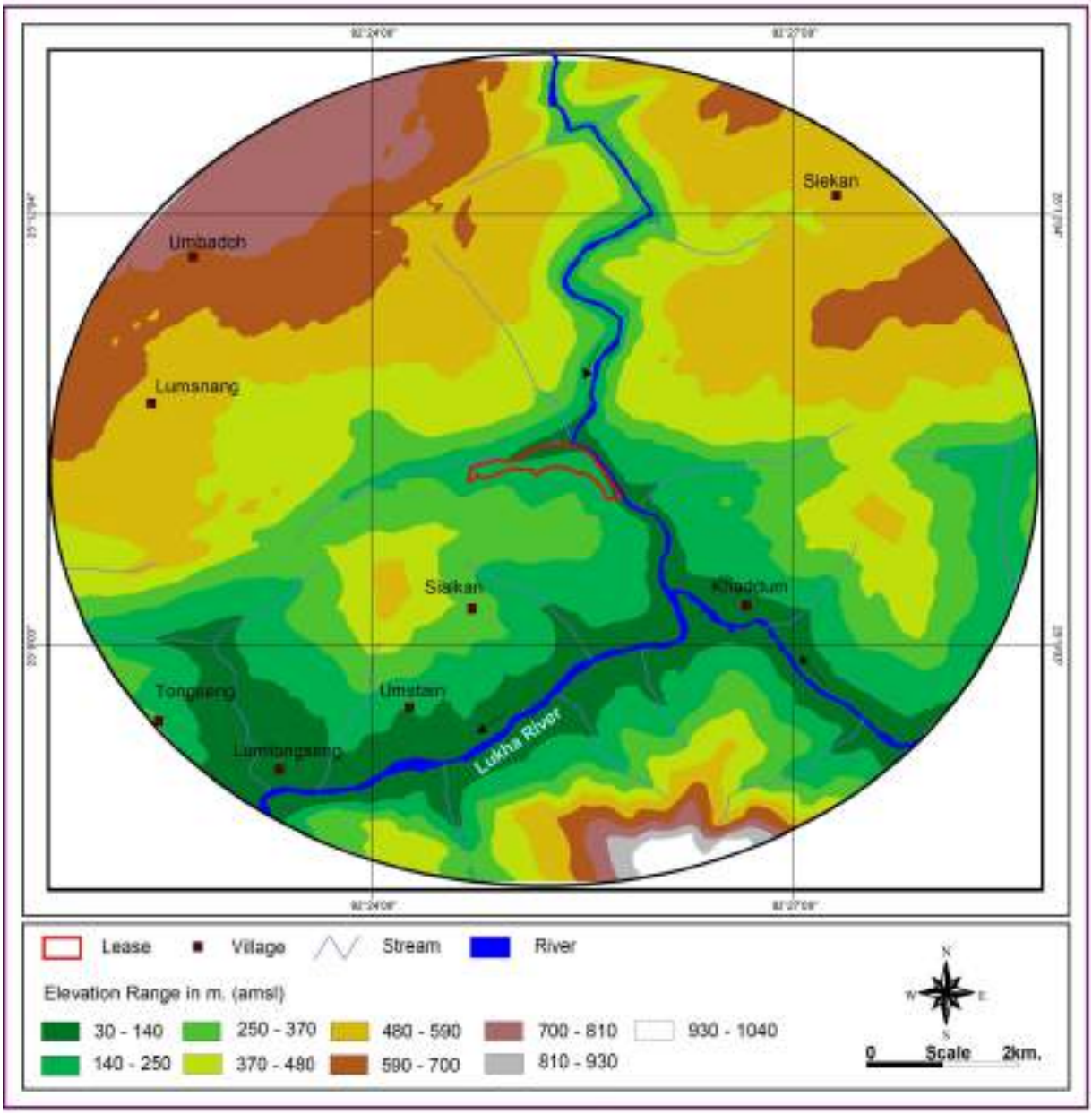
The buffer zone forms the eastern part of the Meghalaya state and covers the district of East Jaintia Hill. Jaintia Hills being a component of the Meghalaya plateau. Jaintia Hills has an undulating topography with a moderate to steep gradients. The hills gently slope towards Brahmaputra valley of Assam in the north and overlook the plains of Bangladesh in the south. The Maryngksih peak on the Eastern plateau of Jaintia Hills stands majestically at the elevation of 1306 meters from the mean sea level and is the highest peak in the entire district. In general, the whole area is full of rugged and undulating terrains with the exception of the deep gorges, steep precipice and narrow valleys carved out by the rivers and a good number of other turbulent streams that drain out all over the study area.

2.2 DEM / TOPOGRAPHY:

The study area forms the Eastern part of the district East Jaintia Hill, Meghalaya. The general topography of the area is hilly. Slope of the land surface is towards south-east and south-west.

The elevation varies from 1040 metre above MSL in south-east to 30 m above MSL near the Lukha river **(Figure-1).**

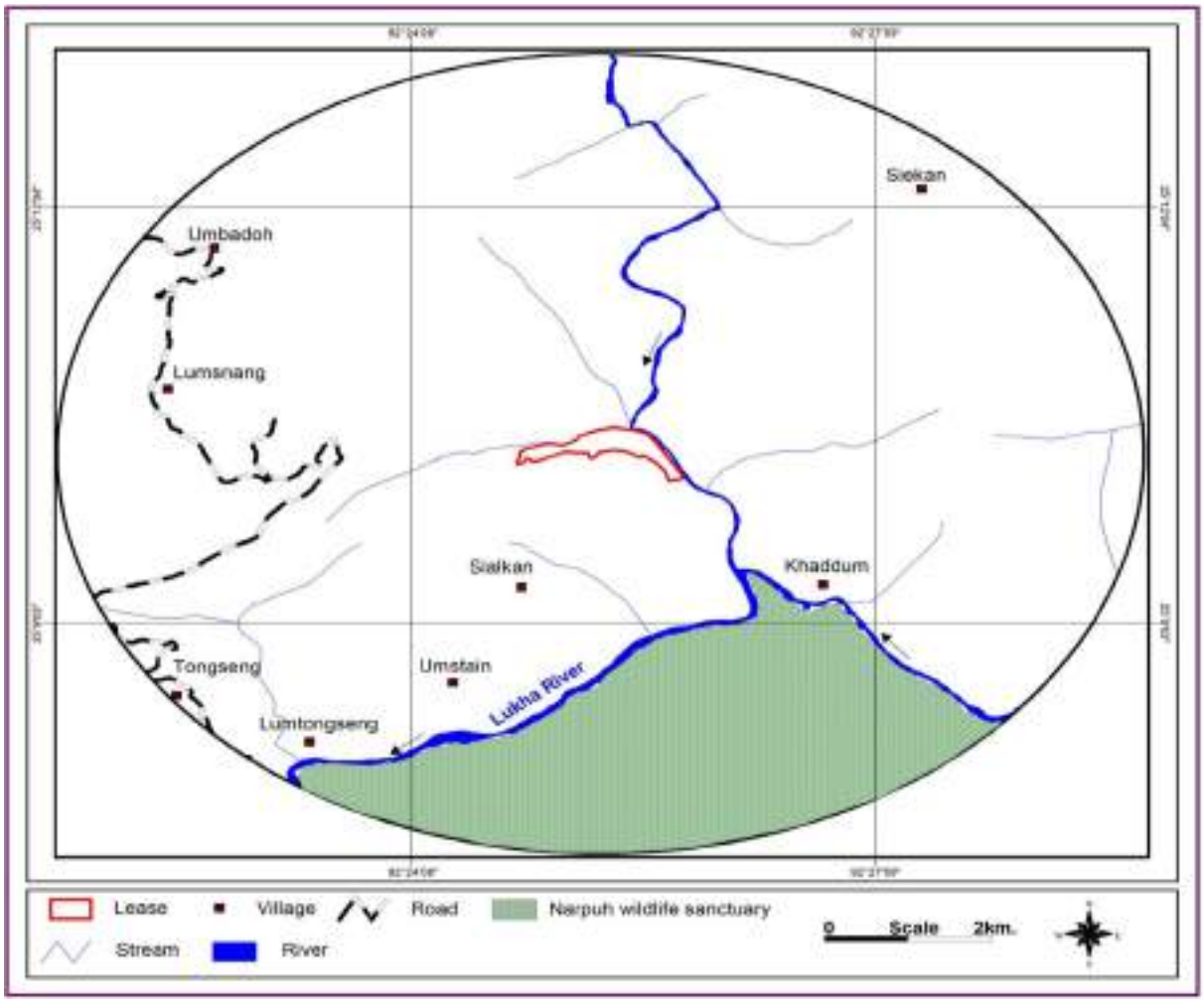
Figure-1. Digital Elevation Model (DEM) of buffer zone area of mining lease area



2.2.1 Drainage:

The drainage pattern of dendritic and rectangular types are found in the area which indicates both topographic and structural control **(Figure-2).**

Figure-2. Drainage map of buffer zone area of mining lease



2.3 CLIMATE

The nearest IMD meteorological station from lease areas is Silchar which is aerial distance of 52 Km. in south-east. However, the climatic conditions are not much different in the basin than recorded at Silchar.

Based on Koppen classification of climatic pattern, the sub-basin may be classified as tropical steppe, semi-arid and hot. The year is divided in to four seasons. The winter season is from mid- December to February and is followed by the hot summer season from March to mid-July including the pre-monsoon season from April to June. The period from July to mid-September constitutes the south west monsoon season and the period from the half of September to mid- December as post-monsoon season.

2.3.1 Temperature

Temperature records from **Silchar observatory** are available for 60 years. The period from April to August is marked by continuous increase in the temperatures. Mean daily maximum and minimum temperature (Aug) of 31.96°C and (Jan) 12.1° C respectively. Night temperatures in August are relatively higher than the May. With the onset of south west monsoon by about mid-June, the temperatures go down considerably. From November onwards, both the day and night temperature decreases, January being the coldest month with daily maximum & minimum temperatures of 24.5°C &12.1°C. The annual range in temperature i.e., the difference between extreme maximum and minimum temperatures may be over 9°C.

2.3.2 Rainfall

Average annual rainfall based on rainfall data recorded at SCML plant for last 14 years has been observed as 6874 mm (6873.56 mm). The rainfall recorded from January 2022 to December, 2022 at SCML plant was 8,035.5mm. Of the annual rainfall, about 90 % fall during Six monsoon months (April to September), With July and August getting the maximum rains. The following table gives the annual rainfall recorded at Plant, since 2009.

Table-1. Annual rainfall recorded at SCML plant site

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
January	11	0	25	19	0	0	10	38	0	0	0	4	0	10.7
February	70	3	37	29	12	52.5	49	51	258	17	18	0.5	0.5	34
March	145	1017	582	211	170	90	61	161	947	150	52	36	137.2	432.2
April	539	2077	274	900	409	173.5	562	2168	1280	321	527	298	208	1402.4
May	485	1247	721	473	1133	1117	1144	1091	557	933	740	1092.5	605.4	1867.2
June	886	2053	1007	3264	981	1108	1207	854	1038	1274	1294	2421.5	1676.7	3033.0
July	897	1118	988	1722	1383	893	719	1242	631	1684	2181	2703	617	172.3
August	1209	941	851	880	761	1625.5	1583	659	1306	349	521	884.4	1960	107.3
September	449	967	473	886	506	1026	831	491	811	785	604	1551	147	466.4
October	445	254	49	496	275	59	128	68	447	99	362	285.1	262	442.3
November	9	18	0	39	0	0	23	183	24	31	5	35.6	0	0
December	0	37	12	0	0	0	11	18	114	0	0	0	20	7.7
Total	**5145**	**9732**	**5019**	**8916**	**5630**	**6155**	**6328**	**7023**	**7413**	**5642**	**6306**	**9311.6**	**5633.8**	**7975.5**

Average Annual Rainfall: 6873.56 mm

2.3.3 Humidity

Relative humidity during the south west monsoon is generally over 70%. Relative humidity during summer afternoon is as low as 60% while during monsoon, it does not go beyond 88%. The mean annual humidity values in the morning are 84 % and in the evening 72 %.

Table-2. Meteorological data as recorded at Silchar

Month	Temperature		Relative Humidity		Mean Cloudiness		Mean Wind Speed
	Mean Daily Max °C	Mean Daily Min °C	08:30 %	17:30 %	08:30 Oktas	17:30 Oktas	Km/hr
Jan.	24.5	12.1	87	65	1.6	1.8	1.3
Feb.	26.4	14.1	81	59	1.8	2.2	2.3
Mar.	29.6	17.7	77	59	2.0	2.8	2.7
Apr.	30.5	21.0	81	69	2.3	4.5	3.9
May	31.0	23.0	83	74	2.4	5.3	4.9
Jun.	31.5	24.6	88	81	2.2	6.4	5.9
Jul.	31.4	26.1	87	82	2.0	6.5	6.4
Aug.	31.9	25.2	87	79	2.0	6.3	6.0
Sep.	31.5	24.6	87	79	1.9	5.8	5.4
Oct.	30.9	22.9	85	76	1.8	4.4	3.4
Nov.	29.1	18.6	82	69	1.7	2.7	2.0
Dec.	26.1	13.9	85	68	1.7	1.7	1.1
Annual mean	**29.6**	**20.4**	**84**	**72**	**1.9**	**4.2**	**3.8**

2.3.4 Cloudiness

Skies are generally moderately to heavily clouded during southwest monsoon season, being overcast on some days. During rest of the year, the skies are normally clear to lightly clouded. During the months of June to August, the mean cloudiness (in Oktas) is usually more than 6, being generally higher in the evenings than the mornings.

2.3.5 Winds

Winds are generally light, to moderate, except during the south west monsoon season when these are moderate to strong. From May to September, winds blow mostly from direction northwest to southwest. In the post monsoon and winter months, winds are mostly from direction lying between northeast and northwest. Mean wind speed is highest in July (3.8 km / hour) and lowest in December& January (1.1 km / hour).

3.0 HYDROGEOLOGY

3.1 Geological Setup

Geologically the area is a part of the Meghalaya shelf, an extension of the Bengal basin. The origin of the limestone deposit relates to the Eocene period during which a major change in sedimentation pattern occur recover the central deep Bengal basin as a result of collision of India with Burma and Tibetan blocks. The influx of sedimentation into the basin from the Himalayas to north and Indo-Burman ranges to the east rapidly increased at this. At this stage, a major marine transgression occurred which resulted in the deposition of carbonate sediments in the eastern part of the basin.

Age	Group	Formation	Lithology
Late Eocene to Early Oligocene	Jaintia	Kopili	Marl, Shale, Grey Siltstone
Middle Eocene		Shella	**Prang Limestone**-Bluish massive to thinly bedded nummulitic limestone with marl interbeds.
Early Eocene			**Narpuh Sandstone**-Dark brown and ferruginous, coarse to medium grained sandstone bands of sandy limestone.
Palaeocene			**Umlatdoh Limestone**-Grey to Pinkish grey nummulitic limestone, renaceous limestone and calcareous sandstone.
			Lakadong Sandstone- Buff, medium grained arkosic sandstone contents workable coal seams, carbonaceous shales.
			Lakadong Limestone-Grey to greyish brown are nacreous formaniferal limestone.
Lower Palaeocene		Therria	Buff, medium to coarse arkosic sandstone with thin un fossil-ferrous limestone, thin beds of pyrite, rich silty sandstone and carbo-shales.
Late Cretaceous	Khasi	Langpar	Buff, calcareous ferruginous sandstone, marl etc.
		Mahadek	Massive coarse grained glauconitic sandstone with dark grey shales and calcareous horizons.

The Shella and Kopili formation are the main sub-divisions of the Jaintia Group, the former stratigraphically occurs below the later. Shella Formation comprises of three alternating sandstone and limestone i.e. Lakadong Limestone, Umlatdoh Limestone and Prang Limestone respectively in chronological order. The pinching out of some of the members and inter fingering of limestone beds with sandstone and shale made them regionally persistent. The Kopili formation consists predominantly of shale with siltstone and sandstone intercalations.

There are conformable relationships between all the members of Jaintia group and all the three beds of limestone are distinct in their grain sizes and fossil content. The rocks of Jaintia Group have a regional strike ranging from NE-SW to E-W 2°-5° dips towards southeast to south. In the area south of Lumshnong, the beds locally exhibit higher southerly dips (15°).

Of all the rocks exposed in the area, only shale form a poor aquifer while alluvium generally thin, remains above water table. It is only during the post monsoon period that basal part of alluvium is saturated that too along river courses.

3.1.1 Local geology

The Limestone is mostly medium grained, hard, compact, fractured and fossiliferrous. The major mineral constituent is calcite and accessory minerals are quartz and iron oxide. In some areas the limestone is intercalated with thin bands of sandstone and is high in silica contents.

The local geology of Brishyrnot Limestone Mine-1 falls under Kopili formation of Jaintia group (of Meghalaya Shelf). The maximum and minimum elevation of the area varies from 219 mRL to 60 mRL respectively. The ltho unit i.e., Limestone formation in the area belongs to Prang limestone unit of the sylhet unit of Kopili formation of Upper Eocene age at the southern side. There is only one band of limestone in this lease area. The thickness of the limestone band as per exploration is 127.00 mtrs. The strike direction of limestone formation in the area is E-W and dipping around 8-15 towards south.

3.2 HYDROGEOLOGY OF THE STUDY AREA

The hydrogeological formation of the study area comprised of Sandstone and Limestone of Paleocene-Eocene age. The presence of weak planes like fractures and joints in these formations form the principal aquifer in the area. The ground water in the district occurs under unconfined, semi-confined to confined conditions. Study of dug wells and exploration data reveals the presence of phreatic/shallow and deep fractured aquifers **(Figure-3).**

The depth of shallow aquifer in the study area including the buffer zone ranges from 23 to over 100 meters. The shallow aquifer occurs under unconfined to semi confined condition.

Ground water from shallow aquifer is exploited through different types of ground water extraction structures such as hand pumps and borewells.

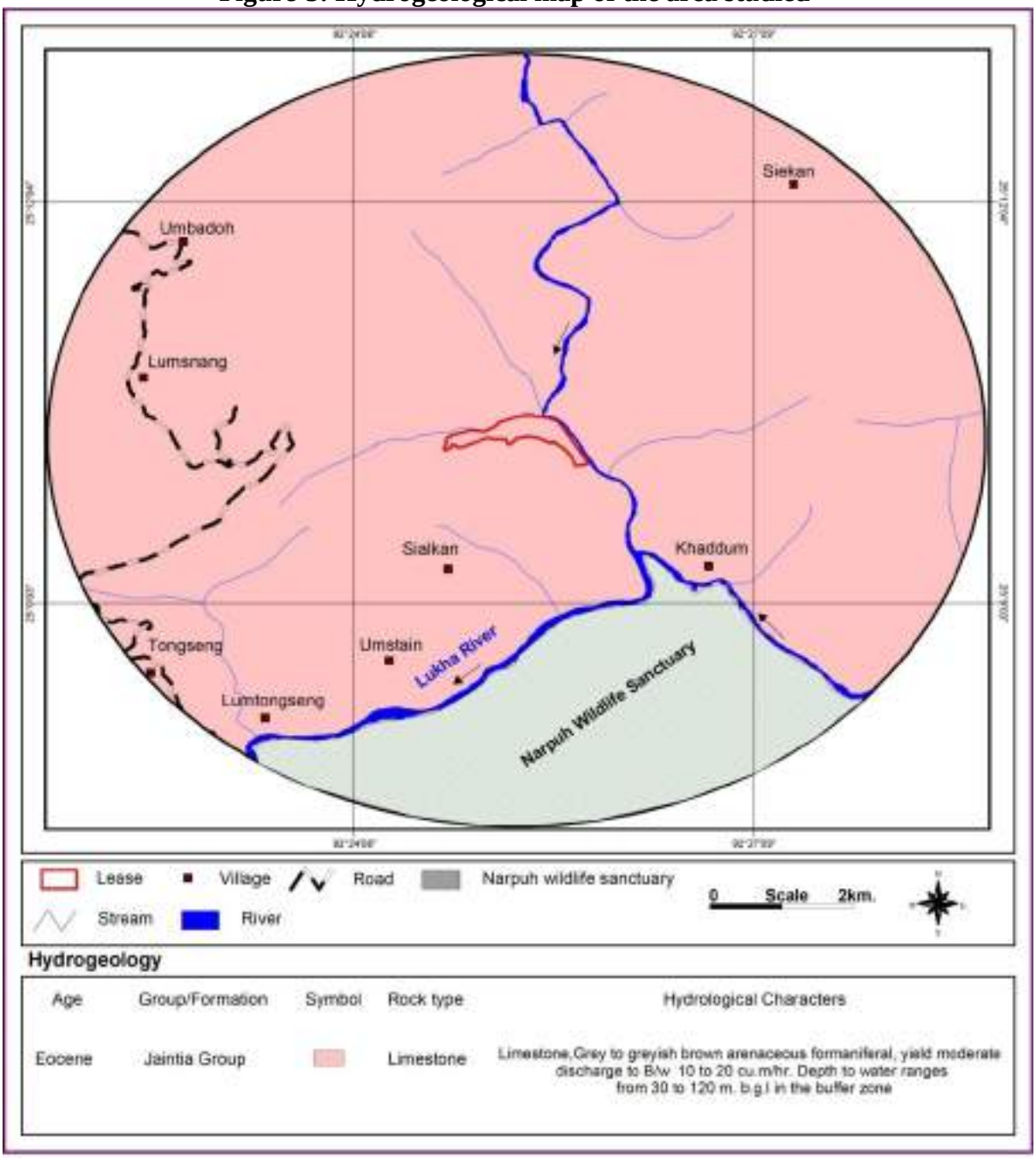
The deeper aquifer occurs as semi-confined to confined condition where ground water is found in the fractured zone of consolidated Sandstone and Limestone. The drilled depth of exploratory wells tapping these aquifers range from 80 to 200 m below ground level (Ref: CGWB, District Brochure).

Seasonal Springs: Spring is defined as a localized natural discharge of ground water appearing at the ground surface as a current of flowing water through well-defined outlets. The discharge may vary from a trickle to a stream.

Groundwater flow from springs is governed mainly by three inter-related factors: geology (type, distribution and permeability characteristics of geologic units), topography (landforms and relief), and climate (timing and amount of precipitation). Topography drives the groundwater flow downhill and largely dictates the occurrence of the spring itself. Climate would influence the timing and amount of recharge to the flow system and the volume and variability of discharge. Groundwater obtained from springs is similar to water pumped from shallow wells.

Most of these springs are depression and topographic or fractured springs. It is observed that the discharge of springs in this area ranges from 0.0 to 3.6 m^3/sec during pre-monsoon season and increases tremendously during monsoon and post monsoon period.

Figure-3: Hydrogeological map of the area studied



3.3 STREAM DISCHARGE MONITORING

The flow of Umtyrngai and Umutha Nallah which cater to the water requirement of the Plant is being monitored by the Environment Cell of the Company, the pre-monsoon, 2022 flow rates are as given **Table-3 to 4 & Figure-4.**

Figure-4. Locations of stream discharge monitoring points in the study area

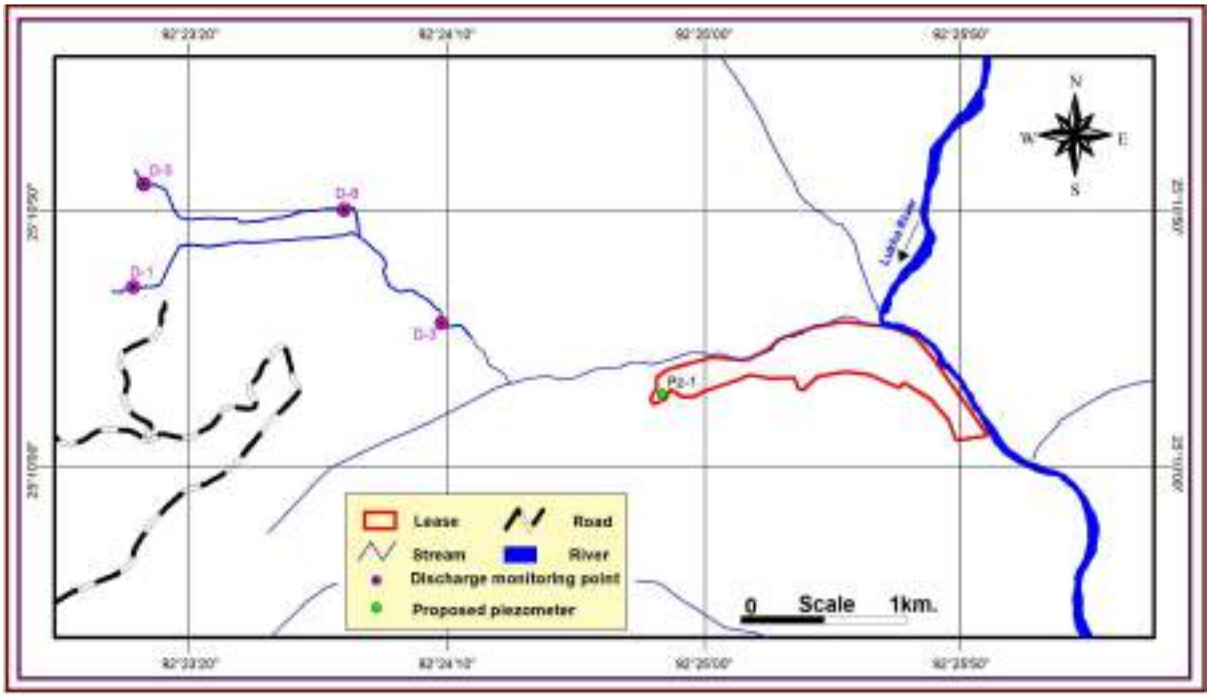


Table-3.Summary of Flow data (June, 2022)-Umtyrngainalah

Flow Data (UP Stream) Umtyrngainalah (D-5)					
S. No.	**Date**	**Water Flow (liter/s)**	**Water Flow (liter/Minute)**	**Water Flow (liter/Hour)**	**Rainfall mm**
1	15.06.2022	1805.82	108349.190	6500951.417	552.7
2	16.06.2022	2463.71	147822.335	8869340.102	245.8
3	17.06.2022	1552.88	93173.077	5590384.615	313.4
4	18.06.2022	1150.38	69022.881	4141372.881	262.7
5	19.06.2022	751.82	45109.422	2706565.350	87.8
6	20.06.2022	624.91	37494.336	2249660.183	38.5
Flow Data (Down Stream) Umtyrngainalah (D-8)					
S. No.	**Date**	**Water Flow (liter/s)**	**Water Flow (liter/Minute)**	**Water Flow (liter/Hour)**	**Rainfall mm**
1	15.06.2022	14697.92	881875.000	52912500.000	552.7
2	16.06.2022	17634.33	1058059.701	63483582.090	245.8
3	17.06.2022	12915.58	774935.065	4649103.896	313.4
4	18.06.2022	10357.92	621475.410	37288524.590	262.7
5	19.06.2022	6660.17	399610.390	23976623.377	87.8
6	20.06.2022	6149.62	368977.273	22138636.364	38.5

Table-4.Summary of Flow data (June, 2022)-UmuthaNalah

Flow Data (UP Stream) UmuthaNalah (D-1)					
S. No.	Date	Water Flow (liter/s)	Water Flow (liter/Minute)	Water Flow (liter/Hour)	Rainfall mm
1	15.06.2022	1548.89	92933.333	5576000.000	552.7
2	16.06.2022	1914.74	114884.211	6893052.632	245.8
3	17.06.2022	1261.92	75715.385	4542923.077	313.4
4	18.06.2022	1031.05	61862.816	3711768.953	262.7
5	19.06.2022	789.68	47380.645	2842838.710	87.8
6	20.06.2022	705.93	42355.932	2541355.932	38.5
Flow Data (Down Stream) UmuthaNalah (D-3)					
S. No.	Date	Water Flow (liter/s)	Water Flow (liter/Minute)	Water Flow (liter/Hour)	Rainfall mm
1	15.06.2022	9541.74	572504.380	34350262.670	552.7
2	16.06.2022	12338.21	740292.373	44417542.373	245.8
3	17.06.2022	7370.47	442228.125	26533687.500	313.4
4	18.06.2022	6331.40	379884.194	22793051.613	262.7
5	19.06.2022	5056.62	3033.97.345	18203840.708	87.8
6	20.06.2022	3234.19	194051.645	11643098.684	38.5

Table-5: Average water flow rate data (April'22 to June'22)

Location	UoM	Upstream	Downstream
70 Ha	L/Min	9576.52	Not available
Umtyrngai Nallah		303053.77	713989.82
Umso Nallah		177186.70	195185.19
Umutha Nallah		72522.05	465792.14
Seshympa River		1079869.57	1425814.3
Lukha River		275060.00	
Lunar River		304914.89	
Umlong River		244226.25	

3.4 Groundwater intersection in the Brishyrnot Limestone Mine-I

Table-6: Groundwater intersection in Brishyrnot Limestone Mine-I

S. No.	ML Area (ha.)	Mining ultimate depth (m amsl)	Ground water level (m amsl)	Groundwater Intersection
1.	42.051	93.0	78	No

Figure-5. Map showing hydrogeological sections in the buffer zone

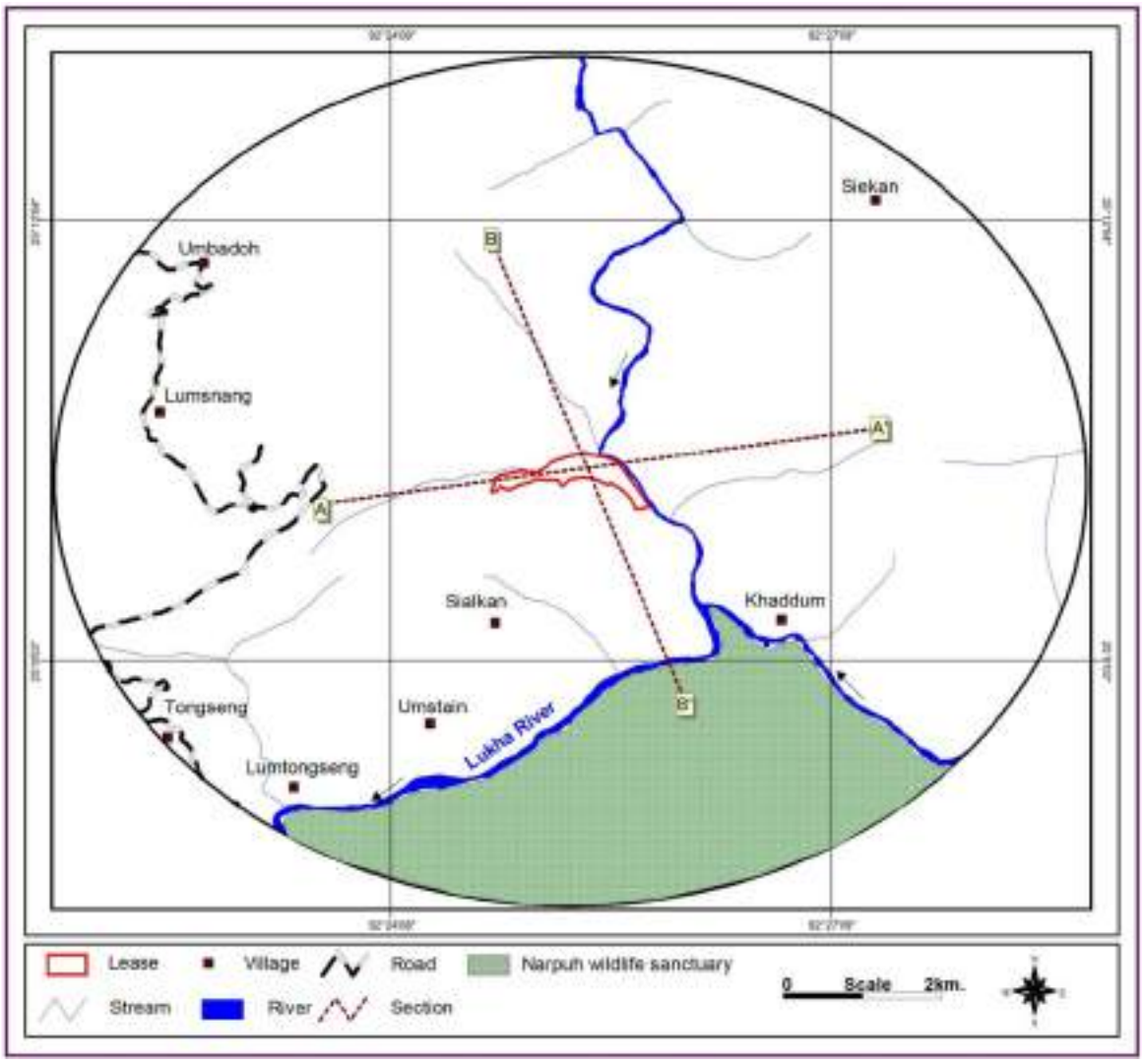


Figure-6. Hydrgeological section A-A'

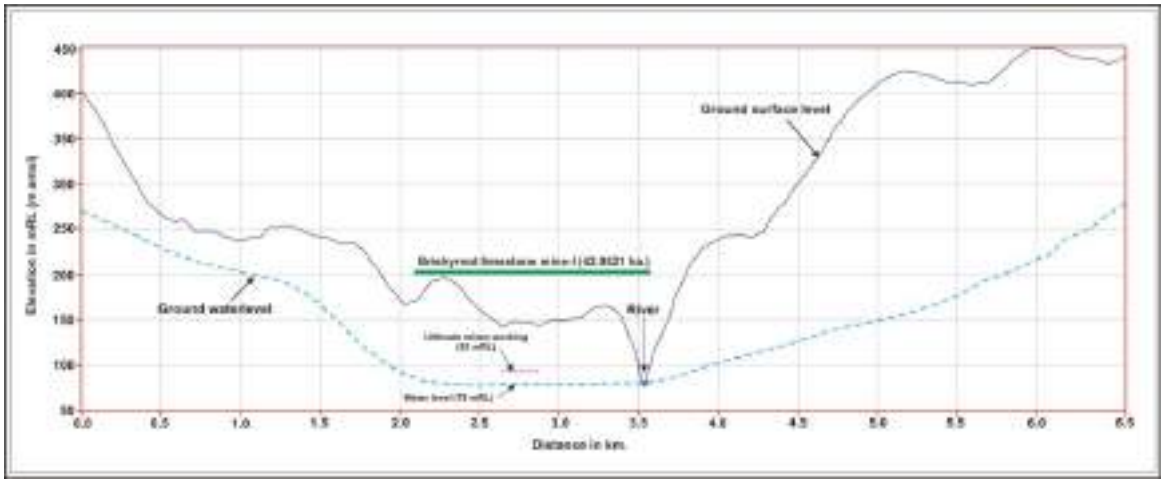
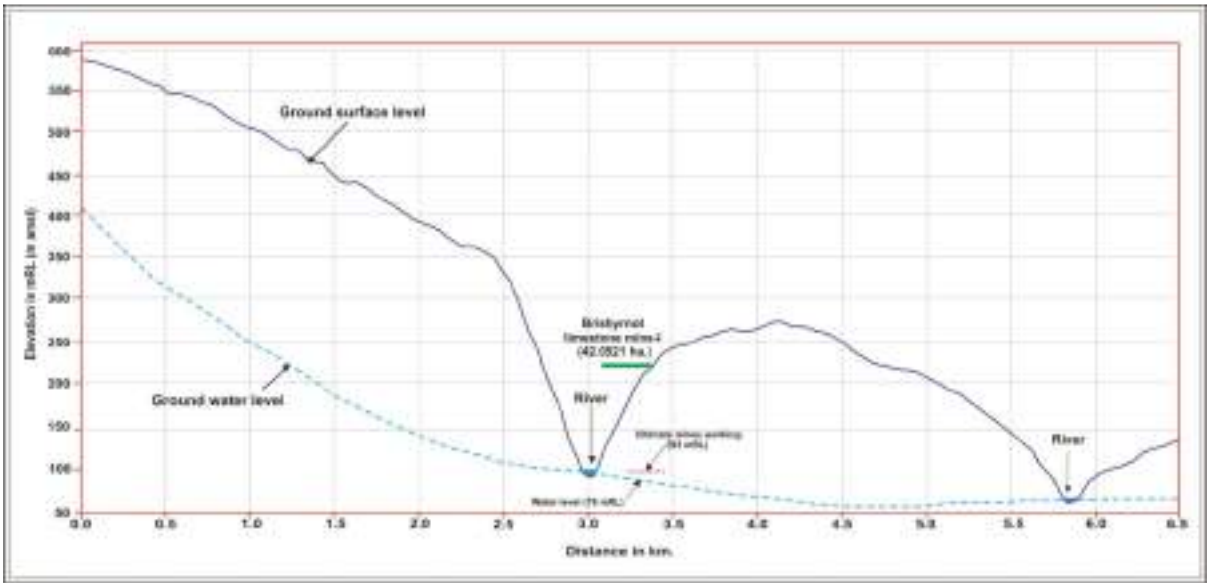


Figure-7. Hydrgeological section B-B'



3.5 Nature of occurrence of ground water

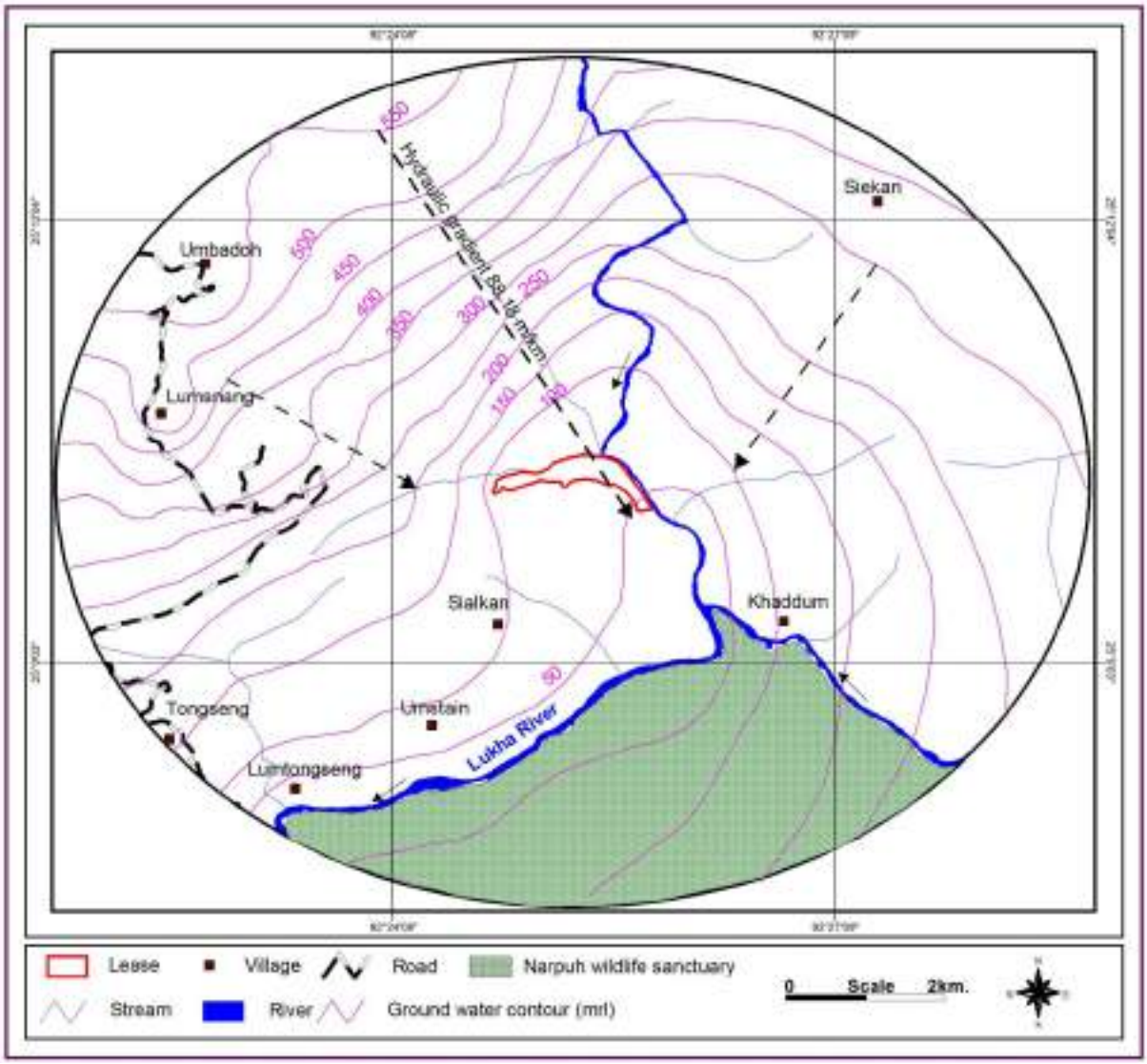
Limestone: Ground water occurs in these formations under semi-confined to confine conditions.

Sandstone: The occurrence of ground water in this formation is largely controlled either by weathering and or by fractures patterns. In fractured rocks, ground water movement mainly takes place along the fracture and their openings. Groundwater in these formations occurs under phreatic conditions in weathered mantle and under semi-confined to confine conditions in the fractured rocks, which is governed by topography and drainage.

3.6 Movement of ground water

A review of the topography and drainage pattern in the buffer zone reveals that the general slope of the area is towards south and south-east and ranges from 80 m/km. to 150 m/km. due to steep hills and deep valleys. The ground water flow is also towards south east with very high hydraulic gradient as 88.18 m / km. as calculated from the monitoring of wells in the buffer zone **(Figure-8).**

Figure-8. Ground water contour map of study area (m amsl)



3.7 Yield of wells

There are no bore-wells in the mining leases but a number of bore-wells exist in the Lumshnong areas which are pumped for couple of hours a day for mostly domestic use. The average yield of these borewells varies from 4 to 10 m^3/hour of potable quality of water. Wells are mostly operated by submersible pumps of 2 to7.5 H.P.

Table-7: Hydrological data of key wells of buffer zone of plant monitored during pre-monsoon-2022

S. No	Village	Longitude	Latitude	Depth of well (m)	Pre monsoon water level (m)	Aquifer	Yield (m^3/d)	Pump capacity (HP)	Purpose
1.	Near Krishna colony	92°23'13.17"	25°10'30.82"	70.80	19.35	Limestone	-	-	Defunct
2.	Near Nala	92°23'13.93"	25°10'28.75"	50.50	15.40	Limestone	-	-	Defunct
3.	BH3, Piezowell	92°23'53.32"	25°10'35.47"	120.4	71.35	Limestone	-	-	Monitoring
4.	Lumshnong	92°23'00.29"	25°10'03.28"	85.20	26.10	Limestone	120.00	5HP/EM	Irrigation
5.	BVCL Pump, Near Highway	92°22'14.47"	25°12'01.74"	155.0	110.00	Limestone	60.00	7.5HP/EM	Domestic
6.	WahiajerNarpuh	92°22'49.26"	25°11'38.05"	140.60	70.80	Limestone	75.00	5HP/EM	Domestic
7.	Thangskoi	92°22'40.98"	25°13'20.36"	130.9	80.10	Limestone	140.00	7.5HP/EM	Irrigation
8.	Near River	92°23'24.90"	25° 8'04.03"	30.80	8.30	Limestone	90.00	5HP/EM	Domestic
9.	Umlong (Valley)	92°20'28.13"	25° 9'18.81"	40.60	12.50	Limestone	80.00	3HP/EM	Domestic
10.	Near ML 4.96	92°22'19.39"	25° 9'46.04"	122.7	73.40	Limestone	100.0	5HP/EM	Irrigation
11.	Umlong	92°20'34.64"	25°10'56.47"	110.5	62.10	Limestone	85.00	2HP/EM	Irrigation
12.	Umbadoh 70	92°24'42.02"	25°12'17.55"	130.4	70.60	Limestone	90.00	3HP/EM	Irrigation
13.	Near Hill Cement Mines	92°24'04.74"	25°13'15.55"	122.3	71.25	Limestone	90.00	2HP/EM	Irrigation

3.8 AQUIFER DESCRIPTION [TYPE, DEPTH, STORATIVITY, PERMEABILITY AND POROSITY]

As aquifer parameters like transmissivity, hydraulic conductivity and storability are required to assess the nature and capability of the aquifer being tapped. Although, ground water modelling is not required as mining will not intersect ground water table which is very deep and optimum depth of mining is shallow. However, onelong duration pump test was conducted in the vicinity of the lease area tapping limestone on an existing pumping well. The values of the aquifer parameters by using the software and by different methods. The details of the pump test along with its theory are discussed as under.

3.8.1 Theory

The basic aim of pump-test analysis is to establish the fundamental aquifer properties like hydraulic conductivity (K) and transmissivity (T). Various methods for determining K and T were developed long back for equilibrium and non-equilibrium conditions in confined and unconfined aquifers.

During an aquifer test, the hydraulic head in the aquifer declines as the time of pumping increases. Analysis of hydraulic head decline, or drawdown, allows for the estimation of aquifer hydraulic properties.

Generally, the type of aquifers with special conditions are:

- Confined
- Leaky or Recharge Boundary
- Unconfined
- Barrier Boundary

3.8.2 Analysis methods:

There are many pumping test solution methods, the methods used for this pumping tests are:

- Theis
- Theis with Jacob Correction
- Cooper &Jacob I

These methods each have some general assumptions:

- aquifer extends radially and infinitely
- single pumping well
- constant pumping rate

The methods mentioned are relatively improved method in the order as listed thus making the "Theis with Jacob Correction" the most appropriate specifically in the case of unconfined aquifers (as transmissivity is not a constant here), against the "Cooper and Jacob-I" method over "Theis" method. The simultaneous analysis based on these methods individually would reveal the extent of variance, if any, to arrive at the most appropriate conclusion.

3.8.3 Aquifer Performance Test (APT)

As aquifer parameters like transmissivity and hydraulic conductivity are required for modelling. There are two long duration pump test was conducted near the plant area (One tapping alluvium and another limestone) on an existing pumping well and observations wells. The details of the pump test along with its theory are discussed as under.

3.8.4 Type, analysis and interpretation of data

The aquifer test data were analysed utilizing "Aquifer Test Pro' Version 4.2.0.2" groundwater software developed by Sclumberger Water Services. The data was analysed using Theis, Theis with Jacob Correction and Cooper & Jacob I methods which provided good fits **(Figure-10 to 14)**. Type curves were generated by the software and were both automatically and manually matched to the observed drawdown data. Type curves were generated for numerous combinations of parameters in order to assess and obtain the combination of parameters which provided the best match with the observed data.

The pump test was conducted on a pumping well located in Lumshnong village **(Figure-9).** The transducer (monitoring sensor) was lowered up depth of 60 m in the well.

3.8.5 Duration of the Test

The pump was run for about 105minutes at a discharge of 17.5 m^3/hour, it was observed that a drawdown of 2.10m occurred in the well speedily and the curve is used for calculation of aquifer parameters. The detail of the pumping well is as:

APT start time : 8.10 P.M 26/05/2022
APT stop time : 10.15 A.M 27/05/2022

Pumping well	
Type of well	T/w
Depth of well	140 m
Dia of well	203 mm
Water level	26.10 m bgl
Location	25°10'3.278"N92°23'0.288"E
Pump capacity	5.0 HP
Discharge	17.5 m^3/hr

Figure-9: Location of pumping well (P/W)used for Aquifer Performance Test (APT)

3.8.6 Data Acquisition system

Micro Divers (Schlumberger make) and Baro Diver were used for the test. The Micro Diver is a data logger specially developed for measurement of temperature and water level in narrow places because the diameter is only 18mm. The Baro Diver is used to compensate for variations in the atmospheric pressure. Battery, data logger, pressure and temperature sensor are integrated in a Faraday Cage with following specifications. Ø- 18mm, L 90mm and a memory of 48,000 measurements, Battery lifetime of 8-10 years, Accuracy: Pressure 0,15% FS, temperature 0,1 ºC.

