

# M/s LAKHWINDER SINGH

( STONE CRUSHER & SCREENING PLANT UNIT-3 )

Site : Village Gondpur Bulla, Teh. Haroli, Distt. Una (H.P.)

**Date-31.03.2026**

To,  
The Member Secretary,  
H.P. State Pollution Control Board,  
Shimla, Himachal Pradesh

**Sub:** - Submission of Draft EIA Report under EIA notification 2006 for mining of minerals by Sh. Lakhwinder Singh Prop. M/s Lakhwinder Stone crusher & screening unit-III at Khasra No. 1236, Mauza /Mohal Gondpur Bulla, Tehsil Haroli, District Una, H.P. having lease area 2.7891 for Public hearing.

**Proposal No.:** SIA/HP/MIN/554952/2025

Respected Sir,

It is submitted that mining project Sh. Lakhwinder Singh Prop. M/s Lakhwinder Stone crusher & screening unit-III having lease area of 2.7891 ha. at Khasra no. 1236 Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una, H.P. There is a proposal to mining minerals. The total lease area of the project is 2.7891 ha. As per EIA notification S.O. 1533 dated 14<sup>th</sup> September, 2006 and its subsequent amendments, the project falls under activity 1(a) of schedule, category B1(as one another existing mine lease is within 500m) is being submitted for HPPCB RO Una for Public Hearing.

Accordingly, we are submitting the following documents as per mandatory requirement.

1. Draft EIA report
2. Requisite Annexures
3. Executive summaries (Hindi/English)

Fee amount of Rs. 5 ,000/- is submitted through Demand Draft is submitted is with DEIA report.

It is requested to kindly consider the proposal for Public Hearing at the earliest.

Thanking you

For M/s Lakhwinder Stone Crusher & Screening Unit-III.



Authorized Signatory

**Draft EIA REPORT**

**of**

**Hill Slope Mining for Extraction of Sand, Stone and Bajri**

**Located at**

**Khasra Nos. 1236, Mauza/Mohal Gondpur bulla, Tehsil Haroli,  
District Una, Himachal Pradesh**

**Project Area: - 2.7891 Hectare**

**Production Capacity: - 93835 MTPA (Excluding Waste)**

**Proposed by**

**Sh. Lakhwinder Singh Prop. M/s Lakhwinder Stone Crusher**

**Project Schedule: - 1(a)(i); Mining of Minerals**

**Category- B1'**

**ToR Identification No: - TO25B0108HP5915931N dated 04-12-25**

**Baseline monitoring Period: - Dec-2025 to Feb-2026**

**Monitoring done by:- Noida Testing Laboratories**

**NABET Certificate No: - TC-12094**



**ENVIRONMENTAL CONSULTANT  
SHIVALIK SOLID WASTE MANAGEMENT LIMITED**



**QCI/ NABET Certificate No: NABET/EIA/23-26/RA 0310**

**Valid up to Aug 17<sup>th</sup>, 2026**

**Address: SCO 20-21, 1<sup>st</sup> floor, Near Hotel Dolphin, Baltana, Zirakpur, (Punjab)140604**

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## TOR LETTER



सत्यमेव जयते

File No: HP SEIAA/2025/1352  
Government of India  
Ministry of Environment, Forest and Climate Change  
(Issued by the State Environment Impact Assessment  
Authority(SEIAA), HIMACHAL PRADESH)

\*\*\*



Dated: 04/12/2025



To,

Lakhwinder Singh  
Mauza/Mohal Gondpur bulla Tehsil Haroli, District Una H.P.  
R/o House no. - 1238, Sector-90, Mohali, Punjab, Mohali, S.A.S Nagar, PUNJAB, NA, 140308  
lakhwindersinghmine@gmail.com

**Subject:** Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding.

**Sir/Madam,**

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project Mining of Sand Stone and Bajri from Khasra no. 1236 Mauza/Mohal Gondpur bulla Tehsil Haroli, District Una H.P. by Sh. Lakhwinder Singh Prop. M/s Lakhwinder stone crusher unit-III submitted to Ministry vide proposal number SIA/HP/MIN/554952/2025 dated 14/10/2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0108HP5915931N
(ii) File No.	HP SEIAA/2025/1352
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vi) Name of Project	Mining of Sand Stone and Bajri from Khasra no. 1236 Mauza/Mohal Gondpur bulla Tehsil Haroli, District Una H.P. by Sh. Lakhwinder Singh Prop. M/s Lakhwinder stone crusher unit-III
(viii) Name of Company/Organization	LAKHWINDER PANAG
(ix) Location of Project (District, State)	UNA, HIMACHAL PRADESH
(x) Issuing Authority	SEIAA
(xi) Applicability of General Conditions	no
(xii) Applicability of Specific Conditions	no

a) Proposal No. SIA/HP/MIN/ 554952/2025, TOR's  
HP SEIAA/2025/1352

SIA/HP/MIN/554952/2025

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# Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III

b)	Processing fee	UTR reference no. HDFCN52025101331014771 on dated 13/10/2025 having amount of Rs. 20,000/-
c)	Project type	Extraction of Sand, Stone and Bajri
d)	Project Location	Khasra number 1236 falling in Mauza/Mohal Gondpur Bulla, Tehsil Haroli, District Una, Himachal Pradesh.
e)	Jamabandi	Jamabandi for the year 2023-2024
f)	Land Status	Private land /hill slope
g)	Capacity	93,835 MT/year
h)	Mining Area	2-78-91 ha
i)	Leases with in 500 meter from the periphery of the area applied.	One mining leases exist within 500 meters:
j)	Letter of Intent	LoI issued on dated 28.03.2025, valid for two years.
k)	EMP Cost	-
l)	CER cost	-

- In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the Ministry for an appraisal by the State Environment Impact Assessment Authority(SEIAA) Appraisal Committee (SEIAA) in the Ministry under the provision of EIA notification 2006 and its subsequent amendments.
- The above-mentioned proposal has been considered by State Environment Impact Assessment Authority(SEIAA) Appraisal Committee of SEIAA in the meeting held on 18/11/2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B, Part C EIA, EMP)] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
- The brief about configuration of plant/equipment, products and byproducts and salient features of the project along with environment settings, as submitted by the Project proponent in Form-1 (Part A, B and C)/EIA & EMP Reports/presented during SEIAA are annexed to this EC as Annexure (1).
- The SEIAA, in its meeting held on 18/11/2025, based on information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to stipulation of specific and general conditions as detailed in Annexure (2).
- The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the State Environment Impact Assessment Authority(SEIAA) Appraisal Committee hereby decided to grant Terms of Reference for instant proposal of M/s. Lakhwinder Singh under the provisions of EIA Notification, 2006 and as amended thereof.
- The Ministry reserves the right to stipulate additional conditions, if found necessary.
- The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
- This issues with the approval of the Competent Authority.

## **Copy To**

- The Secretary (Environment), Ministry of Environment, Forests & Climate Change (MoEF&CC), GoI, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110003 .
- The Chairman, Central Pollution Control Board, Him Parivesh Bhawan, CBD-cum-office Complex, East Arjun Nagar, New Delhi-110032.
- The Chairman, Himachal Pradesh State Pollution Control Board, Shimla-171009.
- The Director (Environment, Science Technology & Climate Change) to the GoHP, Shimla-171001.
- The Adviser (IA), MoEF&CC, GoI, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110003.
- The Integrated Regional Office, MoEF&CC, CGO Complex, Shivalik Khand, Longwood, Shimla, HP-171001.
- The Monitoring Cell, MoEF&CC, GoI, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110003
- Record File.



Standard Terms of Reference for (Mining of minerals)

I.