Figure-10: Barometric pressure and temperature as recorded by Baro Diver

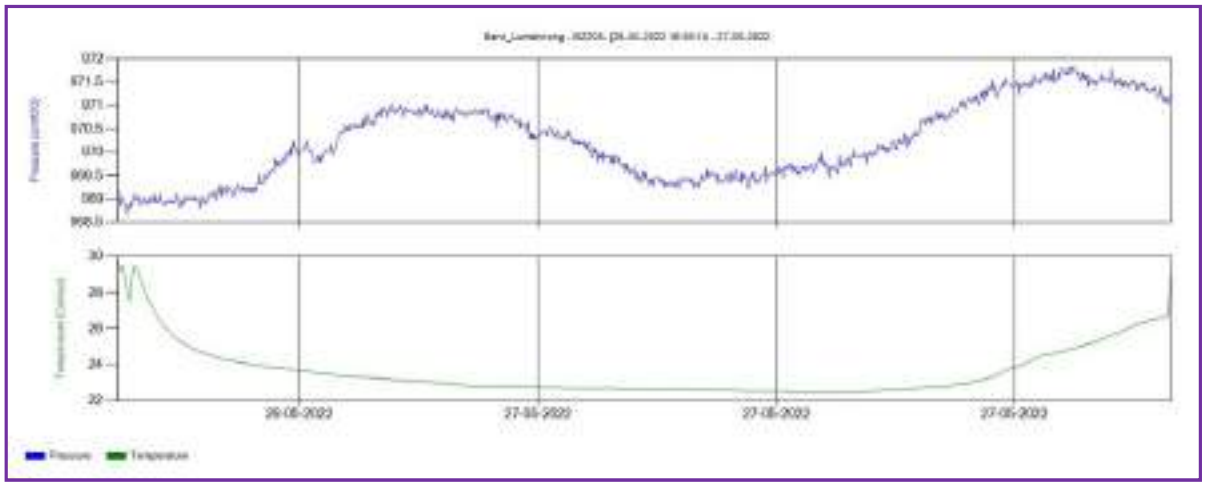


Figure-11: Drawdown and recuperation recorded during the pumping test

3.8.7 Results of pump test

The pump test conducted has indicated the following values of the aquifer parameters calculated by different methods **(Table-8).**

Table-8. Values of aquifer parameters derived by different methods

Method Adopted	Transmissivity (m^2/day)	Hydraulic conductivity (m/day)
Theis	1.63×10^2	2.04×10^0
Theis with Jacob Correction	1.63×10^2	2.04×10^0
Cooper Jacob I	1.84×10^2	2.30×10^0
Average	**1.73×10^2**	**2.13×10^0**

Figure-12: Calculation after Theis

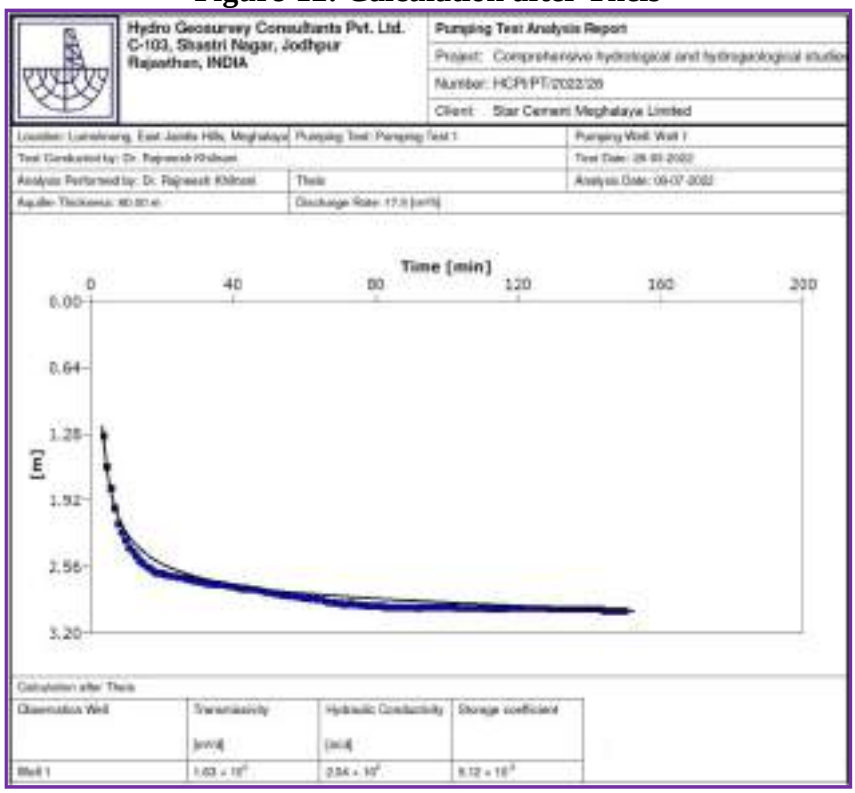


Figure-13: Calculation after Theis with Jacob Correction

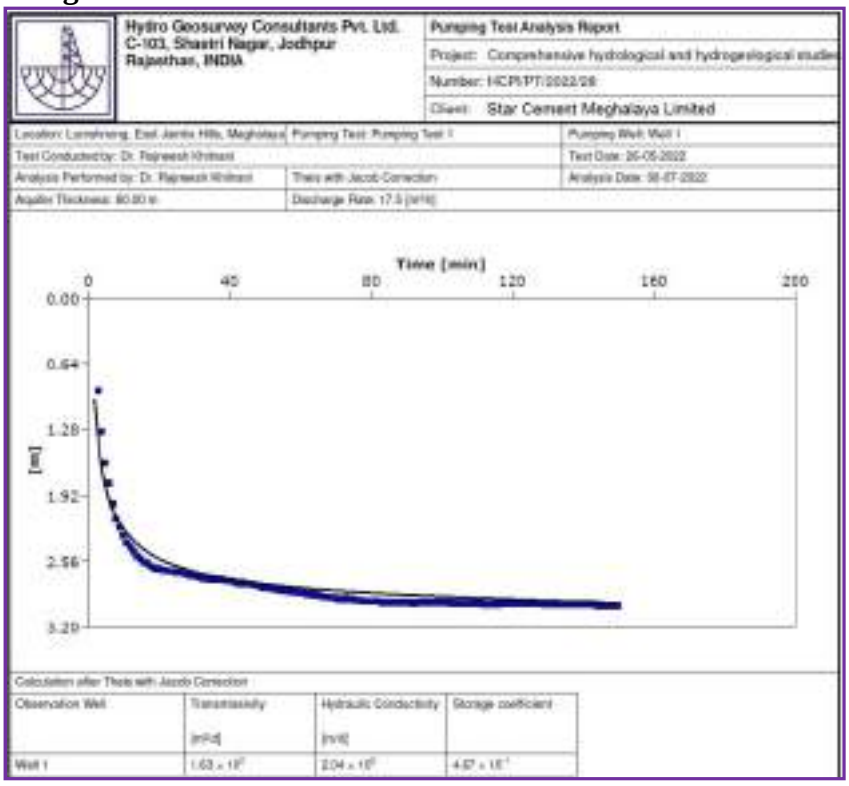
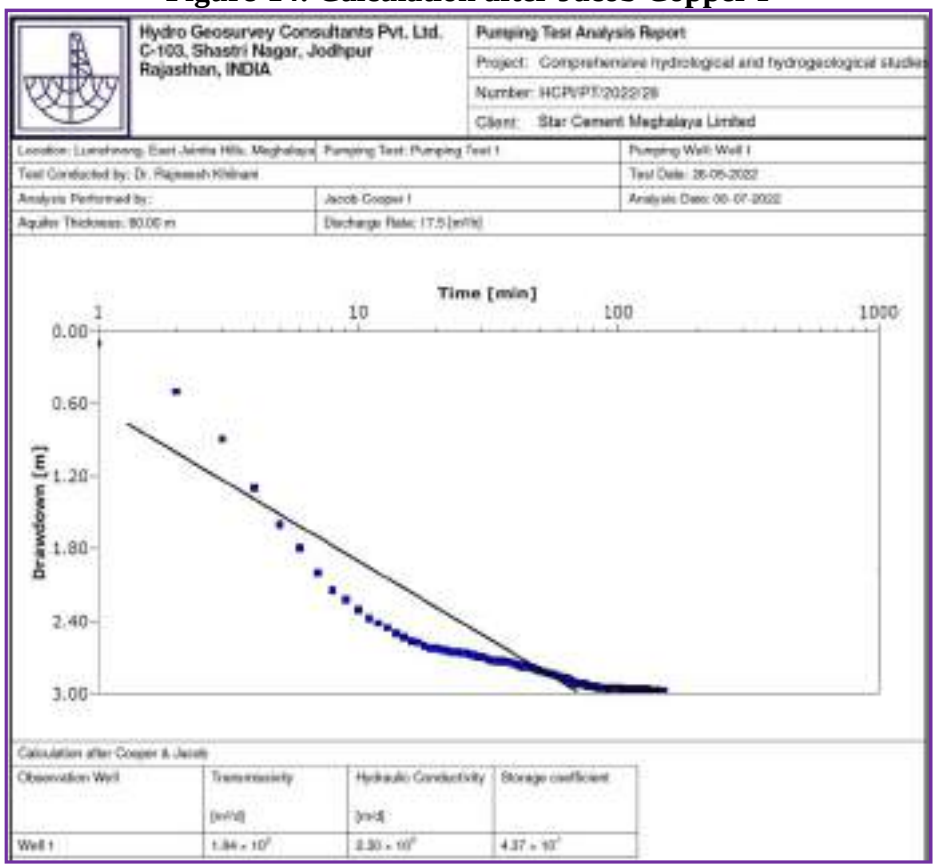


Figure-14: Calculation after Jacob Copper I



The value of transmissivity (T) ranges from 163 m^2/day to 184 m^2/day while the hydraulic conductivity ranges from 2.04 m/day to 2.30 m/day. The relatively high value of transmissivity for the aquifer is primarily due to highly fractured nature of the limestone at depth.

4.0 HYDROLOGICAL NETWORK SYSTEM

4.1 Introduction

It has been proposed to establish a hydrological network system by sinking new piezometer in the mining lease area to find out the depth to water table, particularly in the low lying area. It is also suggested that all the piezometer in the mines area be monthly monitored for ground water levels and its fluctuation may be interpreted to study the impact by preparing hydrograph for piezometer. Water level data may be interpreted and an annual report indicating the impact of mining activities may be prepared.

Accordingly, Based on the hydrogeological and the hydrological settings of the area, HCPL designed the hydrological network system by identifying the locations where piezometer is to be constructed in the mining lease areas.

4.2 Hydrological network system

The hydrological network system has been designed considering the low lying area, which is in corner of the mining lease area to compare the impact of sub-surface drainage.

4.3 Selection of piezometer in mining lease area

In total, one piezometer is proposed to be constructed, in the mining lease area. The location of the proposed piezometer is shown in **Figure-15** and details are given below in **Table-9.**

Table-9: Co-ordinates of the proposed piezometer in the Mine area

S. No.	Proposed Piezometer	Latitude	Longitude	Depth in metres
1.	Pz-1	N 25°10'14.64"	E 92°24'52.30"	120.0

Figure-15. Hydrological network system for mining lease area

4.4 Design of piezometer

Piezometer is essentially a small diameter borehole (100 mm) deep enough to have the zone of saturation permanently which is exclusively used for measuring ground water level. This should only indicate static water level or top of the zone of saturation at any given time.

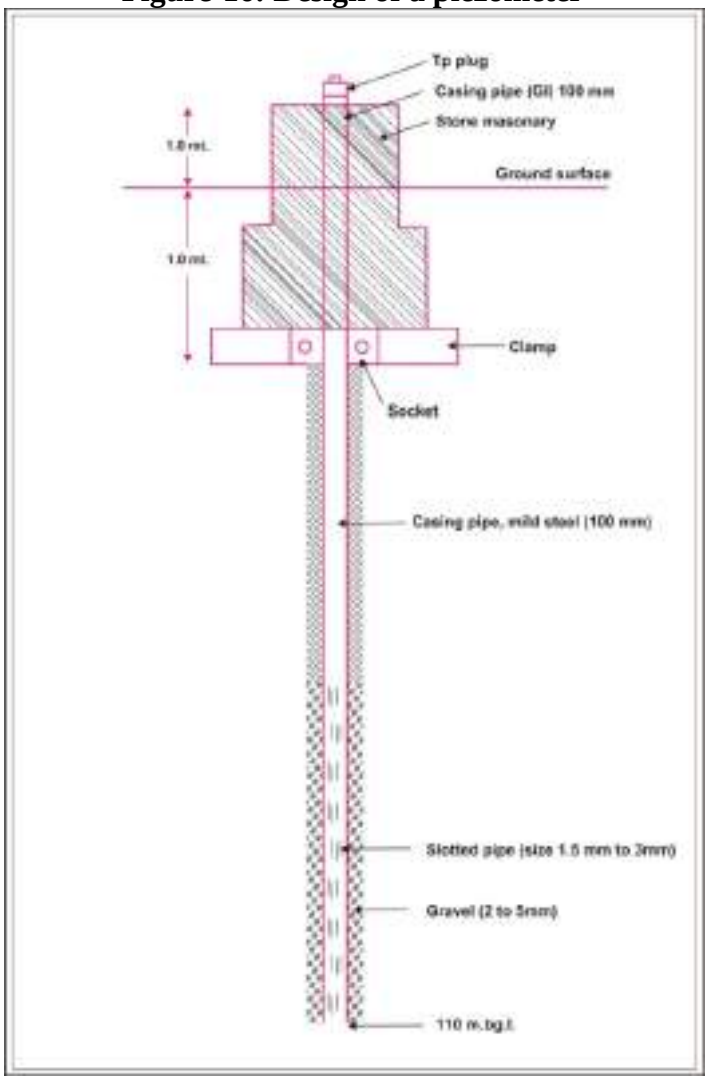
The location of piezometer in any area should be spaced in such a way that fluctuation of water level may indicate the changes caused due to excessive ground water recharge and sub-surface drainage works constructed to drain out the stored water in the water logged area.

The piezometer is proposed to be painted blue and wire fencing provided around it so that people may not damage it. The security staff posted in the plant will see to it that piezometer are not damaged by people.

The piezometer may be drilled by deploying a DTH drilling, which is generally used for construction of hand pumps. Depth of the piezometer should be 65-165 metres (from ground level) with 0.6 metre pipe above the land surface. Piezometer shall be provided with casing pipe either of mild steel or PVC of 100 mm in diameter up to depth of 9 metres followed naked hole of 100 mm diaupto depth of 100 m depending on the thickness of alluvium and weathered rock.

The piezometer may be provided with threaded cap at the top of the pipe which may be opened by pipe wrench for measuring the water levels. The piezometer should be provided with cemented platform (1.00 m x 1.00 m and 0.6 m above the land surface) as shown in **Figure-16**. Piezometer may be provided with sign board indicating the Number of the piezometer. The general depth of piezometer is given below:

Figure-16: Design of a piezometer



4.5 Monitoring program

4.5.1 Monitoring program for water levels

The piezometer is to be monitored every month. The water levels will be measured by using electrical water level indicator having a graduated measuring tape where a sonde, after touching water level in a piezometer lights an electric bulb and makes an alarming sound. Water level is measured from top of casing and its height from land surface is noted. The accuracy of measurement will be 1 cm. Monitoring of piezometer will be started as soon as the piezometer are ready for monitoring.

4.5.2 Bi-annual monitoring for ground water quality

It has also been desired that ground water quality may also be monitored to find out the impact of sub-surface drainage works and recharge from rainfall and surface runoff. Any major change in the increment or decrement of ground water storage or ground water recharge and ground water discharge is reflected in the quality of ground water. If ground water discharge is more than ground water recharge, then it is reflected by the deterioration in water quality and vice versa. So, it recommended that water samples may be collected quarterly, including Pre and Post-monsoon periods (May and September) of the year and all the samples may be analyzed. Corresponding rainfall also may be measured / recorded to develop the correlation with ground water levels, discharge and recharge. Water samples may be collected from the piezometer, after the water level has been measured by depth sampler.

4.6 Conclusions

With the proposed hydrological network system, monthly monitoring of its levels, Quarterly monitoring of its quality, monitoring of rainfall and thereafter interpretation of data periodically, it will be possible to study the impact of mining. This will also help in knowing the net annual change in ground water storage

5.0 DELINEATION OF MICRO WATERSHEDS

Total three micro watersheds are mapped within study area of 100.53km^2. These micro water sheds have been prepared on the basis of latest satellite imagery of high resolution and computer aided stream network system.

Stream networks would be delineated from a Digital Elevation Model (DEM) using the output from the ARCINFO GRID FLOWDIRECTION and FLOWACCUMULATION functions. FLOWDIRECTION using a DEM to determine the direction of flow from every cell in the raster was used. Flow accumulation, in its simplest form, is the number of upslope cells that flow into each cell [Ref: ESRI Data & Maps. (2002). Redlands, CA: Environmental Systems Research Institute.]. By applying a threshold value to the results of

FLOWACCUMULATION, a stream network would be delineated **(Figure-17). Figure-18** shows delineated micro watersheds within study area (5km buffer zone).

Figure-17: DEM and stream network map of the study area

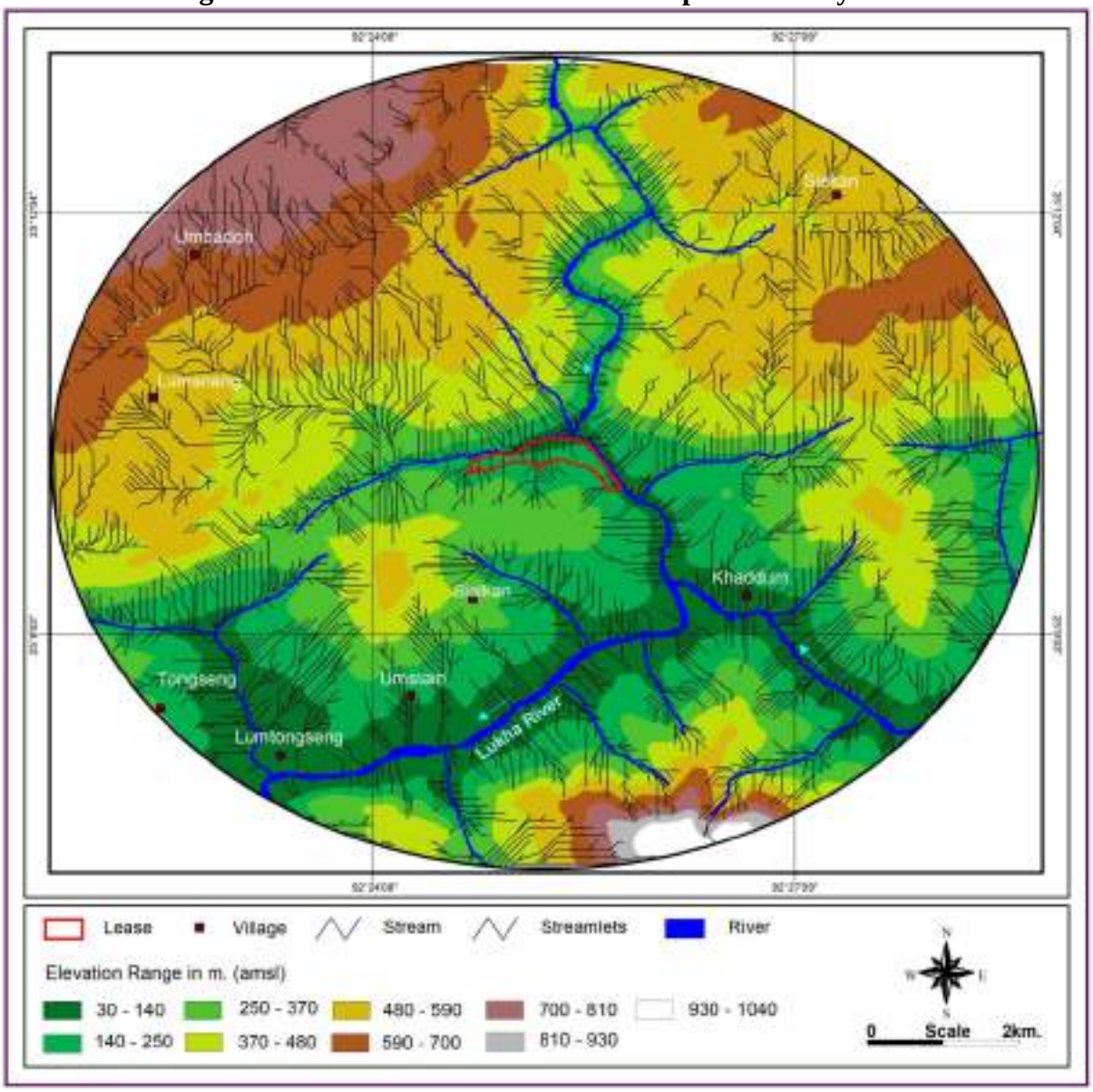
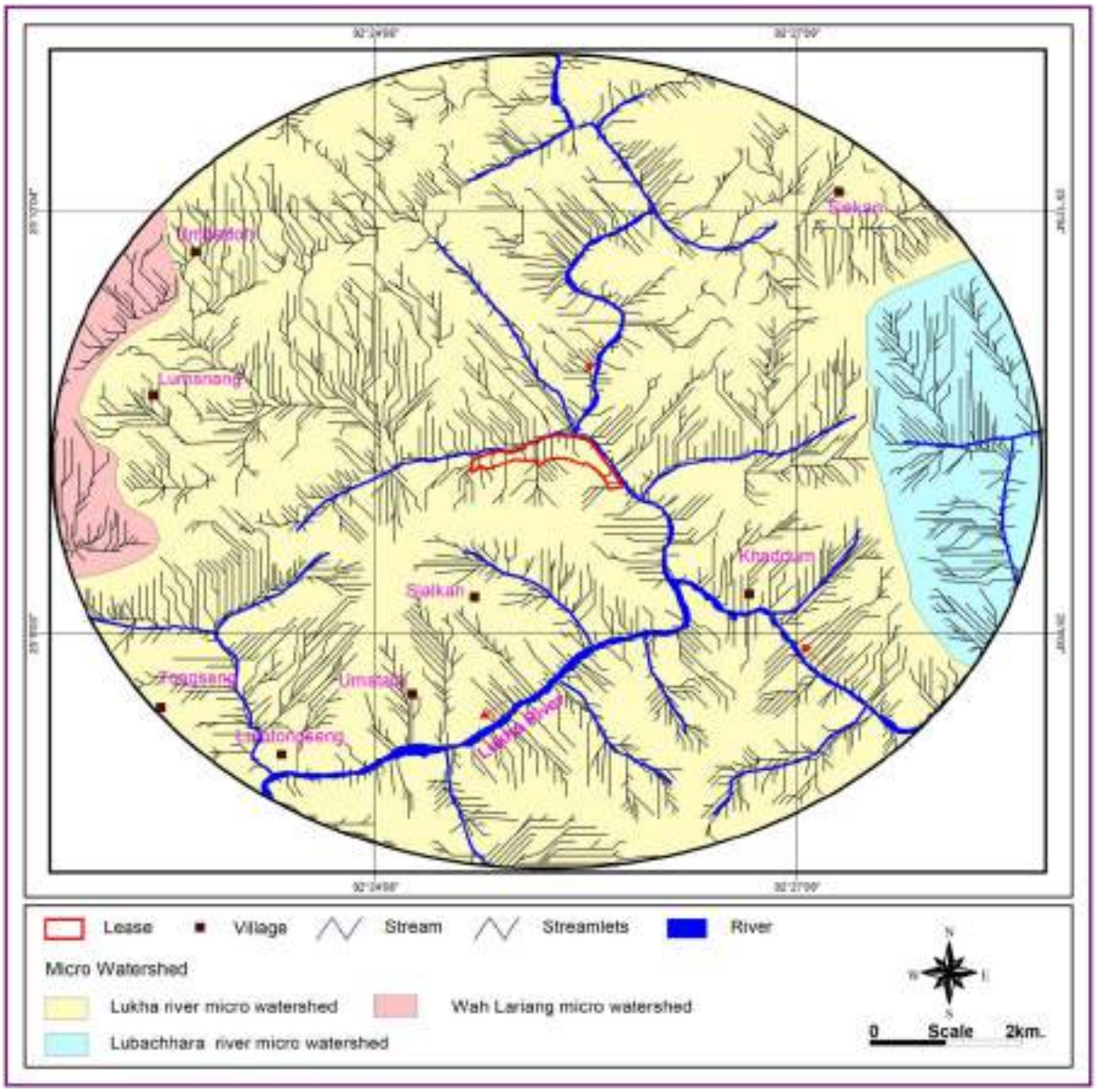


Figure-18: Micro watershed map of the study area



5.1 Lukha river micro watershed

Lukha river micro watershed covers 87.99 km^2 area of central part of the study area (covers around 84% of the buffer zone) with gradient of about 32.50 m/km towards south-west. The catchment yield of Lukha river micro watershed is estimated as 483.84 mcm (Table-10) within study area. Taking 6706 mm as the average rainfall value and value of good surface run off coefficient of 82% for this hilly and steep gradient catchment.

5.2 Wah Lariang river micro watershed

Wah Lariang river micro watershed covers 3.54 km^2 area of western corner of the study area with gradient of about 83.24 m/km towards west. The catchment yield of Wah Lariang river micro watershed is estimated as 19.46 mcm (Table-10) within study area. Taking 6706 mm as the average rainfall value and value of good surface run off coefficient of 82% for this hilly and steep gradient catchment.

5.3 Lubachhara river micro watershed

Lubachhara river micro watershed covers 9.00 km^2 area of eastern part of the study area with gradient of about 112.60 m/km towards south. The catchment yield of Lubachhara river micro watershed is estimated as 49.51 mcm (Table-10) within study area. Taking 6706 mm as the average rainfall value and value of good surface run off coefficient of 82% for this hilly and steep gradient catchment.

Table-10: Total Catchment yield from six micro watersheds
Using formula Catchment yield (m^3) = Catchment area (m^2) * runoff coefficient (%) * rainfall (m)

S. No.	Micro Watershed	Catchment area (m^2)	run off coefficient (%)	Rainfall (m)	Catchment yield (m^3)	Catchment yield (mcm)
		(A)	(B)	(C)	(D) =A*B*C	(E) = D/1000000
1.	Lukha river micro watershed	87987883.40	0.82	6.706	541843161	483.84
2.	WahLariang micro watershed	3538716.54	0.82	6.706	19459119.2	19.46
3.	Lubachhara river micro watershed	9003400.24	0.82	6.706	49508977.6	49.51
	Total	**100.53 km^2**				**~553 mcm**

6.0 GROUND WATER QUALITY

With a view to know the quality of surface and ground water of the mining lease area and in its 10 km buffer zone, 7 ground and 5 surface water samples were collected and were chemically analysed by the NABL accredited Lab., **ENVIROCON (Recognised By Pollution Control Board, Assam)** for 23 constituents/parameters, although the SOP, issued by CGWA (Annexure-I on Water Quality parameters for various industries) has mentioned only few parameters to be determined for the mining.

The location of villages and their co-ordinates from where ground water samples were collected are shown in **Table-11, Figure-19.** It was indicated in the SOP that few water samples may be collected during the non-monsoon period so these were collected during the 2nd week of August, 2023.

Table-11: Locations from where 7 groundwater samples collected

S. No.	Water sample No.	Easting	Northing	Source
1.	GW-1	92°24'18.53"E	25°10'10.93"N	Spring
2.	GW-2	92°23'18.09"E	25°10'39.84"N	B/w
3.	GW-3	92°22'34.09"E	25°10'31.27"N	Spring
4.	GW-4	92°22'33.94"E	25° 08'36.64"N	B/w
5.	GW-5	92°22'57.37"E	25°10' 05.76"N	T/w (Highway Hotel)
6.	GW-6	92°22'49.26"E	25°11'38.05"N	T/w (SI)
7.	GW-7	92°22'43.96"E	25°10' 07.01"N	T/w

Figure-19: Map showing the location from where ground water samples were collected

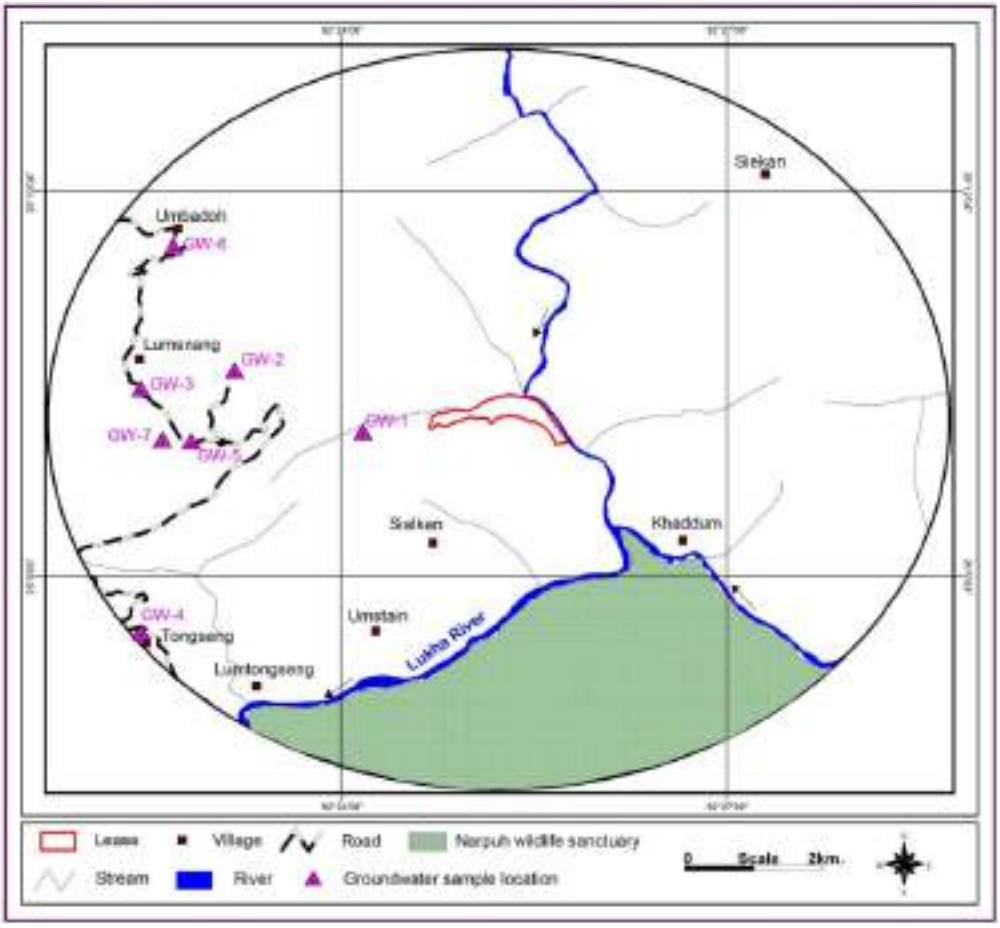


Table-12. Results of chemical analysis of seven ground water samples and its comparison with Indian Drinking Water Standards IS: 10,500-2012

S. No.	Parameter	Unit	GW-1	GW-2	GW-3	GW-4	Acceptable limit as per IS 10500, 2012	Permissible limit as per IS10500, 2012
1.	Colour , Max	Hazen	<1	<1	<1	<1	5	15
2.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3.	Turbidity	NTU	<1	<1	<1	<1	1	5
4.	pH	--	7.9	7.8	7.9	7.4	6.5 – 8.5	No Relaxation
5.	Total Dissolved Solids	mg/l	203.3	168.3	149.8	39.2	500	2000
6.	Calcium (as Ca)	mg/l	19.2	16.0	24.0	3.2	75	200
7.	Chloride (as Cl)	mg/l	10.7	4.0	4.0	2.0	250	1000
8.	Fluorides (as F)	mg/l	0.46	0.47	1.1	0.46	1.0	1.5
9.	Iron (as Fe),	mg/l	0.35	<0.1	<0.1	0.15	0.3	No Relaxation
10.	Magnesium (as Mg)	mg/l	10.7	11.7	6.5	1.9	30	100
11.	Zinc (as Zn)	mg/l	0.50	1.8	0.41	4.8	5.0	15
12.	Nitrate (as NO_3)	mg/l	2.1	0.83	1.0	1.4	45	No Relaxation
13.	Sulphate (as SO_4)	mg/l	74.8	42.0	34.7	14.3	200	400
14.	Total Alkalinity (as $CaCO_3$)	mg/l	26	96	104	11	200	600
15.	Total Hardness, (as $CaCO_3$)	mg/l	92	88	86.7	16	200	600

Table-12: Continued

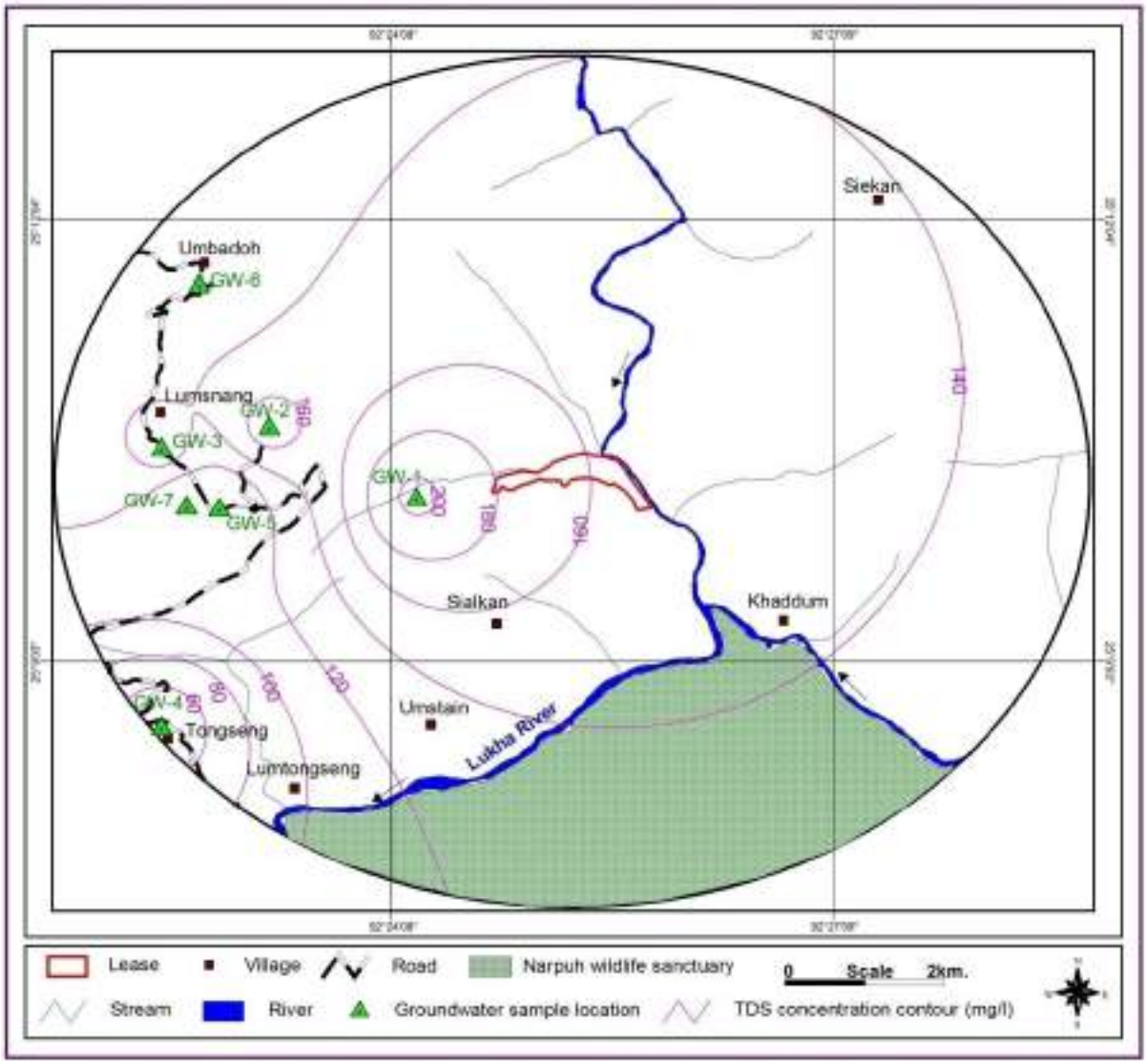
S. No.	Parameter	Unit	GW-5	GW-6	GW-7	Acceptable limit as per IS 10500, 2012	Permissible limit as per IS10500, 2012
1.	Colour , Max	Hazen	2	2	2	5	15
2.	Odour	Agreeable	Odourless	Odourless	Odourless	Agreeable	Agreeable
3.	Turbidity	NTU	0.3	0.5	0.3	1	5
4.	pH	--	7.13	6.74	6.71	6.5 – 8.5	No Relaxation
5.	Total Dissolved Solids	mg/l	97	129	102	500	2000
6.	Calcium (as Ca)	mg/l	18	18	16	75	200
7.	Chloride (as Cl)	mg/l	8.2	8.3	7.2	250	1000
8.	Fluorides (as F)	mg/l	0.4	0.2	0.03	1.0	1.5
9.	Iron (as Fe),	mg/l	0.001	<0.001	<0.001	0.3	No Relaxation
10.	Magnesium (as Mg)	mg/l	2	1	2	30	100
11.	Zinc (as Zn)	mg/l	<0.01	<0.01	<0.01	5.0	15
12.	Nitrate (as NO_3)	mg/l	<0.1	<0.1	<0.1	45	No Relaxation
13.	Sulphate (as SO_4)	mg/l	19	22	25	200	400
14.	Total Alkalinity(as $CaCO_3$)	mg/l	56	52	48	200	600
15.	Total Hardness, (as $CaCO_3$)	mg/l	81	86	112	200	600

6.1 Total Dissolve Solids (TDS)

The Seven ground water samples collected, these were analysed for TDS (mg/l). It was found that ground water samples the TDS was found vey less ranging from 39.2 mg/l (GW-4) to 203.3 mg/l (GW-4). This might be due to good rainfall in the area and sub-surface drainage

conditions in localized area. The quality of water is within acceptable limit of Indian Drinking Water Standards (IS -10,500-2012) of 500 mg/l of total dissolved solids **(Figure-20).**

Figure-20: TDS Concentration Contour in the buffer zone (Groundwater)



6.2 Chloride

As seen in the case of TDS, the Chloride also reveals the same behaviour. All the groundwater samples are having chloride less than 10.7 mg/l and within acceptable limit of 250 mg/l (IS -10,500-2012). The chloride ranges between 2.0 mg/l (GW-4) to 10.7mg/l (GW-1).

6.3 Nitrate

Out of seven ground water samples the Nitrate concentration in the all samples is very less i.e. <0.1 mg/l to 2.1mg/l, the acceptable limits of nitrate if 45 mg/l as per IS -10,500-2012.

6.4 Heavy Metals

The heavy metal likes Zn was analysed in the ground water sample. The concentration of these metals was found less than acceptable limit.

6.5 SURFACE WATER QUALITY OF NEARBY WATER BODIES

The Six surface water were collected from different sources **(Table-13 & Figure-21)** like spring and river/streams from buffer zone area and some important physical and chemical parameters were considered for depicting the baseline status of the study area.

Table-13: Location of surface water samples collected

S. No.	Water sample No	Easting	Northing	Source
1.	SW-1	92°25'35.06"E	25°10'29.53"N	Lubha River
2.	SW-2	92°24'18.24"E	25°10'12.09"N	Umso Nala
3.	SW-3	92°26' 02.60"E	25° 09' 04.37"N	Umtyrngai Nala
4.	SW-4	92°23' 06.18"E	25°10'18.67"N	Umlunar River
5.	SW-5	92°22'29.34"E	25°10'39.04"N	Spring
6.	SW-6	92°22'33.98"E	25°11'23.15"N	Stream

Figure-21: Map showing the location from where surface water samples were collected

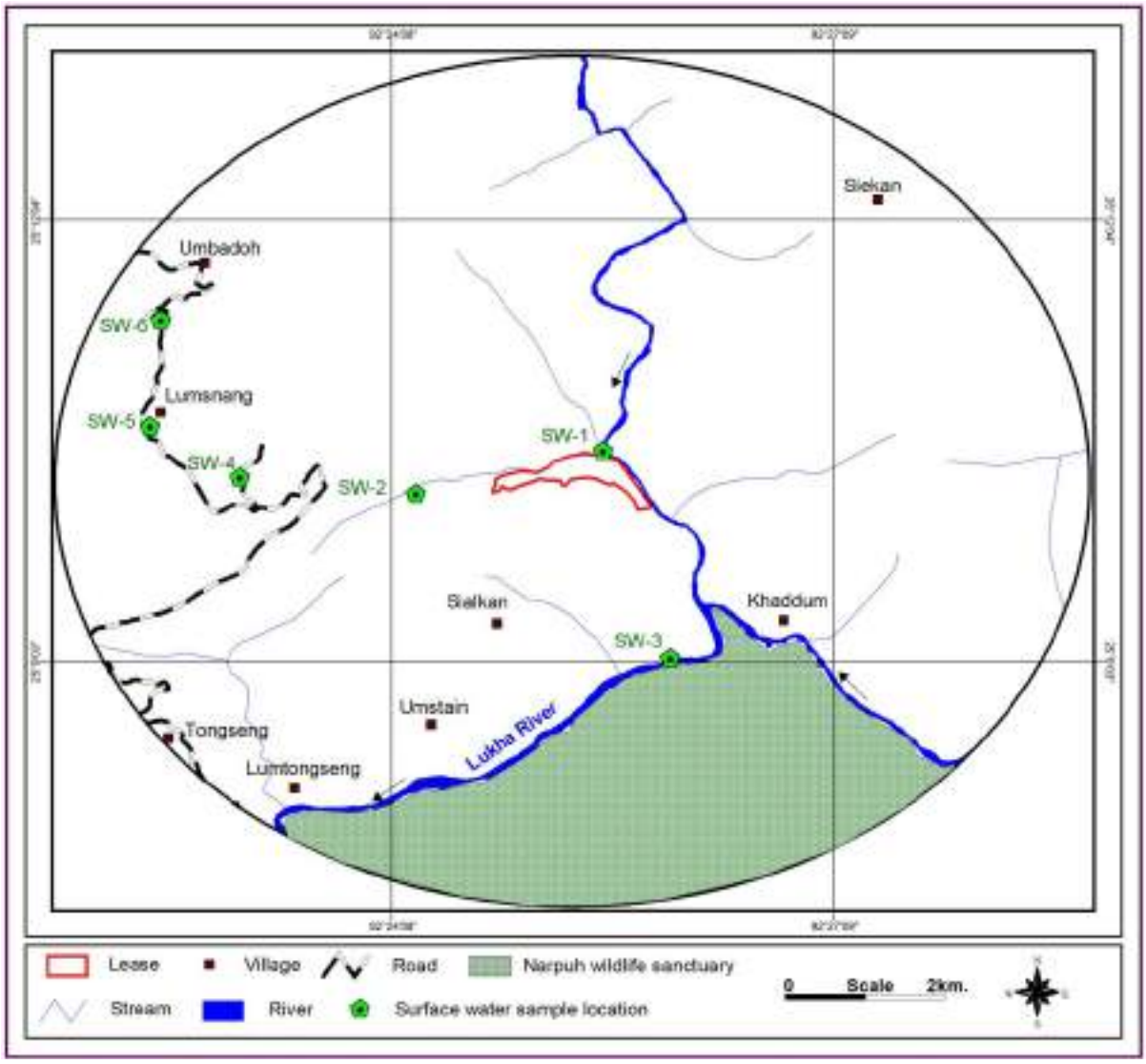


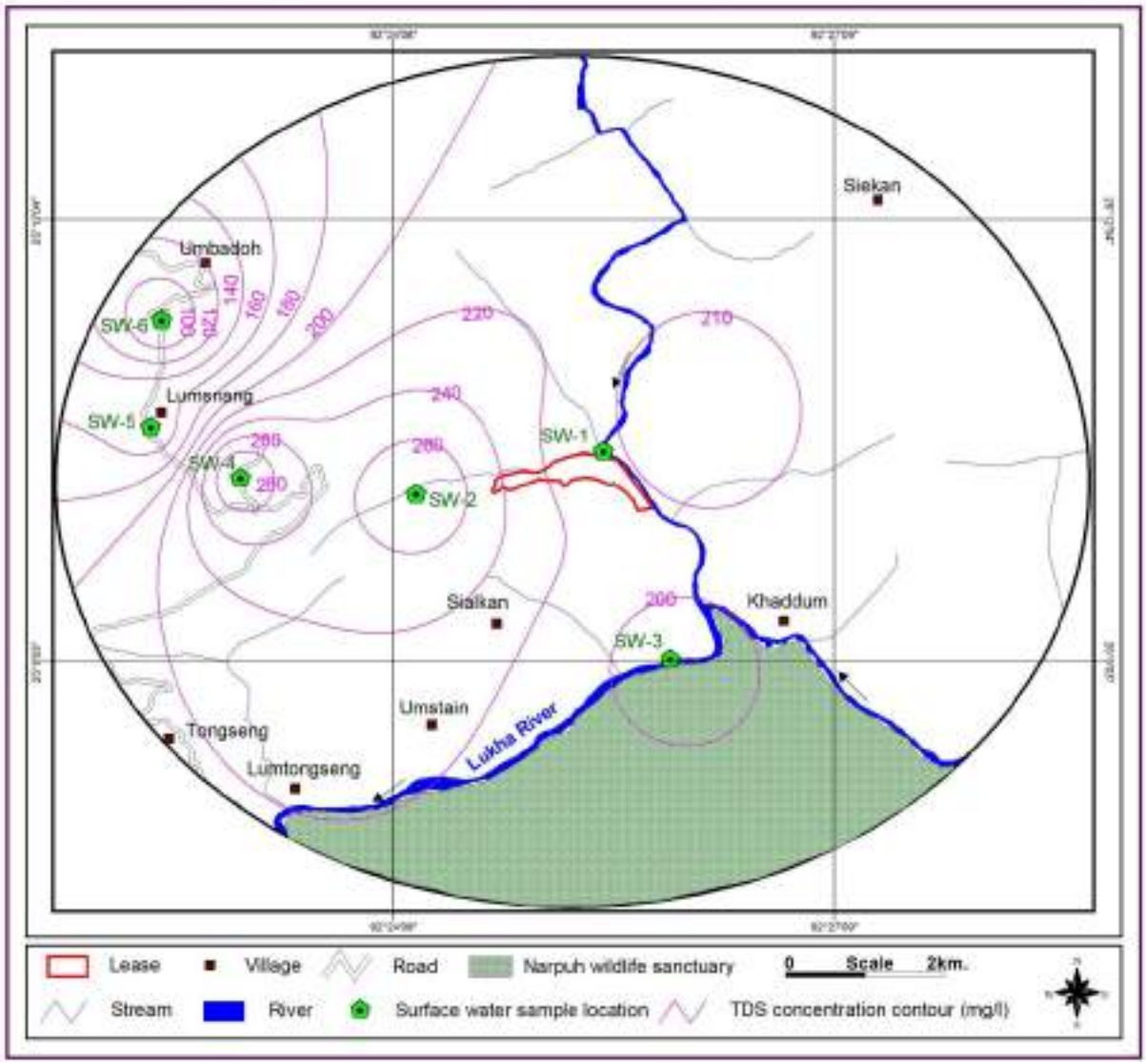
Table-14. Results of chemical analysis of six surface samples and its comparison with Indian Drinking Water Standards IS: 10,500-2012

S. No.	Parameter	Unit	SW-1	SW-2	SW-3	Acceptable limit as per IS 10500, 2012	Permissible limit as per IS10500, 2012
1.	Colour	Hazen	<1	<1	<1	5	15
2.	Odour	Agreeable	Agreeable	Objectable	Agreeable	Agreeable	Agreeable
3.	Temperature	°C	19.1	20.3	19.4	--	--
4.	pH	-	7.5	6.9	7.85	6.5 - 8.5	No relaxation
5.	Total Dissolved Solids	mg/l	212.3	273.2	195	500, Max	2000
6.	Conductivity	µS/cm	424.6	546.8	351.4	--	--
7.	Dissolved Oxygen	mg/l	4.1	3.5	3.2	--	--
8.	BOD	mg/l	2.7	15	17	--	--
9.	COD	mg/l	16	42	44	--	--
10.	Oil & Grease	mg/l	Nil	Nil	Nil	--	--
11.	Total Hardness (as $CaCO_3$)	mg/l	168	152	128	200, Max	600
12.	Calcium (as Ca)	mg/l	33.6	25.6	24	75	200
13.	Magnesium (as Mg)	mg/l	20.4	21.4	16.5	30	100
14.	Iron (as Fe)	mg/l	<0.1	0.332	<0.1	0.3	No relaxation
15.	Ammonical Nitrogen (as N)	mg/l	0.84	1.96	1.12	--	--

Table-14: Continued

S. No.	Parameter	Unit	SW-4	SW-5	SW-6	Acceptable limit as per IS 10500, 2012	Permissible limit as per IS10500, 2012
1.	Colour	Hazen	<1	4	3	5	15
2.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3.	Temperature	°C	19	25.3	25.3	--	--
4.	pH	-	7.4	6.28	6.44	6.5 - 8.5	No relaxation
5.	Total Dissolved Solids	mg/l	295.9	150	85	500, Max	2000
6.	Conductivity	µS/cm	591.6	236	211	--	--
7.	Dissolved Oxygen	mg/l	5.15	5.9	5.7	--	--
8.	BOD	mg/l	2.5	Nil	Nil	--	--
9.	COD	mg/l	16	21	23	--	--
10.	Oil & Grease	mg/l	Nil	Nil	Nil	--	--
11.	Total Hardness (as $CaCO_3$)	mg/l	172	131	126	200, Max	600
12.	Calcium (as Ca)	mg/l	33.6	7	22	75	200
13.	Magnesium (as Mg)	mg/l	21.4	10	9	30	100
14.	Iron (as Fe)	mg/l	<0.1	0.26	0.24	0.3	No relaxation
15.	Ammonical Nitrogen (as N)	mg/l	0.84	0.6	0.5	--	--

Figure-22: TDS Concentration Contour in the buffer zone (Surface water)



All the six-surface water collected, having total dissolved salts less than 500 mg/l which are within permissible limit. The TDS ranges from 85 mg/l to 296 mg/l in all the surface water samples. All other constituents also found very low and within permissible limits of IS 10,500-2012.

7.0 COMPREHENSIVE ASSESSMENT OF THE IMPACT ON THE GROUND WATER REGIME IN AND AROUND THE PROJECT AREA HIGHLIGHTING THE RISKS AND PROPOSED MANAGEMENT STRATEGIES PROPOSED TO OVERCOME ANY SIGNIFICANT ENVIRONMENTAL ISSUES.

7.1 GROUND WATER RECHARGE

The main source of ground water recharge is by the rainfall by direct percolation to the zone of saturation. As already indicated, there is well developed drainage in the area due to high rainfall and loamy soils along with rocky outcrops. A significant part of the rainfall is lost as runoff from the area while a limited percentage of rainfall therefore reaches zone of saturation and becomes the part of ground water storage after meeting the evapo-transpiration losses. There is also some ground water recharge from the return flow of irrigation water. The ground water recharge from return flow of irrigation is normally taken as 20% of the total water applied for irrigation this percentage has been suggested by the Ground Water Estimation Committee for ground water assessment for this part of the state.