S. No	Terms of Reference
1.1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)
1.5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics
1.6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority
1.7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided
1.9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period
1.10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass

Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III

S. No	Terms of Reference
	preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given
1.11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered

S. No	Terms of Reference
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report
1.22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given
1.23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map
1.24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided
1.26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided
1.27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished

Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III

S. No	Terms of Reference
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed
1.36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of

S. No	Terms of Reference
	Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area
1.45	<ol style="list-style-type: none"> <li>1) The project proponent shall include the detailed analysis of GLC-2.5 with air modeling and shall prepare the wind-rose diagram of the site to plan the installation of PCDs.</li> <li>2) The project proponent will assess and erasure that, after ceasing mining operations, to undertake-re-grassing the mining area and any other area which may have been disturbed due to their mining activities and for restoration of the land to a condition which is fit for growth of fodder, flora, fauna etc.</li> <li>3) The project proponent shall conduct and submit a comprehensive mineral replenishment study to assess the rate and extent of natural replenishment of minerals in the leased area.</li> <li>4) The project proponent shall submit a certificate from the Director (Industries) to the fact that the proposed mining site is recommended/approved on the basis of the District Survey Report prepared &amp; approved by SEIAA authorities in conformity with the SO No. 141 (E), SO No. 3611(E) and as per Sustainable Sand Mining Management Guidelines, 2016 and Enforcement &amp; Monitoring Guidelines for Sand Mining, 2020 published by MoEF&amp;CC, GoI.</li> <li>5) Hard copy of the application along with the relevant document shall be ink signed &amp; submitted in the office of SEIAA Secretariat.</li> <li>6) The project proponent shall submit compliance report to the issue raised during public hearing.</li> <li>7) The project proponent shall submit proposed EMP and including CER activities as its part. All</li> </ol>

Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III

S. No	Terms of Reference
	the commitment made under EMP & CER shall be made in the form of affidavit. 8) The project proponent must ensure that environmental samples are analyzed at laboratories located in close proximity to the project site to maintain the accuracy and integrity of results. During each sampling activity, videography and geo-tagged photographs must be captured to provide transparent evidence of proper sampling locations, methods, and handling practices.

**Additional Terms of Reference**

N/A

Annexure 2

**Details of Products & By-products**

Name of the product /By-product	Product / By-product	Quantity	Unit	Mode of Transport / Transmission	Remarks (eg. CAS number)
Sand stone and Bajri	Sand stone and Bajri	93835	Tons per Annum (TPA)	Road	NA

Signature Not Verified

Digitally Signed by : Sh Duni Chand Rana  
Member Secretary, SF/AA

Date: 04/12/2025



### COMPLIANCE OF TOR

The table below gives the compliance of Terms of Reference issued vide ToR identification No. TO25B0108HP5915931N dated 04.12.2025 by the State Level Expert Appraisal Committee (SEAC), Himachal Pradesh for proposed Hill Slope Mining project for extraction of Sand, Stone and Bajri situated at Khasra Nos. 1236 in Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una, Himachal Pradesh by Sh. Lakhwinder Singh Prop. M/s Lakhwinder Stone Crusher. The Point wise compliance of TOR is as under:-

#### COMPLIANCE FOR TERMS OF REFERENCE

S. No.	Terms of Reference	Cross Ref. in EIA Report
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	Not applicable; this is a new project.
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	Letter of Intent attached as <b>Annexure- III</b> .
3	All documents including the approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	All documents are aligned: lease area 2.7891ha., production 93,835 MTPA (Sand, Stone & Bajri), maximum of 40510 tons of waste, consisting of Silty Sand/Topsoil and Clay will be mined.
4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features	Complied and Included in Chapters 2 and 3.

	of the study area (core and buffer zone).	
5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of landforms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	A 1:50,000 scale geomorphology map is provided in Chapter 2, with land use patterns detailed in Chapter 3.
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from the State land use board or the concerned authority.	The land has been allocated for mining in accordance with the State's policy.
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting non compliances/violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.	The company has a well-established Environmental Policy and is committed to full compliance with all its requirements attached as <b>Annexure-XII</b> .
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study	Safety measures for hill slope mining of sand, stone & bajri are detailed in <b>Chapter 7</b> .

	in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	
9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine/ lease period.	10 km study area considered; mine waste and lease period details in <b>Chapter-2</b> .
10	Land use of the study area delineating forest areas, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. The land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Chapter 3 provides a land use map of the 10 km study area, showing key ecological and land features.
11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.	Not applicable.
12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which the Certificate in this regard as mentioned	DFO letter attached as <b>Annexure-VIII</b> .

	above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	
<b>13</b>	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	Not applicable; no forest land involved.
<b>14</b>	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	Not applicable.
<b>15</b>	The vegetation in the RF/PF areas in the study area, with necessary details, should be given.	Complied; biological environment details in <b>Chapter 3</b> .
<b>16</b>	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required should be worked out with cost implications and submitted.	Details provided in <b>Chapter 3</b> .
<b>17</b>	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive	Not Applicable.  Not applicable. No such ecological zones exist within 10 km. DFO certification attached as <b>Annexure-VIII</b> .

	areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	
<b>18</b>	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with the State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.	Complied. Biological environment details included in <b>Chapter 3</b> .
<b>19</b>	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.	Not applicable.
<b>20</b>	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine	Not applicable.

	lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	
<b>21</b>	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.	Not applicable. Project is on hill slope; no displacement involved.
<b>22</b>	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data compiled presented date-wise in the EIA and EMP Report. Site specific meteorological data should also be collected. The location	Baseline data and meteorological details included in <b>Chapter 3</b> . PM10 composition with free silica also provided.

	of the monitoring stations should be such as to represent the whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.	
23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used, and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air quality modeling is included in Chapter 4; wind rose in <b>Chapter 3</b> .
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirements for the Project should be indicated.	Total requirement: 2.85 KLD (1.40 KLD for dust suppression, 0.45 KLD for domestic use). Details in Chapter 2.
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Water sourced from Borewell. Clearance obtained and attached as <b>Annexure-XV</b> .

26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	Not applicable; water is not required in the mining process.
27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.	No impact expected; mining limited to 1m bgl or above water table and conducted in non-monsoon season. Water pollution control measures included in <b>Chapter 4</b> .
28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	Mining will not intersect groundwater; limited to 1m depth during non-monsoon season.
29	Details of any stream, seasonal or otherwise, passing through the lease area and modification /diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	Not Applicable.
30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	Elevation and depth details in <b>Chapters 2 &amp; 4</b> ; schematic diagram in approved mine plan <b>Annexure-VI</b> .
31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant	No vegetation within lease; year-wise plantation plan and budget in <b>Chapter 10</b> . Species list in <b>Chapter 4</b> .

	<p>species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project.</p> <p>Phase-wise, plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.</p>	
<b>32</b>	<p>Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.</p>	Traffic study included in <b>Chapter-4.</b>
<b>33</b>	<p>Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.</p>	A Temporary rest shelter with water, first aid, and protective gear detailed in <b>Chapter 2.</b>

34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	Rehabilitation through phased plantation with local species post-mining.
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Air pollution from vehicle movement addressed with mitigation in <b>Chapter 4</b> ; financial provisions in <b>Chapter 10</b> .
36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated, and the proposed remedial measures should be detailed along with budgetary allocations.	Public health impacts detailed in <b>Chapter 7</b> ; budget included in <b>Chapter 6</b> .
37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Socio-economic profile and proposed benefits detailed in <b>Chapter 3</b> .
38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	Comprehensive EMP included in <b>Chapter 10</b> .