7.2 Ground water recharge of core zone (Mining lease area)

The core zone covers 42.051 hectares area of lease area, mostly composed of loamy soil, limestone and sandstone outcrops. There are a no operational open well or bore-wells in the lease area.

7.2.1 Increment in ground water storage

The ground water recharge can be computed by multiplying the increment in ground water storage by measuring the water level fluctuation during pre and post monsoon periods with area of assessment and specific yield. The equation can express as under:

$$A \times Sy \times h = R$$

Where h is the rise of water level due to monsoon, Sy is the specific yield of the aquifer, and A is the area of computation of recharge, while R is ground water recharge.

As the increment in the ground water storage in the core zone is not known, for lack of monitored wells, this approach could not be adopted.

7.2.2 Rainfall infiltration

The Ground Water Resource Estimate Committee (1997), formed by Govt. of India has proposed rainfall infiltration factor to be used for estimation of ground water recharge for the areas where monitoring of wells cannot be done or has not been done.

The recharge can be estimated by the following equation:

$$Rf \times A \times r = R$$

Where Rf is rainfall infiltration factor, A is area and r is annual rainfall while R is ground water recharge.

The rainfall infiltration factor for limestone/sandstone terrain is taken as 10%, as the area has favourable recharge conditions with moderate rainfall and well developed drainage and also appears to be reasonable looking to the hydrogeological and geomorphological settings. There is a need to use this theoretical approach in this case as the area has not been monitored on a comprehensive scale therefore increment in the ground water storage is not known.

$$0.42051 \times 1000 \times 1000 \times 0.10 \times 6.705 = 0.282 \text{ mcm}$$

Lease area x % of rain fall infiltration x annual rainfall = Recharge

7.3 Ground water recharge of buffer zone (5 km radius area)

Buffer zone has mainly limestone as water bearing formation. The total area of the buffer zone is 100.125km^2, taking 5 km as the radius of study {(100.53-0.4051) km^2 of the lease area} in the district of East Jaintia Hills.

7.3.1 Increment in ground water storage.

Not done due to lack of data availability.

7.3.2 Rainfall infiltration

The Ground Water Resource Estimate Committee, formed by Govt. of India has proposed rainfall infiltration factor to be used for estimation of ground water recharge for the areas where monitoring of wells has not been done. The committee has suggested 10-15 % as the

rainfall infiltration factor for consolidated sedimentaries. The higher limit can be taken for the areas having favourable hydrogeological conditions as in this area. However a lower limit has been taken as there is much surface runoff due to topography. The ground water recharge from rainfall in buffer zone is calculated as under:

100.125×1,000×1,000×0.10×6.705 = 67.13 mcm

Buffer zone area x % of rain fall infiltration x annual rainfall = Recharge

The ground water recharge calculated by rainfall infiltration is high due to high rainfall in the area.

7.4 GROUND WATER DISCHARGE

7.4.1 Ground water discharge in core zone (Lease area)

As there are no operational open wells or bore wells bore wells in the lease area, the ground water discharge from the core zone is nil.

7.4.2 Ground water discharge in buffer zone (5 km radius area)

The ground water discharge takes place mainly by evapo-transpiration and by withdrawal from bore wells and open dug wells with pumps operated mainly for domestic use.

There are very few borewells in the area tapping sandstone/limestone. Most of the wells are along the highway as accessibility of drilling machines in hills is a problem. Moreover, most of the wells are used for domestic use only. Average yield of these borewells is taken as 50m^3/day. Taking these values, the discharge is estimated as under.

64 ×50×350 = 1.12 mcm

No. of wells × average yield/day × Number of days = Withdrawal

8.0 PRESENT STATUS OF GROUND WATER DEVELOPMENT

The present study reveals that against the total ground water recharge of 67.13 mcm, the ground water discharge is 1.12 mcm indicating the status of ground water development of buffer zone as 1.67% only. The buffer zone therefore is Safe. Similarly, as there is no ground

water discharge from the lease area while it receives ground water recharge of 0.282 mcm indicating status of ground water development as 0% keeping the core zone also in the Safe category.

The state ground water organization jointly with Central Ground Water Board (CGWB) determines the status of ground water development for each tehsil every year and publishes the findings once in two years after monitoring the key wells.

The findings of the CGWB have been released in its last report(October, 2022) for the year 2022 and it shows that the status of ground water development of East Jantia Hills district as a whole is 2.28 %and therefore, entire district along with its all blocks lie in Safe category. The findings of this study for the buffer zone match with the assessment done by the CGWB.

9.0 IMPACT ON SURFACE AND GROUND WATER RESORCES

9.1 Impact on ground water resources

The state ground water organizations jointly with Central Ground Water Board (CGWB) determine the status of ground water development for each block/taluka /Mandal every year and publish the findings once in four years after monitoring the key wells.

Ground water pollution can take place only if the mining rejects contain toxic substances, which get leached by the precipitation water and percolate to the ground water table thus polluting it. Any nearby wells or other sources of water can be rendered unfit for drinking and even for industrial use.

The findings of the CGWB have been released in its latest report, released in October, 2022 (DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022) shows that entire district lies in safe zone As the mining is not going to intersect ground water table, no impact on ground water is expected .The cement plants/mining leases are also not using bore wells to meet its water requirement, so impact on ground water is the least.

9.2 Impact on ground surface water resources

As there is well-developed drainage system in the area and surface runoff gathered by first order streams after flowing for short distances, no diversion of existing channels is needed.

9.3 IMPACT ON WATER QUALITY

As the area has the consolidated sedimentary rocks having high rainfall, springs, well developed drainage with thin alluvial cover, there is no possibility on the impact due to mining and the plants on water quality. The water quality is very good and all the constituents are within acceptable limits of drinking water as per IS -12500 -2012.

There is zero discharge of water from mine area and the waste available in the area is non-toxic in nature. Based on the geological data provided by the state govt., no ground water intersection is observed and no contamination of ground water envisaged.

9.4 MITIGATION MEASURES

As the study area is very rich in surface and ground water resources and majority of water requirement for drinking, irrigation and industrial purposes is met from seasonal springs and streams/nallas, no specific mitigation measures are required and natural drainage system should not disturbed.

10.0 RAINWATER HARVESTING PROGRAM

As the study area (5 km. buffer) lies in safe zone, there is no requirement of specific quantity of ground water to be recharged as per the guidelines of CGWA. However, as a national obligation, rain water harvesting can be done by constructing few anicuts /weirs at suitable locations on the streams if it is asked by the local villagers.

11.0 SUMMARY& CONCLUSIONS

As the study area (5 km. buffer) is very rich in surface and ground water resources due to high rainfall, hilly topography, well developed drainage and springs, there are very good prospects of future ground water utilization and of surface water resources. The mines are not

intersecting water table and its water requirement is met from nallah water, the quality of surface and ground water is within the acceptable limits. The mines and plant areas are not going to affect the dynamic and static ground water resources.

The water table, mining pit depth at the end of 5 years and ultimate pit depth is as given below:

S. No.	ML Area (ha.)	Mining ultimate pit Depth (m amsl)	Ground water level (m amsl)	Groundwater Intersection
1.	42.051	93.0	78.0	No

It is proposed that a hydrological network may be designed for monitoring the fluctuation of water levels within the lease and outside along with seasonal change in water quality to know the impact of mining on the water regime from the lease area. It is proposed that one piezometer may be constructed per mine provided with Digital Water Level Recorders, having telemetry system. The report showing the impact of mining may be submitted to the concerned Regional Director, CGWB regularly.

for Hydro-Geosurvey Consultants Pvt. Ltd.,

(Dr. V.B. Khilnani)
Managing Director

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Anexure-IX

Report No. : ENV/SCML/ML/25-26/AA-03
Date : 11/07/2025

Order No. : 5300020685
Date : 30/05/2025

Report Issued To: **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, PO: Lumshnong, Dist.: East Jaintia Hills, Meghalaya

AMBIENT AIR QUALITY TEST RESULTS

LOCATION ↓	Date of Sampling	PM 2.5 (µg/m³)	PM 10 (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	NH_3 (µg/m³)	CO (mg/m³)	O_3 (µg/m³)	Benzene (µg/m³)	Benzopyrene (ng/m³)	Nickel (ng/m³)	Arsenic (ng/m³)	Lead (µg/m³)
LIMITS →	--	60	100	80	80	400	4.0 (1 hr. limit)	180 (1 hr. limit)	5.0 (Annual Average)	1.0 (Annual Average)	20 (Annual Average)	6.0 (Annual Average)	1.0 (24 hrs. Average)
MLA 42.051 Ha Mines Entrance Road	10.06.2025	36.1	68.6	<5.0	<5.0	<5.0	<0.01	<5.0	<0.1	<0.01	<0.01	<0.01	<0.01
MLA 42.051 Ha ROC Drilling Point	10.06.2025	39.4	71.3	<5.0	<5.0	<5.0	<0.01	<5.0	<0.1	<0.01	<0.01	<0.01	<0.01
MLA 42.051 Ha Excavator Point	10.06.2025	32.7	62.9	<5.0	<5.0	<5.0	<0.01	<5.0	<0.1	<0.01	<0.01	<0.01	<0.01

Analysis Protocol: IS 5182

ENVIROCON DIGBOI, ASSAM

Checked By: Pankaj Baroi, **ENVIROCON**

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Report No. : ENV/SCML/ML/25-26/AA-06
Date : 25/10/2025

Order No. : 5300020685
Date : 30/05/2025

Report Issued To: **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, PO: Lumshnong, Dist.: East Jaintia Hills, Meghalaya

AMBIENT AIR QUALITY TEST RESULTS

LOCATION ↓	Date of Sampling	PM 2.5 (µg/m³)	PM 10 (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	NH_3 (µg/m³)	CO (mg/m³)	O_3 (µg/m³)	Benzene (µg/m³)	Benzopyrene (ng/m³)	Nickel (ng/m³)	Arsenic (ng/m³)	Lead (µg/m³)
LIMITS →	--	60	100	80	80	400	4.0 (1 hr. limit)	180 (1 hr. limit)	5.0 (Annual Average)	1.0 (Annual Average)	20 (Annual Average)	6.0 (Annual Average)	1.0 (24 hrs. Average)
Nearby Boundary Pillar no.-07 (Limestone Mines, MLA 42.051 Ha)	20.09.2025	18.6	51.7	<5.0	<5.0	<5.0	<0.01	<5.0	<0.1	<0.01	<0.01	<0.01	<0.01
Nearby Boundary Pillar no.-18 (Limestone Mines, MLA 42.051 Ha)	20.09.2025	21.4	56.3	<5.0	<5.0	<5.0	<0.01	<5.0	<0.1	<0.01	<0.01	<0.01	<0.01
Between Boundary Pillar no.-27 and 28 (Limestone Mines, MLA 42.051 Ha)	20.09.2025	20.4	54.7	<5.0	<5.0	<5.0	<0.01	<5.0	<0.1	<0.01	<0.01	<0.01	<0.01

Analysis Protocol: IS 5182

ENVIROCON DIGBOI, ASSAM

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STAR CEMENT Solid Setting	**Star Cement Meghalaya Limited**
	Ground Water Location
Location Name	42.051 Ha Brishyrnot Limestone Mine of M/s Star Cement Meghalaya Ltd
Total bore well depth (in meter)	184
Latitude→	25◦10'15.28"N
Longitude→	92◦24'57.56"E
Month↓	Ground Water Level in mWC
Apr-25	**45.21**
May-25	**42.45**
Jun-25	**41.59**
Jul-25	**34.55**
Aug-25	**30.95**
Sep-25	**38.70**

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Report No.: ENV/SCML/ML/25-26/GW-09
Date : 11/07/2025

Order No.: 5300020685
Date : 30/05/2025

Report Issued To : **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, P. O.: Khilehriat, Dist.: East Jaintia Hills, Meghalaya

GROUND WATER ANALYSIS RESULTS

Sample Ref. No. : SCML/2025/GW-1506/05

Sample Source : 42.051 Limestone Mine (Brishyrnot Village)

Sample Type : Ground Water

Collected On : 15-06-2025

Received On : 18-06-2025

Collected By : Envirocon Representative

Sl. No.	Parameters	Results	Acceptable Limit*	Permissible Limit* in the Absence of Alternate Source
1.	Colour , Hazen Units, Max	3	5	15
2.	Odour	Odourless	Agreeable	Agreeable
3.	Taste	Acceptable	Agreeable	Agreeable
4.	Turbidity, NTU, Max	0.27	1	5
5.	pH	6.81	6.5 – 8.5	No Relaxation
6.	Total Dissolved Solids, mg/l, Max	99	500	2000
7.	Calcium (as Ca), mg/l, Max	24	75	200
8.	Chloride (as Cl), mg/l, Max	6.6	250	1000
9.	Copper (as Cu), mg/l, Max	<0.001	0.05	1.5
10.	Fluorides (as F), mg/l, Max	<0.1	1.0	1.5
11.	Free Residual Chlorine, mg/l, Min	<0.01	0.2	1
12.	Iron (as Fe), mg/l, Max	0.25	0.3	No Relaxation
13.	Magnesium (as Mg), mg/l, Max	2	30	100
14.	Manganese (as Mn), mg/l, Max	<0.001	0.1	0.3
15.	Zinc (as Zn), mg/l, Max	<0.01	5.0	15
16.	Nitrate (as NO_3), mg/l, Max	2.8	45	No Relaxation
17.	Sulfate (as SO_4), mg/l, Max	<1.0	200	400
18.	Total Alkalinity(as $CaCO_3$) , mg/l, Max	114	200	600
19.	Total Hardness, (as $CaCO_3$), mg/l, Max	136	200	600
20.	Total Arsenic (as As), mg/l, Max	<0.001	0.01	0.05
21.	Total Chromium, (as Cr), mg/l, Max	<0.001	0.05	No Relaxation
22.	Faecal Coliforms/ 100 ml	Absent	Absent	Absent
23.	E. Coli / 100 ml	Absent	Absent	Absent

*Limits as per IS 10500:2012

Analysis Protocol: IS 3025

ENVIROCON DIGBOI, ASSAM

Checked By: Mr. Pankaj Baroi, **ENVIROCON**

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Report No.: ENV/SCML/ML/25-26/GW-10
Date : 11/07/2025

Order No.: 5300020685
Date : 30/05/2025

Report Issued To : **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, P. O.: Khilehriat, Dist.: East Jaintia Hills, Meghalaya

GROUND WATER ANALYSIS RESULTS

Sample Ref. No. : SCML/2025/GW-1506/09 Sample Source : MLA 42.051 Ha Limestone Mines Sample Type : Ground Water
Collected On : 15-06-2025 Received On : 18-06-2025 Collected By : Envirocon Representative

Sl. No.	Parameters	Results	Acceptable Limit*	Permissible Limit* in the Absence of Alternate Source
1.	Colour , Hazen Units, Max	3	5	15
2.	Odour	Odourless	Agreeable	Agreeable
3.	Taste	Acceptable	Agreeable	Agreeable
4.	Turbidity, NTU, Max	0.17	1	5
5.	pH	6.72	6.5 – 8.5	No Relaxation
6.	Total Dissolved Solids, mg/l, Max	127	500	2000
7.	Calcium (as Ca), mg/l, Max	31	75	200
8.	Chloride (as Cl), mg/l, Max	4.6	250	1000
9.	Copper (as Cu), mg/l, Max	<0.001	0.05	1.5
10.	Fluorides (as F), mg/l, Max	<0.1	1.0	1.5
11.	Free Residual Chlorine, mg/l, Min	<0.01	0.2	1
12.	Iron (as Fe), mg/l, Max	0.23	0.3	No Relaxation
13.	Magnesium (as Mg), mg/l, Max	3	30	100
14.	Manganese (as Mn), mg/l, Max	<0.001	0.1	0.3
15.	Zinc (as Zn), mg/l, Max	<0.01	5.0	15
16.	Nitrate (as NO_3), mg/l, Max	2.3	45	No Relaxation
17.	Sulfate (as SO_4), mg/l, Max	<1.0	200	400
18.	Total Alkalinity(as $CaCO_3$) , mg/l, Max	67	200	600
19.	Total Hardness, (as $CaCO_3$), mg/l, Max	76	200	600
20.	Total Arsenic (as As), mg/l, Max	<0.001	0.01	0.05
21.	Total Chromium, (as Cr), mg/l, Max	<0.001	0.05	No Relaxation
22.	Faecal Coliforms/ 100 ml	Absent	Absent	Absent
23.	E. Coli / 100 ml	Absent	Absent	Absent

*Limits as per IS 10500:2012 Analysis Protocol: IS 3025

ENVIROCON DIGBOI, ASSAM Date

Checked By: Mr. Pankaj Baroi, **ENVIROCON**

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Report No.: ENV/SCML/ML/25-26/GW-11
Date : 11/07/2025

Order No.: 5300020685
Date : 30/05/2025

Report Issued To : **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, P. O.: Khilehriat, Dist.: East Jaintia Hills, Meghalaya

GROUND WATER ANALYSIS RESULTS

Sample Ref. No. : SCML/2025/GW-1506/10 | Sample Source : Near Topcem Reliance Petrol Pump (42.051 Ha) | Sample Type : Ground Water

Collected On : 15-06-2025 | Received On : 18-06-2025 | Collected By : Envirocon Representative

Sl. No.	Parameters	Results	Acceptable Limit*	Permissible Limit* in the Absence of Alternate Source
1.	Colour , Hazen Units, Max	4	5	15
2.	Odour	Odourless	Agreeable	Agreeable
3.	Taste	Acceptable	Agreeable	Agreeable
4.	Turbidity, NTU, Max	0.21	1	5
5.	pH	6.73	6.5 – 8.5	No Relaxation
6.	Total Dissolved Solids, mg/l, Max	126	500	2000
7.	Calcium (as Ca), mg/l, Max	34	75	200
8.	Chloride (as Cl), mg/l, Max	4.7	250	1000
9.	Copper (as Cu), mg/l, Max	<0.001	0.05	1.5
10.	Fluorides (as F), mg/l, Max	<0.1	1.0	1.5
11.	Free Residual Chlorine, mg/l, Min	<0.01	0.2	1
12.	Iron (as Fe), mg/l, Max	0.20	0.3	No Relaxation
13.	Magnesium (as Mg), mg/l, Max	4	30	100
14.	Manganese (as Mn), mg/l, Max	<0.001	0.1	0.3
15.	Zinc (as Zn), mg/l, Max	<0.01	5.0	15
16.	Nitrate (as NO_3), mg/l, Max	2.3	45	No Relaxation
17.	Sulfate (as SO_4), mg/l, Max	<1.0	200	400
18.	Total Alkalinity(as $CaCO_3$) , mg/l, Max	61	200	600
19.	Total Hardness, (as $CaCO_3$), mg/l, Max	74	200	600
20.	Total Arsenic (as As), mg/l, Max	<0.001	0.01	0.05
21.	Total Chromium, (as Cr), mg/l, Max	<0.001	0.05	No Relaxation
22.	Faecal Coliforms/ 100 ml	Absent	Absent	Absent
23.	E. Coli / 100 ml	Absent	Absent	Absent

*Limits as per IS 10500:2012

Analysis Protocol: IS 3025

Checked By: Mr. Pankaj Baroi, **ENVIROCON**

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Report No.: ENV/SCML/ML/25-26/GW-20
Date : 25/10/2025

Order No.: 5300020685
Date : 30/05/2025

Report Issued To : **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, P. O.: Khilehriat, Dist.: East Jaintia Hills, Meghalaya

GROUND WATER ANALYSIS RESULTS

Sample Ref. No. : SCML/2025/GW-2409/09

Sample Source : 42.051 Limestone Mine (Brishyrnot Village)

Sample Type : Ground Water

Collected On : 24-09-2025

Received On : 27-09-2025

Collected By : Envirocon Representative

Sl. No.	Parameters	Results	Acceptable Limit*	Permissible Limit* in the Absence of Alternate Source
1.	Colour , Hazen Units, Max	4	5	15
2.	Odour	Odourless	Agreeable	Agreeable
3.	Taste	Acceptable	Agreeable	Agreeable
4.	Turbidity, NTU, Max	0.26	1	5
5.	pH	6.83	6.5 – 8.5	No Relaxation
6.	Total Dissolved Solids, mg/l, Max	115	500	2000
7.	Calcium (as Ca), mg/l, Max	26	75	200
8.	Chloride (as Cl), mg/l, Max	6.8	250	1000
9.	Copper (as Cu), mg/l, Max	<0.001	0.05	1.5
10.	Fluorides (as F), mg/l, Max	<0.1	1.0	1.5
11.	Free Residual Chlorine, mg/l, Min	<0.01	0.2	1
12.	Iron (as Fe), mg/l, Max	0.24	0.3	No Relaxation
13.	Magnesium (as Mg), mg/l, Max	3	30	100
14.	Manganese (as Mn), mg/l, Max	<0.001	0.1	0.3
15.	Zinc (as Zn), mg/l, Max	<0.01	5.0	15
16.	Nitrate (as NO_3), mg/l, Max	3.6	45	No Relaxation
17.	Sulfate (as SO_4), mg/l, Max	<1.0	200	400
18.	Total Alkalinity(as $CaCO_3$) , mg/l, Max	112	200	600
19.	Total Hardness, (as $CaCO_3$), mg/l, Max	131	200	600
20.	Total Arsenic (as As), mg/l, Max	<0.001	0.01	0.05
21.	Total Chromium, (as Cr), mg/l, Max	<0.001	0.05	No Relaxation
22.	Faecal Coliforms/ 100 ml	Absent	Absent	Absent
23.	E. Coli / 100 ml	Absent	Absent	Absent

*Limits as per IS 10500:2012

Analysis Protocol: IS 3025

ENVIROCON DIGBOI, ASSAM

Checked By: Mr. Pankaj Baroi, **ENVIROCON**

NOTE:
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Ph: 03751-264414, 9435008657, 8876028672
E-mail: envirocon@rediffmail.com

ISO 9001:2015 Certified
ISO 45001:2018 Certified

Report No.: ENV/SCML/ML/25-26/GW-21
Date : 25/10/2025

Order No.: 5300020685
Date : 30/05/2025

Report Issued To : **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, P. O.: Khilehriat, Dist.: East Jaintia Hills, Meghalaya

GROUND WATER ANALYSIS RESULTS

Sample Ref. No. : SCML/2025/GW-2409/10 | Sample Source : MLA 42.051 Ha Limestone Mines | Sample Type : Ground Water
Collected On : 24-09-2025 | Received On : 27-09-2025 | Collected By : Envirocon Representative

Sl. No.	Parameters	Results	Acceptable Limit*	Permissible Limit* in the Absence of Alternate Source
1.	Colour , Hazen Units, Max	4	5	15
2.	Odour	Odourless	Agreeable	Agreeable
3.	Taste	Acceptable	Agreeable	Agreeable
4.	Turbidity, NTU, Max	0.21	1	5
5.	pH	6.77	6.5 – 8.5	No Relaxation
6.	Total Dissolved Solids, mg/l, Max	122	500	2000
7.	Calcium (as Ca), mg/l, Max	33	75	200
8.	Chloride (as Cl), mg/l, Max	4.9	250	1000
9.	Copper (as Cu), mg/l, Max	<0.001	0.05	1.5
10.	Fluorides (as F), mg/l, Max	<0.1	1.0	1.5
11.	Free Residual Chlorine, mg/l, Min	<0.01	0.2	1
12.	Iron (as Fe), mg/l, Max	0.25	0.3	No Relaxation
13.	Magnesium (as Mg), mg/l, Max	5	30	100
14.	Manganese (as Mn), mg/l, Max	<0.001	0.1	0.3
15.	Zinc (as Zn), mg/l, Max	<0.01	5.0	15
16.	Nitrate (as NO_3), mg/l, Max	5.2	45	No Relaxation
17.	Sulfate (as SO_4), mg/l, Max	<1.0	200	400
18.	Total Alkalinity(as $CaCO_3$) , mg/l, Max	72	200	600
19.	Total Hardness, (as $CaCO_3$), mg/l, Max	83	200	600
20.	Total Arsenic (as As), mg/l, Max	<0.001	0.01	0.05
21.	Total Chromium, (as Cr), mg/l, Max	<0.001	0.05	No Relaxation
22.	Faecal Coliforms/ 100 ml	Absent	Absent	Absent
23.	E. Coli / 100 ml	Absent	Absent	Absent

*Limits as per IS 10500:2012

Analysis Protocol: IS 3025

ENVIROCON DIGBOI, ASSAM

Checked By: Mr. Pankaj Baroi, **ENVIROCON**

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Report No.: ENV/SCML/ML/25-26/GW-22
Date : 25/10/2025

Order No.: 5300020685
Date : 30/05/2025

Report Issued To : **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, P. O.: Khilehriat, Dist.: East Jaintia Hills, Meghalaya

GROUND WATER ANALYSIS RESULTS

Sample Ref. No. : SCML/2025/GW-2409/11
Sample Source : Near Topcem Reliance Petrol Pump (42.051 Ha)
Sample Type : Ground Water
Collected On : 24-09-2025
Received On : 27-09-2025
Collected By : Envirocon Representative

Sl. No.	Parameters	Results	Acceptable Limit*	Permissible Limit* in the Absence of Alternate Source
1.	Colour , Hazen Units, Max	3	5	15
2.	Odour	Odourless	Agreeable	Agreeable
3.	Taste	Acceptable	Agreeable	Agreeable
4.	Turbidity, NTU, Max	0.19	1	5
5.	pH	6.75	6.5 – 8.5	No Relaxation
6.	Total Dissolved Solids, mg/l, Max	122	500	2000
7.	Calcium (as Ca), mg/l, Max	33	75	200
8.	Chloride (as Cl), mg/l, Max	4.9	250	1000
9.	Copper (as Cu), mg/l, Max	<0.001	0.05	1.5
10.	Fluorides (as F), mg/l, Max	<0.1	1.0	1.5
11.	Free Residual Chlorine, mg/l, Min	<0.01	0.2	1
12.	Iron (as Fe), mg/l, Max	0.21	0.3	No Relaxation
13.	Magnesium (as Mg), mg/l, Max	5	30	100
14.	Manganese (as Mn), mg/l, Max	<0.001	0.1	0.3
15.	Zinc (as Zn), mg/l, Max	<0.01	5.0	15
16.	Nitrate (as NO_3), mg/l, Max	2.8	45	No Relaxation
17.	Sulfate (as SO_4), mg/l, Max	<1.0	200	400
18.	Total Alkalinity(as $CaCO_3$) , mg/l, Max	63	200	600
19.	Total Hardness, (as $CaCO_3$), mg/l, Max	79	200	600
20.	Total Arsenic (as As), mg/l, Max	<0.001	0.01	0.05
21.	Total Chromium, (as Cr), mg/l, Max	<0.001	0.05	No Relaxation
22.	Faecal Coliforms/ 100 ml	Absent	Absent	Absent
23.	E. Coli / 100 ml	Absent	Absent	Absent

*Limits as per IS 10500:2012

Analysis Protocol: IS 3025

ENVIROCON DIGBOI, ASSAM

Checked By: Mr. Pankaj Baroi, **ENVIROCON**

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Report No.: ENV/SCML/ML/25-26/WW-03
Date : 11/07/2025

Order No.: 5300020685
Date : 30/05/2025

Report Issued To : **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, P. O.: Khilehriat, Dist.: East Jaintia Hills, Meghalaya

WASTE WATER ANALYSIS RESULTS

Sample Ref. No. : SCML/2025/ETP-1506/02 | Sample Source : ETP Inlet (SCML) | Sample Type : ETP Un-treated Water
Collected On : 15-06-2025 | Received On : 18-06-2025 | Collected By : ENVIROCON Representative

S. No.	Parameters	Results	Units	Limits [G.S.R. 422(E), 19.05.1993]
1.	pH	6.22	--	5.5 – 9.0
2.	Temperature	25.2	^{0}C	Shall not exceed 5^{0}C above the receiving water temperature
3.	Bio-chemical Oxygen Demand (3 days at 27^{0}C)	63	mg/l	30
4.	Chemical Oxygen Demand	544	mg/l	250
5.	Total Suspended Solids	239	mg/l	100
6.	Oil & Grease	9.8	mg/l	10
7.	Total Residual Chlorine	<0.01	mg/l	1.0
8.	Ammonical Nitrogen (as N)	41	mg/l	50
9.	Total Kjeldahl Nitrogen (as NH_3)	72	mg/l	100
10.	Free Ammonia	0.15	mg/l	5.0

ENVIROCON DIGBOI, ASSAM

Checked By: Mr. Pankaj Baroi, **ENVIROCON**

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Report No.: ENV/SCML/ML/25-26/WW-02
Date : 11/07/2025

Order No.: 5300020685
Date : 30/05/2025

Report Issued To : **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, P. O.: Khilehriat, Dist.: East Jaintia Hills, Meghalaya

WASTE WATER ANALYSIS RESULTS

Sample Ref. No. : SCML/2025/ETP-1506/01 Sample Source : ETP Outlet (SCML) Sample Type : ETP Treated Water
Collected On : 15-06-2025 Received On : 18-06-2025 Collected By : ENVIROCON Representative

S. No.	Parameters	Results	Units	Limits [G.S.R. 422(E), 19.05.1993]
1.	pH	6.74	--	5.5 – 9.0
2.	Temperature	25.2	^{0}C	Shall not exceed 5^{0}C above the receiving water temperature
3.	Bio-chemical Oxygen Demand (3 days at 27^{0}C)	21	mg/l	30
4.	Chemical Oxygen Demand	79	mg/l	250
5.	Total Suspended Solids	23	mg/l	100
6.	Oil & Grease	<4.0	mg/l	10
7.	Total Residual Chlorine	<0.01	mg/l	1.0
8.	Ammonical Nitrogen (as N)	7.6	mg/l	50
9.	Total Kjeldahl Nitrogen (as NH_3)	25	mg/l	100
10.	Free Ammonia	<0.01	mg/l	5.0

ENVIROCON DIGBOI, ASSAM

Checked By: Mr. Pankaj Baroi, **ENVIROCON**

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Report No.: ENV/SCML/ML/25-26/WW-08
Date : 25/10/2025

Order No.: 5300020685
Date : 30/05/2025

Report Issued To : **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, P. O.: Khilehriat, Dist.: East Jaintia Hills, Meghalaya

WASTE WATER ANALYSIS RESULTS

Sample Ref. No. : SCML/2025/ETP-2309/02 | Sample Source : ETP Inlet (SCML) | Sample Type : ETP Un-treated Water
Collected On : 23-09-2025 | Received On : 27-09-2025 | Collected By : ENVIROCON Representative

S. No.	Parameters	Results	Units	Limits [G.S.R. 422(E), 19.05.1993]
1.	pH	6.19	--	5.5 – 9.0
2.	Temperature	25.3	^{0}C	Shall not exceed 5^{0}C above the receiving water temperature
3.	Bio-chemical Oxygen Demand (3 days at 27^{0}C)	66	mg/l	30
4.	Chemical Oxygen Demand	538	mg/l	250
5.	Total Suspended Solids	246	mg/l	100
6.	Oil & Grease	9.7	mg/l	10
7.	Total Residual Chlorine	<0.01	mg/l	1.0
8.	Ammonical Nitrogen (as N)	45	mg/l	50
9.	Total Kjeldahl Nitrogen (as NH_3)	83	mg/l	100
10.	Free Ammonia	0.22	mg/l	5.0

Checked By: Mr. Pankaj Baroi, **ENVIROCON**

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Report No.: ENV/SCML/ML/25-26/WW-07
Date : 25/10/2025

Order No.: 5300020685
Date : 30/05/2025

Report Issued To : **STAR CEMENT MEGHALAYA LIMITED**
Lumshnong, P. O.: Khilehriat, Dist.: East Jaintia Hills, Meghalaya

WASTE WATER ANALYSIS RESULTS

Sample Ref. No. : SCML/2025/ETP-2309/01 Sample Source : ETP Outlet (SCML) Sample Type : ETP Treated Water
Collected On : 23-09-2025 Received On : 27-09-2025 Collected By : ENVIROCON Representative

S. No.	Parameters	Results	Units	Limits [G.S.R. 422(E), 19.05.1993]
1.	pH	6.75	--	5.5 – 9.0
2.	Temperature	25.3	^{0}C	Shall not exceed 5^{0}C above the receiving water temperature
3.	Bio-chemical Oxygen Demand (3 days at 27^{0}C)	22	mg/l	30
4.	Chemical Oxygen Demand	82	mg/l	250
5.	Total Suspended Solids	25	mg/l	100
6.	Oil & Grease	<4.0	mg/l	10
7.	Total Residual Chlorine	<0.01	mg/l	1.0
8.	Ammonical Nitrogen (as N)	7.9	mg/l	50
9.	Total Kjeldahl Nitrogen (as NH_3)	27	mg/l	100
10.	Free Ammonia	<0.01	mg/l	5.0

Checked By: Mr. Pankaj Baroi, **ENVIROCON**

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Annexure-XIII

F. No. CGWA-21/19/2020-CGWA
Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation
Central Ground Water Authority

PUBLIC NOTICE NO. 09/2023
New Delhi, Dated 25th June, 2023

Sub: Extension of CII, FICCI, PHDCCI, NPC, Laghu Udyog as Water Auditors

Whereas the Central Government constituted the Central Ground Water Authority (hereinafter referred to as the Authority) vide notification Number S.O. 38(E), dated 14th January, 1997, followed by notification number S.O. 1124(E) dated 6th November, 2000 and S.O. 1121 (E) dated 13th May, 2010 of the Government of India in the Ministry of Environment & Forests, for the purposes of regulation and control of ground water development and management in the whole of India and to issue necessary regulatory directions.

And whereas, the Ministry of Jal Shakti has issued 'Guidelines to control and regulate ground water extraction in India' vide notification number S.O. 3289(E) dated 24th September, 2020, notified by Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti, wherein Paragraph 4.1 (iii) provided that *"All industries abstracting ground water in excess of 100 m3/d shall be required to undertake annual water audit through Confederation of Indian Industries (CII)/ Federation Indian Chamber of Commerce and Industry (FICCI)/ National Productivity Council (NPC) certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means."*

And whereas an Amendment Notification dated 29.03.2023 has been further issued by Ministry of Jal Shakti, published in the Gazette of India, Extraordinary, Part II, section 3, sub-section (ii), vide Notification number S.O. 1509 (E), wherein Paragraph 5(i) provides the amendment of the above provision as '*All industries abstracting ground water in excess of 100 m3/day shall be required to undertake biennial (once in two years) water audit through certified auditors of agencies as approved by CGWA and submit audit reports within three months of completion of the same to CGWA. Compliance of the earlier given reports may be checked by certified water auditors after one year and the report in this regard may be shared with CGWA*.'

And whereas, as per the approval from the Ministry of Jal Shakti, Govt of India, vide letter No. T-81011/53/2022-GW Section-MOWR dated 27.09.2022, entrusted Rajiv Gandhi National Ground Water and Training Institute (RGNGWTRI), Naya Raipur, Chhattisgarh in collaboration with National Water Academy (NWA), Pune, Maharashtra to conduct training certificate course.

And whereas, as per the Training Course on Certification of Water Auditors conducted by RGNGWTRI, Naya Raipur, 13 persons are qualified as Certified Water Auditors.

Now, it has come to notice that a number of industries are in process of applying renewal of NOC through NOCAP portal and their contract for the water audit are in various stages of completion and report preparation.

In view of the above, the following *has been decided that apart* ***from the 13 Certified Water Auditors, following institutions are allowed to conduct Water Audit and submit their reports up to dated 30th Sept 2023****.*

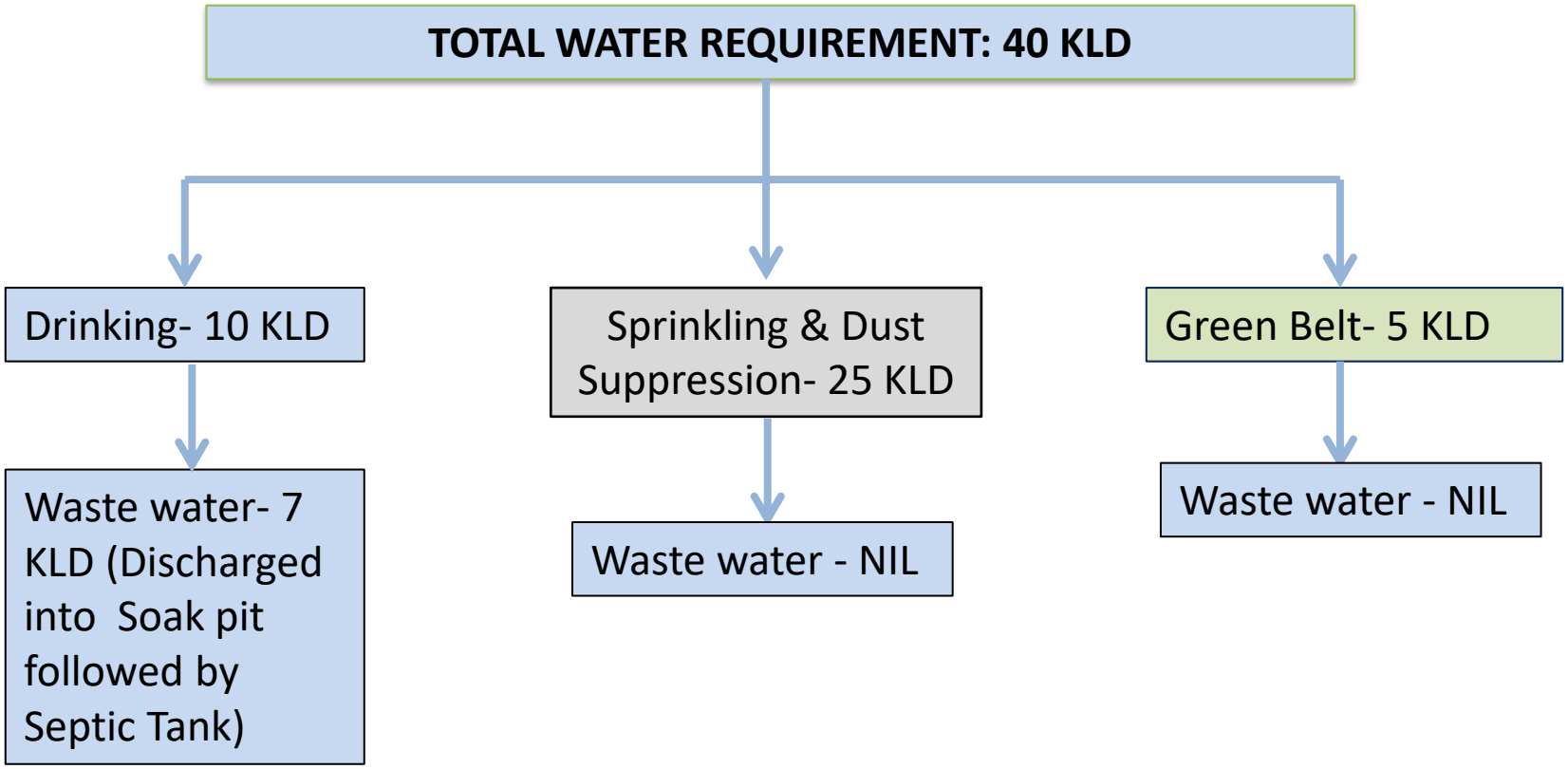
i. Confederation of Indian Industries (CII),
ii. Federation Indian Chamber of Commerce and Industry (FICCI),
iii. National Productivity Council (NPC)
iv. PHD Chamber of Commerce & Industries
v. Laghu Udyog Bharti

The water auditor professionals from ***Confederation of Indian Industries (CII), Federation Indian Chamber of Commerce and Industry (FICCI), National Productivity Council (NPC), PHD Chamber of Commerce & Industries and Laghu Udyog Bharti*** have to mandatorily undergo "Training Course on Certification of Water Auditors" from Rajiv Gandhi National Ground Water Training and Research Institute (RGNGWTRI) in collaboration with National Water Academy (NWA), Pune for continuation of their accreditation beyond 30th Sep 2023.

Member Secretary

Annexure-XIV

WATER BALANCE
for
Brishyrnot Limestone Mine-I (42.051 Hectares)



SOURCE OF WATER FOR MINES

30 KLD: Sewage Treated Water from Cement Plant

10 KLD: Fresh Water from Cement Plant for domestic use

By e-mail

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
OFFICE OF THE REGIONAL CONTROLLER OF MINES, GUWAHATI

No. MCDR-MPCP0CaFl/4/2023-GUH-IBM_RO_GUH Dt : 09/06/2023

Shri/M/s. Star Cement Meghalaya Limited ,
Lumshnong village EAST JAINTIA HILLS Khliehriat

Brishyrnot Limestone Mine I 42 dot 051 Ha (27946501)

Sub : Approval of Modification in Mining Plan in respect of Brishyrnot Limestone Mine-1 of M/s Star Cement Meghalaya Limited over an extent of 42.051 Ha in Brishyrnot Village, Post/PS-Lumshnong, East Jaintia Hill District, Meghalaya State, submitted under Rule 17(3) of MCR, 2016.

Ref: (i) Your Mining Plan submission on 03/04/2023 through Mining Plan Approval System (MPAS) Portal.
(ii) This office scrutiny comments issued on 25.04.2023, 22.05.2023, 07.06.2023, through MPAS Portal.
(iii) Your submission of Mining Plan after attending scrutiny points on draft Mining Plan through MPAS Portal on 09.05.2023, 30.05.2023 and final submission of Mining Plan through MPAS Portal on 08.06.2023.

Sir,

In exercise of the powers conferred by clause (b) of sub-section (2) of section 5 of the Mines & Minerals (Development & Regulation) Act, 1957 and clause (3) of Rule 17 of the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 read with Government of India Order No.S.O.445(E) dated 28.04.1987 and S.O. 1857(E) dated 18th May, 2016; I hereby **APPROVE** the Modifications in Mining Plan along with Progressive Mine Closure Plan (PMCP) for the period of 2023-24 to 2026-27 in respect of Brishyrnot Limestone Mine-1 of M/s Star Cement Meghalaya Limited over an extent of 42.051 Ha in Ha in Brishyrnot Village, Post/PS-Lumshnong, East Jaintia Hill District, Meghalaya State.

This approval is subject to the following conditions:

1. The Modification to the approved Mining Plan is approved without prejudice to any other law applicable to the Mining lease area from time to time whether made by the Central Government, State Government or any other authority and without prejudice to any order or direction from any court of competent jurisdiction.
2. The proposals shown on the plates and/or given in the document is based on the lease map/sketch submitted by the lessee and is applicable from the date of approval.
3. It is also clarified that the approval of the aforesaid Mining Plan does not in any way imply the approval of the Government in terms of any other provision of the Mines and Minerals (Development & Regulation) Act, 1957, or the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rule 2016 and any other laws including Forest (Conservation) Act, 1980, Wild Life (Protection) Act, 1972, Environment (Protection) Act, 1986 or the rules made there under, Mines Act, 1952 and Rule & Regulations made there under.
4. The provisions of the Mines Act, 1952 and Rules and Regulations made there under including submission of notices of opening, appointment of manager and other statutory officials as required by the Mines Act, 1952 shall be complied with.
5. If anything is found to be concealed as required by the Mines Act in the contents of the mining plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
6. That the approval for proposed mining operation and associated allied activities are restricted to the Mining Lease area only. Indian Bureau of Mines has not undertaken verification of the Mining lease boundary on the ground and does not undertake any responsibility regarding correctness of the boundaries of the leasehold shown on the ground with reference to lease map & other plans furnished by the lessee.
7. The proposals are approved prospectively from date of approval.
8. Your attention is invited to the Supreme Court interim order in W.P. (C) No. 202 dated 12.12.1996 for compliance. The approval of above said Modification in Mining Plan is therefore, issued without prejudice to and is subject to the said directions of the Supreme Court as applicable.
9. That the Modification in Mining Plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
10. The execution of Modification in Mining plan shall be subjected to vacations of prohibitory orders / notices, if any.
11. The execution of approved Modification in Mining Plan shall be for the Development & Production proposals related to Limestone and

Shale Mineral only. The Mining operation shall commence only after having all the necessary clearances/permissions from the competent authority of the Central/State Govt. The production proposals are subject to obtaining Environmental Clearance (EC) & CTO/CFO for the approved quantity, obtaining NOC from the concerned Elaka, obtaining NOC from Central Ground Water Authority/ Central Ground Water Board.

12. The Petrographical Study, Mineralogical Study, Hydrological study and the Recovery test shall be carried out within a period of 90 days from the approval of the Modification in Mining Plan and the copy of study reports should be submitted to IBM-Guwahati within 30 days of completion of the study.
13. The lessee will carry out Drone survey of the mine as per rule 34A of MCDR-2017 and shall submit the same within a period of 90 days from the date of getting permission for carrying out Drone Survey of the Mine from DGCA.
14. The Lessee shall erect pillars of specified type as mentioned in rule 12(v) of Minerals (Other than Atomic and Hydro carbons energy minerals) Concession Rules-2016, to demarcate the lease area above ground and shall maintain them. The Lessee shall carry out DGPS survey as per CCOM Circular: 02 / 2010 by any agency authorised by the Directorate of Mineral Resources-Shillong / State Govt of Meghalaya for the DGPS survey work and submit the DGPS survey report within six (6) months from the date of the approval.
15. The lessee shall comply to all the terms and conditions of the registered lease agreement failing which the approval of the document shall be revoked with immediate effect. Copy of duly registered Lease agreement shall be submitted to this office within three months of grant of Mining Lease.
16. This approval does not give any right or claim to the lessee under any law of the land with reference to the Mining lease area, considering it only as an Engineering and technical document which comes into effect only when provisions of all the Laws have been complied with and lease is valid and in force for period of plan, failing which approval will become null and void and the approval shall be deemed as revoked.

Brishyrnot Limestone Mine I 42 dot 051 Ha (27946501)

17. At any stage, if it is found that the information furnished, data incorporated in the document are incorrect or misrepresent facts, the approval of the document shall be revoked with immediate effect.
18. At any stage, if it is found that the approval conflicts with any other law or court order / direction under any statute the approval of the document shall be revoked with immediate effect.
19. The validity period of the financial assurance shall be renewed before the expiry of the same and should be submitted to this office.

Yours Faithfully,

(Sandeep Kumar Singh)

Deputy Controller of Mines (I/C)

Copy for kind information-

1. The Controller of Mines (East Zone), Kolkata.
2. The Director, Directorate of Mineral Resources, Govt of Meghalaya, Risa Colony, Shillong-793003, Meghalaya.
3. The Director of Mines Safety, Guwahati Region.
4. Sri D N Gulhane - Qualified Person, Global Environment & Mining Services,3rd Road, Bashveswara Badvane, Hospet, Karnatak – 583201.Email-gems_hpt@yahoo.com.
5. Mine File.

(Sandeep Kumar Singh)

Deputy Controller of Mines (I/C)

Chapter 1 : General Information

1.1 : Lease Details

IBM Registration Number :	IBM/5483/2011
Lease Code :	27946501
Mine Code :	38MEG657001
Name of Lessee :	Star Cement Meghalaya Limited
Address of Lessee :	Lumshnong Village EAST JAINTIA HILLS Khliehriat
Type of Lessee :	Private
Name of Mining Lease :	Brishyrnot Limestone Mine I 42 Dot 051 Ha
State :	MEGHALAYA
District :	EAST JAINTIA HILLS
Tehsil/ Taluk/ Mandal :	Khliehriat
Village :	Lum Shnong
Lease Area (Ha) :	42.051
Forest Area (Ha) :	0.0000
Name of Minerals :	LIMESTONE
Name of associated minerals :	SHALE

Type :	Existing Lease
Period of the proposal (FY) from :	2023 - 24
Period of the proposal (FY) to :	2026 - 27
Type of working :	Opencast
Nature of Use :	Captive
Category of Mine :	Category A

1.1.1 : Initial/subsequent Lease grant details

Grant	From	To	Lease deed execution date	Lease registration date
Initial Grant	16/09/2022	15/09/2072	15/09/2022	16/09/2022

1.1.2 : Mining Plan Submission Criteria Details

Type of Document :	Modification Of Mining Plan Under Rule 17(3) Of MCR, 2016
Reason/s For Modification :	The Clinker Production Capacity Of SCML Is 1.75 MTPA For Which The Requirement Of Limestone Is 2.45 MTPA. So Far Star Cement Meghalaya Limited Was Meeting Limestone From The Parent Company (Star Cement Limited). Now The Brishyrnot Limestone Mine-I Production Has Been Started And Being The Captive Mine, The Company Proposed To Produce & Supply The Entire Limestone Quantity From This Captive Mine To Their Cement Plant. Therefore For Enhancement Of The Limestone Production Capacity, To Meet The Market Demand Of Cement, The Modification Of The Mining Plan Is Proposed.
Period for which modification is proposed :	2023-2024 to 2026-2027

1.2 : Land Ownership Details

View Land Ownership Details Excel	land ownership Details.xlsx

1.3 : Existing Lease

Date of Execution :	16/09/2022

1.3.1 : Approval of earlier Mining Plan & Its Subsequent Review in Chronological Order

S.N.	Letter Number	Date	Period		Type Of Approved Document	Remark
			From	To		
1	IBM/GHY/MEG/EJH/LST/MP-88	14/09/2022	01/04/2022	31/03/2027	Mining Plan	Mining Plan

1.3.2 : Partial Surrenderd Area During Stages of Operations in Chronological Order

Not Applicable

1.3.3 : Transfer of Lease Area Subsequent to Grant

Not Applicable

1.3.4 : Statutory Compliances

1.3.4.1 : Environment Clearance

Applicable :	Yes
Letter No :	F.No.J-11015/17/2019-IA.II(M)

Date :	08/06/2021
Validity :	07/06/2051
ROM Mineral :	2507000.0000 (Tonnes)

1.3.4.2 : SPCB Approvals

Letter No :	MPCB/ONLINE/CTO(R-1/EHJ/2021/2022-23/14
Approval of :	Consent To Operate
Date :	30/08/2022
Validity :	31/07/2023
ROM Mineral :	2507000.0000 (Tonnes)

1.3.4.3 : Forest Clearance

Applicable :	No
Letter No :	Nil
Date :	Nil
Validity :	Nil
Area (Ha) :	Nil

1.3.4.4 : Land Acquisition Details

Total Area Acquired in hectare:	42.0510
Total Amount Paid (INR) :	1577854500.0000

1.3.5 : Mine Location Details

Toposheet Number :	83C/8 (Restricted)

1.3.5.1 : Location of Boundary Pillars

View Location of Boundary Pillars Excel	Boundary Pillars.xlsx

1.3.6 : Owner/Nominated Owner Details

Name	PAN of owner / Nominated Owner	Address of owner/ Nominated Owner	Mobile Number	Email	Please attach Minutes of Board Resolution in case of Nominated Owner
Pankaj Kejriwal	AFTPK9055K	Lumshnong Dist East Jaintia Hills Meghalaya793210	9811772451	pankajkejriwal@hotmail.com	Board_Resolution.pdf

1.3.7 : Qualified Person Details as per M(OAHCEM)CR, 2016

S.N.	Prefix	Name	PAN of QP	Address	Mobile no.	Qualification	Exp in years as prescribed under the rule	Email
1	Mr	D N Gulhane	AECPG1944F	Global Environment & Mining Services, 3rd Road, Bashveswara Badvane, Hospet, Karnatak – 583201.	9449830533	MSc MPhil PhD	14	gems_hpt@yahoo.com

Chapter 2A : Geology & Exploration

2A.1 : Geology

2A.1.1 : Topography

Terrain :	Undulating
Highest Level (m) from MSL :	219.0000
Lowest Level (m) from MSL :	60.0000
Average Level (m) from MSL :	139.0000
Drainage Pattern :	Dendritic
Order of Stream :	Order 2
Min Dist of Stream from Lease Area(m) :	0.0200

2A.1.2 : Details of Physiographic features and Infrastructures avaiable in and around the lease/ block area

Description	Location if existing Within the lease/block area	Distance from boundary periphery in kms, if existing outside the lease/block area. (within 5.00Kms)	Remark if any
River/Nallah/Reservoir	Nil	0.020	Perennial
Public roads (Tar road, cart road)	Nil	5.22	Brishyrnot Village Road
Railway track	Nil	0.00	Nil
Human settlements	Nil	0.743	Brishyrnot Village
Archaeological monuments/ places of worships/public utilities etc	Nil	0.788	Village Chruch
Wild life sanctuaries/ national parks	Nil	1.46	Naruph Wildlife sanctuary

Coastal Regulation Zone (CRZ)	Nil	0	0
Powertransmision lines/telephone lines	Nil	0	0
Firing range	Nil	0	0
Ordinance factory	Nil	0	0
grazing land/ burial ground or cremation ground	Nil	0.750	Burial Ground
Any other specify	Nil	0	0

Particulars	Distance from lease boundary in kms
Near by village	0.74
Nearest Railway station	72.00
Nearest Port	229.00
Distance of SH/NH from lease area	5.22

2A.1.3 : Regional Geology

Regional Geology

The lease hold is part of the Meghalaya Shelf, an extension of Bengal Basin. The origin of this limestone deposit relates to the Eocene time during which a major change in sedimentation pattern occurred over the central deep Bengal basin as a result of collision of india with the Burma and Tibetan blocks. The influx of sedimentation into the basin from the Himalayas to the north and the Indo - burman ranges to the east rapidly increased at this time. At the stage , a major marine transgression occurred which resulted in the deposition of carbonate sediments in the eastern part of the basin. The Shella and Kopili Formation are the main subdivisions of Jaintia group, the former strati graphically occurs below the later. Shella Formation comprises of three alternating sandstone and limestone members, viz, Lakadong Limestone, Umlatdoh Limestone and Prang Limestone respectively in chronological order. The pinching out of some of the members and inter fingering of limestone beds with sandstone and shale made them regionally persistent. The Kopili Formation consists predominantly of shale with siltstone and sandstone intercalations. There is a conformable relationship between all the members of Jaintia group and all the three beds of limestone are distinct in their grain sizes and fossils content. The rocks of Jaintia Group have a regional strike ranging from NE-SW to E-W with 2° to 5° dips towards southeast to south. In the area south of Lumshnong, the beds locally exhibit higher southerly dips (15°). SOURCE: The generalized stratigraphic succession of the Jaintia group of formations established by Geological Survey of India in report entitled “Investigation for limestone in Lumthalary Block, North Eastern part of Litang river valley, Jaintia Hills district, Meghalaya (E-II Stage) – Field Session 1999-2001” and published in 2010 as “Meghalaya Mineral Investigation Project”. The regional stratigraphic succession is enclosed as Annexure no 20.24.

2A.1.4 : Local Geology & Structure

2A.1.4.1 : Local Geological Set-up

The local geology of Brishyrnot Limestone mine 1 falls under Kopili formation of Jaintia group (of Meghalaya Shelf) and The area under report falls under survey of india topo sheet No. 83C/8. The maximum and Minimum elevation of the area varies from 219 mRL to 60 mRL respectively. The lthounit i.e., Limestone formation in the area belongs to Prang limestone unit of the sylhet unit of Kopili formation of Upper Eocene age at the southern side. There is only one band of limestone in this lease area. The thickness of the limestone band as per exploration is 127.00 mtrs. The strike direction of limestone formation in the area is E-W and dipping around 8-15 towards south . Based on the surface and sub surface data generated during the exploration work, The following lithological units are encountered in the area. Weathered Soil & Siliceous Shale Limestone

2A.1.4.2 : Structure

Based on mode of occurrence, morphological features, age, basin configuration, amenability to prospecting and proving operations as well as mineability, the Stratiform, Stratabound and Tabular Deposit of Regular Habit are characterized as large, continuous, bedded, horizontal to low or gently dipping deposits that are geologically undisturbed with abundant outcrops and are uniform in quality. Strike and dip of the deposit is E-W and 8 - 15. Dip direction towards South. In consideration of nature of occurrence of limestone, the limestone of ML area can be classified as Bedded Stratiform and Tabular Deposit of Regular Habit as Minerals (Evidence of Mineral Contents) Rules 2015.

2A.1.4.3 : Lithology, Petrographic & Mineralogical Description for Major, Associated & Indicator Minerals

During P.L stage topographic survey and geological mapping was done by the technical personnel of SCML followed by surface sampling and analysis. 24 Nos. of surface samples were collected from limestone exposures in the area and analyzed for 9 radicals. The analysis result confirmed the suitability of limestone for cement manufacturing. Besides 6 Nos. of surface samples for weathered siliceous shale samples have also been analyzed. Based on this, the surface topographical as well as geological map was prepared on 1:2000 scale with 3m contour interval and detailed exploration by drilling in 16 boreholes was carried out followed by core sampling and analysis. Six Nos. of pits were made over the top siliceous shale in the southern part of the ML area to ascertain its extent and quality.

2A.1.4.4 : Mode of Occurance & Controls of Mineralization

Limestone is formed almost exclusively by organisms in seawater either, by direct crystallization of dissolved calcium and carbonate to form shells, or as a by-product of the presence of organisms in seawater. Limestone is formed in two ways. It can be formed with the help of living organisms and by evaporation. The second way limestone is formed when water containing particles of calcium carbonate evaporate, leaving behind the sediment deposit. The water pressure compacts the sediment, creating limestone. The most common place to find limestone is beneath the marine waters. Ocean conditions form the rock as organisms, animal skeletons, and calcium carbonate combine. The shells and other items build up over time and harden into a limestone deposit on a larger scale. Limestone is usually a biological sedimentary rock, forming from the accumulation of shell, coral, algal, fecal and other organic debris. It can also form by chemical sedimentary processes, such as the precipitation of calcium carbonate from lake or ocean water. Limestone is usually grey, but it may also be white, yellow or brown. It is a soft rock and is easily scratched. It will effervesce readily in any common acid. Geologically, the area is a part of the Meghalaya shelf, an extension of the Bengal Basin. The origin of this limestone deposit relates to the Eocene time, during which a major change in sedimentation pattern occurred over the Central deep Bengal basin as a result of collision of India with the Burma and Tibetan Blocks. The influx of sediments into the basin from the

Himalayas to the North and the Indo Burma Ranges to the east rapidly increased at this time. At this stage, a major marine transgression occurred which resulted in the deposition of carbonate sediments in the eastern part of the basin. The Shella and Kopili Formation are the main subdivisions of Jaintia group, the former stratigraphically occurs below the later. Shella Formation comprises of three alternating sandstone and l

2A.1.4.5 : Extent of Weathering/ Alteration

Limestone areas are predominantly affected by chemical weathering when rainwater, which contains a weak carbonic acid, reacts with limestone. This causes the limestone to dissolve. Carbon dioxide in the atmosphere forms very dilute carbonic acid when it dissolves in rain. Which is generally seems in the outcrops of the deposits of the mine.

2A.1.4.6 : Nature/Form of Mineral	Lump
Specify If any other	Massive Bedded Limestone Formation

2A.1.4.7 : Extent of Mineralization

The limestone is formed due to the process of sedimentation. All the materials equal or more than CaO >34% (Min) and MgO <5% (Max) above has been considered as limestone as per IBM notification no C 284/CMG/2017 dated 25th April 2018 for threshold value of limestone. there is single band of limestone passing through the mine lease area having dimensions of length 1776m and width varies from 101 to 301 mtrs. The average CaO content of limestone is 52.31% and average MgO content is 0.88%.

2A.1.4.8 : Deposit Type (as per MEMC Rule)

Past Exploration In the past, the area was covered under regional geological mapping by Geological Survey of India with an aim to delineate the limestone bands and identify limestone blocks suitable for exploration. Further Directorate of Mineral Resources (DMR), Govt. of Meghalaya carried out exploration in three blocks viz. Thangskai-Lumshnong block, Lumshnong South and Lumshnong North block. In Thangskai - Lumshnong block, a total reserve of 291.21 million tons of both Lower and Middle Sylhet limestone were indicated covering an area of 2.50 sq. km, out of which 22 million tons of cement grade of Lower Sylhet limestone was proved. In Lumshnong South Block, mineable reserves of 36.6 million tons of paper grade limestone (Upper Sylhet limestone) have been estimated within an area of 0.5 sq km. Out of the total area covered by drilling, 0.25 sq.km area was covered by cement Corporation of India (CCI) under N.E.C. scheme during 1982-1983 and another 0.25 sq.km was covered by the D.M.R., Meghalaya. In Lumshnong North Block, out of an area of 2.5 sq km, covered by mapping, an area of 1.5 sq km was explored by drilling resulting in estimating 62 million tons of limestone of Middle Sylhet band. The average thickness of limestone encountered in the boreholes is given below: Upper Sylhet (Prang) Limestone:92.65 m Middle Sylhet (Umlatdoh) Limestone :39.65 m Lower Sylhet (Lakadong) Limestone :61.80 m

Strike / Trend of the Ore Body						
E	0	E	to	W	0	W

Amount of Dip of the Ore Body (degree)	Amount of Dip of the Ore Body (degree)
8	15
(from)	(to)

Dip Direction of the Ore Body			Plunge of Mineral Body (degree) (if any)	Direction of Plunge		
S	8	S	0	W	0	W

2A.2: Exploration

2A.2.1: Summary of The Previous Exploration (for fresh grant) / During Last Plan Period (for existing leases)

Name of The Agency
M/s Mahananda Construction Co. 457,Bidhan Road, (Old Dooars Bus Stand) Siliguri-734001, West Bengal mahanandasigindia@yahoo.in, +91 353 2536343+91 9733045915

2A.2.1.1: Geological Mapping

SI.No.	Year		Scale	Area Covered (Ha)
	From	To		
1	01/04/2010	31/03/2011	1:2000	42.0510
2	01/04/2022	31/03/2023	1:2000	42.0510

2A.2.1.2: Airborne Geophysical Survey

SI.No.	Type of Survey	Spacing (m)	Total line (km)	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
					Form	To	Form	To
1	NIL	Nil	Nil	Nil	Nil	Nil	Nil	Nil

2A.2.1.3: Ground Geophysical Survey

SI.No.	Type of Survey	Spacing (m)	Total line (km)	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
					Form	To	Form	To
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

2A.2.1.4: Geochemical Survey

SI.No.	Type of Sample	No of Samples	Aanlysis report	Area Covered (Ha)
1	Nil	Nil	Nil	Nil

2A.2.1.5: Pitting

Number of Pits
6

SI.No.	Year		Pit ID	Length of Pit (m)	Width of Pit (m)	Depth of Pit (m)	Depth (from)	Depth(to)	Running mtr	Litho units exposed	Name of the radical	Av Grade(in %)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
	From	To											From	To	From	To
1	01/04/2010	31/03/2011	P1	2.50	1.00	2.50	0.00	2.50	2.50	Shale	Silica	86.56	25:10:16.43	25:10:16.43	92:24:51.54	92:24:51.54
2	01/04/2010	31/03/2011	P2	1.50	1.00	1.50	0.00	1.50	1.50	Shale	Silica	85.41	25:10:14.34	25:10:14.34	92:24:50.93	92:24:50.93
3	01/04/2010	31/03/2011	P3	4.50	1.00	4.50	0.00	4.50	4.50	Shale	Silica	81.22	25:10:21.98	25:10:21.98	92:25:20.87	92:25:20.87
4	01/04/2010	31/03/2011	P4	3.40	1.00	3.40	0.00	3.40	3.40	Shale	Silica	69.18	25:10:22.28	25:10:22.28	92:25:35.07	92:25:35.07
5	01/04/2010	31/03/2011	P5	2.20	1.00	2.20	0.00	2.20	2.20	Shale	Silica	68.69	25:10:19.52	25:10:19.52	92:25:42.14	92:25:42.14
6	01/04/2010	31/03/2011	P6	3.90	1.00	3.90	0.00	3.90	3.90	Shale	Silica	66.18	25:10:17.87	25:10:17.87	92:25:41.92	92:25:41.92

2A.2.1.6: Trenching

Number of Trenches
0

2A.2.1.6.1: Spacing

Min (m)	Max (m)	Avg (m)
0.00	0.00	0.00

SI.No.	Year		Trench ID	Length of Trench (m)	Width of Trench (m)	Depth of Trench(m)	Depth (from)	Depth(to)	Running mtr	Litho units exposed	Name of the radical	Av. Grade	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
	From	To											From	To	From	To
1	Nil	Nil	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0	0	0.0000	Nil	Nil	Nil	Nil

2A.2.1.7 Exploratory Drilling(Core/non Core)

SI.No.	Year		Exploration agency	Core holes		Non-core (RC/DTH)		Grand total		Attach log sheet of each borehole in csv/excel format
	From	To		Number of boreholes drilled	Total mtrs	Number of boreholes drilled	Total mtrs	Number of boreholes drilled	Total mtrs	
1	01/04/2010	31/03/2011	M/s Mahananda Construction Co. 457,Bidhan Road, (Old Dooars Bus Stand) Siliguri-734001 , West Bengal mahanandasigindia@yahoo.in, +91 353 2536343+91 9733045915	16	1002.00	0	0.00	16	1002.00	Borehoel_Data_42.xls

2A.2.1.8: Exploratory Mining

SI.No.	Pit/Adit ID	Length in Mtr	Width in Mtr	Depth in mtrs	Volume (m^3)
1	0	0.00	0.00	0.00	0.00

2A.2.1.9: Sampling

SI.No.	Type of sample	No of samples collected	Number of samples analyzed	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Remark if any
				From	To	From	To	
1	Random	1	1	25:10:17.53	25:10:17.53	92:24:64.33	92:24:64.33	Surface Sample
2	Random	1	1	25:10:14.86	25:10:14.86	92:24:55.16	92:24:55.16	Surface Sample
3	Random	1	1	25:10:17.52	25:10:17.52	92:24:56.54	92:24:56.54	Surface Sample
4	Random	1	1	25:10:17.52	25:10:17.52	92:24:57.40	92:24:57.40	Surface Sample
5	Random	1	1	25:10:17.53	25:10:17.53	92:24:59.23	92:24:59.23	Surface Sample
6	Random	1	1	25:10:16.13	25:10:16.13	92:25:00.18	92:25:00.18	Surface Sample
7	Random	1	1	25:10:18.25	25:10:18.25	92:25:01.29	92:25:01.29	Surface Sample
8	Random	1	1	25:10:16.76	25:10:16.76	92:25:02.27	92:25:02.27	Surface Sample
9	Random	1	1	25:10:19.01	25:10:19.01	92:25:03.13	92:25:03.13	Surface Sample
10	Random	1	1	25:10:18.54	25:10:18.54	92:25:04.36	92:25:04.36	Surface Sample
11	Random	1	1	25:10:20.88	25:10:20.88	92:25:13.05	92:25:13.05	Surface Sample
12	Random	1	1	25:10:23.24	25:10:23.24	92:25:19.27	92:25:19.27	Surface Sample
13	Random	1	1	25:10:25.13	25:10:25.13	92:25:23.47	92:25:23.47	Surface Sample
14	Random	1	1	25:10:25.34	25:10:25.34	92:25:24.96	92:25:24.96	Surface Sample
15	Random	1	1	25:10:25.35	25:10:25.35	92:25:26.47	92:25:26.47	Surface Sample
16	Random	1	1	25:10:27.22	25:10:27.22	92:25:26.84	92:25:26.84	Surface Sample
17	Random	1	1	25:10:23.34	25:10:23.34	92:25:29.90	92:25:29.90	Surface Sample
18	Random	1	1	25:10:25.61	25:10:25.61	92:25:29.76	92:25:29.76	Surface Sample

19	Random	1	1	25:10:25.35	25:10:25.35	92:25:10.23	92:25:10.23	Surface Sample
20	Random	1	1	25:10:23.33	25:10:23.33	92:25:32.01	92:25:32.01	Surface Sample
21	Random	1	1	25:10:24.09	25:10:24.09	92:25:32.93	92:25:32.93	Surface Sample
22	Random	1	1	25:10:24.10	25:10:24.10	92:25:37.13	92:25:37.13	Surface Sample
23	Random	1	1	25:10:22.86	25:10:22.86	92:25:39.46	92:25:39.46	Surface Sample
24	Random	1	1	25:10:22.09	25:10:22.09	92:25:41.74	92:25:41.74	Surface Sample
25	Random	1	1	25:10:20.20	25:10:20.20	92:25:23.32	92:25:23.32	Surface Sample
26	Random	1	1	25:10:19.27	25:10:19.27	92:25:24.39	92:25:24.39	Surface Sample
27	Random	1	1	25:10:19.40	25:10:19.40	92:25:28.28	92:25:28.28	Surface Sample
28	Random	1	1	25:10:20.05	25:10:20.05	92:25:33.37	92:25:33.37	Surface Sample
29	Random	1	1	25:10:18.14	25:10:18.14	92:25:38.49	92:25:38.49	Surface Sample Surface Sample
30	Random	1	1	25:10:14.44	25:10:14.44	92:25:43.85	92:25:43.85	Surface Sample
31	Drill Core	18	18	25:10:24.80	25:10:24.80	92:25:21.20	92:25:21.20	Nil
32	Drill Core	50	50	25:10:18.30	25:10:18.30	92:25:20.40	92:25:20.40	Nil
33	Drill Core	64	64	25:10:23.90	25:10:23.90	92:25:35.30	92:25:35.30	Nil
34	Drill Core	86	86	25:10:18.20	25:10:18.20	92:25:34.60	92:25:34.60	Nil
35	Drill Core	45	45	25:10:18.40	25:10:18.40	92:24:58.80	92:24:58.80	Nil
36	Drill Core	71	71	25:10:50.90	25:10:50.90	92:24:58.60	92:24:58.60	Nil
37	Drill Core	16	16	25:10:15.90	25:10:15.90	92:24:58.60	92:24:58.60	Nil
38	Drill Core	52	52	25:10:17.30	25:10:17.30	92:25:05.09	92:25:05.09	Nil
39	Drill Core	17	17	25:10:21.90	25:10:21.90	92:25:13.70	92:25:13.70	Nil
40	Drill Core	44	44	25:10:19.00	25:10:19.00	92:25:13.30	92:25:13.30	Nil
41	Drill Core	8	8	25:10:27.20	25:10:27.20	92:25:28.70	92:25:28.70	Nil
42	Drill Core	51	51	25:10:20.70	25:10:20.70	92:25:27.90	92:25:27.90	Nil
43	Drill Core	37	37	25:10:22.70	25:10:22.70	92:25:42.50	92:25:42.50	Nil
44	Drill Core	91	91	25:10:17.10	25:10:17.10	92:25:41.90	92:25:41.90	Nil

45	Drill Core	48	48	25:10:12.30	25:10:12.30	92:25:48.50	92:25:48.50	Nil
46	Drill Core	49	49	25:10:09.40	25:10:09.40	92:25:48.10	92:25:48.10	Nil
47	Pit	1	1	25:10:16.43	25:10:16.43	92:24:51.54	92:24:51.54	Nil
48	Pit	1	1	25:10:14.34	25:10:14.34	92:24:50.93	92:24:50.93	Nil
49	Pit	1	1	25:10:21.98	25:10:21.98	92:25:20.87	92:25:20.87	Nil
50	Pit	1	1	25:10:22.28	25:10:22.28	92:25:35.07	92:25:35.07	Nil
51	Pit	1	1	25:10:19.52	25:10:19.52	92:25:42.14	92:25:42.14	Nil
52	Pit	1	1	25:10:17.87	25:10:17.87	92:25:41.92	92:25:41.92	Nil

2A.2.1.10: Chemical Analysis

SI.No.	Sample ID	Minerals	Radical with garde in %	Name of Agency	Type of agency	Attachment
1	SCML/42.051 Ha./BH-12/S-01 -16	Limestone	CaO 51.47%	Star Cements Meghalaya Limited	Inhouse	BH-12.xlsx
2	SCML/42.051 Ha./BH-13/S-01 - 50	Limestone	CaO 49.78%	Star Cements Meghalaya Limited	Inhouse	BH-13.xlsx
3	SCML/42.051 Ha./BH-14/S-01 - 64	Limestone	CaO 52.68%	Star Cements Meghalaya Limited	Inhouse	BH-14.xlsx
4	SCML/42.051 Ha./BH-15/S-01 - 86	Limestone	CaO 52.69%	Star Cements Meghalaya Limited	Inhouse	BH-15.xlsx
5	SCML/42.051 Ha./BH-16/S-01 - 45	Limestone	CaO 52.30%	Star Cements Meghalaya Limited	Inhouse	BH-16.xlsx
6	SCML/42.051 Ha./BH-17/S-01 - 51	LimLimestone estone	CaO 52.74%	Star Cements Meghalaya Limited	Inhouse	BH-17.xlsx
7	SCML/42.051 Ha./BH-23/S-01 -16	Limestone	CaO 52.53%	Star Cements Meghalaya Limited	Inhouse	BH-23.xlsx
8	SCML/42.051 Ha./BH-24/S-01- 52	Limestone	CaO 52.38%	Star Cements Meghalaya Limited	Inhouse	BH-24.xlsx
9	SCML/42.051 Ha./BH-25/S-01 -17	Limestone	CaO 52.47%	Star Cements Meghalaya LimitedStar Cements	Inhouse	BH-25.xlsx

				Meghalaya Limited		
10	SCML/42.051 Ha./BH-26/S-01 -44	Limestone	CaO 52.36%	Star Cements Meghalaya Limited	Inhouse	BH-26.xlsx
11	SCML/42.051 Ha./BH-27/S-01 - 08	Limestone	CaO 51.59%	Star Cements Meghalaya Limited	Inhouse	BH-27.xlsx
12	SCML/42.051 Ha./BH-28/S-01 - 48	Limestone	CaO 52.45%	Star Cements Meghalaya LimitedStar Cements Meghalaya Limited	Inhouse	BH-28.xlsx
13	SCML/42.051 Ha./BH-29/S-01 - 37	Limestone	CaO 52.57%	Star Cements Meghalaya Limited	Inhouse	BH-29.xlsx
14	SCML/42.051 Ha./BH-30/S-01 - 91	Limestone	CaO 52.74%	Star Cements Meghalaya Limited	Inhouse	BH-30.xlsx
15	SCML/42.051 Ha./BH-31/S-01 - 48	Limestone	CaO 52.53%	Star Cements Meghalaya Limited	Inhouse	BH-31.xlsx
16	SCML/42.051 Ha./BH-32/S-01 - 49	Limestone	CaO 52.60%	Star Cements Meghalaya Limited	Inhouse	BH-32.xlsx
17	PIT-1/SCML/42.051/SST /01	Shale	SiO2 86.56%	Star Cements Meghalaya Limited	Inhouse	PIT1.xlsx
18	PIT-2/SCML/42.051/SST /02	Shale	SiO2 84.51%	Star Cements Meghalaya Limited	Inhouse	PIT2.xlsx
19	PIT-3/SCML/42.051/SST /03	Shale	SiO2 85.41%	Star Cements Meghalaya Limited	Inhouse	PIT3.xlsx
20	PIT-4/SCML/42.051/SST /04	Shale	SiO2 69.18%	Star Cements Meghalaya Limited	Inhouse	PIT4.xlsx
21	PIT-5/SCML/42.051/SST /05	Shale	SiO2 68.69%	Star Cements Meghalaya Limited	Inhouse	PIT5.xlsx
22	PIT-6/SCML/42.051/SST /06	Shale	SiO2 66.18%	Star Cements Meghalaya Limited	Inhouse	PIT6.xlsx

* Chemical analysis of core /non vore samples may be uploaded in CSV file which shall normally include Five files namely collar file, survey file and Geology log file, Assay file & RQD File.

2A.2.1.11: Petrology & Mineralogical Studies

SI.No.	Type of Sample	Number of Sample Drawn	Number of Sample Analyzed	Petrographic Study Report
1	Nil	0	0	Nil

2A.2.1.12: Beneficiation Studies

SI.No.	Type of Beneficiation	Number of Samples	Attach
1	Nil	0	Nil

2A.2.1.13: Bulk Density Study as per M(EMC) Rules, 2015 and SOP of CGPB

Method adopted for calculating bulk density of ore and waste
1) Caliper method (As per SOP vide file No A-285(47)/CGPB/2018-19/CMG dated 03/03/2020 by IBM) adopted for determination of Bulk density used for limestone, Shale & sandstone core. 2) Container fill method (As per SOP vide file No A-285(47)/CGPB/2018-19/CMG dated 03/03/2020 by IBM) adopted for determination of Bulk density used for Soil.

SI.No.	Nature of Ore/OB	Mineral	Number of samples	Bulk Density Established (t/m^3)
1	Limestone	Limestone	3	2.50
2	Shale	Shale	3	1.81
3	Sandstone	Waste	3	2.32
4	Soil	Waste	3	1.80

2A.2.1.14: Area Covered under Exploration

Level of exploration	Area in Ha.		Total Area in Ha.
	Forest	Non Forest	
G-1	0.000000	38.858000	38.858000
G-2	0.000000	0.000000	0.000000
G-3	0.000000	0.000000	0.000000
G-4	0.000000	0.000000	0.000000
Area proved as Non-mineralized	0.000000	0.000000	0.000000

Area to be explored	0.000000	3.193000	3.193000
Total	0.000000	42.051000	42.051000

2A.2.2: Summary of The Previous Exploration (Before Last Plan Period)

Name of The Agency
Nil

2A.2.2.1: Geological Mapping

SI.No.	Year		Scale	Area Covered (Ha)
	From	To		
1	Nil	Nil	Nil	Nil

2A.2.2.2: Airborne Geophysical Survey

SI.No.	Type of Survey	Spacing (m)	Total line (km)	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
					From	To	From	To
1	Nil	0.00	0.000000	0.00	Nil	Nil	Nil	Nil

2A.2.2.3: Ground Geophysical Survey

SI.No.	Type of Survey	Spacing (m)	Total line (km)	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
					From	To	From	To
1	Nil	0	0	0.0000	Nil	Nil	Nil	Nil

2A.2.2.4: Geochemical Survey

SI.No.	Type of Sample	No of Samples

1	Nil	0

2A.2.2.5: Pitting

SI.No.	Pit ID	Length of Pit (m)	Width of Pit (m)	Depth of Pit (m)	Litho units exposed	Litho Unit From (m)	Litho Unit To (m)	Average Grade(%)	Running Metres (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
										Form	To	Form	To
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

2A.2.2.6: Trenching

Number of Trenches
Nil

Spacing

Min (m)	Max (m)	Avg (m)
Nil	Nil	Nil

Area Covered Under Trenching

Co-ordinates

Latitude

North	Nil
North	Nil
North	Nil
North	Nil

Longitude

East	Nil
East	Nil
East	Nil
East	Nil

SI.No.	Trench ID	Length of Trench (m)	Width of Trench (m)	Depth of Trench (m)	Litho Units Exposed	Average Grade	Running mtr	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
								From	To	From	To
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

2A.2.2.7: Exploratory Drilling

2A.2.2.7.1:Core/Non-core Drilling

SI.No.	Year		Exploration agency	Core holes		Non-core (RC/DTH)		Grand total		Attach log sheet of each borehole in csv/excel format
	From	To		Number of boreholes drilled	Total mtrs	Number of boreholes drilled	Total mtrs	Total boreholes	Total mtrs	
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

2A.2.2.8: Exploratory Mining

SI.No.	Pit / Adit ID	Volume (m^3)
1	0	0.00

2A.2.2.9: Sampling

SI.No.	Type of sample	Number of Samples	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
				From	To	From	To

1	Nil	Nil	Nil	Nil	Nil	Nil	Nil

2A.2.2.10: Chemical Analysis

SI.No.	Sample ID	Minerals	Radical Analysis	Attachment
1	SCML/42.051 Ha./BH-12/S-01 -16	Limestone	CaO 51.47%	12.xlsx
2	SCML/42.051 Ha./BH-13/S-01 - 50	Limestone	CaO 49.78%	13.xlsx
3	SCML/42.051 Ha./BH-14/S-01 - 64	Limestone	CaO 52.68%	14.xlsx
4	SCML/42.051 Ha./BH-15/S-01 - 86	Limestone	CaO 52.69%	15.xlsx
5	SCML/42.051 Ha./BH-16/S-01 - 45	Limestone	CaO 52.30%	16.xlsx
6	SCML/42.051 Ha./BH-17/S-01 - 51	Limestone	CaO 52.74%	17.xlsx
7	SCML/42.051 Ha./BH-23/S-01 -16	Limestone	CaO 52.53%	23.xlsx
8	SCML/42.051 Ha./BH-24/S-01- 52	Limestone	CaO 52.38%	24.xlsx
9	SCML/42.051 Ha./BH-25/S-01 -17	Limestone	CaO 52.47%	25.xlsx
10	SCML/42.051 Ha./BH-26/S-01 -44	Limestone	CaO 52.36%	26.xlsx
11	SCML/42.051 Ha./BH-27/S-01 - 08	Limestone	CaO 51.59%	27.xlsx
12	SCML/42.051 Ha./BH-28/S-01 - 48	Limestone	CaO 52.45%	28.xlsx
13	SCML/42.051 Ha./BH-29/S-01 - 37	Limestone	CaO 52.57%	29.xlsx
14	SCML/42.051 Ha./BH-30/S-01 - 91	Limestone	CaO 52.74%	30.xlsx
15	SCML/42.051 Ha./BH-31/S-01 - 48	Limestone	CaO 52.53%	31.xlsx
16	SCML/42.051 Ha./BH-32/S-01 - 49	Limestone	CaO 52.60%	32.xlsx
17	SCML/42.051/SST/01	Sandy Shale	SiO2 86.56%	PIT1.xlsx
18	SCML/42.051/SST/02	Sandy Shale	SiO2 84.51%	PIT2.xlsx
19	SCML/42.051/SST/03	Sandy Shale	SiO2 85.41%	PIT3.xlsx
20	SCML/42.051/SST/04	Sandy Shale	SiO2 85.41%	PIT4.xlsx
21	SCML/42.051/SST/05	Sandy Shale	SiO2 68.69%	PIT5.xlsx
22	SCML/42.051/SST/06	Sandy Shale	SiO2 68.69%	PIT6.xlsx

2A.2.2.11:Petrology & Mineralogical Studies

SI.No.	Type of Sample	Number of Sample Drawn	Number of Sample Analyzed	Petrographic Study Report
1	Nil	0	0	Nil

2A.2.2.12: Beneficiation Test

SI.No.	Type of Beneficiation	Number of Samples	Attachment
1	Nil	0	Nil

2A.2.2.13: Bulk Density

SI.No.	Rock Type	Number of Samples	Minerals	Bulk Density Established (t/m^3)
1	Limestone	3	Limestone	2.50
2	Shale	3	Shale	1.81
3	Sandstone	3	Waste / Siliceous	2.32
4	Soil	3	Waste / Aluminous	1.80

2A.2.2.14: Area Covered under Exploration

Level of exploration	Area in Ha.		Total Area in Ha.
	Forest	Non Forest	
G-1	0.0000	38.8580	38.8580
G-2	0.0000	0.0000	0.0000
G-3	0.0000	0.0000	0.0000
G-4	0.0000	0.0000	0.0000
Area proved as Non-mineralized	0.0000	0.0000	0.0000
Area to be explored	0.0000	3.1930	3.1930

Total	0.0000	42.0510	42.0510

SI.No.	Year		Area converted to G1 from G2, G3 & G4	% increase in G-1 Area	Remaining Area % in G2	Remaining Area % in G3	Remaining Area % in G4	Remaining Area in G2	Remaining Area in G3	Remaining Area in G4
	From	To								
1	01/04/2010	31/03/2011	38.85	92.40	0.00	0.00	0.00	0.00	0.00	0.00
Potentially Mineralised area (Ha)										38.85

2A.2.3 Ore Body Geometry & Grade

SI.No.	Name of the ore band	General Strike / Trend	Dip Of Mineral Body	Average Strike Length (m)	Average Width (m)	Chemical parameters				
						Average Depth (m)	Name of the radical	Min Grade (%)	Max Grade (%)	Avg Grade (%)
1	Prang	E-W	S	1577.00	256.00	57.30	CaO	42.82	54.23	48.52

2A.2.4: Reserve / Resource Estimation Method

2A.2.4.1: Methodology

Resource / Reserve Estimation Method
Sectional Area Method
Methodology
The total mineral resources (TMR) are estimated by cross sectional area method in Auto CAD software. Cross sectional area is multiplied with influence and bulk density. Mathematically, the resource is calculated as follows: TMR = C x L x B TMR = Total Mineral Resource (in MT) Where C = Cross Sectional Area (in m2) L= length of influence in meter B = Bulk density in metric tonnes per cubic meter Basics of Resource estimation Reserves have been estimated for the mineralised zone encountered in the borehole. The exploration carried out with 16 boreholes (BH-12 to BH-17 and BH-23 to BH-32) as well as surface limestone exposures with detailed analysis have been duly considered for demarcating the entire ML area under G1 axis for limestone only. Based on the available data for economic and feasibility for this lease area, the above resources have been booked under probable reserve and remaining resources.

2A.2.4.2: Resource Calculation

SI.No.	Cross Section/Bloc	Section Area/ Block	Influence(m)	Depth in mtr	Volume (m^3)	Bulk Density (t/m^3)	Resource Quantity (t)	Level of Exploration	Type of Land	Name of the radical	Grade (%)	Method used for resource

	k	Area(sq mt)										estimation
1	AA	10489	150.00	74.00	1573320.00	2.50	3933300.00	331	Private Land	CaO	52.53	Cross Sectional Method
2	BB	3602	200.00	73.00	720356.00	2.50	1800889.50	331	Private Land	CaO	52.94	Cross Sectional Method
3	CC	6672	200.00	56.00	1334325.00	2.50	3335813.00	331	Private Land	CaO	52.79	Cross Sectional Method
4	DD	13807	200.00	66.00	2761364.00	2.50	6903409.75	331	Private Land	CaO	50.03	Cross Sectional Method
5	EE	12551	200.00	91.00	2510195.00	2.50	6275486.50	331	Private Land	CaO	52.33	Cross Sectional Method
6	FF	27003	200.00	133.00	5400608.00	2.50	13501520.50	331	Private Land	CaO	52.69	Cross Sectional Method
7	GG	25151.085	200.00	148.00	5030217.00	2.50	12575542.50	331	Private Land	CaO	52.61	Cross Sectional Method
8	HH	13188	150.00	170.00	1978169.00	2.50	4945422.38	331	Private Land	CaO	52.95	Cross Sectional Method
Total					21308554.00		53271384.13					

2A.2.4.3: Mineral Resource Estimate for Conversion to Mineral Reserve

The resources are Measured Mineral Resources (331) category as per Minerals (Evidence Mineral Content) Rules 2015 are considered for conversion to Mineral Reserves category. Method of Mineral resource estimation (Surface area method, Cross section area method or indicate the software used). This should be calculated separately for forest area and non- forest area. Parameters for resource estimation Explored Strike Length :1577.00m Cut-off Grade: 44.00% CaO. Threshold Value : CaO – 34% (Min) and MgO – 5% (Max) Maximum Depth of the mineralization established based on the regional exploration : upto 78.75 mRL Others (Recovery Factor): 93.65% Ultimate economic depth/UPL : 93 mRL. The resources / Reserves are calculated by cross sectional method as well as the Slice Plan Method. During estimation of resources / reserve estimation by cross sectional method, the sectional wise cross-sectional area is measured and multiplied by sectional interval to calculate the volume. The tonnage is arrived by multiplying the tonnage is arrived by multiplying the volume with 2.5 m3 and recovery factor is considered as 93.65%. In case of

estimation by slice plan method is prepared for every 9m. The area of slice is measured and multiplied by height 9m bench to estimate. the volume the tonnage is arrived by multiplying the volume by 2.5 and recovery of 93.65%. The calculation of enclosed in 20.4 and 20.6.

2A.2.4.4: Threshold value & Cut off Parameters

Threshold Value : CaO – 34% (Min) and MgO – 5% (Max) Cut off parameters : CaO- 44%, MgO- 2.50%

2A.2.4.5: Mining Factors or Assumptions

The reserves of the ML area has been estimated by detailed mine design with conceptual plan for mining. Following key factors have been take into account for estimation of reserves. 1) 7.5m barrier zone has been left from lease boundary as per statutory 2) Forming pit at an ultimate pit limit slope 45degree 3) The area is non-mineable due to 7.5m safety zone 50 m barrier at the northern part taken from the lease boundary ultimate pit slope and ultimate pit limit. 4) Ultimate economic depth/UPL is 93 MRL. The limestone shall be worked either upto 7.5 m barrier or 50m barrier at the northern part of lease boundary forming the ultimate pit limit or ultimate pit limit defined by the mineralization of limestone for its recovery upto drilled depth by formation of benches of mainly 9m height. The production benches will have a face angle of 80° to 85° from horizontal. But since the production benches will be pushed finally upto the UPL, the ultimate pit limit is given the final slope of the pit. Ultimately, the benches finally left un-mined will have a final configuration of 9m height and 9m effective width and the overall slope at the UPL works out to 45°.

2A.2.4.6: Metallurgical Factors or Assumptions

No processing and beneficiation/metallurgical processing of the mineral “limestone” is desired. The crusher of 350 tph and 1200 tph rated capacity are already installed near cement plant area.

2A.2.4.7: Cost & Revenue Factors

The cost of production of clinker is Rs. 2675/Ton and selling price of clinker is Rs. 2921/Ton. Therefore the revenue/ Profit per ton is Rs 246.00/- The detailed costing is given annexure no 20.16.

2A.2.4.8: Market Assessment

The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into future. Demand & Supply Consumption of limestone depends on production and sale of clinker/cement, thus the demand and supply study has been carried out for the final product i.e., cement based on the market study, the target market for sale of cement produced from this plant will be sold in states of Assam, Meghalaya, Arunachal Pradesh, Manipur, Tripura, Nagaland, Sikkim, Mizoram, West Bengal and Bihar. Company enjoys a leadership position in the north -, east region with market share of more than 23%.

2A.2.4.9: Other Modifying Factors

a The effect, if any, of natural risk, infrastructure, environmental, legal, marketing, social or governmental factors on the likely viability of a project and/or on the estimation and classification of the Mineral Reserves. The estimation and classification of residual reserves has been carried out as per Minerals (Evidence of Mineral Contents) Rules 2015. A total of 17.34 million tons and 0.534 million tons mineable reserves under 121 category has been estimated. 7.78 million tons of limestone is proposed in the first plan period and thereafter 9.56 million tons of limestone will be produced till the conceptual period. The limestone produced from the proposed ML will be used in plant. Thus no effect is foreseen on account of natural risk, infrastructure, environmental, legal, marketing, social or governmental factors and reserves on the viability of the mine. b Environmental descriptions of anticipated liabilities. Location plans of mineral rights and titles. The anticipated liabilities in terms of environment impact and its management for mined out land, air quality, water quality, noise quality, soil quality, socio-economics etc. has been dealt in the Progressive Mine Closure plan.

2A.2.4.10: Classification

The estimation and classification of reserves has been carried out as per Mineral (Evidence of Mineral Contents) Rules 2015. A total of 17.24 million tons of limestone & 0.534 million tons of shale reserves under 111 categories have been estimated.

2A.2.4.11: Calculation of blocked resources

SI.No.	Reserves blocked due to	Cross section/Block	Sectional area/ block area (in Sq mtr)	Influence (m)	Depth (m)	Volume (m^3)	Bulk Density (t/m^3)	Resource Quantity (t)	UNFC code	Type of Land	Name of the radical	Grade (%)	Method used for resource estimation
1	7.5 Meter Safety Barrier	AA	519.00	150.00	0.00	77850.00	2.50	194625.00	211	Private	CaO	52.53	Cross Sectional Method
2	7.5 Meter Safety Barrier	BB	631.00	200.00	0.00	126200.00	2.50	315500.00	211	Private	CaO	52.94	Cross Sectional Method
3	7.5 Meter Safety Barrier	CC	461.00	200.00	0.00	92200.00	2.50	230500.00	211	Private	CaO	52.79	Cross Sectional Method
4	7.5 Meter Safety Barrier	DD	681.00	200.00	0.00	136200.00	2.50	340500.00	211	Private	CaO	50.03	Cross Sectional Method
5	7.5 Meter Safety	EE	687.00	200.00	0.00	137400.00	2.50	343500.00	211	Private	CaO	52.33	Cross Sectional

	Barrier												Method
6	7.5 Meter Safety Barrier	FF	1068.00	200.00	0.00	213600.00	2.50	534000.00	211	Private	CaO	52.69	Cross Sectional Method
7	7.5 Meter Safety Barrier	GG	1550.00	200.00	0.00	310000.00	2.50	775000.00	211	Private	CaO	52.61	Cross Sectional Method
8	7.5 Meter Safety Barrier	HH	1867.00	150.00	0.00	280050.00	2.50	700125.00	211	Private	CaO	52.95	Cross Sectional Method
9	River/Nallah/Reservoir	AA	1319.00	150.00	0.00	197850.00	2.50	494625.00	211	Private	CaO	52.53	Cross Sectional Method
10	River/Nallah/Reservoir	BB	37.00	200.00	0.00	7400.00	2.50	18500.00	211	Private	CaO	52.94	Cross Sectional Method
11	River/Nallah/Reservoir	CC	329.00	200.00	0.00	65800.00	2.50	164500.00	211	Private	CaO	52.79	Cross Sectional Method
12	River/Nallah/Reservoir	DD	122.00	200.00	0.00	24400.00	2.50	61000.00	211	Private	CaO	50.03	Cross Sectional Method
13	River/Nallah/Reservoir	EE	339.00	200.00	0.00	67800.00	2.50	169500.00	211	Private	CaO	52.33	Cross Sectional Method
14	River/Nallah/Reservoir	FF	1296.00	200.00	0.00	259200.00	2.50	648000.00	211	Private	CaO	52.69	Cross Sectional Method
15	River/Nallah/Reservoir	GG	3917.00	200.00	0.00	783400.00	2.50	1958500.00	211	Private	CaO	52.61	Cross Sectional Method
16	River/Nallah/Reservoir	HH	4289.00	150.00	0.00	643350.00	2.50	1608375.00	211	Private	CaO	52.95	Cross Sectional Method

17	Ultimate Pit Limit	AA	3905.00	150.00	0.00	585692.70	2.50	1464231.75	211	Private	CaO	52.53	Cross Sectional Method
18	Ultimate Pit Limit	BB	2446.00	200.00	0.00	489172.50	2.50	1222931.25	211	Private	CaO	52.94	Cross Sectional Method
19	Ultimate Pit Limit	CC	3386.00	200.00	0.00	677170.70	2.50	1692926.75	211	Private	CaO	52.79	Cross Sectional Method
20	Ultimate Pit Limit	DD	5530.00	200.00	0.00	1105922.60	2.50	2764806.50	211	Private	CaO	50.03	Cross Sectional Method
21	Ultimate Pit Limit	EE	6405.00	200.00	0.00	1281025.50	2.50	3202563.75	211	Private	CaO	52.33	Cross Sectional Method
22	Ultimate Pit Limit	FF	14427.00	200.00	0.00	2885301.70	2.50	7213254.25	211	Private	CaO	52.69	Cross Sectional Method
23	Ultimate Pit Limit	GG	15154.00	200.00	0.00	3030773.00	2.50	7576932.50	211	Private	CaO	52.61	Cross Sectional Method
24	Ultimate Pit Limit	HH	7032.00	150.00	0.00	1054768.95	2.50	2636922.38	211	Private	CaO	52.95	Cross Sectional Method
Total						14532527.65		36331319.13					

2A.2.4.12: Calulation of Reserves - I

SI.No.	Cross section/Block	Sectional area/ block area (in Sq mtr)	Influence (m)	Depth (m)	Volume (m^3)	Bulk Density (t/m^3)	Resource Quantity (t)	UNFC code	Type of Land	Name of the radical	Grade (%)	Method used for resource estimation
1	AA	4746	150.00	59.00	711927.00	2.50	1779817.50	111	Private	CaO	52.53	Cross

												Sectional Method
2	BB	488	200.00	15.00	97583.00	2.50	243957.50	111	Private	CaO	52.94	Cross Sectional Method
3	CC	2496	200.00	33.00	499155.00	2.50	1247887.50	111	Private	CaO	52.79	Cross Sectional Method
4	DD	7474	200.00	48.00	1494841.00	2.50	3737102.50	111	Private	CaO	50.03	Cross Sectional Method
5	EE	5120	200.00	30.00	1023969.00	2.50	2559922.50	111	Private	CaO	52.33	Cross Sectional Method
6	FF	10213	200.00	72.00	2042507.00	2.50	5106267.50	111	Private	CaO	52.69	Cross Sectional Method
7	GG	4530	200.00	47.00	906044.00	2.50	2265110.00	111	Private	CaO	52.61	Cross Sectional Method
Total					6776026.00		16940065.00					

2A.2.4.13: Calculation of Reserves -II

Mineral	LIMESTONE

Reserves/ Resources estimated as on	01/04/2023

UNIT of estimation	tonnes

A. Mineral Reserve

Classification	Code	Quantity			Grade		Remark
		Forest	Non Forest	Total	Forest	Non Forest	

1. Proved Mineral Reserve (A)	111	0.00	16940065.00	16940065.00	0	CaO - 52.03%, MgO - 0.91%, SiO2 -2.92%	Nil
2. Probable Mineral Reserve (A)	121	0.00	0.00	0.00	0	0	Nil
3. Probable Mineral Reserve (A)	122	0.00	0.00	0.00	0	0	Nil

B. Remaining Resources

Classification	Code	Quantity			Grade		Remark
		Forest	Non Forest	Total	Forest	Non Forest	
1. Feasibility Mineral Resource (B)	211	0.00	36331319.13	36331319.13	0	Cao - 52.47%, MgO - 0.76%, SiO2 - 2.29%	Nil
2. Prefeasibility Mineral Resource (B)	221	0.00	0.00	0.00	0	0	Nil
3. Prefeasibility Mineral Resource (B)	222	0.00	0.00	0.00	0	0	Nil
4. Measured Mineral Resource (B)	331	0.00	0.00	0.00	0	0	Nil
5. Indicated Mineral Resource (B)	332	0.00	0.00	0.00	0	0	Nil
6. Inferred Mineral Resource (B)	333	0.00	0.00	0.00	0	0	Nil
7. Reconnaissance Mineral Resource (B)	334	0.00	0.00	0.00	0	0	Nil

Total Mineral Resources (A+B) :	53271384.13

2A.2.4.13: Calculation of Reserves -III

Associated Mineral (SHALE)

Mineral	SHALE

Reserves/ Resources estimated as on	01/04/2023

UNIT of estimation	2

A. Mineral Reserve

Classification	Code	Quantity			Grade		Remark
		Forest	Non Forest	Total	Forest	Non Forest	
1. Proved Mineral Reserve (A)	111	0.00	534527.04	534527.04	0	SiO2 - 69.33, MgO- 0.43%	Nil
2. Probable Mineral Reserve (A)	121	0.00	0.00	0.00	0	0	Nil
3. Probable Mineral Reserve (A)	122	0.00	0.00	0.00	0	0	Nil

B. Remaining Resources

Classification	Code	Quantity			Grade		Remark
		Forest	Non Forest	Total	Forest	Non Forest	
1. Feasibility Mineral Resource (B)	211	0.00	94124.43	94124.43	0	SiO2 - 69.33, MgO- 0.43%	Nil
2. Prefeasibility Mineral Resource (B)	221	0.00	0.00	0.00	0	0	Nil
3. Prefeasibility Mineral Resource (B)	222	0.00	0.00	0.00	0	0	Nil
4. Measured Mineral Resource (B)	331	0.00	0.00	0.00	0	0	Nil
5. Indicated Mineral Resource (B)	332	0.00	0.00	0.00	0	0	Nil
6. Inferred Mineral Resource (B)	333	0.00	0.00	0.00	0	0	Nil
7. Reconnaissance Mineral Resource (B)	334	0.00	0.00	0.00	0	0	Nil

Total Mineral Resources (A+B) :	628651.47

2A.2.5: Future Exploration Proposal

2A.2.5.1: Geological Mapping

SI.N.	Year	Scale	Area Covered (Ha)
1	2023-2024	1:2000	42.05
2	2024-2025	1:2000	42.05
3	2025-2026	1:2000	42.05
4	2026-2027	1:2000	42.05

2A.2.5.2: Ground Geophysical Survey

SI.No.	Year	Type of Survey	Spacing (m)	Total line (km)	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
						From	To	From	To
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

2A.2.5.3: Pitting

Number of Pits
0

SI.No.	Year	Land Type	Pit ID	Length of Pit (m)	Width of Pit (m)	Depth of Pit (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
							From	To	From	To
1	Nil	Nil	0	0.00	0.00	0.00	Nil	Nil	Nil	Nil

2A.2.5.4: Trenching

Number of Trenches
0

2A.2.5.4.1: SPACING

Min (m)	Max (m)	Avg (m)
0.00	0.00	0.00

2A.2.5.4.2: Area Covered Under Trenching

Co-ordinates

SI.No.	Year	Land Type	Trench ID	Length of Trench (m)	Width of Trench (m)	Depth of Trench(m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
							From	To	From	To
1	Nil	Nil	0	0.0000	0.0000	0.0000	Nil	Nil	Nil	Nil

2A.2.5.5: Exploratory Drilling

2A.2.5.5.1: Core Drilling & Non-Core Drilling

SI.No.	Year	In Forest Area				In Non Forest Area				Total Borehole	Total Meter
		No. of Borehole	Total Mtr	Type Borehole	Grid Interval	No. of Borehole	Total Mtr	Type Borehole	Grid Interval		
1	2025-2026	0	0.00	Nil	0.00	7	980.00	Core	200.00	7	980.00
2	2026-2027	0	0.00	Nil	0.00	6	840.00	Core	200.00	6	840.00

2A.2.5.6: Exploratory Mining

SI.No.	Year	Pit ID	Length in meter	Width in meter	Depth in meter	Volume (m^3)

1	Nil	0	0.00	0.00	0.00	0.00

2A.2.5.7: Sampling

SI.No.	Year	Type of Sample	Number of Samples Proposed	Area Covered(Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
					From	To	From	To
1	2025-2026	Drill Core	140	1.87	25:10:16.40	25:10:16.40	92:24:55.00	92:24:55.00
2	2025-2026	Drill Core	140	0.70	25:10:16.54	25:10:16.54	92:24:53.25	92:24:53.25
3	2025-2026	Drill Core	140	0.38	25:10:17.55	25:10:17.55	92:25:00.66	92:25:00.66
4	2025-2026	Drill Core	140	1.50	25:10:19.65	25:10:19.65	92:25:14.94	92:25:14.94
5	2025-2026	Drill Core	140	1.50	25:10:18.60	25:10:18.60	92:25:22.09	92:25:22.09
6	2025-2026	Drill Core	140	1.50	25:10:25.10	25:10:25.10	92:25:22.06	92:25:22.06
7	2025-2026	Drill Core	140	1.50	25:10:19.68	25:10:19.68	92:25:29.37	92:25:29.37
8	2026-2027	Drill Core	140	0.87	25:10:07.09	25:10:07.09	92:25:51.40	92:25:51.40
9	2026-2027	Drill Core	140	1.50	25:10:26.18	25:10:26.18	92:25:29.20	92:25:29.20
10	2026-2027	Drill Core	140	1.50	25:10:17.87	25:10:17.87	92:25:36.59	92:25:36.59
11	2026-2027	Drill Core	140	1.50	25:10:17.87	25:10:17.87	92:25:36.35	92:25:36.35
12	2026-2027	Drill Core	140	1.50	25:10:15.71	25:10:15.71	92:25:43.54	92:25:43.54
13	2026-2027	Drill Core	140	0.87	25:10:07.31	25:10:07.31	92:25:50.72	92:25:50.72

2A.2.5.8 Petrographic & Mineralgraphic Studies

SI.No.	Year	Type of Sample	Number of Samples Proposed
1	Nil	Nil	0

Chapter 2B : Geology & Exploration UG : NA

Chapter 3: Mineral Beneficiation / Processing

Name of The Ore/Mineral	Limestone and shale

3.1: Mineralogy of the ROM ore/ Mineral

SI.No	Valuable Mineral Name	Approx. Mineral %	Gangue Mineral/s name	Approx. Mineral Gangue %
1	Limestone	52.3100	Silica	1.7400
2	Shale	69.3300	Nil	Nil

3.2: Complete Chemical Analysis of the ROM Ore/Mineral

SI.No	Radical	Wt%
1	CaO	52.3100
2	Mgo	1.1300
3	SiO2	2.3400
4	Al2O3	1.0000
5	Fe2O3	0.9000
6	Na2O	0.0800
7	K2O	0.0500
8	Cl	0.0200
9	LOI	42.4800

3.3: Crushing Section

3.3.1: Primary Crushing

SI.No	Type of Crusher	Make	Capacity of Crusher(tph)	Feed Size(mm)	Product Size(mm)
1	Other	Larsen & Turbo	1200	1000.0000	-100.0000

3.3.2: Secondary Crushing

Not Applicable

3.3.3: Tertiary Crushing

Not Applicable

3.4: Grinding Section

3.4.1: Dry Grinding

SI.No	Type of Mill	Stages	Make of the Mill	Feed Flow Rate(tph)	Feed Size(mm)	Product Size Mill Discharge(mm)	Type of Screen	Make	Aperture Size of Screen/Classifier (mm), if applicable	Classifier / Screen undersize (tph)	Classifier / Screen oversize (tph)
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

3.4.2: Wet Grinding

Not Applicable

3.5: Dry Processing

3.5.1: Screening and Classification

Not Applicable

3.5.2: Other Operations

Not Applicable

3.5.3: Product Quality

Not Applicable

3.6: Wet Processing

3.6.1: Scrubbing / Washing

SI.No	Type of Scrubbers / washers	Stages, if applicable	Make	Capacity(tph)	Feed Size(mm)	Product Size (mm)	Product Quality, if available	Water Requirement(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	Nil	Nil	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000

3.6.2: Screening and Classification

SI.No	Type of screen /	Stages, if applicable	Make	Capacity(tph)	Aperture Size of Screen/Clas	Feed Size(mm)	Product Size (mm)	Product Quality, if	Water Requirement(l/h)	Fresh Water Requirement	Recirculated Water (l/h)

	classifiers				sifier (mm), if applicable			available		(l/h)	
1	Nil	Nil	0	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000

3.6.3: Gravity Separation

SI.No	Type of separators (jig, table, spiral, etc.)	Stages, if applicable	Make	Capacity(tph)	Feed Size(mm)	Product (Conc) (tph)	Product-Mid (tph), if available	Product-Tail (tph)	Water Requirement(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	Nil	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6.4: Magnetic Separation

SI.No	Type of magnetic separators (magnetic intensity)	Stages, if applicable	Make	Capacity(tph)	Feed Size(mm)	Product-Mag (tph)	Product-Mid (tph), if available	Product non-Mag (tph)	Water Requirement(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	Nil	Nil	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6.5: Flotation

SI.No	Type of flotation equipment (froth/ column)	Stages (rougher/ cleaner, etc), if applicable	Make	Capacity(tph)	Feed Size(mm)	Product-Float (tph)	Product non-Float (tph)	Water Requirement(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	Nil	Nil	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6.6: Other Operations

SI.No	Type of	Stages, if	Make	Capacity(tph)	Feed	Product-Conc	Product-Mid	Product-Tail	Water Require	Fresh Water	Recirculated

	equipment / operation	applicable			Size(mm)	(tph)	(tph), if available	(tph)	ment(l/h)	Requirement (l/h)	Water (l/h)
1	Nil	Nil	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6.7: Product Quality (wet processing)

Products	Wt%	In Tonnes	Size (Range) mm	Complete chemical analysis
Concentrate	0.0000	0.0000	0	0
Sub-grade	0.0000	0.0000	0	0
Rejects	0.0000	0.0000	0	0

3.7: Overall Product Quality (Dry cum Wet Processing)

Products	Wt%	In Tonnes	Size (Range) mm	Complete chemical analysis
Concentrate	0.0000	0.0000	0	0
Sub-grade	0.0000	0.0000	0	0
Rejects	0.0000	0.0000	0	0

3.8: Disposal Method for tailing/ rejects

a) Explain the disposal method for tailing or reject from processing plant with detail chemical / mineral analysis of tailing	Nil
b) Size and capacity of tailing pond, toxic effect of such tailings, process adopted to neutralise its effect (if any)	Nil
c) Any other data (if available)	Nil

3.9: Overall water requirement of mining and mineral processing

Indicate quantity, source of supply, disposal of water and extent of recycling and chemical	Water_Balance_Chart__42.pdf

analysis of water	

3.10: Flow sheets and charts

Material balance chart of mineral processing plant(s) (each stage of process)	Flow_chart.pdf
Attach flow sheet of beneficiation of plant(s)	Nil
Any other data (if applicable)	Nil

Chapter 4A: Mining Operations

4A.1.1: Existing Method of Mining	Mechanized

Choose one or more	HEMM with deephole drilling	Combination of loaders and tippers	None	None

4A.1.2: Proposed Method of Mining	Mechanized

Choose one or more	HEMM with deephole drilling	Combination of loaders and tippers	None	None

Reasons for Proposed Changes	Nil

4A.2: Operational Parameters

4A.2.1: Inventory of Existing Pits & Dumps

4A.2.1.1: Pits

SI.No.	Pit ID	Pit Status	Area Covered by Pit(Ha)	Pit Dimensions(L*W*D)
1	1	Active	1.51	210mx71mx28m

4A.2.1.2: Dumps and Stacks

4A.2.1.2.1: Dump Details

SI.No.	Dump ID	Dump Status	Type of Dump	Total of Dump	Area Covered	Height(m)	Latitude (dd:mm:ss.ss)	Longitude (dd:mm:ss.ss)

				Quantity(t)	by Dump(Ha)		From	To	From	To
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

4A.2.1.2.2: Stack Details

SI.No.	Stack ID	Type of Stack	Total Stack of Quantity(t)	Area Covered by Stack(Ha)	Height(m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
						From	To	From	To
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

4A.2.1.3: Details of stabilised dumps

SI.No.	Dump ID	Number of Terraces	Average Height of Terraces(m)	Lenght of Toe Wall(m)	Lenght of Garland Drain(m)	Area Stablized(Ha)	Method of Stablization
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil

4A.2.2: Opencast Mining

4A.2.2.1: Bench Parameters

Pit ID	Year	Max Height of the Benches in Over Burden (m)	Min Width of the Benches in Over Burden (m)	Slope of the Bench in Over Burden (degree)	Max Height of the Benches in Mineral (m)	Minimum Width of the Benches in Mineral (m)	Slope of the Bench in Mineral (degree)	Overall Slope of Pit (degree)	Number of Benches in Top Soil	Number of Benches in Over Burden	Number of Benches in Mineral	Max Depth of Workings (m)	Depth of Water Table (mRL)	Max Slope Angle of Haul Roads (1xx in)
1	2023-2024	0.00	0.00	0.00	9.00	21.00	85.00	45.00	0	0	3	165.00	78.00	1:16
2	2023-2024	0.00	0.00	0.00	9.00	21.00	85.00	45.00	1	0	2	156.00	78.00	1:16
2	2024-2025	0.00	0.00	0.00	9.00	21.00	85.00	45.00	1	0	5	129.00	78.00	1:16
2	2025-2026	0.00	0.00	0.00	9.00	21.00	85.00	45.00	0	0	8	129.00	78.00	1:16
2	2026-2027	0.00	0.00	0.00	9.00	21.00	85.00	45.00	0	0	3	120.00	78.00	1:16

4A.2.2.2: Yearwise Opencast Development - I Continue

SI.No.	Year	Pit ID	Bench	Direction	Bulk Density of Overburden (BD1) (ton/m^3)	Bulk Density of Mineral (BD2) (tonn/m^3)	Top Soil Volume (Length x Width x Height) (m^3)	Over Burden Volume (Length x Width x Height) (m^3)	Over Burden Quantity (t)	ROM Volume (Length x Width x Height) (m^3)	ROM Quantity (t)	Recovery	Mineral Reject (t)	Production Main (t)	Production Associated (t)	OB Ratio to Ore (m^3/ton)
1	2023-2024	1	3	E-W	0.00	2.50	0.00	0.00	0.00	771863.00	1929657.50	1.00	0.00	1929657.50	0.00	Nil
2	2023-2024	2	2	E-W	0.00	2.50	5478.00	0.00	0.00	65929.60	164824.00	1.00	0.00	164824.00	0.00	Nil
3	2023-2024	2	1	E-W	0.00	1.80	0.00	0.00	0.00	33152.10	59673.78	1.00	0.00	0.00	59673.78	Nil
4	2024-2025	2	5	E-W	0.00	2.50	14488.00	0.00	0.00	999994.70	2499986.75	1.00	0.00	2499986.75	0.00	Nil
5	2024-2025	2	1	E-W	0.00	1.80	0.00	0.00	0.00	100777.40	181399.32	1.00	0.00	0.00	181399.32	Nil
6	2025-2026	2	8	E-W	0.00	2.50	0.00	0.00	0.00	999807.40	2499518.50	1.00	0.00	2499518.50	0.00	Nil
7	2025-2026	2	1	E-W	0.00	1.80	0.00	0.00	0.00	97600.00	175680.00	1.00	0.00	0.00	175680.00	Nil
8	2026-2027	2	3	E-W	0.00	2.50	0.00	0.00	0.00	999713.75	2499284.38	1.00	0.00	2499284.38	0.00	Nil
9	2026-2027	2	1	E-W	0.00	1.80	0.00	0.00	0.00	6600.00	11880.00	1.00	0.00	0.00	11880.00	Nil
Total									0.00		10021904.23		0.00	9593271.13	428633.10	

4A.2.2.2 Yearwise Opencast Development - I End

SI.No.	Year	Pit ID	Total Topsoil Volume	Total Over Burden	Total Over Burden	Total ROM Volume	Total ROM Quantity

			(m^3)	Volume (m^3)	Quantity (t)	(m^3)	(t)
1	2023-2024	1	0.00	0.00	0.00	771863.00	1929657.50
2	2023-2024	2	5471.00	0.00	0.00	65929.60	164824.00
3	2023-2024	2	0.00	0.00	0.00	33152.10	59673.78
4	2024-2025	2	14488.00	0.00	0.00	999994.70	2499986.75
5	2024-2025	2	0.00	0.00	0.00	100777.40	181399.32
6	2025-2026	2	0.00	0.00	0.00	999807.40	2499518.50
7	2025-2026	2	0.00	0.00	0.00	97600.00	175680.00
8	2026-2027	2	0.00	0.00	0.00	999713.75	2499284.38
9	2026-2027	2	0.00	0.00	0.00	6600.00	11880.00
		Total	19959.00	0.00	0.00	4075437.95	10021904.23

4A.2.2.3: Transportation & Hauling Equipment

SI.No.	Type	Make	Capacity (m^3)	No. of Equipments
1	Dumper	Ashok Leyland	10.00	18

4A.3: Material Handling Summary

4A.3.1: Studies Undertaken

Title	Study Undertaken	Attachment (only pdf allowed)
Blast Vibration Study Report	No	Nil
Slope Stability Study Report	No	Nil
Recovery Study Report	No	Nil
Hydrological Study Report	No	Nil
Mineral Beneficiation Study Report	No	Nil

Subsidence Study Report	No	Nil
Geotechical Study Report	No	Nil
Any Other Study Report	No	Nil
Bulk Density Study Report	Yes	15_Bulk_density_Study_Report.pdf

4A.3.2: Insitu Mining

SI.No.	Year	Waste Quantity(t)	ROM Quantity(t)	Total Handling (t)	ROM Quantity Saleable Mineral (t)	ROM Quantity Mineral Reject (t)	OB Ratio to Ore (Waste Quantity / ROM Quantity)	Grade Range (%)
1	2023-2024	0.00	2154155.28	2154155.28	2154155.28	0.00	0.00	CaO 52.58
2	2024-2025	0.00	2681386.07	2681386.07	2681386.07	0.00	0.00	CaO 52.15
3	2025-2026	0.00	2675198.50	2675198.50	2675198.50	0.00	0.00	CaO 52.29
4	2026-2027	0.00	2511164.38	2511164.38	2511164.38	0.00	0.00	CaO 52.26
5	2026-2027	0.00	Nil	Nil	Nil	0.00	Nil	Nil
	Total	0.00	10021904.23	10021904.23	10021904.23	0.00		

4A.3.3: Dump workings

SI.No.	Year	Dump ID	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Area (m2)	Avg Height of Dump (m)	Volume (m^3)	Total Dump Quantity (t)	Proposed Dump Handling Quantity (t) (A)	Proposed Recovery of Saleable Mineral (t)(B)	Proposed Waste Quantity (t) (A-B)	Grade Range (%)	Justification
			From	To	From	To									
1	2023-2024	0	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

4A.3.4: Calculation Summary

Year	2023-2024	2024-2025	2025-2026	2026-2027	Total
(A) Total ROM quantity (t)	2154155.28	2681386.07	2675198.50	2511164.38	10021904.23
(B) Saleable ore from ROM (t)	2154155.28	2681386.07	2675198.50	2511164.38	10021904.23
(C) Proposed Dump Handling Quantity (t)	0.00	0.00	0.00	0.00	0.00
(D) Saleable Ore recovered from dump workings (t)	0.00	0.00	0.00	0.00	0.00
(E) Total Saleable Ore (t)(=B+D)	2154155.28	2681386.07	2675198.50	2511164.38	10021904.23
(F) Total Quantity Handled (t)(=A+C)	2154155.28	2681386.07	2675198.50	2511164.38	10021904.23

4A.4: Machine Calculation

4A.4.1: Machine Requirement Summary

Number of Average Working Days in One Year (A)	300
Number of Shifts per Day (B)	2
Material Handling Required per Day (t) ((D)=Largest of (Q1,Q5)/(A))	9024.88
Material to be Handled per Shift (t) ((E)=(D)/(B))	4512.44
Handling Required per Hour (t) ((F)=(E)/8 hours)	752
Effective Shift Time	6 hrs 00 mins

4A.4.2: Shovel / Excavator Requirement

Effective Shift Time	6 hrs	00 mins

SI.No.	Type	Bucket Capacity	Bucket Fill Factor (B)	Swell Factor (C)	Tonnage Factor	Machine Utilization	Efficiency (%) (E)	Cycle time (sec) (F)	(G) TPH =TPH (G)	Total Hours (H)	Yearly handling	Maximum handling of	Number of excavator	Standby excavator

		(m^3)(A)			(t/m^3) (D)	Factor (%) (U)			=((3600 x A x B x C x D x E x U) / F)	=Number of working days x Number of shifts/day x Effective shift hours	by one Excavator (t) (I)=(G x H)	the material by this machine during the block period (t) (J)	machines required (K) = (J / I)	(L)
1	Hydraulic Excavator	2.60	0.65	0.80	2.50	0.70	0.75	45	141.96	3600	511056.00	2707464.32	5.30	1

4A.4.3: Dumper Requirement

Effective Shift Time	6 hrs	00 mins

SI.No.	Total Hours=Number of working days (W)x Number of shifts/day x Effective shift hours (Machine Requirement Summary) (A)	Capacity of Dumpers (t) (B)	Speed of the dumper (KMPH) (i)	Lead Distance (KM) (ii)	Time taken to cover distance in minutes(iii) =(ii/i) x 60	Queuing, Loading Time at Shovel (min) (iv)	Queuing, Unloading Time during unloading (min) (v)	Total Time to complete one trip(vi) = (iii + iv + v)	No. of Trips / hr = (60 / vi)	Total transportation per hour =(B X vii)	Yearly handling by one dumper (ix) = A x TPH	Maximum handling of the material by this machine during the block period (t) (x)	Number of dumpers will be (xi) =(x / ix)	Plus Standby dumper (xii)
1	3600	18.00	14.00	2.50	10.71	6.00	4.50	21.21	2	50	183384.00	2707464.32	14	3

4A.4.4: Drill Machine Requirement

Effective Shift Time	6 hrs	00 mins

SI.No.	Type of Drill	Depth of Hole(including Sub-grade Drilling (m)	Spacing (m)	Burden (m)	Bulk Density of Waste (t/m^3)	Bulk Density of Mineral (t/m^3)	Yield per Hole (t)	Yield per Meter (t/m) = Yield per Hole (t)/Depth of Hole(including Sub-grade Drilling (m))	Annual Target Known (t)	Drilling Requirement per Day (m) = (Annual Target Known (t) / Yield per Meter (t/m))/Number of Average Working Days in One Year (A)	Drilling Requirement per Shift(m)	Rate of Drilling per Hours (m/hr) = Drilling Requirement per Shift(m)/Effective Shift Time	Required No. of drills (m/c) = Required rate of drilling in meters per hr./ Actual rate of drilling in meters per hr of the machine deployed	Stand by Drill
1	Hydraulic	10.00	4.50	3.00	0.00	2.50	303.75	30.37	2499987.00	274.39	137.20	22.87	2.00	1

4A.4.5: Machine Deployment Details

4A.4.5.1: Excavator & Loading Equipment

SI.No.	Type	Make	Capacity (m^3)	No. of Equipments
1	Excavator	L&T Komatasu	2.60	5

4A.4.5.2: Dozers Details

SI.No.	Type	Make	Capacity (hp)	No. of Equipments
1	Grader	BEML	320.00	1

4A.4.5.3: Drilling Details

SI.No.	Type	Make	Capacity (t)	Diameter of Hole(mm)
1	Hydraulic Drill With Top Hammer	X-AVAS-600 Combined With Crawler Drill Model D-45	11.00	115.00

4A.5 Blasting Requirement

4A.5.1: Blasting & Explosive Requirement in Waste/Development

SI.No.	Drill Pattern / Spacing of Holes (m)	Burden of Holes (m)	Number of Rows / Rings	Yield per Holes in Waste (m^3)	Frequency of Blasting in a Week	Maximum Number of Holes Blasted in a Round	Charge per Hole (kg)	Charge per Round (kg)	Explosive Requirement Per Month in Development (kg)	Powder Factor in Development / Waste (t/kg)	Depth Of Hole
1	0	0	0	0	0	0	0	0	0	0	0

4A.5.2: Blasting & Explosive Requirement in Mineral / Ore

Type of Explosive	Type of Explosives used / to be Used
Ammonium Nitrate Fuel Oil Mixture	Aluminised Gelled Slurry Explosives (Large Diameter)

SI.No.	Total ROM proposed to be handled in CUM/annum	Total ROM proposed to be handled in CUM/day	Spacing of Holes (m)	Burden of Holes (m)	Number of Rows	Yield per Holes in ROM Zone (m^3)	Frequency of Blasting in a Week	Maximum Number of Holes Blasted in a Round	No of Holes Required to be Blasted per Round	Charge per Hole (kg)	Charge per Round (kg)	Explosive Requirement Per Month for ROM Zone Blasting (kg)	Powder Factor in Ore (t/kg)	Pop Shooting (no of Boulders)	Plaster Shooting (no of Boulders)	Use of Rockbreaker	Capacity	Secondary Blasting Requirements	Depth Of Hole
1	999995	3333.32	4.5	3.5	3	121.5	3	58	58	46	2668	31549	6.6	0	0	1	1.5	0	10

4A.6: Man Power Deployment

4A.6.1: Managerial

SI.No.	Particular	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	1st Class	0	0	0	1	1
2	2nd Class Manager	1	1	0	0	2
3	Mining Engineer	0	0	0	1	1
4	Geologist	0	0	0	1	1
5	Mechanical Engineer	0	0	0	1	1

4A.6.2: Supervisory

SI.No.	Particular	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	Foreman	1	1	0	1	3
2	Mine-mate	1	1	0	1	3
3	Blaster	1	1	0	0	2

4A.6.3: Skilled Workers / Operators

SI.No.	Particular	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	Operator	4	4	0	0	8
2	Dumper Operator	13	13	0	0	26
3	Drill Operator	1	1	0	1	3
4	Dozer/Grader Operator	1	1	0	0	2
5	Other	1	1	0	3	5

6	Technician	1	1	0	1	3

4A.6.4: Semi-skilled Workers

SI.No.	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	1	1	0	1	3

4A.6.5: Unskilled Workers

SI.No.	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	0	0	0	10	10

4A.6.6: Others Specify

SI.No.	Particular	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	other	0	0	0	0	0

4A.6.7: No of Persons Engaged Per Day

SI.No.	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	26	26	0	22	74

No of Shifts per Day ((A) = Machine Requirement Summary (B))	2
Average Daily Employment per Shift ((B) = (Total Number of Person per Day) / (A))	37
Material to be Handled per Shift ((C) = Machine Requirement Summary (E))	4512

4A.6.8: Supervision

SI.No.	Particular	Qualification	Requirement / Proposed	In Position / Existing Strength	(Requirement / Proposed) - (In Position / Existing Strength) = (-) Shortage / (+) Excess	Remarks
1	Mines Manager	B. E (Mining) With First Class Managers Certificate Of Competency	01	01	00	Nil
2	Assistant Manager	B. E (Mining) With Second Class Managers Certificate Of Competency	02	01	01	Nil
3	Mining Engineer	B.Tech Mining Engineering	01	01	0	Nil
4	Geologist	M.Sc Geology	01	01	0	Nil
5	Others Specify	Mechanical Engineer	01	01	0	Nil
6	Mine Foreman	Statutory Certificates	03	03	0	Nil
7	Mining Mate	Statutory Certificates	03	03	0	Nil
8	Blaster	Statutory Certificates	02	02	0	Nil

4A.7: Waste Management

4A.7.1: Existing Dump

SI.No.	Year	Dump Id	Type of Dump	Proposed Area (ha)	Height (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Total Dump Quantity (m^3)	Existing Dump Location
						From	To	From	To		
1	Nil	Nil	Nil	0.00	0.00	Nil	Nil	Nil	Nil	0.00	Nil

4A.7.2: New Dump

SI.No.	Year	Dump Id	Type of Dump	Proposed Area (ha)	Height (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Total Dump Quantity (m^3)	New Dump Location
						From	To	From	To		
1	Nil	Nil	Nil	0.00	0.00	Nil	Nil	Nil	Nil	Nil	Nil

4A.7.3: Existing Stack

SI.No.	Year	Stack ID	Type of Stack	Proposed Area (ha)	Height (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Total Stack Quantity (m^3)	Existing Stack Location
						From	To	From	To		
1	Nil	Nil	Nil	0.00	0.00	Nil	Nil	Nil	Nil	Nil	Nil

4A.7.4: New Stack

SI.No.	Year	Stack ID	Type of Stack	Proposed Area (ha)	Height (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Total Stack Quantity (m^3)	New Stack Location
						From	To	From	To		
1	Nil	Nil	Nil	0.00	0.00	Nil	Nil	Nil	Nil	Nil	Nil

4A.8: Mineral Waste Handling To Utilize As Minor Mineral

SI.No.	Year	Dump ID	Type of Dump	Proposed Area (ha)	Quantity Handled (t)	Quantity Recovered (t)	Name Of Minor Mineral	Alternative Waste Utilization (m^3)
1	Nil	Nil	Nil	0.00	0.00	Nil	Nil	Nil

4A.9: Use of Minerals

SI.No.	Proposed Use Of Mineral	Name Of Mineral	Relevant Use Of Mineral	Physical Specifications	Chemical Specifications
1	Captive use in Own Industry	LIMESTONE	Use of Limestone for cement production in Star Cement Meghalaya Limited	-600 mm	CaO 52.31%, MgO 0.88%, SiO2 2.43%
2	Captive use in Own Industry	SHALE	Use of Shale for cement	-100mm	SiO2 66.93%

			production in Star Cement Meghalaya Limited		

* Choose among these:

1. Captive use in own industry

2. Direct Selling

3. Selling Post-Beneficiation /Up-gradation

*Select more than one, if applicable

Chapter 4 B : Mining Operations UG : NA

Chapter 5: Sustainable Mining

5.1: Sustainable Mining and SDF Implementations in Compliance of Rule 35 of MCDR'2017

Sustainable Mining and SDF implementation during the proposal period 2023-24 to 2026-27 will be carried out in accordance with rule 35 of MCDR 2017. Community engagement and welfare activities will be organized to manage the socio economic impacts due to mining

(Total 200 characters)

Compliance of Vishakha Committee Guidelines for prevention of women harassment at workplace	Implemented

5.2: CSR INITIATIVES

5.2.1: 2023-2024

Details of Work Proposed during the Year / Measures Planned for the Affected Segment	Cumulative Work done / Measures Taken
5.2.1.1: Area to be Developed for Recreation	
Area (Ha)	Area (Ha)
0.01	0.00

5.2.1.2: Area for Water Storage & Recharge Facility	
Area (Ha)	Area (Ha)
0.01	0.00

5.2.1.3: Efforts Made towards Housing for Local Communities	
Number of Houses	Number of Houses
0	0

5.2.1.4: Efforts Made towards Providing Transport to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
35	0

5.2.1.5: Efforts Made towards Providing Healthcare to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
300	0

5.2.1.6: Efforts Made towards Providing Hygiene & Sanitation to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
300	0

5.2.1.7: Efforts Made towards Skill Development Programs to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
15	0

5.2.1.8: Efforts Made to Promote Education & Knowledge Based Initiatives	
Number of Beneficiaries	Number of Beneficiaries
13	0

5.2.1.9: Communication Facilities Provided to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
0	0

5.2.1.10: Any Other Steps Taken for Improving the Socio-Economic Standard of Local Communities	
Number of Beneficiaries	Number of Beneficiaries
15	0

5.2.1.11: Adoption of ODF		
Number of Toilets Built inside the Lease Area	Number of Toilets Built outside the Lease Area:	Number of Beneficiaries
2	1	20

5.2.1.12: Awareness Program among Mine Workers for Swatchata	
Number of Swatchata Programmes Proposed	Number of Swatchata Programmes Held
2	0

5.2.1.13: Efforts for green energy	
Total energy consumption (KWh)	Green energy consumption (% of total)
0.40	0.00

5.2.1.14: Water & recycled use	
Total water consumption (KLD)	Water recycled (% of total)
50.00	0.00

5.2.2: 2024-2025

Details of Work Proposed during the Year / Measures Planned for the Affected Segment	Cumulative Work done / Measures Taken
5.2.2.1: Area to be Developed for Recreation	
Area (Ha)	Area (Ha)
0.01	0.01

5.2.2.2: Area for Water Storage & Recharge Facility	
Area (Ha)	Area (Ha)
0.01	0.01

5.2.2.3: Efforts Made towards Housing for Local Communities	
Number of Houses	Number of Houses
0	0

5.2.2.4: Efforts Made towards Providing Transport to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
40	35

5.2.2.5: Efforts Made towards Providing Healthcare to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
300	300

5.2.2.6: Efforts Made towards Providing Hygiene & Sanitation to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
300	300

5.2.2.7: Efforts Made towards Skill Development Programs to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
15	15

5.2.2.8: Efforts Made to Promote Education & Knowledge Based Initiatives	
Number of Beneficiaries	Number of Beneficiaries
15	13

5.2.2.9: Communication Facilities Provided to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
0	0

5.2.2.10: Any Other Steps Taken for Improving the Socio-Economic Standard of Local Communities	
Number of Beneficiaries	Number of Beneficiaries
20	15

5.2.2.11: Adoption of ODF		
Number of Toilets Built inside the Lease Area	Number of Toilets Built outside the Lease Area:	Number of Beneficiaries
0	1	50

5.2.2.12: Awareness Program among Mine Workers for Swatchata	
Number of Swatchata Programmes Proposed	Number of Swatchata Programmes Held
2	2

5.2.2.13: Efforts for green energy	
Total energy consumption (KWh)	Green energy consumption (% of total)
0.50	0.00

5.2.2.14: Water & recycled use	
Total water consumption (KLD)	Water recycled (% of total)
100.00	0.00

5.2.3: 2025-2026

Details of Work Proposed during the Year / Measures Planned for the Affected Segment	Cumulative Work done / Measures Taken
5.2.3.1: Area to be Developed for Recreation	
Area (Ha)	Area (Ha)
0.01	0.02

5.2.3.2: Area for Water Storage & Recharge Facility	
Area (Ha)	Area (Ha)
0.01	0.02

5.2.3.3: Efforts Made towards Housing for Local Communities	
Number of Houses	Number of Houses
0	0

5.2.3.4: Efforts Made towards Providing Transport to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
40	75

5.2.3.5: Efforts Made towards Providing Healthcare to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
300	600

5.2.3.6: Efforts Made towards Providing Hygiene & Sanitation to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
250	600

5.2.3.7: Efforts Made towards Skill Development Programs to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
20	35

5.2.3.8: Efforts Made to Promote Education & Knowledge Based Initiatives	
Number of Beneficiaries	Number of Beneficiaries
15	28

5.2.3.9: Communication Facilities Provided to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
0	0

5.2.3.10: Any Other Steps Taken for Improving the Socio-Economic Standard of Local Communities	
Number of Beneficiaries	Number of Beneficiaries
20	35

5.2.3.11: Adoption of ODF		
Number of Toilets Built inside the Lease Area	Number of Toilets Built outside the Lease Area:	Number of Beneficiaries
0	1	30

5.2.3.12: Awareness Program among Mine Workers for Swatchata	
Number of Swatchata Programmes Proposed	Number of Swatchata Programmes Held
2	6

5.2.3.13: Efforts for green energy	
Total energy consumption (KWh)	Green energy consumption (% of total)
0.50	0.00

5.2.3.14: Water & recycled use	
Total water consumption (KLD)	Water recycled (% of total)
100.00	0.00

5.2.4: 2026-2027

Details of Work Proposed during the Year / Measures Planned for the Affected Segment	Cumulative Work done / Measures Taken
5.2.4.1: Area to be Developed for Recreation	
Area (Ha)	Area (Ha)
0.25	0.03

5.2.4.2: Area for Water Storage & Recharge Facility	
Area (Ha)	Area (Ha)
0.01	0.03

5.2.4.3: Efforts Made towards Housing for Local Communities	
Number of Houses	Number of Houses
0	0

5.2.4.4: Efforts Made towards Providing Transport to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
40	115

5.2.4.5: Efforts Made towards Providing Healthcare to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
300	900

5.2.4.6: Efforts Made towards Providing Hygiene & Sanitation to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
250	850

5.2.4.7: Efforts Made towards Skill Development Programs to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
20	50

5.2.4.8: Efforts Made to Promote Education & Knowledge Based Initiatives	
Number of Beneficiaries	Number of Beneficiaries
15	0

5.2.4.9: Communication Facilities Provided to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
0	0

5.2.4.10: Any Other Steps Taken for Improving the Socio-Economic Standard of Local Communities	
Number of Beneficiaries	Number of Beneficiaries
20	35

5.2.4.11: Adoption of ODF		
Number of Toilets Built inside the Lease Area	Number of Toilets Built outside the Lease Area:	Number of Beneficiaries
0	0	50

5.2.4.12: Awareness Program among Mine Workers for Swatchata	
Number of Swatchata Programmes Proposed	Number of Swatchata Programmes Held
2	6

5.2.4.13: Efforts for green energy	
Total energy consumption (KWh)	Green energy consumption (% of total)
0.50	0.00

5.2.4.14: Water & recycled use	
Total water consumption (KLD)	Water recycled (% of total)
100.00	0.00

5.3: Rehabilitation & Resettlement of Affected Persons

Particular	2023-2024	2024-2025	2025-2026	2026-2027
Proposed Number of Project Affected Persons(PAP)	0	0	0	0
Proposed Number of Person for Alternate Arrangement for Sustainable Livelihood	0	0	0	0
Proposed Number of Person for Skill Training	0	0	0	0
Proposed Number of Person Likely to get Direct Employment	0	0	0	0
Proposed Number of Person Likely to get Indirect Employment	0	0	0	0
Proposed Project Affected Families Skilled and Absorbed	0	0	0	0
Proposed Number of Project Affected Families	0	0	0	0

Chapter 6: Progressive Mine Closure Plan

6.1: Status of Land

Total Area Degraded					Total mined out area Reclaimed and Rehabilitated			Other Areas Reclaimed and Rehabilitated	
Total area under excavation in the lease		Area under Dumps(in hect)	Area under utility services(in hect)	Area under Stack yards(in hect)	Mined out Area Reclaimed but not rehabilitated(in hect)	Mined outArea fully Rehabilitated from Reclaimed area(in hect)	Area under Water Reservoir considered Rehabilitated (in hect)	Stabililized Waste dump Rehabilitated (in hect)	Virgin area under Green Belt (in hect)
Area under mining operation	Mined Out area in the lease								
1.51	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00

6.2: Progressive Reclamation and Rehabilitation Plan

6.2.1: Backfilling

Quantity of Waste / Fill Material Available at Site (m^3)	0.00
Availability of Top Soil for Spreading (m^3)	0.00
Proposed Spread Area (m^2)	0.00

6.2.1.1: Year Wise Proposal

SI.No	Year	Pit ID	Area (m^2)	Top RL	Bottom RL	Estimated Expenditure (₹ INR)
1	2023-2024	0	0.00	0	0	0.00
2	2024-2025	0	0.00	0	0	0.00
3	2025-2026	0	0.00	0	0	0.00

4	2026-2027	0	0.00	0	0	0.00

6.2.2: Water Reservoir

Average Rainfall of The Area (mm)	6835.84
Proposed Area under Water Storage	0

6.2.2.1: Preparations For Ground Water Recharging

6.2.2.1.1: Drilling Holes	
Year	Proposed no of Holes to be Drilled
2023-2024	0.00
2024-2025	0.00
2025-2026	0.00
2026-2027	0.00

6.2.2.1.2:Preparation of Course Gravel Bed	
Year	Proposed Area of Bed (LxW)
2023-2024	0.00
2024-2025	0.00
2025-2026	0.00
2026-2027	0.00

Please specify, if others
Nil

6.2.2.2: Protective measures (Please specify running meter)

6.2.2.2.1: Fencing

Year	Proposed Fencing Length (m)	Latitude(dd:mm:ss.ss)		Longitude(dd:mm:ss.ss)	
		From	To	From	To
2023-2024	825	25:10:14.06	25:10:15.02	92:24:57.16	92:24:59.76
2024-2025	920	25:10:15.02	25:10:17.39	92:24:59.76	92:25:06.73
2025-2026	670	25:10:17.39	25:10:15.58	92:25:06.73	92:25:18.55
2026-2027	740	25:10:15.58	25:10:17.49	92:25:18.55	92:25:22.02

6.2.2.2.2: Retaining Wall

Year	Proposed Wall Length (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
		From	To	From	To
2023-2024	950	25:10:17.94	25:10:14.64	92:24:50.60	92:25:19.69
2024-2025	600	25:10:14.79	25:10:23.59	92:25:19.81	92:25:36.40
2025-2026	500	25:10:18.12	25:10:10.59	92:25:31.55	92:25:49.52
2026-2027	0	Nil	Nil	Nil	Nil

6.2.2.2.3: Garland Drains

Year	Proposed Bund Length (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
		From	To	From	To
2023-2024	1050	25:10:18.06	25:10:12.87	92:24:50.39	92:24:19.66
2024-2025	650	25:10:13.50	25:10:24.050	92:25:20.63	92:25:38.47
2025-2026	550	25:10:14.99	25:10:09.90	92:25:36.08	92:25:49.52
2026-2027	0	Nil	Nil	Nil	Nil

6.2.3: Green Belt Development

6.2.3.1: Cumulative work done (upto end of previous block of five years)

SI.No	Total Expenditure Incurred up to Last	Area Covered (Ha)	Number of Plants	Survival Rate (%)

	Year (INR)			
1	141000.00	0.19	470	80.00

6.2.3.2: Year Wise Proposal

SI.No	Year	Green Belt Location (s)	Area Proposed to be Covered (Ha)	Number of Plants Proposed	Expected Survival Rate (%)	Estimated Expenditure (₹ INR)
1	2023-2024	Safety Zone	0.42	1050	80	52500
2	2024-2025	Safety Zone	0.24	600	80	30000
3	2025-2026	Safety Zone	0.243	608	80	30400
4	2026-2027	Safety Zone	0.155	388	80	19400

6.2.4: Use of Shallow Pits

6.2.4.1: Cumulative Work Done (upto end of previous block of five years)

SI.No	Pit ID	Work Done	Area covered (m^2)	Total Expenditure Incurred (up to last five year block) (₹ INR)
1	0	0	0.00	0.00

6.2.4.2: Year Wise Proposal

SI.No	Year	Pit ID	Total Area(Ha)	Area Proposed for Crops (Ha)	Suitable Crops	Area Proposed for Grass (Ha)	Total Proposed Expenditure (₹ INR)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Remarks
								From	To	From	To	
1	Nil	0	0.00	0.00	0	0.00	0.00	Nil	Nil	Nil	Nil	0

6.2.5: Pisciculture

6.2.5.1: Total Expenditure incurred as on Date (INR)	0.00

6.2.5.2: Cumulative work done as on Date

SI.No	Pit ID	Area (m^2)	Expenditure (₹ INR)
1	Nil	Nil	Nil

6.2.5.3: Year Wise Proposal

SI.No	Year	Pit ID	Area (m^2)	Estimated Expenditure (₹ INR)
1	Nil	0	0.00	0.00

6.2.5.4: Source of Water for Pisciculture	Nil
6.2.5.5: Whether the quality of water has been assessed & found to be suitable for Pisciculture	No

6.2.6: Recreational Facility

6.2.6.1: Total Expenditure Incurred (up to last five year block) (INR)	0.00

6.2.6.2: Cumulative work done as on Date

SI.No	Pit ID	Area (m^2)	Expenditure (₹ INR)
1	0	0.00	0.00

6.2.6.3: Year Wise Proposal

SI.No	Year	Type of Recreational Facility	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Estimated Expenditure (INR)
				From	To	From	To	
1	2023-2024	0	0.00	Nil	Nil	Nil	Nil	Nil

2	2024-2025	0	0.00	Nil	Nil	Nil	Nil	Nil
3	2025-2026	0	0.00	Nil	Nil	Nil	Nil	Nil
4	2026-2027	0	0.00	Nil	Nil	Nil	Nil	Nil

6.2.7: Dump Area Stabilization & Development

SI.No	Year	Dump ID	No of Terraces	Average Height of Terraces (m)	Length of Toe Wall (m)	Length of Garland Drain (m)	Area Stabilized (Ha)	Method of Stabilization	Estimated Expenditure (₹ INR)	No of Check Dams
1	Nil	0	0	0.00	0.00	0.00	0.00	0	0.00	Nil

6.2.8: Other Form of Reclaiming the Area

6.2.8.1: Cumulative work done as on Date

SI.No	Total Expenditure incurred as on Date (INR)	Work Done
1	0.00	0

6.2.8.2: Year Wise Proposal

SI.No	Year	Work Proposals	Estimated Expenditure (INR)
1	2023-2024	Fencing, Retaining Wall & Garland Drain, Green Belt Development.	3408750.00
2	2024-2025	Fencing, Retaining Wall & Garland Drain, Green Belt Development.	2420000.00
3	2025-2026	Fencing, Retaining Wall & Garland Drain, Green Belt Development.	1984900.00
4	2026-2027	Fencing, Green Belt Development.	647400.00

6.2.9: TopSoil Management

6.2.9.1: Cummulative Work Done as on Date

SI.No	Top Soil Generated (m^3)	Top Soil Utilized (m^3)	Topsoil Stored (m^3)	Total expenditure incurred as on date (₹)
1	0.00	0.00	0.00	0.00

6.2.9.2: Year Wise Proposal

SI.No	Year	Topsoil Generated (m^3) (A)	Topsoil Utilized (m^3) (B)	Topsoil Stored (m^3) (A-B)	Estimated Expenditure (INR)
1	2023-2024	5478.00	5478.00	0.00	443745.00
2	2024-2025	14488.00	14488.00	0.00	1173384.00
3	2025-2026	0.00	0.00	0.00	0.00
4	2026-2027	0.00	0.00	0.00	0.00

6.2.10: Tailings Dam Management

SI.No	Year	Yearly generation of Tailing (m^3) (A)	Total capacity of Tailing Pond (m^3)	Measures Proposed for Periodic Desilting	Yearly Utilization of Tailing (m^3) (B)	Disposal of Tailing to Tailing Pond (m^3) (A-B)	Tailing Dam Design	Structural Stability Studies
1	2023-2024	0.00	0.00	0	0.00	0.00	Nil	Nil
2	2024-2025	0.00	0.00	0	0.00	0.00	Nil	Nil
3	2025-2026	0.00	0.00	0	0.00	0.00	Nil	Nil
4	2026-2027	0.00	0.00	0	0.00	0.00	Nil	Nil

6.2.11: Land Use of Lease Area at the Expiry of Lease Period

Total Area Degraded	Non Degraded area	Total mined out area Reclaimed and Rehabilitated	Other Areas Reclaimed and Rehabilitated

Mined Out area in the lease	Area under Dumps(in hect)	Area under the Tailing Dam	Area under utility services(in hect)	Area undistur bed/virgin	Mined out Area Reclaimed but not rehabilitated(i n hect)	Mined outArea fully Rehabilitated from Reclaimed area(in hect)	Area under Water Reservoir considered Rehabilitated (in hect)	Stabililized Waste dump Rehabilitated (in hect)	Virgin area under Green Belt (in hect)	Rehabilitated Area under utility services(in hect)	Rehabilitated Area under Tailing dam (in hect)
23.557	0.00	0.00	0.32	18.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Chapter 7: Financial Assurance/ Performance Surety (AREA PUT TO USE)

2023-2024

Consolidated View of Financial Assurance

SI.No	Particular	Area put to use at Start of Year (ha) (A)	Additional Requirement (ha) (B)	Total (ha) (C = A + B)
1	Area under Mining	1.51	4.55	6.06
2	Topsoil stacking	0.00	0.00	0.00
3	Overburden/Waste Dumping	0.00	0.00	0.00
4	Mineral Storage	0.00	0.00	0.00
5	Infrastructure (Workshop, Administrative Building etc.)	0.00	0.00	0.00
6	Roads	0.10	0.10	0.20
7	Railway	0.00	0.00	0.00
8	Tailing Pond	0.00	0.00	0.00
9	Effluent Treatment Plant	0.00	0.00	0.00
10	Mineral Separation Plant	0.00	0.00	0.00
11	Township Area	0.00	0.00	0.00
12	Others to specify	0.00	0.51	0.51
	Total	1.61	5.16	6.77

2024-2025

Consolidated View of Financial Assurance

SI.No	Particular	Area put to use at Start of Year (ha) (A)	Additional Requirement (ha) (B)	Total (ha) (C = A + B)
1	Area under Mining	6.06	6.65	12.71
2	Topsoil stacking	0.00	0.00	0.00
3	Overburden/Waste Dumping	0.00	0.00	0.00
4	Mineral Storage	0.00	0.00	0.00
5	Infrastructure (Workshop, Administrative Building etc.)	0.00	0.00	0.00
6	Roads	0.20	0.00	0.20
7	Railway	0.00	0.00	0.00
8	Tailing Pond	0.00	0.00	0.00
9	Effluent Treatment Plant	0.00	0.00	0.00
10	Mineral Separation Plant	0.00	0.00	0.00
11	Township Area	0.00	0.00	0.00
12	Others to specify	0.51	0.29	0.80
	Total	6.77	6.94	13.71

2025-2026

Consolidated View of Financial Assurance

SI.No	Particular	Area put to use at Start of Year (ha) (A)	Additional Requirement (ha) (B)	Total (ha) (C = A + B)
1	Area under Mining	12.71	5.28	17.99
2	Topsoil stacking	0.00	0.00	0.00
3	Overburden/Waste Dumping	0.00	0.00	0.00
4	Mineral Storage	0.00	0.00	0.00
5	Infrastructure (Workshop, Administrative Building etc.)	0.00	0.00	0.00

6	Roads	0.20	0.00	0.20
7	Railway	0.00	0.00	0.00
8	Tailing Pond	0.00	0.00	0.00
9	Effluent Treatment Plant	0.00	0.00	0.00
10	Mineral Separation Plant	0.00	0.00	0.00
11	Township Area	0.00	0.00	0.00
12	Others to specify	0.80	0.29	1.09
	Total	13.71	5.57	19.28

2026-2027

Consolidated View of Financial Assurance

SI.No	Particular	Area put to use at Start of Year (ha) (A)	Additional Requirement (ha) (B)	Total (ha) (C = A + B)
1	Area under Mining	17.99	1.55	19.54
2	Topsoil stacking	0.00	0.00	0.00
3	Overburden/Waste Dumping	0.00	0.00	0.00
4	Mineral Storage	0.00	0.00	0.00
5	Infrastructure (Workshop, Administrative Building etc.)	0.00	0.00	0.00
6	Roads	0.20	0.00	0.20
7	Railway	0.00	0.00	0.00
8	Tailing Pond	0.00	0.00	0.00
9	Effluent Treatment Plant	0.00	0.00	0.00
10	Mineral Separation Plant	0.00	0.00	0.00
11	Township Area	0.00	0.00	0.00
12	Others to specify	1.09	0.16	1.25
	Total	19.28	1.71	20.99

Financial Assurance

Financial Assurance

Category A Mining Lease

Total Area Proposed to be put to use in hect(Year 1 to 5)	Amount of Bank Gurantee (Lac INR)	Valid till (dd/mm/yyyy)	Upload copy of Bank Gurantee as attachment
20.99	104.95	31/03/2027	16_BG_42.pdf

Category B Mining Lease

SI.No	Total Area Proposed to be put to use in hect(Year 1 to 5)	Amount of Bank Gurantee (Lac INR)	Valid till (dd/mm/yyyy)	Upload copy of Bank Gurantee as attachment
1	Nil	Nil	Nil	Nil

Chapter 8: Review of Previous Proposals (Not applicable for fresh grant)

8.1: General

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	Deviation	Reasons for deviation
1	Mining	0.00	2.97	1.51	-1.46	The mining operations has been started from the month of December - 2022
2	Mineral storage	0.00	0.00	0.00	0	Nil
3	Mineral Beneficiation plant	0.00	0.00	0.00	0	Nil
4	Township	0.00	0.00	0.00	0	Nil
5	Tailing Pond	0.00	0.00	0.00	0	Nil
6	Railways	0.00	0.00	0.00	0	Nil
7	Roads	0.00	0.00	0.10	0.10	Nil
8	Infrastructure (Workshop, administrative building etc.)	0.00	0.00	0.00	0	Nil
9	OB/waste dump	0.00	0.00	0.00	0	Nil
10	Top soil preservation	0.00	0.00	0.00	0	Nil
11	Others	0.00	0.21	0.00	-0.21	The mining operations has been started from the month of December - 2022

12	Total area put to use	0.00	3.18	1.61	-1.57	The mining operations has been started from the month of December - 2022
13	Excavated area reclaimed	0.00	0.00	0.00	0	Nil
14	Waste dump area reclaimed	0.00	0.00	0.00	0	Nil
15	Undisturbed Area	42.05	38.87	40.44	1.57	The mining operations has been started from the month of December - 2022
	Total	42.05	42.05	42.05	0	

8.1.2: SDF and CSR Expenditures

Activity	Proposals		Achievement	Deviation	Reasons for deviation
Total expenditure incurred for implementation of SDF at mine level including - Environment Protection - CSR & other welfare activities in peripheral area (Explanation: Expenditure is not over and above the statutory levies imposed by the Government; However, THIS EXCLUDES CONTRIBUTION TO DMF & NMET and is over and above the statutory levies imposed by the Government.)	10% of Royalty (a)	Total Expenditure for SDF implementation (b)			
CSR (Corporate Social Responsibility) spending at the mine level in Proposal Period (as per Companies Act, 2013 or otherwise)	8171527.00	8171527.00	9000000.00	828473.00	0

8.2: Technical Details

8.2.1: Exploration

Particulars	Proposals			Achievement			Deviation			Reasons for deviation
	Boreholes	Pits	Trenchs	Boreholes	Pits	Trenchs	Boreholes	Pits	Trenchs	
Number of Boreholes/ Pits/ Trenches	0	0	0	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Boreholes Meterage (If Boreholes selected in first row) (m)	0			0			0			0
Grid	0			0			0			0
G Axis upgradation during Proposal Period as per guidelines of MEMC Rule 2015)	0			0			0			0
Area converted under G1 from G2/G3	0			0			0			0

8.2.2: Mine Development (Opencast/ Underground/ Both/ Dump Mining)

Particulars	Proposals	Actual	Deviation	Reasons for deviation
8.2.2.1: Generation of Ore/Waste While Development				
Ore	1021440.90	400147.65	-621293.25	The mining operations has been started from the month of December - 2022

Waste	0	0	0	0
Generated Waste while ROM recovery	0	0	0	0
Dumping Site (For Surface)	0	0	0	0
Removal of waste/ over burden in cubic meters	0	0	0	0
8.2.2.2: Excavation				
Lateral extent	2.97	1.51	-1.46	The mining operations has been started from the month of December - 2022
Vertical extent	27	28	1	The mining operations has been started from the month of December - 2022

8.2.3: Mining operation: Dump Mining

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
Handling of Material	0	0	0	0
Waste Generated post recovery	0	0	0	0
Dumping site for waste	0	0	0	0

8.2.4: Zero Waste Mining

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
Alternative use / Disposal of Waste Generated (excluding top soil)	0.00	0.00	0.00	0

8.2.5: Backfilling

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
Site (Co-ordinates)	0	0	0	0

Area	0	0	0	0
Depth	0	0	0	0
Volume Backfilled (CuM)	0	0	0	0
Backfilled Area available for Reclamation and Rehabilitation	0	0	0	0
Backfilled Area Reclaimed and Rehabilitated	0	0	0	0
Balance Backfilled Area	0	0	0	0

8.2.6: Production of Mineral(s)

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
8.2.6.1: ROM				
Opencast	1021440.9000	400147.6500	-621293.2500	The total Deviation is -6,21,293.25.The mining operations has been started from the month of December - 2022 .
8.2.6.2: Cleaned Ore				
Opencast	1021440.9000	400147.6500	-621293.2500	The total Deviation is -6,21,293.25.The mining operations has been started from the month of December - 2022 .
Dump Mining	0.0000	0.0000	0.0000	0
Recovery from Mineral Rejects or Tailings	0.0000	0.0000	0.0000	0
Total	1090700.3700	400147.6500	-621293.2500	The total Deviation is -6,21,293.25.The mining operations has been started from the month of December - 2022 .

8.2.7: Handling of Mineral Rejects/ Sub-Grade

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
Generation of mineral rejects				
Opencast	0	0	0	0
Dump Mining	0	0	0	0
Other recovery	0	0	0	0
Stacking of mineral rejects/ sub-grade mineral (Dump Id)	0	0	0	0
Blending of mineral reject / sub-grade	0	0	0	0

8.2.8: Environment Compliances

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
8.2.8.1: Top soil				
Generation	0	0	0	0
Utilization	0	0	00	0
Stacking (Dump Id)	0	0	0	0
Reclamation	0	0	0	0
Rehabilitation	0	0	0	0
8.2.8.2: Afforestation (Dumps/Benches/Backfilled Area etc.)				
2022 - 2023	0	0	0	0
Nil	Nil	Nil	Nil	Nil
Nil	Nil	Nil	Nil	Nil
Nil	Nil	Nil	Nil	Nil
Nil	Nil	Nil	Nil	Nil
8.2.8.3: Afforestation (Green Belt)				

2022 - 2023	450	470	20	Nil
Nil	Nil	Nil	Nil	Nil
Nil	Nil	Nil	Nil	Nil
Nil	Nil	Nil	Nil	Nil
Nil	Nil	Nil	Nil	Nil
Construction of check dams	0	0	0	0
Construction of Garland Drain (in meter)	750	0	-750	The mining operations has been started from the month of December - 2022
Construction of Retaining Walls (in meter)	650	0	-650	The mining operations has been started from the month of December - 2022
8.2.8.4: Tailings				
Generation	0	0	0	0
Utilization	0	0	0	0
Disposal	0	0	0	0

8.3: Socio-Economic Review

8.3.1: Rehabilitation & Resettlement for Project Affected People

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
No. of Project Affected People (PAP)	0.0000	0.0000	0.0000	0
%age of PAP for whom alternate arrangements made for sustained livelihood	0.0000	0.0000	0.0000	0
% of project affected families given	0.0000	0.0000	0.0000	0

employment				
% of project affected families who have been skilled by the lessee and absorbed (% of total employment given to affected families)	0.0000	0.0000	0.0000	0

8.3.2 : Grievance Redressal

Grievances Received	2021 - 2022	2022 - 2023	Nil	Nil	Nil
	0	0	0	0	0
Grievances Redressed	0	0	0	0	0

8.3.3: Welfare and socio-economic development programs for local communities

Particulars	2022 - 2023	Nil	Nil	Nil	Nil
8.3.3.1 Support for Drinking Water & Agriculture					
No. of Water Storage Tanks constructed	1	0	0	0	0
Drinking Water Facilities provided (Bore wells/ Pumps etc.)	1	0	0	0	0
Irrigation Support provided (Canals/ Pumps etc.)	0	0	0	0	0
No. of Water tanks De-silted	0	0	0	0	0
Water Treatment facilities provided (A/NA)	0	0	0	0	0
Amount of Water treated (in kL) (if selected A in above)	0	0	0	0	0
8.3.3.2 Support to Health & Medical Services					
No. of persons identified from Occupational health diseases	0	0	0	0	0
No. of Health Camps/ Medicine Camps Organized	1	0	0	0	0

8.3.3.3 Support to Skill development & Education					
Vocational Training Provided/ Support Provided					
No. of employees undergone Vocational training	5	0	0	0	0
No. of other persons undergone Vocational training	15	0	0	0	0
Number of Literacy & Education Camps held/ Supported	0	0	0	0	0
8.3.3.4 Support to Transportation Services & Infrastructure					
Expenditure on Transportation Services & Infrastructure	20,00,000	0	0	0	0
Road development (m) in the peripheral area (not lease area)	1400	0	0	0	0
No. of Public transport support provided (Ambulance/Buses/ School Vans etc)	2	0	0	0	0
8.3.3.5 Swatchata Programs: Creating/providing sanitation and healthy condition in and around the mine area					
Adoption of ODF within mining lease area					
No. of Toilets built in the Lease Area	0	0	0	0	0
Adoption of ODF in nearby villages					
No. Of Toilets built in the villages	79	0	0	0	0
Provision for greenage recreational facility (Within Lease Area/ Outside)					
Recreational Area Type (Picnic Spot/ tracks/Park Etc)	0	0	0	0	0
Area covered (For within Lease Area only)	0	0	0	0	0
Awareness program among Mine workers for Swatchata					
No. of Swatchchta	3	0	0	0	0

Programmes held					

Chapter 9 : Impact Assessment (NA)

Chapter 10: Annexures

1. Upload Document

1.1 Upload Document

SI.No.	Title	Is Upload	Document (only pdf allowed)
1	Letter of Intent /Letter of lease grant	Nil	01_Letter_of_Intent.pdf
2	Copy of lease deed executed	Nil	02_Lease_Deed.pdf
3	Copy of Declaration of Owner/Nominated Owner in case of Company/partnership firm	Nil	03_Board_Resolution.pdf
4	ID & Address Proof of Owner/ Nominated Owner	Nil	04_ID_Address_Proof_Nominated_Owner.pdf
5	Copy of Environment and Forest Clearence, Consent to Establish, Consent to Operate	Nil	05_Environmental_Clearance_42.pdf
6	Copy of Registration of Company (RoC)/Partnership firm (Registration) & Deed	Nil	06_Registration_of_Company.pdf
7	Consent letter for Qualified Person	Nil	07_Consent_Letter_for_RQP.pdf
8	Experience & Qualification Details of Qualified Person	Nil	08_Qualified_Person.pdf
9	Certificate from QP	Nil	09_RQP.pdf
10	Copy of Bank Guarantee	Nil	10_Bank_Guarnatee_R.pdf
11	Copy of Performance Surety	Nil	Nil
12	Copy of MDPA (as applicable)	Nil	Nil
13	Exploration details	Nil	13_Lithologs.pdf
14	Copy of feasibility Report	Nil	Feasbility__MEMC42.pdf
15	Copy of Study reports conducted as per Para	Nil	15_Bulk_density_Study_Report.pdf

	4.3.1		
16	Chemical and Mineralogical analysis report	Nil	16_NABL_Inhouse.pdf
17	Any other Report or Certification as required in the submitted Document.	Nil	Nil
18	Copy of Scale relaxation approval granted(if applicable)	No	Nil
19	Mineral processing flowsheet with stage wise recovery	Nil	19_Material_Flow_Chart.pdf
20	Any Other	Yes	Annexure_20.pdf

Chapter 11: Plates (OC)

1. Upload Document

1.1 Upload Document

S.N.	Title	Is Upload	Document
1	Lease sketch plan;	Nil	01_Lease_Sketch.pdf
2	Surface Plan (.KMZ format)(Georeferenced); A statutory plan as per MCDR, 2017. The Plan should be submitted showing different color codes for:(1) Active Pits & Excavation area(2) Excavated area reclaimed & rehabilitated (3)Active dumps (4) Stabilized & rehabilitated dump area , (5) Green belt (6) Mineral Stacks (7) Utilities such as plant, buildings etc (8) Lease boundary along with other details.)	Nil	02_Surface_Plan_KMZ.kmz
3	Surface Geological Plan of the lease (.KMZ format)(Georeferenced); The Plan should be submitted showing different color codes for : (1) Lithological/Geological Occurance (2) Area under G1,G2,G3 & G4 (3) Active pits & Excavation area (4) Dump Area (5) Mineral Stacks (6) Lease boundary along with other details.)	Nil	03_Surface_Geological_Plan_of_the_Lease.kmz
4	Surface Geological sections (in Pdf format); Geological sections with different color coding depicting all the features shown in Surface Geological Plan.)	Nil	04_Surface_Geological_Sections.pdf
5	Five year Production and Development plan (.KMZ format)(Georeferenced); The Plan should be submitted showing different color coding for: (1) Active Pit and Excavation area ,	Nil	05_Five_Year_Production_and_Development_Plan.kmz

	(2) Year wise excavation proposal for year I to V ((3) Active dump and yearwise dump proposal for year I to V (4) Year wise Dump working proposal for year I to V (6) Lease boundary (with reference to chapter 4) along with other details.)		
6	Five year Production and Development sections (in pdf fromat); Year wise excavation and dumping proposals with different color coding depicting all the features as shown in the Five year Production and development plan.)	Nil	06__P_and_D_Sections_final_Model.pdf
7	Progressive Mine Closure Plan (.KMZ format)(Georeferenced); The Plan should be submitted showing different color coding for : (1) Yearwise excavated area Reclaimed & rehabilitated for year I to V (2) Year wise dump area to be stabilized and dump area to be rehabilitatd for year I to V (3) Year wise Green area proposed from year I to V.(4) Any other reclamation and rehabilitation measures proposed.(5) Lease boundary (with reference to chapter 6) along with other details.)	Nil	07_PMCP.kmz
8	Progressive mine Closure sections (in pdf format); Year wise Progressive mine clouser sections showing all the yearwise reclamation, rehabilitaion proposals as depicted in the Progessive mine clouser plan.)	Nil	08_PMC_Sections_final_Model.pdf
9	Conceptual Plan (.KMZ format)(Georeferenced); The Plan should depict the staus of lease area as envisaged at the end of life of Mine showing all the details. Status of land use shall be depicted by different color coding.)	Nil	09_Conceptual_Plan.kmz
10	Conceptual Sections (pdf) format;	Nil	10_Conceptual_Sections.pdf
11	Geo referenced Cadastral Plan; Duly certified by the State Government)	Nil	11_Geo_Cadastral_Plan.pdf
12	Financial Assurance Plan (KMZ);	Nil	12_FAAP.kmz

13	Environmental Plan (.KMZ format)(Georeferenced); As per MCDR, 2017 indicating all the details.)	Nil	13_Environmental_Plan.kmz
14	Any other plan/section as deemed necessary by approving authority;	Yes	14_Surface_Plan_Other_Plans.pdf
15	Five Year Production and Development sections (in pdf format);	Yes	15_Year_Wise_Pand_D_Sections.pdf
16	LEVEL WISE SLICE PLAN; LEVEL WISE SLICE PLAN (PDF FORMAT IN VISIBLE SCALE))	Yes	16__Slice_plans.pdf

Chapter 11 : Plates(UG) : NA

Annexure-XVI

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Assam

Date : **16/05/2025**
Time : **19:14:00 PM**
Validity upto : **15/05/2026**

Certificate SL. No.	:	AS01100030004740
Registration No.	:	ML117708
Date of Registration	:	25/Apr/2023
Month & Year of Manufacturing	:	January-2023
Valid Mobile Number	:	******9784
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	AS0110003
GSTIN	:	
Fees	:	Rs.130.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.01

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Assam

Date	:	**16/05/2025**
Time	:	**18:16:19 PM**
Validity upto	:	**15/05/2026**

Certificate SL. No.	:	AS01100030004730
Registration No.	:	ML117709
Date of Registration	:	25/Apr/2023
Month & Year of Manufacturing	:	January-2023
Valid Mobile Number	:	******8391
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	AS0110003
GSTIN	:	
Fees	:	Rs.130.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.01

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Assam

Date	:	**16/05/2025**
Time	:	**18:40:54 PM**
Validity upto	:	**15/05/2026**

Certificate SL. No.	:	AS01100030004732
Registration No.	:	ML117712
Date of Registration	:	25/Apr/2023
Month & Year of Manufacturing	:	December-2022
Valid Mobile Number	:	******8391
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	AS0110003
GSTIN	:	
Fees	:	Rs.130.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.01

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Assam

Date	:	**16/05/2025**
Time	:	**18:52:24 PM**
Validity upto	:	**15/05/2026**

Certificate SL. No.	:	AS01100030004734
Registration No.	:	ML117714
Date of Registration	:	25/Apr/2023
Month & Year of Manufacturing	:	December-2022
Valid Mobile Number	:	******9784
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	AS0110003
GSTIN	:	
Fees	:	Rs.130.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.01

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Assam

Date	:	**16/05/2025**
Time	:	**19:06:22 PM**
Validity upto	:	**15/05/2026**

Certificate SL. No.	:	AS01100030004737
Registration No.	:	ML117716
Date of Registration	:	25/Apr/2023
Month & Year of Manufacturing	:	January-2023
Valid Mobile Number	:	******9784
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	AS0110003
GSTIN	:	
Fees	:	Rs.130.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.01

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Assam

Date	:	**16/05/2025**
Time	:	**19:03:09 PM**
Validity upto	:	**15/05/2026**

Certificate SL. No.	:	AS01100030004736
Registration No.	:	ML117717
Date of Registration	:	25/Apr/2023
Month & Year of Manufacturing	:	January-2023
Valid Mobile Number	:	******9784
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	AS0110003
GSTIN	:	
Fees	:	Rs.130.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.01

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Assam

Date	:	**16/05/2025**
Time	:	**19:09:07 PM**
Validity upto	:	**15/05/2026**

Certificate SL. No.	:	AS01100030004738
Registration No.	:	ML118278
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	March-2023
Valid Mobile Number	:	******9784
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	AS0110003
GSTIN	:	
Fees	:	Rs.130.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.01

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Assam

Date	:	**16/05/2025**
Time	:	**18:58:07 PM**
Validity upto	:	**15/05/2026**

Certificate SL. No.	:	AS01100030004735
Registration No.	:	ML118279
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	March-2023
Valid Mobile Number	:	******9784
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	AS0110003
GSTIN	:	
Fees	:	Rs.130.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.01

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Assam

Date	:	**16/05/2025**
Time	:	**18:46:41 PM**
Validity upto	:	**15/05/2026**

Certificate SL. No.	:	AS01100030004733
Registration No.	:	ML118280
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	February-2023
Valid Mobile Number	:	******9784
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	AS0110003
GSTIN	:	
Fees	:	Rs.130.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.01

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Assam

Date	:	**16/05/2025**
Time	:	**19:11:43 PM**
Validity upto	:	**15/05/2026**

ML118281

Certificate SL. No.	:	AS01100030004739
Registration No.	:	ML118281
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	March-2023
Valid Mobile Number	:	******9784
Emission Norms	:	BHARAT STAGE VI
Fuel	:	DIESEL
PUC Code	:	AS0110003
GSTIN	:	
Fees	:	Rs.130.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.01

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Annexure-XVII

DATE	SL NO	EMP CODE	NAME	PULSE	BP	HEIGHT	WEIGHT	VISUAL ACUITY	C.VISION	CXR	SPIROMETRY	AUDIOMETRY	HB%	RBS	CREATININE	CHOLESTEROL	REMARKS
05-02-2025	2	JS010	BIPUL PHUKON	70	140/90	165CM	69KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.90%	90mg/dl	1.0mg/dl	198mg/dl	FIT
	4	JS423	GOBIN BRAHMA	93	110/60	171CM	61KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	12.00%	102mg/dl	0.9mg/dl	170mg/dl	FIT
	5	SP004	GOPAL CHETRY	94	100/60	167CM	84KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	15.00%	103mg/dl	0.8mg/dl	201mg/dl	FIT
06-02-2025	7	S328	BAL KRISHNA PANDAEY	83	110/80	168CM	73KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.20%	101mg/dl	0.9mg/dl	180mg/dl	FIT
	8	SP031	MUKESH KUMAR	71	120/70	165CM	50KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.20%	87mg/dl	0.8mg/dl	196mg/dl	FIT
	10	S1298	JAY PRAKASH THAKUR	85	100/60	165CM	75KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	105mg/dl	0.8mg/dl	161mg/dl	FIT
	11	JS832	GULEN CHANDRA MONDAL	90	110/60	168CM	88KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	13.60%	106mg/dl	0.9mg/dl	182mg/dl	FIT
	13	JS486	NILHAKANTA HAJONG	91	110/70	159CM	49KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	12.20%	130mg/dl	0.8mg/dl	169mg/dl	FIT
	15	JS418	ALTAF HUSSAIN	72	120/70	162CM	69KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.90%	90mg/dl	1.0mg/dl	185mg/dl	FIT
	16	S583	SAHIDUL ISLAM	100	110/70	167CM	78KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.20%	112mg/dl	1.0mg/dl	187mg/dl	FIT
07-02-2025	17	S831	BISWAJIT DEY	83	110/80	158CM	65KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	93mg/dl	0.8mg/dl	178mg/dl	FIT
	18	GC215	JUBAIR AHMED	73	120/90	166CM	64KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.90%	95mg/dl	1.0mg/dl	190mg/dl	FIT
	19	GC653	SUBHADIP SAHA	89	110/70	170CM	79KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.90%	110mg/dl	0.9mg/dl	192mg/dl	FIT
	20	JS363	BUDHA DUTTA	77	110/70	160CM	72KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	15.00%	105mg/dl	1.0mg/dl	161mg/dl	FIT
	21	GC229	ALOM HUSSAIN BARBHUIYA	87	100/70	171CM	65KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	13.00%	98mg/dl	0.9mg/dl	172mg/dl	FIT
	24	JS478	LAKHAN BASUMATARY	78	130/80	168CM	69KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.50%	127mg/dl	0.9mg/dl	195mg/dl	FIT
	25	GC568	AKASH KARKI	67	100/60	169CM	67KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	96mg/dl	0.8mg/dl	160mg/dl	FIT
	26	S825	SOFOR UDDIN	89	110/80	171CM	57KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	88mg/dl	0.9mg/dl	169mg/dl	FIT
	27	S944	NITUL SAIKIA	104	110/70	161CM	44KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	12.00%	139mg/dl	0.8mg/dl	168mg/dl	FIT
	28	JS177	SHESH NATH SINGH KUSHW/	102	130/90	166CM	70KG	L6/9 R6/9 Withglass	Normal	Normal	Normal	Normal	13.80%	120mg/dl	1.0mg/dl	201mg/dl	FIT
	29	JS013	ADHIR CHANDRA	77	140/70	167CM	83KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	15.00%	101mg/dl	0.9mg/dl	210mg/dl	FIT
	30	JS444	SOIF UDDIN BARBHUIYA	78	110/80	172CM	71KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	98mg/dl	0.8mg/dl	192mg/dl	FIT
	31	GC230	MAZIBUR RAHMAN	84	110/80	168CM	73KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	118mg/dl	0.9mg/dl	198mg/dl	FIT
08-02-2025	34	GC300	ROTENDRA SINGHA	80	120/70	172CM	79KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.90%	113mg/dl	0.8mg/dl	168mg/dl	FIT
	35	GC217	DILWAR HUSSAIN	88	130/90	160CM	71KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	15.00%	96mg/dl	0.9mg/dl	181mg/dl	FIT
	36	GC105	MANOJ MALLIK	82	130/90	167CM	55KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	128mg/dl	0.8mg/dl	175mg/dl	FIT
10-02-2025	37	S823	YOURAJ HAJONG	100	120/70	157CM	58KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.90%	95mg/dl	0.9mg/dl	189mg/dl	FIT
	39	S830	JALAL UDDIN	76	120/80	168CM	70KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	82mg/dl	0.9mg/dl	200mg/dl	FIT
	40	JS485	RAMAKANTA BARMAN	89	120/80	165CM	71KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.80%	120mg/dl	0.9mg/dl	181mg/dl	FIT
11-02-2025	42	JS470	H.BHANUSH SINGHA	90	110/70	162CM	56KG	L6/9 R6/9 Withoutglass	Normal	Normal	Normal	Normal	13.60%	89mg/dl	1.0mg/dl	180mg/dl	FIT
	43	GC222	MOHAN BASUMATORY	76	130/80	164CM	69KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.20%	160mg/dl	0.9mg/dl	201mg/dl	FIT
	44	GC094	NIRANJAN NATH	77	110/70	157CM	52KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	12.50%	110mg/dl	0.8mg/dl	166mg/dl	FIT
	46	JS489	ANUP CHANDA	71	100/70	162CM	50KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	NormalN	12.90%	85mg/dl	0.8mg/dl	160mg/dl	FIT
12-02-2025	47	GC216	GOPI RANJAN CHANDA	86	100/60	166CM	70KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	13.00%	108mg/dl	0.9mg/dl	172mg/dl	FIT
	48	GC231	ABDUL SAHID CHOUDHURY	74	120/70	157CM	60KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.20%	86mg/dl	0.8mg/dl	195mg/dl	FIT
	49	GC214	RIPON NATH	94	110/90	164CM	58KG	L6/9 R6/9 Withoutglass	Normal	Normal	Normal	Normal	13.20%	89mg/dl	0.9mg/dl	169mg/dl	FIT
	50	GC226	NILKUMAR SINGHA	94	120/70	162CM	78KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	111mg/dl	1.0mg/dl	181mg/dl	FIT
13-02-2025	52	GC221	LOKEN SINGHA	80	120/90	167CM	60KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.60%	109mg/dl	0.9mg/dl	186mg/dl	FIT
	53	SP030	DHAR DAS	83	100/60	166CM	64KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	82mg/dl	1.0mg/dl	160mg/dl	FIT
	54	GC235	GOBINDA DAS	88	90/60	155CM	57KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	12.60%	95mg/dl	0.8mg/dl	164mg/dl	FIT
	55	JS696	ADBUL RAHIM BARBHUIYA	76	100/70	168CM	88KG	L6/9 R6/9 Withoutglass	Normal	Normal	Normal	Normal	14.20%	152mg/dl	1.0mg/dl	179mg/dl	FIT
	56	GC100	ANIL BRAHMA	60	120/70	159CM	47KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.40%	102mg/dl	0.8mg/dl	190mg/dl	FIT
14-02-2025	57	SP097	DES RAJ	91	130/70	162CM	59KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	12.60%	158mg/dl	0.9mg/dl	179mg/dl	FIT
	58	GC582	SANJIB CHANDA	103	110/80	170CM	65KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	13.20%	87mg/dl	1.1mg/dl	191mg/dl	FIT
15-02-2025	60	S1165	RAJEEV RANJAN	71	110/80	162CM	67KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	98mg/dl	0.9mg/dl	160mg/dl	FIT
	62	GC471	RAJU PURKAYASTHA	92	130/90	160CM	72KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.60%	110mg/dl	0.9mg/dl	206mg/dl	FIT
	63	JS495	DECREE JYOTI MONDAL	74	100/70	166CM	69KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.50%	78mg/dl	0.8mg/dl	164mg/dl	FIT
	64	GC377	SAMBHU BISWASH	120	110/70	174CM	54KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	98mg/dl	0.9mg/dl	188mg/dl	FIT
	65	S1317	YAGYESH PRATAP SINGH	73	110/70	167CM	87KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	13.00%	127mg/dl	1.0mg/dl	186mg/dl	FIT
18-02-2025	66	P460	LAKHAN KUMAR DASH	68	110/80	166CM	55KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	13.20%	87mg/dl	1.1mg/dl	169mg/dl	FIT
	67	2100649	JAYANTA PATRA	87	110/60	159CM	65KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	14.70%	119mg/dl	0.8mg/dl	179mg/dl	FIT
	68	S1026	RABI RANJAN	68	120/70	169CM	79KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	14.60%	110mg/dl	1.0mg/dl	201mg/dl	FIT
	69	JS822	BANTI KARMAKAR	86	120/80	175CM	83KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	12.80%	136mg/dl	1.0mg/dl	200mg/dl	FIT
	70	S1325	PREM PRAKASH KUMAR	88	130/90	167CM	83KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.90%	118mg/dl	1.0mg/dl	197mg/dl	FIT
	72	S1320	AMIT RANA	93	100/70	167CM	78KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	13.00%	098mg/dl	1.0mg/dl	174mg/dl	FIT
	74	JS516	DUGANA JANAK RAO	102	130/70	167CM	76KG	L6/9 R6/9 Without glass	Normal	Normal	Normal	Normal	14.70%	119mg/dl	1.0mg/dl	201mg/dl	FIT
19-02-2025	75	SP110	HITESH GOALA	68	110/80	167CM	69KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.70%	112mg/dl	0.9mg/dl	189mg/dl	FIT
	76	S675	ABDUL KARIM	95	120/70	165CM	61KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.80%	117mg/dl	1.0mg/dl	187mg/dl	FIT
	77	JS431	AMRIT NOMOSUDRA	85	120/70	168CM	66KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.60%	112mg/dl	1.0mg/dl	176mg/dl	FIT
	78	JS422	MITHUN PODDER	105	120/70	173CM	68KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.70%	115mg/dl	1.0mg/dl	193mg/dl	FIT
	79	JS681	KANCHAN KANU	73	110/70	176CM	67KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.20%	119mg/dl	1.0mg/dl	201mg/dl	FIT
	80	S921	SANDEEP DAHIYA	86	110/80	159CM	74KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	117mg/dl	0.8mg/dl	187mg/dl	FIT
	81	S1242	CHINTU RAJAK	82	120/70	161CM	69KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.50%	098mg/dl	0.9mg/dl	179mg/dl	FIT
	83	S1312	VISHWANATH	76	110/70	171CM	65KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.80%	089mg/dl	1.0mg/dl	189mg/dl	FIT

	84	P1697	PHERIUS SHYLLA	83	110/60	171CM	69KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.70%	115mg/dl	0.8mg/dl	172mg/dl	FIT
20-02-2025	85	GC268	SARIMUL HAQUE	104	110/70	157CM	47KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	089mg/dl	0.9mg/dl	183mg/dl	FIT
	88	S673	RAJESH HAJONG	72	120/70	159CM	50KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.20%	095mg/dl	1.0mg/dl	179mg/dl	FIT
	89	JS016	BIJAN SINHA	86	120/70	165CM	89KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.70%	112mg/dl	1.0mg/dl	207mg/dl	FIT
	90	GC116	GAUTAM SINHA	78	110/70	165CM	80KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.20%	112mg/dl	0.8mg/dl	179mg/dl	FIT
	91	S729	AMIT	94	120/70	156CM	60KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.20%	108mg/dl	0.9mg/dl	169mg/dl	FIT
	93	JS741	NARDELA PRAKASH	94	120/70	176CM	85KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.60%	117mg/dl	1.0mg/dl	196mg/dl	FIT
	94	GC201	MAYAJ UDDIN	86	130/80	163CM	73KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	111mg/dl	1.0mg/dl	189mg/dl	FIT
	95	GC312	BAPPAN DEB	79	110/80	171CM	54KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.00%	119mg/dl	0.9mg/dl	176mg/dl	FIT
	96	GC099	LARSU GOYARI	75	140/90	163CM	58KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	14.80%	119mg/dl	1.0mg/dl	179mg/dl	FIT
	97	GC102	AMIT SINHA	78	110/70	158CM	66KG	L6/6R6/6 With out glass	Normal	Normal	Normal	Normal	13.50%	129mg/dl	0.8mg/dl	187mg/dl	FIT
21-02-2025	99	GC283	JANTU ROY	77	110/80	174CM	74KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.80%	108mg/dl	1.0mg/dl	205mg/dl	FIT
	100	JS791	JAY PRAKASH MAHATO	84	120/80	164CM	74KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	15.20%	098mg/dl	0.9mg/dl	189mg/dl	FIT
	102	S1301	ABHISHAK KUMAR	80	130/80	168CM	73KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.20%	119mg/dl	0.9mg/dl	196mg/dl	FIT
	103	JS437	NILBIR SINGH	93	120/70	157CM	66KG	L6/6 R6/9 With out glass	Normal	Normal	Normal	Normal	14.70%	098mg/dl	1.0mg/dl	205mg/dl	FIT
	104	JS722	DHANLAL SHARMA	92	110/80	172CM	69KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.90%	090mg/dl	1.0mg/dl	192mg/dl	FIT
	105	S996	JONMANI DAS	106	110/70	180CM	72KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	15.40%	117mg/dl	0.9mg/dl	196mg/dl	FIT
	106	P115	AV.RAMARAJU	100	130/70	170CM	71KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	12.60%	146mg/dl	1.0mg/dl	201mg/dl	FIT
22-02-2025	109	S1112	ANKUR RATHORE	65	130/90	170CM	85KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.60%	129mg/dl	1.1mg/dl	203mg/dl	FIT
	110	JS802	ASHWANI KUMAR PATEL	88	120/80	170CM	62KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.10%	090mg/dl	1.0mg/dl	187mg/dl	FIT
	111	S1346	CHEKU NAGA BABU	77	110/70	180CM	79KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.80%	107mg/dl	0.9mg/dl	197mg/dl	FIT
	113	SP003	MEGHNATH HAJONG	78	110/70	177CM	63KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.90%	108mg/dl	1.0mg/dl	183mg/dl	FIT
	115	S975	MANOJ KUMAR	83	110/80	181CM	71KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.80%	081mg/dl	1.0mg/dl	208mg/dl	FIT
	116	JS771	SAHAB UDDIN BARBHUIYA	98	120/70	165CM	60KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	108mg/dl	1.2mg/dl	189mg/dl	FIT
	118	S008	SAMIM HUSSAIN	94	130/80	168CM	84KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.80%	112mg/dl	1.0mg/dl	203mg/dl	FIT
	119	GC302	SAMBARU BASUMATARY	108	120/70	170CM	64KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Norml	14.50%	103mg/dl	1.0mg/dl	187mg/dl	FIT
	121	SP131	ASUR UDDIN ALI	88	110/70	158CM	67KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.10%	117mg/dl	0.9mg/dl	183mg/dl	FIT
	122	S1318	PADAM PRASAD SHARMA	71	110/70	170CM	81KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.00%	093mg/dl	1.0mg/dl	202mg/dl	FIT
24-02-2025	124	SP388	NIWAN NIALANG	109	110/70	160CM	49KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.10%	096mg/dl	1.0mg/dl	166mg/dl	FIT
	126	JS421	RINTU ROY	76	110/70	167CM	61KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.70%	110mg/dl	0.8mg/dl	189mg/dl	FIT
	127	GC378	ALAUR RAHMAN	86	110/70	168CM	73KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.70%	89mg/dl	1.0mg/dl	201mg/dl	FIT
	128	GC621	RANJAN ACHAREJEE	91	100/60	170CM	58KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.40%	112mg/dl	0.8mg/dl	176mg/dl	FIT
	129	S1188	AVILESH KUMAR TIWARI	84	110/70	174CM	74KG	L6/9 R6/6 With out glass	Normal	Normal	Normal	Normal	15.10%	117mg/dl	0.9mg/dl	205mg/dl	FIT
	130	GC177	MANOJ KUMAR MALAKAR	82	110/80	168CM	64KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.90%	105mg/dl	1.0mg/dl	176mg/dl	FIT
	132	P-915	ROWEL SUMER	104	110/70	160CM	51KG	L6/9 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	107mg/dl	0.8mg/dl	169mg/dl	FIT
	134	JS-748	MANNA NATH	86	110/70	167CM	49KG	L6/9 R6/6 With glass	Normal	Normal	Normal	Normal	13.20%	118mg/dl	1.0mg/dl	182mg/dl	FIT
	135	JS-536	SANJAY BARMAN	106	130/90	169CM	71KG	L6/9 R6/9 With out glass	Normal	Normal	Normal	Normal	15.20%	89mg/dl	0.9mg/dl	186mg/dl	FIT
	136	JS-751	CHUNI LAL SINHA	96	120/80	167CM	70KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	108mg/dl	1.0mg/dl	201mg/dl	FIT
	139	GC-228	BIJAY SINHA	88	110/70	168CM	70KG	L6/6 R6/9 With out glass	Normal	Normal	Normal	Normal	13.20%	108mg/dl	1.0mg/dl	179mg/dl	FIT
25-02-2025	141	P-1602	RYNGKATLANG DKHAR	67	100/70	170CM	93KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	109mg/dl	1.0mg/dl	187mg/dl	FIT
	142	11002202	JOHNSON KHONGLAH	108	140/90	160CM	73KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.20%	159mg/dl	1.0mg/dl	179mg/dl	FIT
	143	P-1390	MISHAK JUTANG	83	130/90	161CM	61KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	120mg/dl	1.0mg/dl	179mg/dl	FIT
	145	JS-600	SHYAM KANU DEURI	83	100/60	169CM	71KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.60%	103mg/dl	1.0mg/dl	201mg/dl	FIT
	146	P-1584	EVENING POHTHMI	66	100/70	155CM	49KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.80%	112mg/dl	0.9mg/dl	189mg/dl	FIT
	147	P-1369	LYNTI TRUH	79	130/80	159CM	58KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.60%	118mg/dl	1.0mg/dl	179mg/dl	FIT
	148	P-1534	BENI PDANG	100	120/70	170CM	59KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.60%	112mg/dl	1.0mg/dl	189mg/dl	FIT
	150	GC-106	PRADIP SINHA	91	110/60	164CM	60KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	115mg/dl	1.0mg/dl	189mg/dl	FIT
	151	JS-707	GHANASHYAM CHETRI	93	140/90	149CM	65KG	L6/6 R6/9 With out glass	Normal	Normal	Normal	Normal	12.90%	103mg/dl	1.0mg/dl	201mg/dl	FIT
	152	GC-253	GUNAJIT DAS	100	110/80	165CM	45KG	L6/9 R6/9 With out glass	Normal	Normal	Normal	Normal	13.20%	111mg/dl	0.9mg/dl	182Mg/dl	FIT
	153	GC-386	SUMESWAR BASAMATARY	70	110/70	169CM	74KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	15.20%	117mg/dl	1.1mg/dl	201mg/dl	FIT
	154	GC-630	P. GOBIN SINGH	104	130/80	164CM	68KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.60%	121mg/dl	1.0mg/dl	176mg/dl	FIT
26-02-2025	155	SP-166	WENLYROI KHONGLAH	84	110/70	170CM	74KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.10%	92mg/dl	0.9mg/dl	182Mg/dl	FIT
	156	P-499	DONKUPAR LASO	66	110/80	167CM	53KG	L6/9 R6/6 With out glass	Normal	Normal	Normal	Normal	13.00%	101mg/dl	1.1mg/dl	169mg/dl	FIT
	158	S-824	TH. SUSHIL KR SINGHA	81	120/90	181CM	82KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.80%	112mg/dl	1.0mg/dl	189mg/dl	FIT
	159	S-984	D.V RAMANAYYA	78	120/70	169CM	73KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	13.80%	92mg/dl	0.9mg/dl	179mg/dl	FIT
	160	S-1302	NOHAR SINGH	80	120/80	161CM	74KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.70%	151mg/dl	1.0mg/dl	208mg/dl	FIT
	161	GC-234	JOGENDA MADHI	67	120/80	158CM	56KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.80%	117mg/dl	0.9mg/dl	193mg/dl	FIT
27-02-2025	162	SP-165	NEHMON LADONG	77	110/80	172CM	69KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.90%	83mg/dl	0.8mg/dl	180mg/dl	FIT
	163	JS-534	BIJON ROY	86	110/60	160CM	66KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.90%	112mg/dl	0.8mg/dl	171mg/dl	FIT
28-02-2025	165	SP-390	RAJESH KUMAR GOGUL	85	100/70	168CM	82KG	L6/9 R6/6 With glass	Normal	Normal	Normal	Normal	13.00%	89mg/dl	1.0mg/dl	162mg/dl	FIT
	166	S-1123	ROHIT DEBNATH	108	110/60	174CM	63KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.60%	104mg/dl	1.0mg/dl	189mg/dl	FIT
	167	P-1617	SUMIT	86	120/70	175CM	55KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.90%	77mg/dl	0.8mg/dl	200mg/dl	FIT
	168	S-1176	PROBODH PRAKASH BOTE	74	120/70	165CM	67KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	87mg/dl	0.9mg/dl	192mg/dl	FIT
03-03-2025	171	S-1391	BARAD BHAVESH KUMAR	74	110/70	173CM	53KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	98mg/dl	0.8mg/dl	170mg/dl	FIT
04-03-2025	172	S-048	SUBASH CHANDER	89	130/80	162CM	84KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	15.00%	108mg/dl	1.0mg/dl	200mg/dl	FIT

10-03-2025	175	P-1741	RAHUL	89	120/80	175CM	85KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.00%	117mg/dl	1.0mg/dl	183mg/dl	FIT
13-03-2025	176	S-671	M.APPANNA	78	110/60	167CM	62KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	87mg/dl	0.9mg/dl	189mg/dl	FIT
15-03-2025	177	GC-251	SAIKAT NAYAK	87	110/70	166CM	67KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.70%	119mg/dl	0.9mg/dl	176mg/dl	FIT
	178	GC-641	DEBASISH DAS	79	120/80	168CM	62KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.60%	112mg/dl	1.0mg/dl	183mg/dl	FIT
	179	GC-645	JAGANATH DAS	62	120/70	163CM	55KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	15.20%	089mg/dl	1.1mg/dl	201mg/dl	FIT
	180	GC-615	BISHAL BHATTACHARJEE	87	110/60	163CM	51KG	L/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	112mg/dl	0.8mg/dl	179mg/dl	FIT
17-03-2025	181	JS-009	SHANKAR CHETRY	86	130/70	162CM	6OKG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	14.00%	135mg/dl	1.0mg/dl	192mg/dl	FIT
	182	GC-624	SUBRATA PAUL	96	130/80	170CM	78KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.80%	122mg/dl	1.0mg/dl	206mg/dl	FIT
	183	GC-647	SANKAR DEY	85	110/80	176CM	58KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	13.50%	112mg/dl	0.8mg/dl	189mg/dl	FIT
	184	S-1195	M SRAVANTH	97	120/80	164CM	65KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.20%	117mg/dl	1.0mg/dl	189mg/dl	FIT
18-03-025	185	GC-298	JAWHAR DAS	84	140/90	160CM	73KG	L6/6 R6/6 With out glass	Normal	Normal	Normal	Normal	13.90%	127mg/dl	1.1mg/dl	201mg/dl	FIT
04-04-2025	186	GC-583	HAPPY KHONGLAH	90	120/80	163CM	86KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	15.00%	121mg/dl	1.0mg/dl	190mg/dl	FIT
	187	S-850	DAVINDER SINGH	102	110/80	168CM	86KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	98mg/dl	0.8mg/dl	188mg/dl	FIT
	188	S-829	MAMIYAN SINHA	62	120/90	175CM	75KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.50%	101mg/dl	0.9mg/dl	181mg/dl	FIT
	189	JS-725	DIPANKAR KSKOTI	86	100/70	165CM	64KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	95mg/dl	1.0mg/dl	171mg/dl	FIT
	190	SP-042	SANJIB KR. SINHA	92	110/70	162CM	49KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	98mg/dl	0.8mg/dl	160mg/dl	FIT
	191	GC-550	PULAK DAS	80	110/80	165CM	76KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.50%	089mg/dl	0.8mg/dl	164mg/dl	FIT
	192	S-582	FULKUMAR SINHA	103	130/80	156CM	67KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.80%	117mg/dl	0.9mg/dl	200mg/dl	FIT
	193	SP-366	REKHA SUTING	104	100/70	149CM	46KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	13.00%	90mg/dl	0.8mg/dl	160mg/dl	FIT
05-04-2025	195	GC-572	HILARIUS TONGPER	94	110/70	169CM	59kg	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	12.90%	90mg/dl	0.8mg/dl	172mg/dl	FIT
	197	P-1599	ISNEI POHDWENG	69	90/60	153CM	46KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	11.00%	90mg/dl	0.8mg/dl	161mg/dl	FIT
07-04-2025	198	P1370	NIEW KOR POHTHMI	78	100/60	159CM	64KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.80%	102mg/dl	1.0mg/dl	166mg/dl	FIT
	199	GC448	DIPU SINHA	74	110/80	168CM	79KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.60%	108mg/dl	1.1mg/dl	190mg/dl	FIT
	200	SP043	ANNADA SINHA	87	110/70	164CM	64KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	114mg/dl	1.0mg/dl	186mg/dl	FIT
	201	2100702	HARISH KUMAR	80	130/70	173CM	67KG	L6/6 R6/6 With glass	Normal	Normal	Normal	Normal	14.80%	105mg/dl	0.9mg/dl	192mg/dl	FIT
08-04-2025	202	SP085	BABUCHALLAM	88	100/60	159CM	47KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	98mg/dl	0.8mg/dl	164mg/dl	FIT
	203	SP087	REEMEMBERME NIALONG	126	120/60	173CM	70KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	102mg/dl	0.9mg/dl	168mg/dl	FIT
	204	P1378	DECOS MUKHIM	76	120/70	143CM	47KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.60%	109mg/dl	1.0mg/dl	179mg/dl	FIT
	206	P606	ISABELLA LYNGDOH	101	130/80	148CM	80KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	116mg/dl	1.0mg/dl	198mg/dl	FIT
	207	GC598	EMIKI LAMARE	70	100/60	149CM	60KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.80%	98mg/dl	0.9mg/dl	160mg/dl	FIT
	208	P555	REBECA LYNGDOH	76	120/70	143CM	47KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.60%	109mg/dl	1.0mg/dl	179mg/dl	FIT
	209	P1561	BHUMON LAMARE	93	110/70	149CM	71KG	L/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	82mg/dl	1.0mg/dl	160mg/dl	FIT
	210	GC450	DHAN BAHADUR CHETRY	74	100/60	163CM	58KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.20%	78mg/dl	1.0mg/dl	183mg/dl	FIT
	211	GC454	DHIMAN SHARMA	100	110/80	175CM	83KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.80%	113mg/dl	1.0mg/dl	181mg/dl	FIT
09-04-2025	213	GC487	RAJU DEY	70	110/70	162CM	40KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.20%	104mg/dl	1.0mg/dl	174mg/dl	FIT
	214	S1415	GUMMITHA JASWANTH REDI	104	130/80	172CM	88KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	15.10%	117mg/dl	1.0mg/dl	201mg/dl	FIT
11-04-2025	215	2100830	SANKAR SAH	89	120/80	167CM	66KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	92mg/dl	1.0mg/dl	176mg/dl	FIT
12-04-2025	216	GC558	CASEMON LAMARE	88	100/60	148CM	63KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	11.00%	98mg/dl	1.0mg/dl	189mg/dl	FIT
14-04-2025	217	P556	ELAN SHADAP	117	120/80	161CM	76KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.80%	115mg/dl	1.0mg/dl	186mg/dl	FIT
	218	P1553	SHLURMON CHALLAM	82	110/70	154CM	42KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	11.00%	116mg/dl	1.0mg/dl	187mg/dl	FIT
	219	P1633	SUBEST SUTING	94	120/70	159CM	53KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	12.00%	108mg/dl	0.9mg/dl	188mg/dl	FIT
	220	SP383	MUT MEKI PDANG	88	110/60	161CM	62KG	L6/6 R6/9 With out glass	Normal	Normal	Normal	Normal	14.50%	101mg/dl	1.0mg/dl	174mg/dl	FIT
15-04-2025	221	GC488	RAJU THAPA	84	110/70	165CM	69KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	129mg/dl	1.0mg/dl	180mg/dl	FIT
	222	GC462	AMALENDU SINHA	62	120/70	160CM	62KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.60%	111mg/dl	1.0mg/dl	200mg/dl	FIT
	223	GC452	TIKENDRAJIT SINHA	97	120/80	157CM	77KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.50%	97mg/dl	0.9mg/dl	184mg/dl	FIT
16-04-2025	224	P557	BHAMIKI PYKHLONG	96	110/80	153CM	56KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.50%	119mg/dl	1.1mg/dl	201mg/dl	FIT
	225	GC613	ENING MUKHIM	84	130/90	158CM	58KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.20%	98mg/dl	1.0mg/dl	189mg/dl	FIT
17-04-2025	227	SP269	EWANME GYMPAD	93	100/70	164CM	66KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.50%	119mg/dl	1.0mg/dl	201mg/dl	FIT
21-04-2025	229	SP386	STARLY RUPAI	92	110/70	154CM	51KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.80%	90mg/dl	1.0mg/dl	176mg/dl	FIT
	230	GC465	SACHIN SINHA	94	120/80	166CM	75KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.60%	98mg/dl	0.8mg/dl	197mg/dl	FIT
22-04-2025	231	SP240	PYNKHLAIN DKHAR	74	120/90	152CM	55KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	normal	13.20%	101mg/dl	1.0mg/dl	173mg/dl	FIT
	232	P1371	WON SHYLLA	83	90/60	166CM	54KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	normal	13.60%	119mg/dl	1.0mg/dl	182Mg/dl	FIT
	233	JS188	BAPPA KR	83	110/80	163CM	69KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	119mg/dl	1.0mg/dl	176mg/dl	FIT
23-04-2025	234	2200616	JADA SREENIVASULU	52	100/60	168CM	75KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	98mg/dl	0.8mg/dl	169mg/dl	FIT
24-04-2025	235	11002119	ROMI HAZRA	94	110/70	176CM	59.8KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	108mg/dl	0.9mg/dl	198mg/dl	FIT
26-04-2025	236	GC498	SUBASH CH. VARMA	90	110/80	168CM	58KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	110mg/dl	0.9mg/dl	176mg/dl	FIT
02-05-2025	237	SP083	BARLIM LAMIN	103	90/60	153CM	47KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.20%	087mg/dl	0.8mg/dl	169mg/dl	FIT
	238	SP173	SACHING POPHLET	77	90/60	161CM	57KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.60%	118mg/dl	0.8mg/dl	179mg/dl	FIT
07-05-2025	239	GC638	NILESH KUMAR	78	130/80	179CM	77KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	normal	14.00%	106mg/dl	0.9mg/dl	210mg/dl	FIT
08-05-2025	240	P410	MEHUN LAMARE	101	130/90	164CM	83KG	L6/6 R6/9 With out glass	Normal	Normal	Normal	Normal	14.50%	113mg/dl	1.1mg/dl	200mg/dl	FIT
	241	GC451	RABI SINHA	79	110/80	163CM	75KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	91mg/dl	1.0mg/dl	188mg/dl	FIT
09-05-2025	242	P1637	RIMEN SUTNGA	89	120/70	152CM	62KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.20%	108mg/dl	0.9mg/dl	162mg/dl	FIT
12-05-2025	243	SP236	MANISHA SHYLLA	114	110/70	153CM	50KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.80%	122mg/dl	0.8mg/dl	190mg/dl	FIT
	244	GC495	BHUBAN NUNIA	98	120/80	168CM	63KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.80%	135mg/dl	0.9mg/dl	178mg/dl	FIT
13-05-2025	245	P568	PLAN WAR	83	100/60	157CM	51KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	15.20%	100mg/dl	1.0mg/dl	198mg/dl	FIT

	246	SP372	WOMPHERKI PUSEIN	70	120/70	156CM	54KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.80%	90mg/dl	0.9mg/dl	170mg/dl	FIT
	247	SP379	WANKA SUTING	NA	100/60	150CM	47KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	11.00%	101mg/dl	0.8mg/dl	173mg/dl	FIT
	248	SP293	JALTIS PATWAD	68	110/70	158CM	60KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.80%	118mg/dl	1.0mg/dl	190mg/dl	FIT
	249	GC575	PYRKHAT PYNKHLONG	73	100/60	157CM	56KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	90mg/dl	0.9mg/dl	168mg/dl	FIT
14-05-2025	250	GC605	BINU SHYLLA	87	90/60	146CM	46KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	11.60%	102mg/dl	0.8mg/dl	160mg/dl	FIT
	251	SP170	LUNG WAR	86	110/70	154CM	54KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.80%	89mg/dl	1.0mg/dl	190mg/dl	FIT
	252	SP295	SAITBHA TRUH	88	120/80	156CM	48KG	L6/6 R6/9 Without glass	Normal	Normal	Normal	Normal	12.60%	100mg/dl	0.8mg/dl	169mg/dl	FIT
	253	GC611	ENIWEL NYALANG	86	120/70	169CM	58KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.20%	102mg/dl	1.0mg/dl	186mg/dl	FIT
	254	JS690	HARISH GOPE	89	120/80	162CM	67KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.50%	114mg/dl	1.1mg/dl	200mg/dl	FIT
	256	GC622	EMONLANG PYNGKHLONG	108	130/80	162CM	47KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.20%	110mg/dl	1.0mg/dl	190mg/dl	FIT
	257	GC460	DAHAR HUSSAIN BARBHUIY.	68	100/60	164CM	46KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	121mg/dl	0.9mg/dl	180mg/dl	FIT
	258	SP363	DUKI PAYA LAMARE	93	110/70	151CM	54KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	131mg/dl	0.9mg/dl	178mg/dl	FIT
15-05-2025	261	SP270	DAIOOMIKI RYMBAI	113	130/80	167CM	51KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	15.00%	118mg/dl	0.9mg/dl	191mg/dl	FIT
	262	SP341	SAMLANG RUPAI	94	120/80	171CM	66KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.20%	108mg/dl	1.0mg/dl	179mg/dl	FIT
	263	P1531	WANMON SUCHIANG	97	110/70	168CM	62KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.20%	100mg/dl	0.9mg/dl	185mg/dl	FIT
	265	SP171	LAIDLANG KYNDOH	72	120/70	163CM	52KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.90%	101mg/dl	1.0mg/dl	188mg/dl	FIT
	266	P1662	SOPHIA DKHAR	66	110/70	155CM	47KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.60%	98mg/dl	0.9mg/dl	173mg/dl	FIT
16-05-2025	267	SP336	EMBOKLANG PDANG	99	100/60	162CM	55KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.50%	92mg/dl	1.0mg/dl	192mg/dl	FIT
	268	P1519	YOOWANMIKI SYRTI	116	110/70	158CM	51KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	12.90%	112mg/dl	1.0mg/dl	187mg/dl	FIT
19-05-2025	270	GC223	JALIL UDDIN	66	130/90	169CM	65KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.80%	85mg/dl	0.9mg/dl	201mg/dl	FIT
20-05-2025	271	GC654	LANDO RYMBAI	80	110/60	159CM	52KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	80mg/dl	0.8mg/dl	200mg/dl	FIT
29-05-2025	272	GC659	RAKESH DAS	96	120/70	168CM	70KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.20%	138mg/dl	1.1mg/dl	205mg/dl	FIT
30-05-2025	273	GC617	PHEIU MUKSOR	95	120/80	163CM	63KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.80%	103mg/dl	1.0mg/dl	118mg/dl	FIT
31-05-2025	274	JS420	BIMAL DEBBARMA	76	120/70	168CM	61KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.50%	094mg/dl	1.0mg/dl	189mg/dl	FIT
03-06-2025	276	S891	RAUSHAN KUMAR SINGH	97	120/80	157CM	46KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	128mg/dl	1.0mg/dl	189mg/dl	FIT
09-06-2025	277	S833	BABUL SINGHA	90	120/80	152CM	49KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.60%	109mg/dl	1.0mg/dl	180mg/dl	FIT
12-06-2025	279	SP383	LEEMEKI PATLONG	90	130/80	166CM	63KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.00%	101mg/dl	0.8mg/dl	176mg/dl	FIT
16-06-2025	280	SP338	MANLET DONG	91	100/60	149CM	59KG	L6/9 R6/9 Without glass	Normal	Normal	Normal	Normal	11.20%	100mg/dl	0.9mg/dl	167mg/dl	FIT
17-06-2025	281	SP294	PHERLIN RUPAI	86	110/60	151CM	45KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.09%	109mg/dl	0.8mg/dl	180mg/dl	FIT
20-06-2025	282		DABASHISH KASOR	87	110/60	172CM	65KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.02%	112mg/dl	1.0mg/dl	179mg/dl	FIT
	283		SATYAVARAPA MANIKANTA	92	110/70	163CM	78KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.08%	157mg/dl	1.0mg/dl	209mg/dl	FIT
	284		YAMMANUR MABU SUBHAM	96	110/80	176CM	78KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.09%	112mg/dl	1.0mg/dl	192mg/dl	FIT
21-06-2025	285		FANESH KUMAR THAKUR	85	120/80	176CM	99KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.08%	119mg/dl	1.0mg/dl	200mg/dl	FIT
	286		RAMPADA PATRA	76	130/90	165CM	77KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.05%	113mg/dl	1.0mg/dl	206mg/dl	FIT
	287		RAMAVATAR SINGH	112	130/90	170CM	84KG	L6/6 R6/6 WITH GLASS	Normal	Normal	Normal	Normal	15.00%	90mg/dl	1.0mg/dl	182Mg/dl	FIT
	288		PANDAB DANDAPAT	83	110/60	153CM	58KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	14.06%	90mg/dl	1.0mg/dl	189mg/dl	FIT
23.06.2025	289	SP167	DAKIRU LAMARE	119	120/80	152CM	49KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.05%	106mg/dl	0.8mg/dl	181mg/dl	FIT
30.06.2025	290	JS239	JAKIR HUSSIAN BARBHIYA	92	120/70	166CM	66KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.05%	196mg/dl	1.1mg/dl	200mg/dl	FIT
1.06.2025	291	P453	PRITIMON MUKHIM	96	110/70	154CM	53KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.02%	120mg/dl	0.9mg/dl	168mg/dl	FIT
11.07.2025	292	P1705	PRAVEEN	110	110/80	176CM	71KG	L6/6 R6/6 Without glass	Normal	Normal	Normal	Normal	13.00%	98mg/dl	0.8mg/dl	167mg/dl	FIT

BASELINE HEALTH RISK ASSESSMENT

Development of road	Air emission & Dust Generation	-Dust generation due to road construction will affect the respiratory health of workers and nearby population	Major	-Water sprinkling system will be done for dust suppression. -Proper nose masks will be provided to the workers engaged in dust generating activities.

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Annexure-XIX

FORM O

[See Rule 29F(2) and 29L]
Report of medical examination under Rule 29B
(To be issued in Triplicate)**

Certificate No. .....

Certified that Shri / ~~Smt~~ Sadanand Ray ..... Employed as ....., in **Brishyrnot Limestone Mine**, Form **A** No. 65 has been examined for an initial / periodical* medical examination. He / ~~she~~* appears to be 39 years of age. The finding of the examining authority are given the attached sheet. It is considered that Shri / ~~Smt~~. Sadanand Ray.

*(a) is medically fit for any employment in mines.

*(b) is suffering from NA and is medically unfit for

(i) any employment in mine ; or
(ii) any employment below ground; or
(iii) any employment or work .....

(c) is suffering from NA, and should get this disability * cured / controlled and should be again examined within a period of ..... months. He / she* will appear for re-examination with the result of test of ..... * and the opinion of ..... specialist from ..... He / she* may be permitted / not* permitted to carry on his / her* duties during the period.

Signature of the examining authority

Dr. S. Shantikumar Singh

Place Numbong.

Date : 20/10/2025

Name and designation in Block letters

Dr S S Singh
Senior Manager (Medical Services)
Reg. no : MNMC 02151

* Delete whatever is not applicable.

Report of the examining authority

(to be filled in for every medical examination whether initial or periodical re-examination or after cure/control of disability).

Annexure to Certificate No..... as a result of medical examination on.....

Identification Mark.. One mole on forehead..

Left thumb impression of the Candidate

1. General development — Good / Fair / Poor
2. Height..160....cms.
3. Weight..66....Kg.
4. Eyes:
   (i) Visual acuity-Distant vision (with or without glasses)
   Right eye.....6/6..... Left eye.....6/6.....
   (ii) any organic diseases of eyes Nil
   *(iii) night blindness Nil
   *(iv) colour blindness NAD
   *(v) squint NAD
   (* to be tested in special cases)
5. Ears
   (i) Hearing: Right ear..Normal..... Left ear..Normal..
   (ii) any organic diseases. NO
6. Respiratory system;
   Chest measurement;
   (i) after full inspiration .....091..... cms.
   (ii) after full expiration .....088..... cms.
7. Circulatory system;
   Blood Pressure. 130/80 mmHg
   Pulse. 92 b/m
8. Abdomen;
   Tenderness; NO
   Liver; NAD
   Spleen; NAD
   Tumour. NAD
9. Nervous system;
   History of fits or epilepsy. Nil
   Paralysis. Nil
   Mental health. Normal
10. Locomotor system. Normal
11. Skin. Normal
12. Hernia. NO
13. Hydrocele. NO
14. Any other abnormality. NO
15. Urine:
    Reaction. Acidic
    Albumin. Nil
    Sugar. Nil
16. Skiagram of chest. X-Ray chest normal
17. Any other 'C' test considered necessary by the examining authority. Nil
18. Any opinion of specialist considered necessary. Nil

Place: Lumshnong.....]

Signature of the examining authority.

Report of Medical Examination under Mines Rule 29B

(To be used in continuation with Form O)

Certificate No :

Name : Sadanand Ray

Identification Marks : one mole on forhead

Result of Lung Function Test (Spirometry)

Parameters	Predicted Value	Performed Value	% of Predicted
Forced Vital Capacity (FFV)	02·94 (L)	03·10 (L)	105%.
Forced Vital Capacity 1 (FEV1)	02·52 (L)	02·77 (L)	110%.
FEV 1 / FVC	85·71 (%)	89·35 (%)	104%.
Peak Expiratory Flow	08·28 (L/S)	07·40 (L/S)	089%.

Spirometry Report Enclosed

Signature of the Examination Authority

Report of Medical Examination as per the recommendation
National Safety Conferences in Mines

(To be used in continuation with Form O)

Certificate No :

Name : Sadanand. Ray

Identification Marks : On mole on forhead.

1. Cardiological Assessment

Auscultation	S_1	Normal
	S_2	Normal
	Additional Sound	Nil
Electrocardiograph (12 leads) findings:		✓ Normal / Abnormal

Enclosed ECG

2. Neurological Assessment

Findings	Normal / Abnormal
Superficial Reflexes	Normal
Deep Reflexes	Normal
Peripheral Circulation	Normal
Vibrational Syndromes	Normal / Nil

3. ILO Classification of Chest Radiograph :

Profusion of Pneumoconiotic Opacities	Grades	Types
Present / Absent ✓		

Enclosed Chest Radiograph

4. Audiometry Findings:

Conduction Type	Left Ear	Right Ear
Ear Conduction	✓ Normal / Abnormal	✓ Normal / Abnormal
Bone Conduction	✓ Normal / Abnormal	✓ Normal / Abnormal

Enclosed Audiometry Report.

5. Pathological / Microbiological Investigations:

S.No	Tests	Findings
1	Blood- Tc, Dc, Hb, ESR, Platelets	WNL / Abnormal
2	Blood Sugar – Fasting & PP	WNL / Abnormal
3	Lipid profile	WNL / Abnormal
4	Blood Urea, Creatinine	WNL / Abnormal
5	Urine Routine	WNL / Abnormal
6	Stool Routine	WNL / Abnormal

Enclosed Investigation Reports.

6. Special Test for Mn exposure

Behavioral Disturbances		Present / Not Present
Neurological Disturbances	Speech Defect	Present / Not Present
	Tremor	Present / Not Present
	Adiadocokinesia	Present / Not Present
	Emotional Changes	Present / Not Present

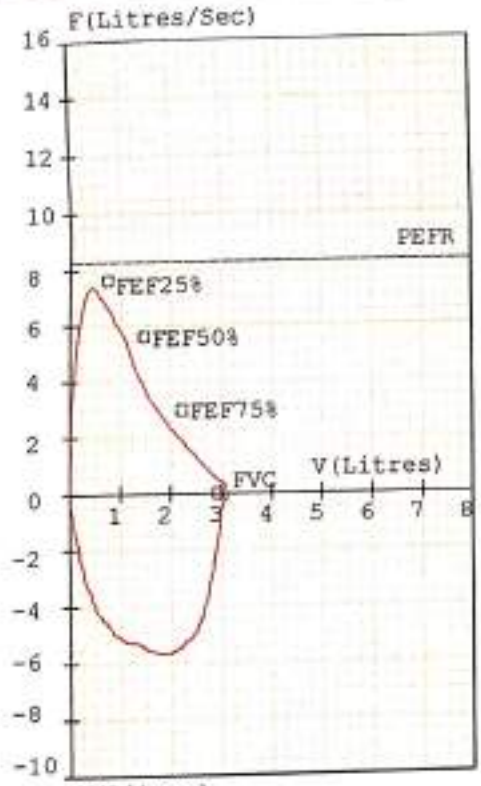
7. Any other Special Test Required: Nil

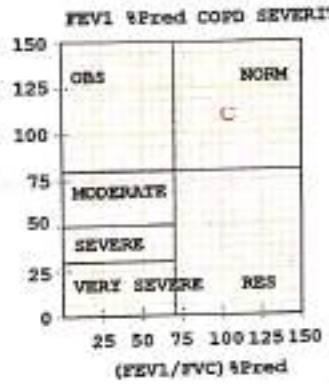
Signature of the Examination Authority

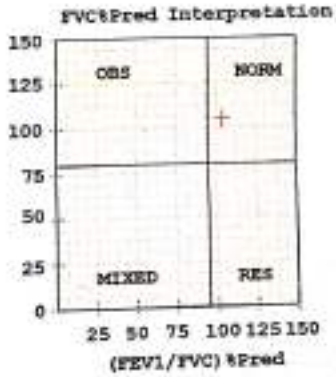
OCCUPATIONAL HEALTH CENTER

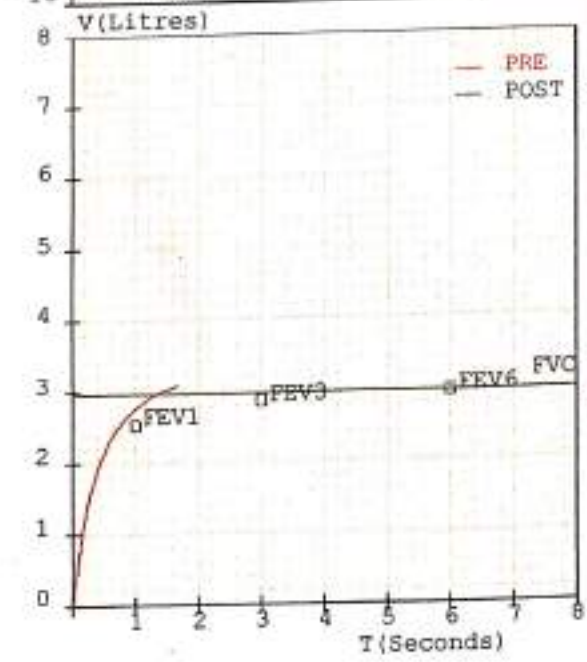
STARCEMENT LUMSHNONG MEGHALAYA

Patient: SADANANDRAY		Age	: 39 Yrs	Gender	: Male
Refd.By: DR		Height	: 160 Cms	Smoker	: No
Pred.Eqns: RECORDERS		Weight	: 66 Kgs	Eth. Corr	: 100
Date : 20-OCT-2025		ID	:	Temp	:









FVC Results

Parameter		Pred	M.Pre	%Pred	M.Post	%Pred	%Imp
FVC	(L)	02.94	03.10	105	-----	---	---
FEV1	(L)	02.52	02.77	110	-----	---	---
FEV1/FVC	(%)	85.71	89.35	104	-----	---	---
FEF25-75	(L/s)	04.14	03.16	076	-----	---	---
PEFR	(L/s)	08.28	07.40	089	-----	---	---
FIVC	(L)	-----	03.16	---	-----	---	---
FEV.5	(L)	-----	02.15	---	-----	---	---
FEV3	(L)	02.85	03.10	109	-----	---	---
PIFR	(L/s)	-----	05.70	---	-----	---	---
FEF75-85	(L/s)	-----	01.25	---	-----	---	---
FEF.2-1.2	(L/s)	06.91	06.30	091	-----	---	---
FEF 25%	(L/s)	07.62	06.49	085	-----	---	---
FEF 50%	(L/s)	05.58	03.45	062	-----	---	---
FEF 75%	(L/s)	02.95	01.62	055	-----	---	---
FEV.5/FVC	(%)	-----	69.35	---	-----	---	---
FEV3/FVC	(%)	96.94	100.00	103	-----	---	---
FET	(Sec)	-----	01.72	---	-----	---	---
ExplTime	(Sec)	-----	00.06	---	-----	---	---
Lung Age	(Yrs)	030	027	090	-----	---	---
FEV6	(L)	02.94	-----	---	-----	---	---
FIF25%	(L/s)	-----	05.24	---	-----	---	---
FIF50%	(L/s)	-----	05.46	---	-----	---	---
FIF75%	(L/s)	-----	04.50	---	-----	---	---

Pre Test COPD Severity

Test within normal limits

Pre Medication Report Indicates
Spirometry within normal limits as (FEV1/FVC) %Pred >95 and FVC%Pred >80

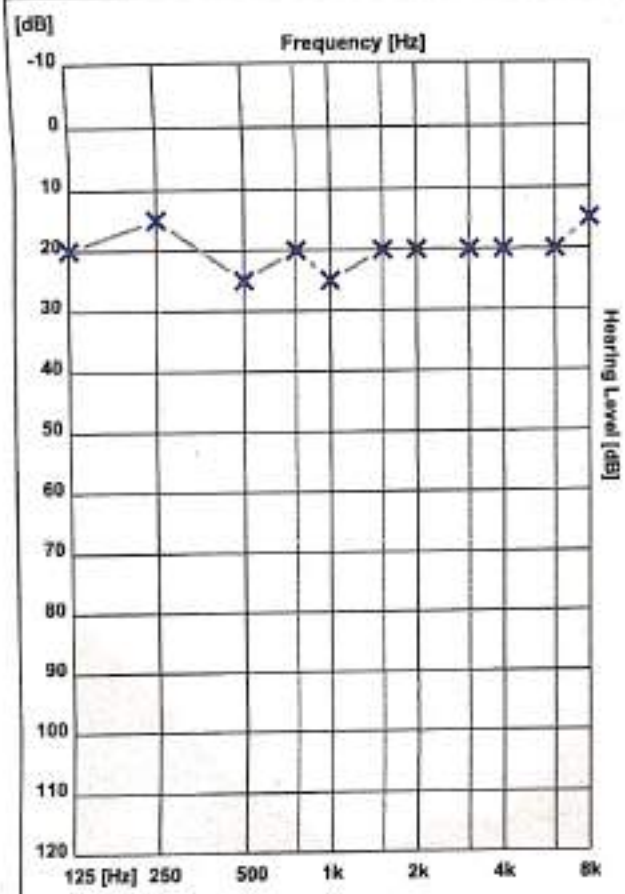
S.C.L. HOSPITAL STAR CEMENT, LUMSHNONG
Date

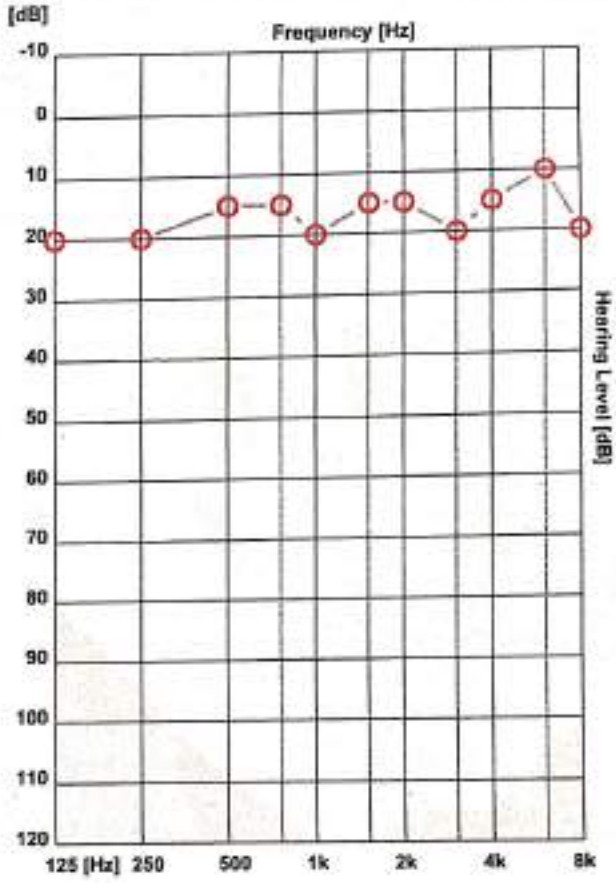
OCCUPATIONAL HEALTH CENTER

STAR CEMENT LUMSHNONG,MEGAALAYA

Patient ID : 1141
Name : SADANAND RY
CR Number : 20251020113450
Registration Date : 20-Oct-2025

Age : 39
Gender : Male
Phone : 9366579953
Operator : satyabrata bardhan





	125 Hz	250 Hz	500 Hz	750 Hz	1000 Hz	1500 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz	8000 Hz
X - Air Left	20	15	25	20	25	20	20	20	20	20	15
O - Air Right	20	20	15	15	20	15	15	20	15	10	20
> - Bone Left											
< - Bone Right											

	Average	High	Mid	Low
AIR Left	20.00 dB	18.75 dB	21.67 dB	20.00 dB
AIR Right	16.82 dB	16.25 dB	16.67 dB	17.50 dB

Clinical Notes :

Not Found

S.C.L HOSPITAL
Date
STAR CEMENT, LUMSHNONG

STARCEMENT
Solid Setting

OHC Lumshnong,Meghalaya

Date-20/10/2025

Name	SADANAND RAY
Age	39YRS
Sex	MALE
E. CODE	
Doctor Name	

Blood	Findings	N. Level
TLC	8,800	4000-11000
Neutrophil	64%	55-65%
Lymphocyte	32%	25-35%
Eosinophils	2%	1-4%
Monocytes	2%	2-8%
Hb%	13.2	12-16 gm/dl
ESR	10	< 20 mm/hr
Platelet count	1,99,000	1-4 Lacs
Urea	26	20-40
Creatinine	1.0	0.5-1.3
BS Fasting	98	70-110
BS PP	132	110-140
LIPID PROFILE		
Cholesterol	202	130-250
Triglyceride	134	50-150
LDL	93	60-100
HDL	40	> 40
Urine R/E		Remarks
Quantity	40ml	
Colour	straw	
Deposit	nil	
Reaction	acidic	
Sp Gravity	q.n.s	
Sugar	nil	
Protein	trace	
Cast/Crystals	nil	
Epithelial cells	present(+)	
Pus Cells	2-3/hpf	

Stool R/E	Findings	Remarks
Physical Findings		
Colour	Yellowish	
Consistency	semisolid	
odour	normal	
mucous	ni	
Blood	nil	
Reaction	acidic	
Other	nad	
Microscopic		
Ova	nil	
Cyst	nil	
V.cell	present(+)	
Starch ganules	nil	
Mucous Elasces	present(+)	
Fat droplet	nil	
Other	nad	
Sputum test	NO AFB SEEN	

S.C.L HOSPITAL
Date
STAR CEMENT, LUMSHNONG

Signature and Stamp

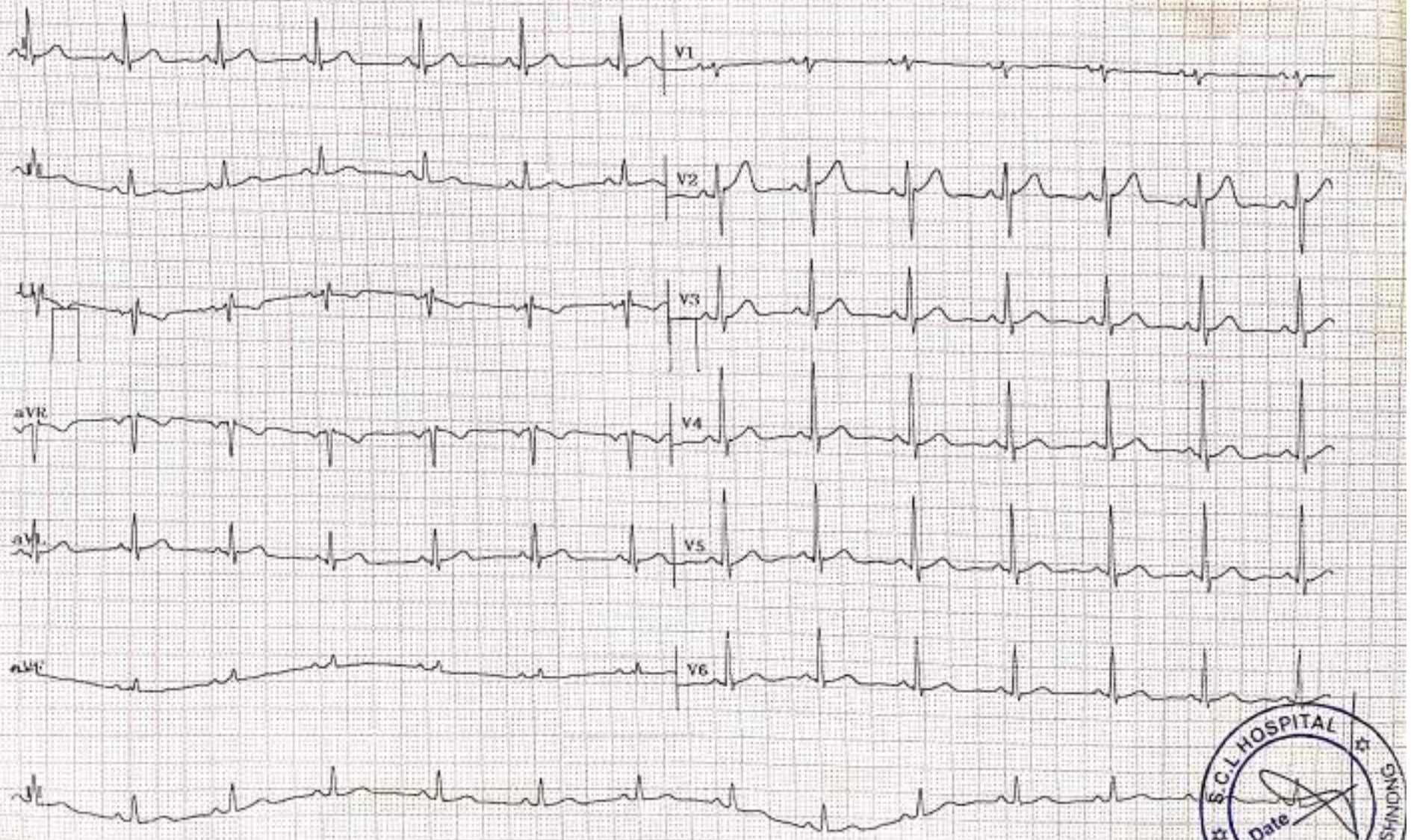
2025-10-20 09:20:37 6 Channel + 1 Rhythm Report Hosp: Star Cement

Prescribed by:

ID :
Name:
Age :0 years
Sex :
H :0 cm / W :0 kg

Heart Rate: 81 bpm
PR/RR Int.:118/741 ms
QRS Dur: 92 ms
QT/QTc: 348/405 ms
P-R-T axes: 15 20 0
SV1/RV5/R+S:0.20/1.28/1.48mV

** Analysis Result ** (To be finally confirmed by physician)
Normal Sinus Rhythm
Normal Axis
[Normal ECG]



S.C.L HOSPITAL
Date
STAR CEMENT LUMSHNONG

LPF:40Hz AC:50Hz EMG:Off 10.0mm/mV 25.0mm/sec Cardio7e(NPD03E77) 2.29/3.25 Bionet Co., Ltd.

130

FORM O

[See Rule 29F(2) and 29L]
Report of medical examination under Rule 29B
(To be issued in Triplicate)**

Certificate No. .....

Certified that Shri / Smt ...Janu Phonglosa..... Employed as Excavatory Operator in **Brishyrnot Limestone Mine**, Form **A** No.130..... Has been examined for an initial / ~~periodical~~* medical examination. He / she* appears to be ...30..... years of age. The finding of the examining authority is given the attached sheet. It is considered that Shri / Smt. .....Janu Phonglosa.....

*(a) is medically fit for any employment in mines.

*(b) is suffering from .....NA..... And is medically unfit for

(i) any employment in mine ; or
(ii) any employment below ground; or
(iii) any employment or work .....

(c) is suffering from .....NA....., and should get this disability * cured / controlled and should be again examined within a period of ..... months. He / she* will appear for re-examination with the result of test of ..... * and the opinion of ..... specialist from ..... . He / she* may be permitted / not* permitted to carry on his / her* duties during the period.

Signature of the examining authority

.....

Name and designation in Block

Place Lumshnong
letters

Date: 04/08/2028

* Delete whatever is not applicable.

Report of the examining authority

(to be filled in for every medical examination whether initial or periodical of re-examination or after cure/control of disability).

Annexure to Certificate No..... as a result of medical examination on.....

Identification Mark..Mole...in...the...back Side of Neck.

Left thumb impression of the Candidate

Good / Fair / Poor

1. General development
2. Height..163..cms.
3. Weight...73..Kg.
4. Eyes:
   (i) Visual acuity-Distant vision (with or without glasses)
   Right eye...6/6..... Left eye...6/6.....
   (ii) any organic diseases of eyes Nil
   *(iii) night blindness Nil
   *(iv) colour blindness NAD
   *(v) squint NAD
   (* to be tested in special cases)
5. Ears
   (i) Hearing: Right ear..Normal..... Left ear..Normal
   (ii) any organic diseases. NO
6. Respiratory system;
   Chest measurement;
   (i) after full inspiration .....98..... cms.
   (ii) after full expiration .....92..... cms.
7. Circulatory system;
   Blood Pressure 120/80 mmHg
   Pulse 86 bfm
8. Abdomen;
   Tenderness; NO
   Liver; NAD
   Spleen; NAD
   Tumour. NAD
9. Nervous system;
   History of fits or epilepsy. Nil
   Paralysis. Nil
   Mental health. Normal
10. Locomotor system. Normal
11. Skin. Normal
12. Hernia. NO
13. Hydrocele. NO
14. Any other abnormality. NO
15. Urine:
    Reaction. Acidic
    Albumin. Nil
    Sugar. Nil
16. Skiagram of chest. X-Ray chest normal
17. Any other 'C' test considered necessary by the examining authority. Nil
18. Any opinion of specialist considered necessary. Nil

Place: Dumshnong

Signature of the examining authority.

Report of Medical Examination under Mines Rule 29B

(To be used in continuation with Form O)

Certificate No :

Name : Janu. phonglosa.

Identification Marks : Mole in the backside of neck.

Result of Lung Function Test (Spirometry)

Parameters	Predicted Value	Performed Value	% of Predicted
Forced Vital Capacity (FFV)	03.79 (L)	03.59 (L)	095%.
Forced Vital Capacity 1 (FEV1)	03.27 (L)	03.54 (L)	108%.
FEV 1 / FVC	86.28%.	98.61%.	114%.
Peak Expiratory Flow	09.59 (L/S)	06.94 (L/S)	072%.

Spirometry Report Enclosed

Signature of the Examination Authority

Report of Medical Examination as per the recommendations of National Safety Conferences in Mines

(To be used in continuation with Form O)

Certificate No :

Name : Janu. phonglosa

Identification Marks : Mole on the back side of Neck.

1. Cardiological Assessment

Auscultation	S_1	Normal
	S_2	Normal
	Additional Sound	Nil
Electrocardiograph (12 leads) findings:		Normal / Abnormal

Enclosed ECG

2. Neurological Assessment

Findings	Normal / Abnormal
Superficial Reflexes	Normal
Deep Reflexes	Normal
Peripheral Circulation	Normal
Vibrational Syndromes	Normal

3. ILO Classification of Chest Radiograph :

Profusion of Pneumoconiotic Opacities	Grades	Types
Present / Absent		

Enclosed Chest Radiograph

4. Audiometry Findings:

Conduction Type	Left Ear	Right Ear
Ear Conduction	Normal / Abnormal	Normal / Abnormal
Bone Conduction	Normal / Abnormal	Normal / Abnormal

Enclosed Audiometry Report.

5. Pathological / Microbiological Investigations:

S.No	Tests	Findings
1	Blood- Tc, Dc, Hb, ESR, Platelets	WNL / Abnormal
2	Blood Sugar – Fasting & PP	WNL / Abnormal
3	Lipid profile	WNL / Abnormal
4	Blood Urea, Creatinine	WNL / Abnormal
5	Urine Routine	WNL / Abnormal
6	Stool Routine	WNL / Abnormal

Enclosed Investigation Reports.

6. Special Test for Mine exposure

Behavioral Disturbances		Present / Not Present
Neurological Disturbances	Speech Defect	Present / Not Present
	Tremor	Present / Not Present
	Adiadocokinesia	Present / Not Present
	Emotional Changes	Present / Not Present

7. Any other Special Test Required: Nil

Signature of the Examination Authority

STARCEMENT
Solid Setting

OHC Lumshnong,Meghalaya

Date- 04-08-2025

Name	JANU PHONGLOSA
Age	30YRS
Sex	MALE
E. CODE	

Blood	Findings	N. Level
TLC	8,100	4000-11000
Neutrophil	60%	55-65%
Lymphocyte	32%	25-35%
Eosinophils	2%	1-4%
Monocytes	6%	2-8%
Hb%	14.3	12-16 gm/dl
ESR	5	< 20 mm/hr
Platelet count	1,68,000	1-4 Lacs
Urea	27	20-40
Creatinine	0.8	0.5-1.3
BS Fasting	92	70-110
BS PP	116	110-140
LIPID PROFILE		
Cholesterol	177	130-250
Triglyceride	101	50-150
LDL	80	60-100
HDL	33	> 40
Urine R/E	**Findings**	**Remarks**
Quantity	20ml	
Colour	straw	
Deposit	nil	
Reaction	acidic	
Sp Gravity	q.n.s	
Sugar	nil	
Protein	nil	
Cast/Crystals	nil	
Epithelial cells	Presnt(+)	
Pus Cells	1-2hpf	

Stool R/E	Findings	Remarks
Physical Findings		
Colour	Yellowish	
Consistency	semisolid	
odour	normal	
mucous	nil	
Blood	nil	
Reaction	acidic	
Other	nad	
Microscopic		
Ova	nil	
Cyst	nil	
V.cell	present(+)	
Starch ganules	nil	
Mucous	present(+)	
Fat droplet	nil	
Other	nad	
Sputum test	NO AFB SEEN	

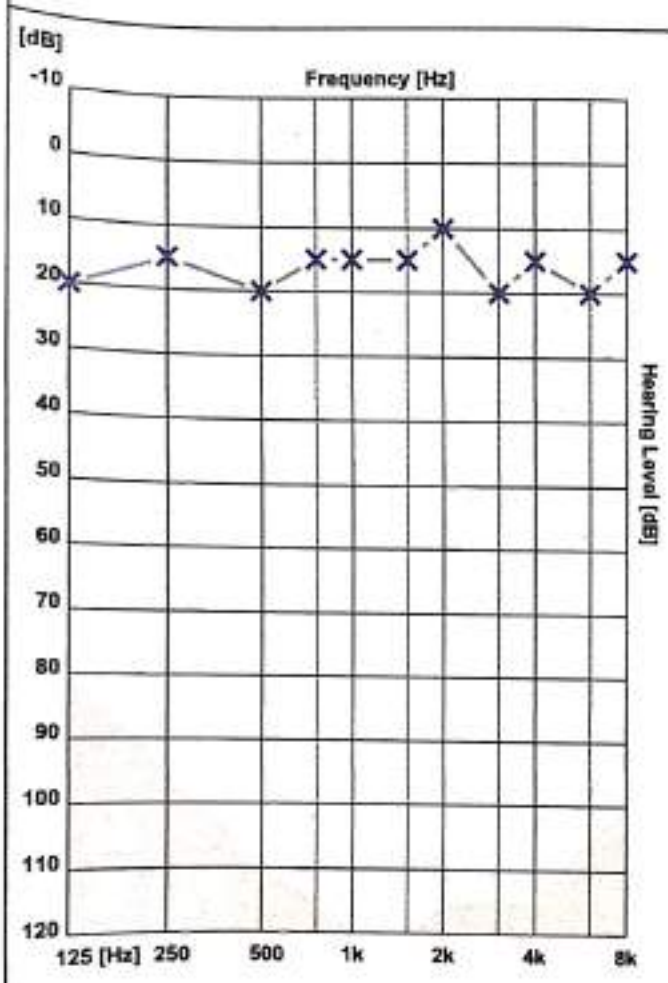
S.C.L HOSPITAL
Date
Signature and Stamp
STAR CEMENT, LUMSHNONG

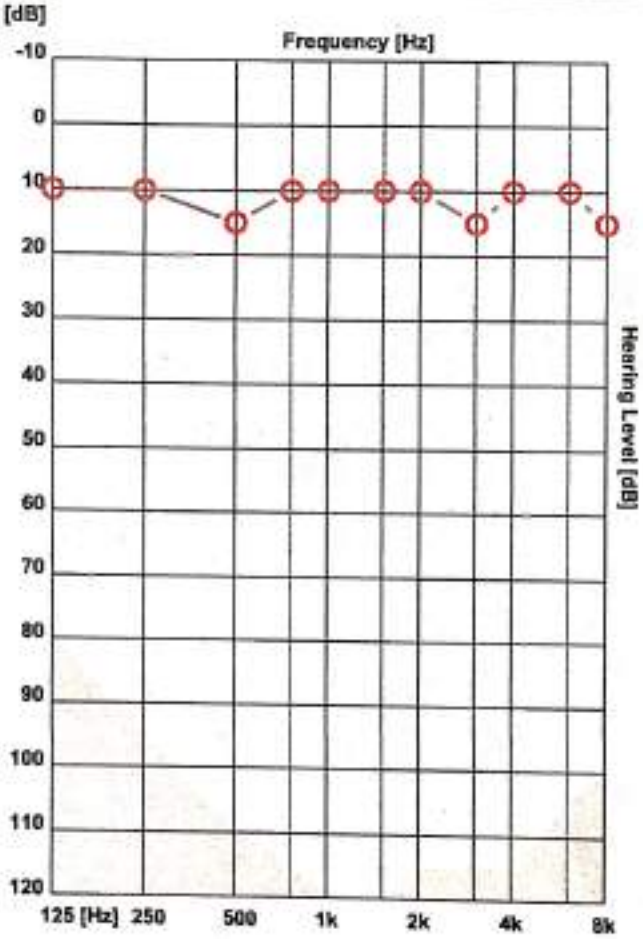
OCCUPATIONAL HEALTH CENTER

STAR CEMENT LUMSHNONG,MEGAALAYA

Patient ID : 1073
Name : JANU PHONGLASA
CR Number : 20250804175623
Registration Date : 04-Aug-2025

Age : 30
Gender : Male
Phone : 8415816197
Operator : satyabrata bardhan





	125 Hz	250 Hz	500 Hz	750 Hz	1000 Hz	1500 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz	8000 Hz
X - Air Left	20	15	20	15	15	15	10	20	15	20	15
O - Air Right	10	10	15	10	10	10	10	15	10	10	15
> - Bone Left											
< - Bone Right											

	Average	High	Mid	Low
AIR Left	16.36 dB	17.50 dB	13.33 dB	17.50 dB
AIR Right	11.36 dB	12.50 dB	10.00 dB	11.25 dB

Clinical Notes :

Not Found

S.C.L HOSPITAL
Date
STAR CEMENT LUMSHNONG

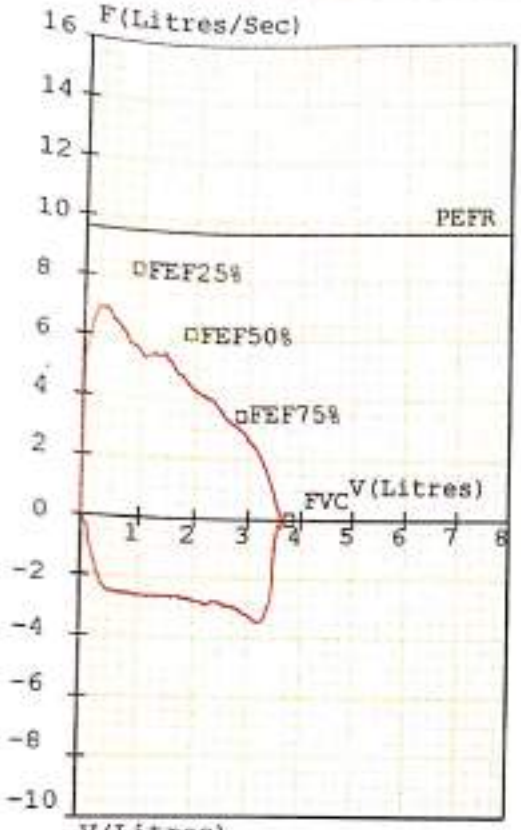
OCCUPATIONAL HEALTH CENTER

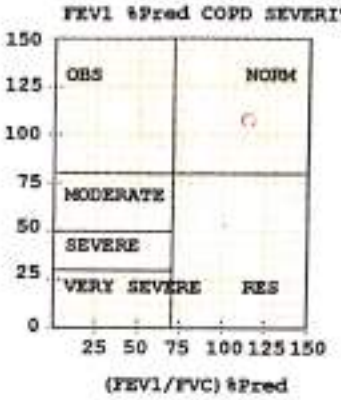
STARCEMENT LUMSHNONG MEGHALAYA

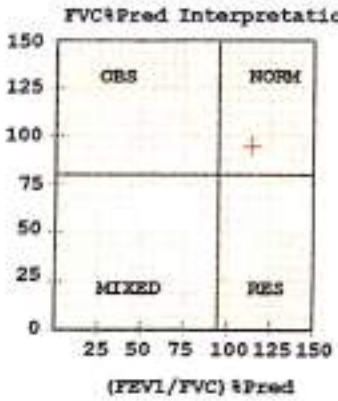
Patient: JANU PHONGLOSA
Refd.By: DR
Pred.Eqns: RECORDERS
Date : 04-AUG-2024

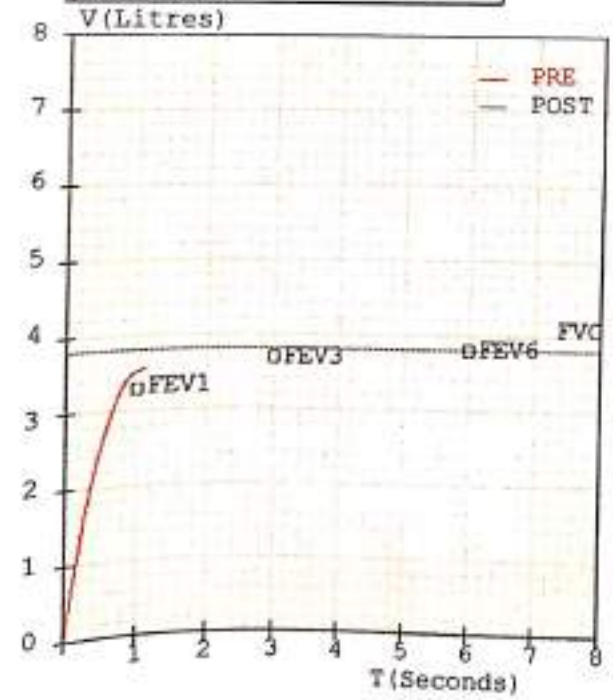
Age : 30 Yrs
Height : 163 Cms
Weight : 73 Kgs
ID :

Gender : Male
Smoker : No
Eth. Corr: 100
Temp :









FVC Results

Parameter		Pred	M.Pre	%Pred	M.Post	%Pred	%Imp
FVC	(L)	03.79	03.59	095	-----	---	---
FEV1	(L)	03.27	03.54	108	-----	---	---
FEV1/FVC	(%)	86.28	98.61	114	-----	---	---
FEF25-75	(L/s)	04.74	04.45	094	-----	---	---
PEFR	(L/s)	09.59	06.94	072	-----	---	---
FIVC	(L)	-----	03.56	---	-----	---	---
FEV.5	(L)	-----	02.55	---	-----	---	---
FEV3	(L)	03.67	03.59	098	-----	---	---
PIFR	(L/s)	-----	03.42	---	-----	---	---
FEF75-85	(L/s)	-----	02.83	---	-----	---	---
FEF.2-1.2	(L/s)	08.15	05.97	073	-----	---	---
FEF 25%	(L/s)	08.29	05.65	068	-----	---	---
FEF 50%	(L/s)	06.18	04.74	077	-----	---	---
FEF 75%	(L/s)	03.44	03.16	092	-----	---	---
FEV.5/FVC	(%)	-----	71.03	---	-----	---	---
FEV3/FVC	(%)	96.83	100.00	103	-----	---	---
FET	(Sec)	-----	01.13	---	-----	---	---
ExplTime	(Sec)	-----	00.04	---	-----	---	---
Lung Age	(Yrs)	023	021	091	-----	---	---
FEV6	(L)	03.79	-----	---	-----	---	---
FIF25%	(L/s)	-----	02.98	---	-----	---	---
FIF50%	(L/s)	-----	02.69	---	-----	---	---
FIF75%	(L/s)	-----	02.58	---	-----	---	---

Pre Test COPD Severity

Test within normal limits

Pre Medication Report Indicates
Spirometry within normal limits as (FEV1/FVC) %Pred >95 and FVC%Pred >80

S.C.L HOSPITAL
Date
STAR CEMENT, LUMSHNONG

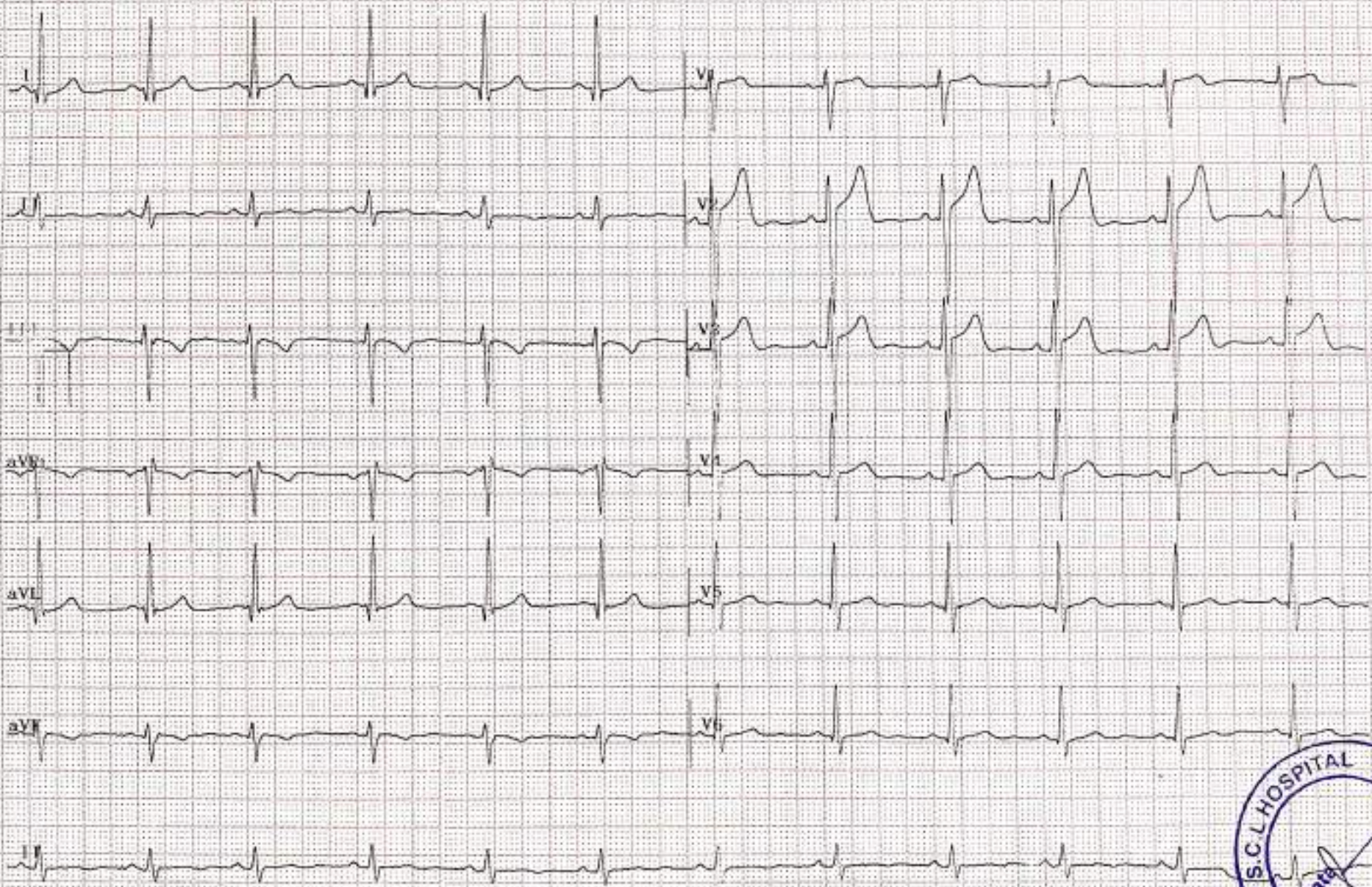
2025-08-04 11:33:24 6 Channel + 1 Rhythm Report Hosp: Star Cement

Prescribed by:

ID :NEW
Name:JANU PHONGLOSA
Age :30 years
Sex :Male
H :0 cm / W :0 kg

Heart Rate: 72 bpm
PR/RR Int.:130/833 ms
QRS Dur: 112 ms
QT/QTc: 390/426 ms
P-R-T axes: 18 -21 -19
SV1/RV5/R+S=0.82/1.12/1.94mV

** Analysis Result ** (To be finally confirmed by physician)
Normal Sinus Rhythm
Normal Axis
[Normal ECG]



S.C.L HOSPITAL Date STAR CEMENT LUMSHNONG

Base:0.2Hz LPF:40Hz AC:50Hz EMG:Off 10.0mm/mV 25.0mm/sec Cardio7e(NPD03E77) 2.29/3.25 Bionet Co., Ltd.

(125)

FORM O

[See Rule 29F(2) and 29L]
Report of medical examination under Rule 29B
(To be issued in Triplicate)**

Certificate No. .....

Certified that Shri / ~~Smt~~ Bono Rabha ..... Employed as drill operator ....., in **Brishyrnot Limestone Mine**, Form **A** No. ..... Has been examined for an initial / periodical* medical examination. He / ~~she~~* appears to be 30 years of age. The finding of the examining authority is given the attached sheet. It is considered that Shri / ~~Smt~~ Bono Rabha .....

*(a) is medically fit for any employment in mines.

*(b) is suffering from NA ..... And is medically unfit for

(i) any employment in mine ; or
(ii) any employment below ground; or
(iii) any employment or work ..... .

(c) is suffering from NA ....., and should get this disability * cured / controlled and should be again examined within a period of ..... months. He / she* will appear for re-examination with the result of test of ..... * and the opinion of ..... specialist from ..... . He / she* may be permitted / not* permitted to carry on his / her* duties during the period.

Signature of the examining authority

DR. S. SHARATCHANDRA SINGH

Place Umshnong
letters

Date: 26/06/2025

Name and designation in Block

Dr S S Singh
Senior Manager (Medical Services)
Reg. no : MNMC 02151

* Delete whatever is not applicable.

Report of the examining authority

(to be filled in for every medical examination whether initial or periodical of re-examination or after cure/control of disability).

Annexure to Certificate No..... as a result of medical examination on.....

Identification Mark... Ok mole on (R) cheek

Left thumb impression of the Candidate

Good / Fair / Poor

1. General development
2. Height... 162 ...cms.
3. Weight... 48 ..Kg.
4. Eyes:
   (i) Visual acuity-Distant vision (with or without glasses)
   Right eye.... 6/6 ..... Left eye... 6/6 .....
   (ii) any organic diseases of eyes NIL
   *(iii) night blindness NIL
   *(iv) colour blindness NAD
   *(v) squint NAD
   (* to be tested in special cases)
5. Ears
   (i) Hearing: Right ear... normal ..... Left ear... normal
   (ii) any organic diseases. NO
6. Respiratory system;
   Chest measurement;
   (i) after full inspiration ..... 078 ..... cms.
   (ii) after full expiration ..... 073 ..... cms.
7. Circulatory system;
   Blood Pressure 120/80 mmHg
   Pulse 96 b/m
8. Abdomen;
   Tenderness; NO
   Liver; NAD
   Spleen; NAD
   Tumour. NAD
9. Nervous system;
   History of fits or epilepsy. NIL
   Paralysis. NIL
   Mental health. normal
10. Locomotor system. normal
11. Skin. normal
12. Hernia. NO
13. Hydrocele. NO
14. Any other abnormality. NO
15. Urine:
    Reaction. Acidic
    Albumin. NIL
    Sugar. NIL
16. Skiagram of chest. X-Ray chest normal
17. Any other 'C' test considered necessary by the examining authority. NIL
18. Any opinion of specialist considered necessary. NIL

Place: Kurnool

Signature of the examining authority.

Report of Medical Examination under Mines Rule 29B

(To be used in continuation with Form O)

Certificate No :

Name : Bono · Rabha ·

Identification Marks : On mole on R Chest

Result of Lung Function Test (Spirometry)

Parameters	Predicted Value	Performed Value	% of Predicted
Forced Vital Capacity (FFV)	02. 94 (L)	03. 05 (L)	104 %.
Forced Vital Capacity 1 (FEV1)	02. 52 (L)	03. 02 (L)	120 %.
FEV 1 / FVC	85. 71 (%.)	99. 02 (%.)	116 %.
Peak Expiratory Flow	08. 28 (L/S)	06. 31 (L/S)	076 %.

Spirometry Report Enclosed

Signature of the Examination Authority

Report of Medical Examination as per the recommendations of National Safety Conferences in Mines

(To be used in continuation with Form O)

Certificate No :

Name : Boro · Rabha

Identification Marks : One mole on (R) cheek

1. Cardiological Assessment

Auscultation	S_1	Normal
	S_2	Normal
	Additional Sound	Nil
Electrocardiograph (12 leads) findings: ✓		Normal / Abnormal

Enclosed ECG

2. Neurological Assessment

Findings	Normal / Abnormal
Superficial Reflexes	Normal
Deep Reflexes	Normal
Peripheral Circulation	Normal
Vibrational Syndromes	Normal / Nil

3. ILO Classification of Chest Radiograph :

Profusion of Pneumoconiotic Opacities	Grades	Types
Present / Absent ✓		

Enclosed Chest Radiograph

4. Audiometry Findings:

Conduction Type	Left Ear	Right Ear
Ear Conduction ✓	Normal / Abnormal	Normal / Abnormal ✓
Bone Conduction ✓	Normal / Abnormal	Normal / Abnormal ✓

Enclosed Audiometry Report.

5. Pathological / Microbiological Investigations:

S.No	Tests	Findings
1	Blood- Tc, Dc, Hb, ESR, Platelets	WNL / Abnormal
2	Blood Sugar – Fasting & PP	WNL / Abnormal
3	Lipid profile	WNL / Abnormal
4	Blood Urea, Creatinine	WNL / Abnormal
5	Urine Routine	WNL / Abnormal
6	Stool Routine	WNL / Abnormal

Enclosed Investigation Reports.

6. Special Test for Mine exposure

Behavioral Disturbances		Present / Not Present
Neurological Disturbances	Speech Defect	Present / Not Present
	Tremor	Present / Not Present
	Adiadocokinesia	Present / Not Present
	Emotional Changes	Present / Not Present

7. Any other Special Test Required: Nil

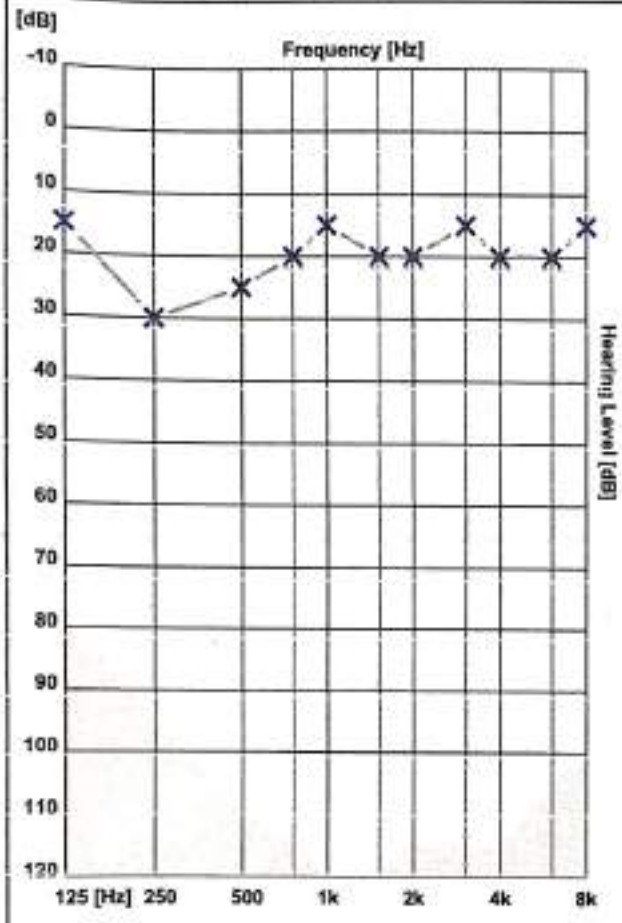
Signature of the Examination Authority

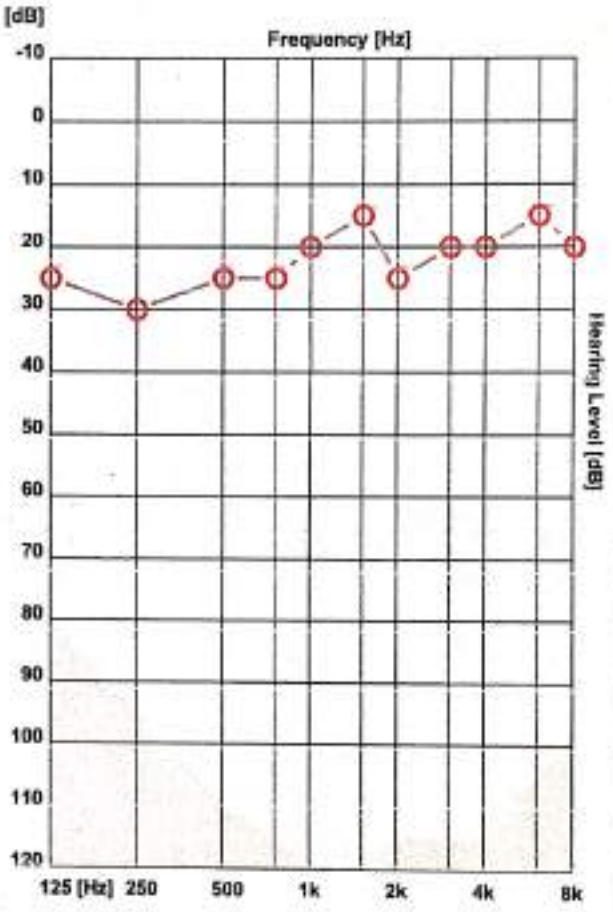
OCCUPATIONAL HEALTH CENTER

STAR CEMENT LUMSHNONG,MEGAALAYA

Patient ID : 1028
Name : BONO RABHA
CR Number : 20250627104938
Registration Date : 27-Jun-2025

Age : 30
Gender : Male
Phone : 6002537850
Operator : satyabrata bardhan





	125 Hz	250 Hz	500 Hz	750 Hz	1000 Hz	1500 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz	8000 Hz
X - Air Left	15	30	25	20	15	20	20	15	20	20	15
O - Air Right	25	30	25	25	20	15	25	20	20	15	20
> - Bone Left											
< - Bone Right											

	Average	High	Mid	Low
AIR Left	19.55 dB	17.50 dB	18.33 dB	22.50 dB
AIR Right	21.82 dB	18.75 dB	20.00 dB	26.25 dB

Clinical Notes :

Not Found

S.C.L HOSPITAL
Date
STAR CEMENT, LUMSHNONG

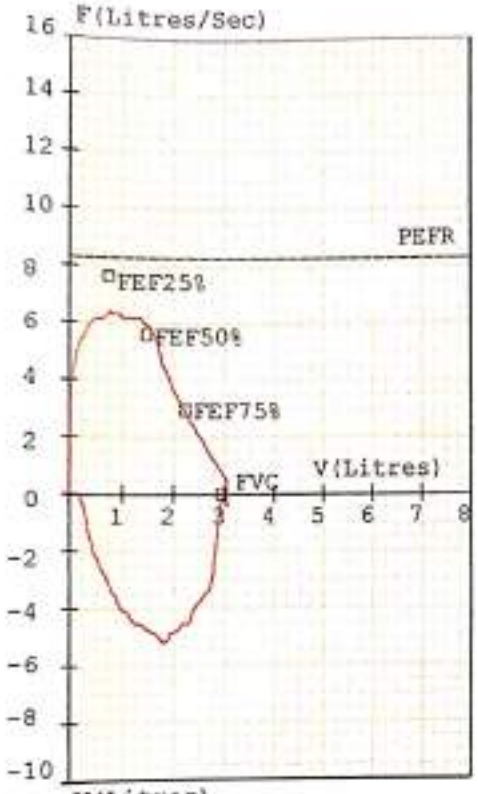
OCCUPATIONAL HEALTH CENTER

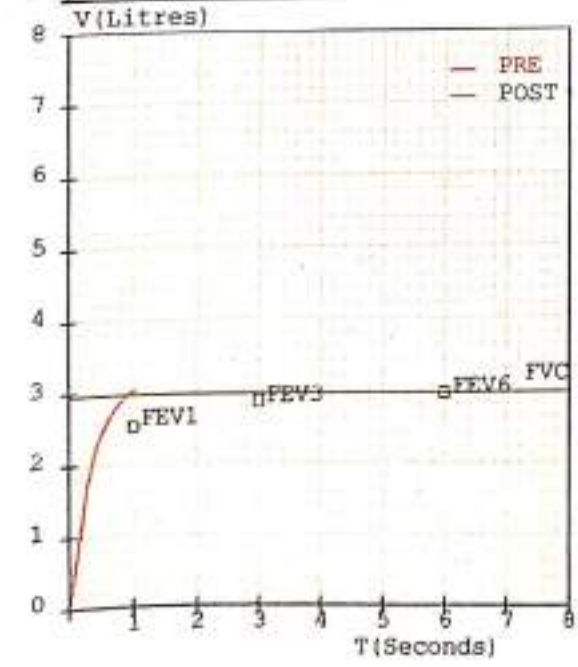
STARCEMENT LUMSHNONG MEGHALAYA

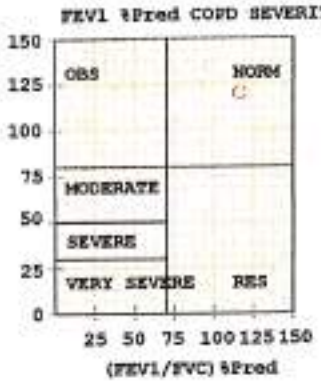
Patient: BONO RABHA
Refd.By: DR Singh
Pred.Eqns: RECORDERS
Date : 26-JUN-2025

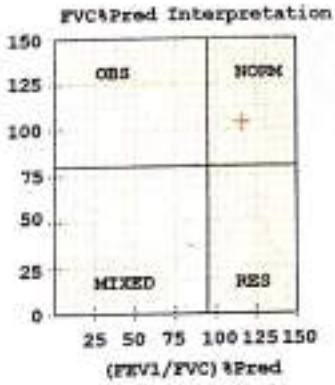
Age : 30 Yrs
Height : 162 Cms
Weight : 48 Kgs
ID :

Gender : Male
Smoker : No
Eth. Corr: 100
Temp :









FVC Results

Parameter		Pred	M.Pre	%Pred	M.Post	%Pred	%Imp
FVC	(L)	02.94	03.05	104	-----	---	---
FEV1	(L)	02.52	03.02	120	-----	---	---
FEV1/FVC	(%)	85.71	99.02	116	-----	---	---
FEF25-75	(L/s)	04.14	04.72	114	-----	---	---
PEFR	(L/s)	08.28	06.31	076	-----	---	---
FIVC	(L)	-----	02.84	---	-----	---	---
FEV.5	(L)	-----	02.41	---	-----	---	---
FEV3	(L)	02.85	03.05	107	-----	---	---
PIFR	(L/s)	-----	05.18	---	-----	---	---
FEF75-85	(L/s)	-----	02.08	---	-----	---	---
FEF.2-1.2	(L/s)	06.91	05.97	086	-----	---	---
FEF 25%	(L/s)	07.62	06.31	083	-----	---	---
FEF 50%	(L/s)	05.58	05.81	104	-----	---	---
FEF 75%	(L/s)	02.95	02.69	091	-----	---	---
FEV.5/FVC	(%)	-----	79.02	---	-----	---	---
FEV3/FVC	(%)	96.94	100.00	103	-----	---	---
FET	(Sec)	-----	01.07	---	-----	---	---
ExplTime	(Sec)	-----	00.05	---	-----	---	---
Lung Age	(Yrs)	030	024	080	-----	---	---
FEV6	(L)	02.94	-----	---	-----	---	---
FIF25%	(L/s)	-----	03.59	---	-----	---	---
FIF50%	(L/s)	-----	05.12	---	-----	---	---
FIF75%	(L/s)	-----	04.26	---	-----	---	---

Pre Test COPD Severity

Test within normal limits

S.C.L HOSPITAL
Date
STAR CEMENT, LUMSHNONG

Pre Medication Report Indicates
Spirometry within normal limits as (FEV1/FVC)%Pred >95 and FVC%Pred >80

STARCEMENT
Solid Setting

OHC Lumshnong,Meghalaya

Name	BONO RABHA	DATE-26/06/2025
Age	30YRS	
Sex	MALE	
Dr.	S.SINGH	

Name of Test	Level	N. Level
TLC	7,200	4500-9000
Neutrophil	61%	55-65%
Lym	35%	25-35%
Eosinophils	2%	1-4%
Monocytes	2%	2-8%
Hb%	13.9	12-15 gm/dl
ESR	10	1-15 mm/hr
LIPID PROFILE	**Level**	**N.Level(mg/dl)**
Cholesterol	177	130-250
Triglyceride	112	50-140
LDL	80	60-120
HDL	41	30-60
Urine Routine	**Findings**	**Remarks**
Quantity	15ml	
Colour	straw	
Deposit	nil	
Reaction	acidic	
Sp Gravity	q.n.s	
Sugar	nil	
Protein	Trace	
Cast/Crystals	nil	
Epithelial cells	present(+)	
Pus Cells	2-3/hpf	

Name of the test	Findings	
Stool R/E		
Physical Findings		
Colour	Brownish	
Consistency	semisolid	
odour	normal	
mucous	nil	
Blood	nil	
Reaction	acidic	
Other	nad	
Microscopic	**Examination**	**Remarks**
Ova	nil	
Cyst	nil	
V.cell	present (+)	
Starch ganules	nil	
Mucous Elasces	present (+)	
Fat droplet	nil	
Other	nad	
Test	**Level**	**level(mg/dl)**
BS Fasting	86mg/dl	70-110
BS PP	117mg/dl	110-140
Test	**Level**	**level(mg/dl)**
Urea	25	20-40
Creatinine	0.8	0.5-1.4

PLATELET COUNT 1,85,000

SPUTUM - NO AFB SEEN.

S.C.L HOSPITAL
STAR CEMENT LUMSHNONG
Date
Signature and Stamp

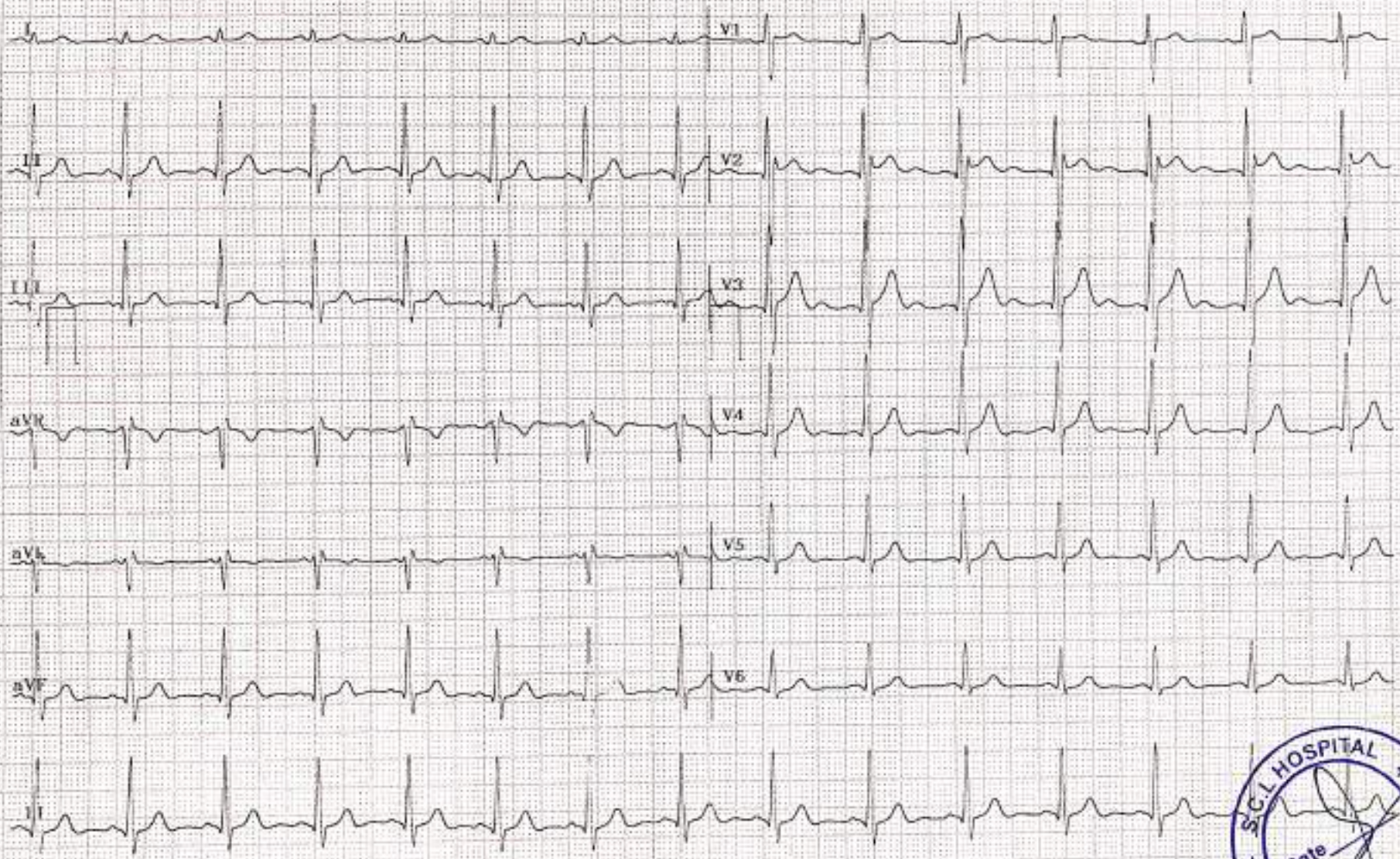
2025-06-26 15:41:27 6 Channel + Rhythm Report Hosp: Star Cement

Prescribed by:

ID :
Name:
Age :0 years
Sex :
H :0 cm / W :0 kg

Heart Rate: 89 bpm
PR/RR Int.:114/674 ms
QRS Dur: 112 ms
QT/QTc: 334/405 ms
P-R-T axes: -2 77 65
SV1/RV5/R*S:0.75/1.15/1.90mV

** Analysis Result ** (To be finally confirmed by physician)
Normal Sinus Rhythm
Normal Axis
[Normal ECG]



S.C.L HOSPITAL
Date
STAR CEMENT LUMSHNONG

Base:0.2Hz LPF:40Hz AC:50Hz EMG:OFF 10.0mm/mV 25.0mm/sec Cardio7e(NPH03E77) 2.29/3.25 Bionet Co., Ltd.

FORM O

[See Rule 29F(2) and 29L]
Report of medical examination under Rule 29B
(To be issued in Triplicate)**

Certificate No. .....

Certified that Shri / Smt ... Akash Karki ..... Employed as ... Blasting Helper ..., in **Brishynot Limestone Mine**, Form A No. ..... Has been examined for an initial / ~~periodical~~* medical examination. He / ~~she~~* appears to be ... 28 ... years of age. The finding of the examining authority is given the attached sheet. It is considered that Shri / ~~Smt.~~ ..... Akash Karki .....

*(a) is medically fit for any employment in mines.

*(b) is suffering from ..... NA ..... And is medically unfit for

(i) any employment in mine ; or
(ii) any employment below ground; or
(iii) any employment or work .....

(c) is suffering from ..... NA ....., and should get this disability * cured / controlled and should be again examined within a period of ..... months. He / she* will appear for re-examination with the result of test of ..... * and the opinion of ..... specialist from ..... . He / she* may be permitted / not* permitted to carry on his / her* duties during the period.

Signature of the examining authority

DR. S. SHARATCHANDRA SINGH

Name and designation in Block

Dr S S Singh
Senior Manager (Medical Services)
Reg. no : MNMC 02151

Place Umrihnong
letters

Date: 20/06/2025

* Delete whatever is not applicable.

Report of the examining authority

(to be filled in for every medical examination whether initial or periodical of re-examination or after cure/control of disability).

Annexure to Certificate No..... as a result of medical examination on.....

Identification Mark...One...dymd...Scar.....
(L) wrist area

Left thumb impression of the Candidate

Good / Fair / Poor

1. General development
2. Height...168...cms.
3. Weight...69....Kg.
4. Eyes:
   (i) Visual acuity-Distant vision (with or without glasses)
   Right eye.....6/6..... Left eye.....6/6.....
   (ii) any organic diseases of eyes Nil
   *(iii) night blindness Nil
   *(iv) colour blindness NAD
   *(v) squint Nad
   (* to be tested in special cases)
5. Ears
   (i) Hearing: Right ear..normal..... Left ear..normal.....
   (ii) any organic diseases. No
6. Respiratory system;
   Chest measurement;
   (i) after full inspiration .....092..... cms.
   (ii) after full expiration .....088..... cms.
7. Circulatory system;
   Blood Pressure 110/70mmHg
   Pulse 69
8. Abdomen;
   Tenderness; No
   Liver; NAD
   Spleen; Nad
   Tumour. NAD
9. Nervous system;
   History of fits or epilepsy. Nil
   Paralysis. Nil
   Mental health. Normal
10. Locomotor system. Normal
11. Skin. Normal
12. Hernia. No
13. Hydrocele. No
14. Any other abnormality. No
15. Urine:
    Reaction. Acidic
    Albumin. Nil
    Sugar. Nil
16. Skiagram of chest. X-Ray Chest normal
17. Any other 'C' test considered necessary by the examining authority. Nil
18. Any opinion of specialist considered necessary. Nil

Signature of the examining authority.

Place: Lumshnong.....]

Report of Medical Examination under Mines Rule 29B

(To be used in continuation with Form O)

Certificate No :

Name : Akash Karki

Identification Marks : One depressed scar on Occipital.

Result of Lung Function Test (Spirometry)

Parameters	Predicted Value	Performed Value	% of Predicted
Forced Vital Capacity (FFV)	03·51 (L)	02·93 (L)	083%.
Forced Vital Capacity 1 (FEV1)	03·09 (L)	02·93 (L)	095%.
FEV 1 / FVC	88·03%.	100·00%.	114%.
Peak Expiratory Flow	06·31 (L/S)	07·12 (L/S)	113%.

Spirometry Report Enclosed

Signature of the Examination Authority

Report of Medical Examination as per the recommendations of National Safety Conferences in Mines

(To be used in continuation with Form O)

Certificate No :

Name : Akash Karki

Identification Marks : One depressed scar on Abdomen.

1. Cardiological Assessment

Auscultation	S_1	Normal
	S_2	Normal
	Additional Sound	Nil
Electrocardiograph (12 leads) findings:		Normal / Abnormal

Enclosed ECG

2. Neurological Assessment

Findings	Normal / Abnormal
Superficial Reflexes	Normal
Deep Reflexes	Normal
Peripheral Circulation	Normal
Vibrational Syndromes	Normal / Nil

3. ILO Classification of Chest Radiograph :

Profusion of Pneumoconiotic Opacities	Grades	Types
Present / Absent ✓		

Enclosed Chest Radiograph

4. Audiometry Findings:

Conduction Type	Left Ear	Right Ear
Ear Conduction	Normal / Abnormal	Normal / Abnormal
Bone Conduction	Normal / Abnormal	Normal / Abnormal

Enclosed Audiometry Report.

5. Pathological / Microbiological Investigations:

S.No	Tests	Findings
1	Blood- Tc, Dc, Hb, ESR, Platelets	WNL / Abnormal
2	Blood Sugar – Fasting & PP	WNL / Abnormal
3	Lipid profile	WNL / Abnormal
4	Blood Urea, Creatinine	WNL / Abnormal
5	Urine Routine	WNL / Abnormal
6	Stool Routine	WNL / Abnormal

Enclosed Investigation Reports.

6. Special Test for Mine exposure

Behavioral Disturbances		Present / Not Present
Neurological Disturbances	Speech Defect	Present / Not Present
	Tremor	Present / Not Present
	Adiadocokinesia	Present / Not Present
	Emotional Changes	Present / Not Present

7. Any other Special Test Required: Nil.

Signature of the Examination Authority

STARCEMENT
Solid Setting

OHC Lumshnong,Meghalaya

Name	AKASH KARKI	DATE-20/06/2025
Age	28YRS	
Sex	MALE	
Dr.	S.SINGH	

Name of Test	**Level**	**N. Level**
TLC	7,200	4500-9000
Neutrophil	61%	55-65%
Lym	35%	25-35%
Eosinophils	2%	1-4%
Monocytes	2%	2-8%
Hb%	13.9	12-15 gm/dl
ESR	10	1-15 mm/hr
LIPID PROFILE	**Level**	**N.Level(mg/dl)**
Cholesterol	177	130-250
Triglyceride	112	50-140
LDL	80	60-120
HDL	41	30-60
Urine Routine	**Findings**	**Remarks**
Quantity	15ml	
Colour	straw	
Deposit	nil	
Reaction	acidic	
Sp Gravity	q.n.s	
Sugar	nil	
Protein	Trace	
Cast/Crystals	nil	
Epithelial cells	present(+)	
Pus Cells	2-3/hpf	

Name of the test	**Findings**	
Stool R/E		
Physical Findings		
Colour	Brownish	
Consistency	semisolid	
odour	normal	
mucous	nil	
Blood	nil	
Reaction	acidic	
Other	nad	
Microscopic	**Examination**	**Remarks**
Ova	nil	
Cyst	nil	
V.cell	present (+)	
Starch ganules	nil	
Mucous Elasces	present (+)	
Fat droplet	nil	
Other	nad	
Test	**Level**	**level(mg/dl)**
BS Fasting	86mg/dl	70-110
BS PP	117mg/dl	110-140
Test	**Level**	**level(mg/dl)**
Urea	25	20-40
Creatinine	0.9	0.5-1.4

PLATELET COUNT 1,85,000

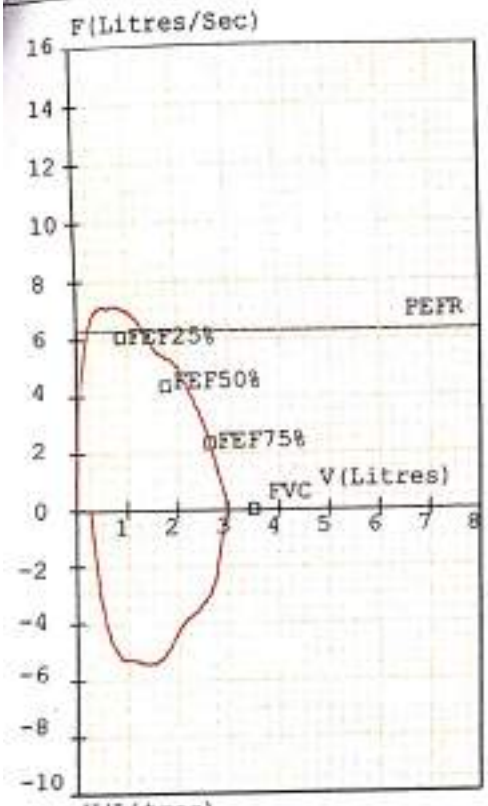
SPUTUM - NO AFB SEEN.

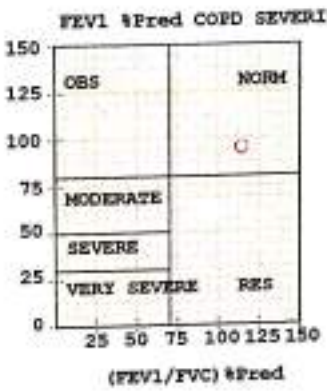
S.C.L HOSPITAL
Date
Signature and Stamp
STAR CEMENT, LUMSHNONG

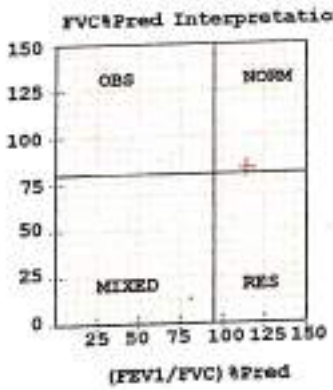
OCCUPATIONAL HEALTH CENTER

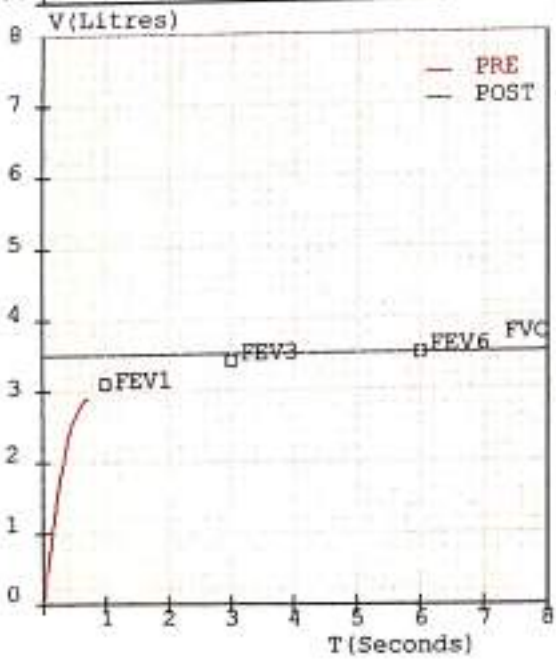
STARCEMENT LUMSHNONG MEGHALAYA

ent: AKASH KARKI	Age : 28 Yrs	Gender : Male	
d.By: DR	Height : 168 Cms	Smoker : No	
ed.Eqns: RECORDERS	Weight : 69 Kgs	Eth. Corr: 100	
ate : 20-JUN-2025	ID :	Temp :	









FVC Results

Parameter		Pred	M.Pre	%Pred	M.Post	%Pred	%Imp
FVC	(L)	03.51	02.93	083	-----	---	---
FEV1	(L)	03.09	02.93	095	-----	---	---
FEV1/FVC	(%)	88.03	100.00	114	-----	---	---
FEF25-75	(L/s)	04.51	05.73	127	-----	---	---
PEFR	(L/s)	06.31	07.12	113	-----	---	---
FIVC	(L)	-----	02.62	---	-----	---	---
FEV.5	(L)	-----	02.64	---	-----	---	---
FEV3	(L)	03.40	02.93	086	-----	---	---
PIFR	(L/s)	-----	05.46	---	-----	---	---
FEF75-85	(L/s)	-----	03.50	---	-----	---	---
FEF.2-1.2	(L/s)	08.13	06.82	084	-----	---	---
FEF 25%	(L/s)	06.07	07.03	116	-----	---	---
FEF 50%	(L/s)	04.37	05.79	132	-----	---	---
FEF 75%	(L/s)	02.34	04.19	179	-----	---	---
FEV.5/FVC	(%)	-----	90.10	---	-----	---	---
FEV3/FVC	(%)	96.87	100.00	103	-----	---	---
FET	(Sec)	-----	00.76	---	-----	---	---
ExplTime	(Sec)	-----	00.06	---	-----	---	---
Lung Age	(Yrs)	018	019	106	-----	---	---
FEV6	(L)	03.51	-----	---	-----	---	---
FIF25%	(L/s)	-----	03.12	---	-----	---	---
FIF50%	(L/s)	-----	04.50	---	-----	---	---
FIF75%	(L/s)	-----	05.28	---	-----	---	---

Pre Test COPD Severity

Test within normal limits

S.C.L HOSPITAL Date STAR CEMENT, LUMSHNONG

Pre Medication Report Indicates

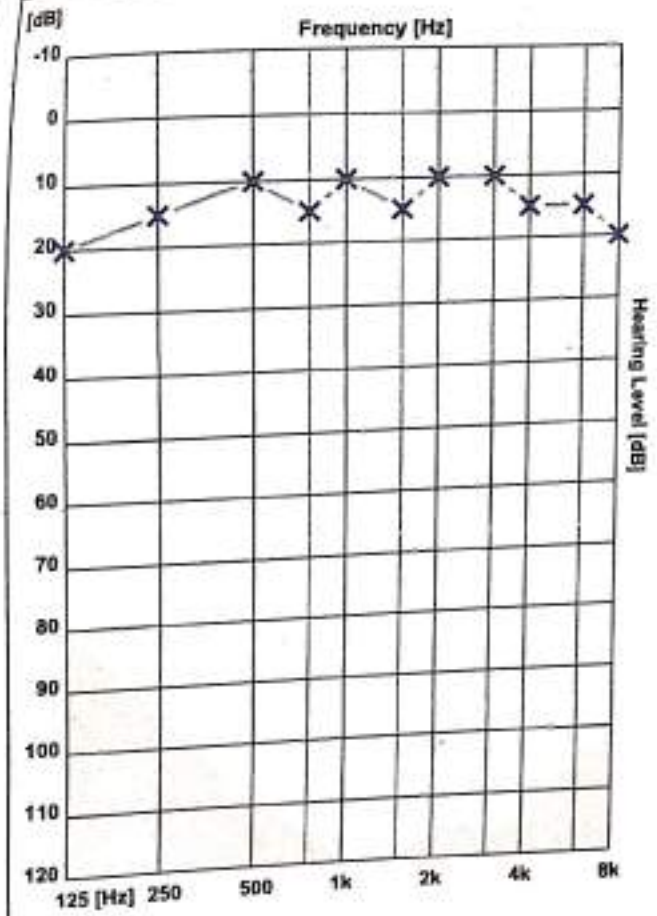
Spirometry within normal limits as (FEV1/FVC)%Pred >95 and FVC%Pred >80

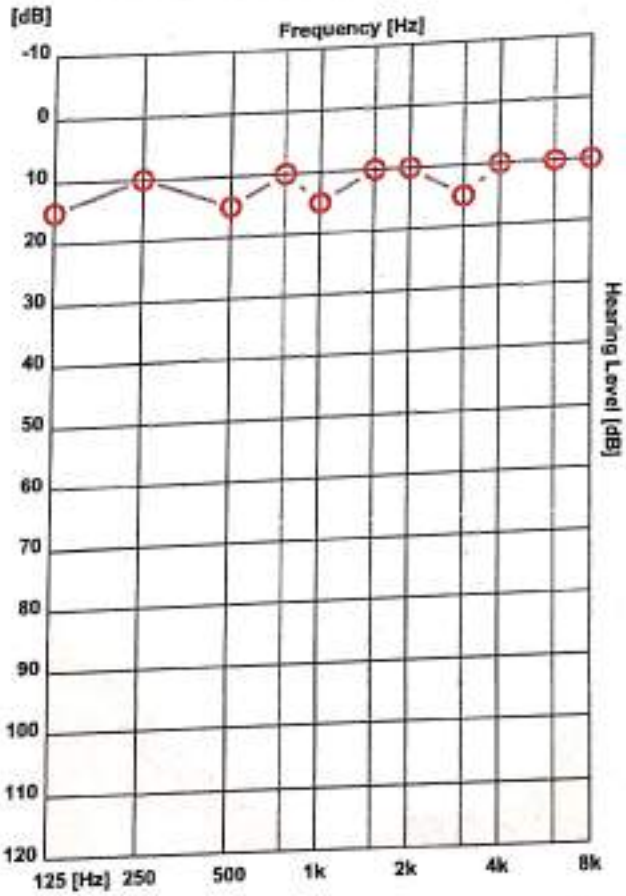
OCCUPATIONAL HEALTH CENTER

STAR CEMENT LUMSHNONG,MEGAALAYA

Patient ID : 1024
Name : AKASH KARKI
CR Number : 20250621100110
Registration Date : 21-Jun-2025

Age : 28
Gender : Male
Phone : 9864234798
Operator : satyabrata bardhan





	125 Hz	250 Hz	500 Hz	750 Hz	1000 Hz	1500 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz	8000 Hz
X - Air Left	20	15	10	15	10	15	10	10	15	15	20
O - Air Right	15	10	15	10	15	10	10	15	10	10	10
> - Bone Left											
< - Bone Right											

	Average	High	Mid	Low
AIR Left	14.09 dB	15.00 dB	11.67 dB	15.00 dB
AIR Right	11.82 dB	11.25 dB	11.67 dB	12.50 dB

Clinical Notes :

Not Found

S.C.L HOSPITAL
Date
STAR CEMENT, LUMSHNONG

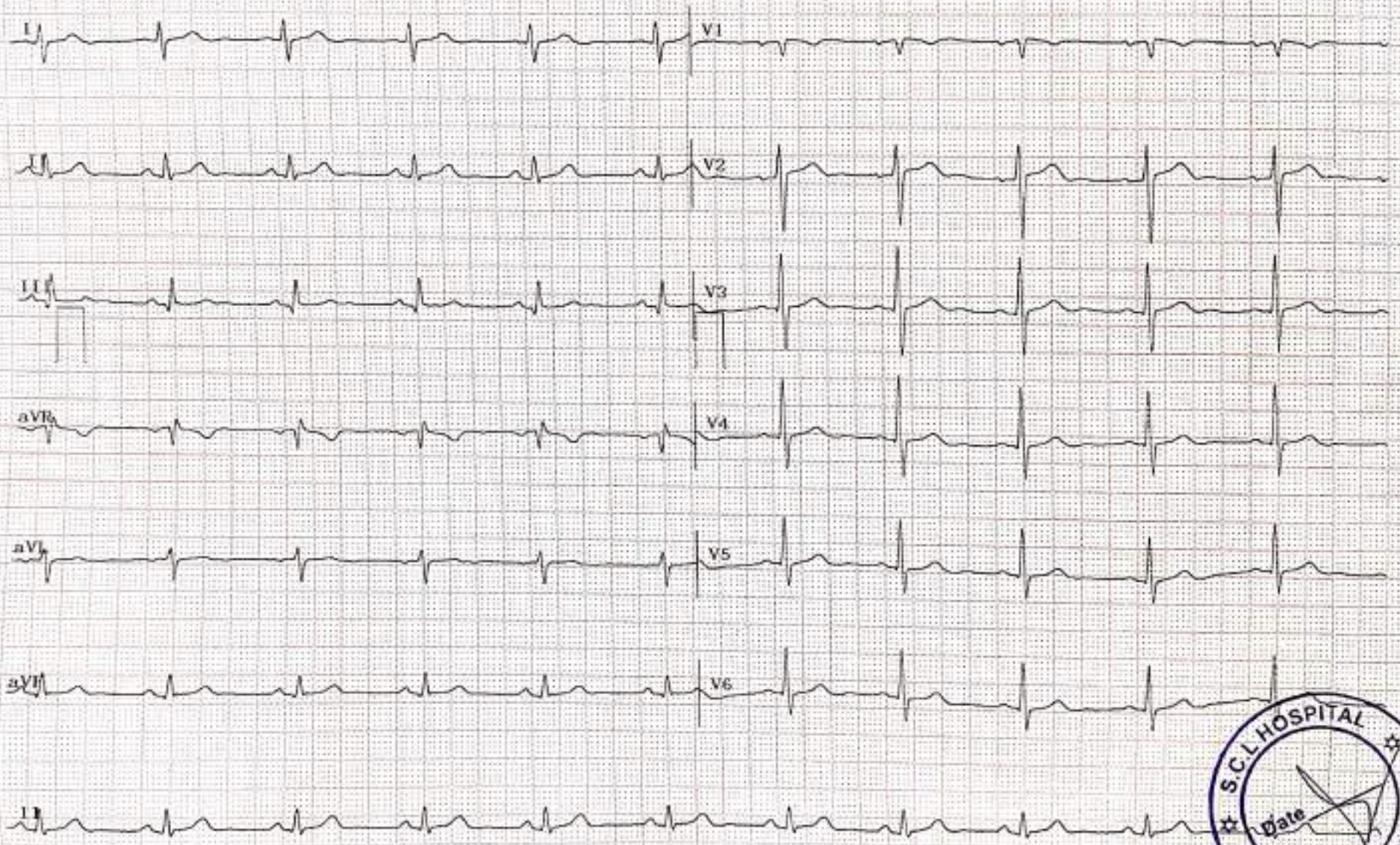
2025-06-20 15:52:44 6 Channel + 1 Rhythm Report Hosp: Star Cement

Prescribed by:

ID :gc 568
Name:akash
Age :28 years
Sex :Male
H :0 cm / W :0 kg

Heart Rate: 67 bpm
PR/RR int.:142/896 ms
QRS Dur: 104 ms
QT/QTc: 392/412 ms
P-R-T axes: 77 99 53
SV1/RV5/R+S:0.00/0.84/0.84mV

** Analysis Result ** (To be finally confirmed by physician)
Normal Sinus Rhythm
Normal Axis
[Normal ECG]



S.C.L HOSPITAL
Date
STAR CEMENT, LUMSHNONG

LPF:40Hz AC:50Hz EMG:Off 10.0mm/mV 25.0mm/sec Cardio7e(NPD03E77) 2.29/3.25 Bionet Co., Ltd.

Activities and budget earmarked for Corporate Environmental Responsibility (CER)

Sl	Activities	Provision	Capital Cost (in Lakhs)	Present Status
1	Education	✓ Operation of two school bus at Brishyrnot village ✓ Support to RCLP school ✓ Offer scholarship to the most desirable student from the village ✓ Free elementary and secondary education for Brishyrnot students at Star Public School	5,00,000	School Bus- INR 11,52,912 Support to RCLP school- INR 2,76,960 Scholarship- INR 2,50,000 Elementary and secondary education – INR 14,68,699  School Bus
				 Scholarship Scheme
2	Health	✓ Conducted medical camp ✓ Free eyes check up ✓ Dedicated one ambulance for the Brichyrnot village	6,00,000	Medical camp and free eye check-up – INR 3,99,553 Ambulance – INR 6,65,411  Dedicated Ambulance  Free Eye Camp

3	Water & Sanitation	✓ Provide drinking water to the village	5,00,000	Water Tank- INR 8,72,581  Supply of Drinking Water
4	Environment	✓ Installation of solar streetlight and household solar unit to BPL families ✓ Plantation in community land	8,00,000	Solar Streetlights & unit – INR 3,72,063 Plantation- INR 2,40,000  Solar Streetlights and Solar Unit
5	Community Development	✓ Support to sport club of Brichyrnot village ✓ Support to 70 beneficiaries for broom making project ✓ Support one bio floc fish farmer	8,00,000	Sport Club- INR 92,492 Broom Making- INR 60,630 Bio Bloc fish farmer – INR 55,078  Broom Making Project
Total			32,00,000	

Environmental protection measures Expences (April 2025 to September 2025)

Mines:	Brishyrnot Limestone Deposit-I (42.051 Ha.)
Details	**Amount in Rs.**
Green Belt development recurring cost (2105 saplings *Rs.200/-)	4,21,000.00
Installation of Automatic Water Sprinkler system (PO: 7400000697)	23,00,000.00
TOTAL EXPENCES	**27,21,000.00**