<b>39</b>	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	Public Hearing proceedings will be released by the Pollution Control Board. All concerns raised have been addressed by the Project Proponent through a time-bound Action Plan with budgetary provisions, duly incorporated in <b>Chapter 7</b> of the final EIA/EMP Report.
<b>40</b>	Details of litigation pending against the project, if any, with direction/order passed by any Court of Law against the Project should be given.	No litigation is pending against the project.
<b>41</b>	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	<b>Project cost:- ₹10 lakhs.</b> EMP implementation:- <b>Capital cost</b> ₹15.09 lakhs; <b>Recurring cost</b> ₹2.92 lakhs/year; ₹14.65 lakhs over five years
<b>42</b>	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Disaster Management Plan Provided in <b>Chapter 7.</b>
<b>43</b>	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Benefits of the Project Provided in <b>Chapter 8.</b>
<b>44</b>	<b>General points</b>	
<b>a.</b>	Executive summary of the EIA/EMP report	The Executive Summary of the project has been included as part of the EIA Report.
<b>b.</b>	All documents to be properly referenced with index and continuous page numbering.	All documents have been duly referenced, indexed, and sequentially paginated
<b>c.</b>	Where data are presented in the Report, especially in Tables, the period in which the data were collected, and the sources should be indicated.	Data sources and collection periods are indicated where applicable.
<b>d.</b>	Project Proponent shall enclose all the analysis/testing reports of water, air, and soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original	Monitoring conducted by Noida Testing Laboratory, accredited by NABL and MoEF&CC.

Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III

	analysis/testing reports should be available during appraisal of the Project.	
<b>e.</b>	Where the documents provided are in a language other than English, an English translation should be provided.	Translated copies are provided wherever required.
<b>f.</b>	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	All required documents, as per SEIAAHP guidelines, have been submitted.
<b>g.</b>	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August 2009, which are available on the website of this Ministry, should be followed.	EIA report prepared in accordance with the prescribed guidelines.
<b>h.</b>	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.	No changes made to the original scope or project parameters.
<b>i.</b>	As per circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of	Not applicable; this is a new project. Surface plan, contour details, drainage, and geological maps are enclosed.

	<p>Environment, Forest and Climate Change, as may be applicable.</p> <p>I. The EIA report should also include.</p> <p>II. Surface plan of the area indicating contours of main topographic features, drainage and mining area.</p> <p>III. geological maps and sections and sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.</p>	
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**In addition to the standard Terms of Reference (ToR) prescribed by the MoEF&CC, the following Specific ToR points have been stipulated by SEAC:-**

Sr. No.	Terms of Reference	Cross Ref. in EIA Report
<b>1.</b>	1) The project proponent shall include the detailed analysis of GLC-2.5 with air modeling and shall prepare the wind-rose diagram of the site to plan the installation of PCDs.	Detailed analysis of GLC-2.5, along with air quality modeling and wind-rose diagram, has been incorporated in <b>Chapter-4</b> of the EIA Report.
<b>2.</b>	The project proponent will assess and erasure that, after ceasing mining operations, to undertake-regressing the mining area and any other area which may have been disturbed due to their mining activities and for restoration of the land to a condition which is fit for growth of fodder, flora, fauna etc.	An affidavit confirming reclamation and restoration commitments will be submitted during the Final EIA presentation.
<b>3.</b>	The project proponent shall conduct and submit a comprehensive mineral replenishment study to assess the rate and extent of natural replenishment of minerals in the leased area.	Not applicable, as this is a hill slope mining project.

4.	The project proponent shall submit a certificate from the Director (Industries) to the fact that the proposed mining site is recommended/approved on the basis of the District Survey Report prepared & approved by SEIAA authorities in conformity with the SO No. 141 (E), SO No. 3611(E) and as per Sustainable Sand Mining Management Guidelines, 2016 and Enforcement & Monitoring Guidelines for Sand Mining, 2020 published by MoEF&CC, GoI.	Certificate from the Director (Industries) will be submitted during the Final EIA presentation.
5.	Hard copy of the application along with the relevant document shall be ink signed & submitted in the office of SEIAA Secretariat.	Agreed and will be complied.
6.	The project proponent shall submit compliance report to the issue raised during public hearing.	Not applicable, as the draft EIA is being submitted for public hearing.
7.	The project proponent shall submit proposed EMP and including CER activities as its part. All the commitment made under EMP & CER shall be made in the form of affidavit.	CER has been included in EMP. Commitments under EMP & CER will be submitted in affidavit form during the Final EIA presentation.
8.	The project proponent must ensure that environmental samples are analyzed at laboratories located in close proximity to the project site to maintain the accuracy and integrity of results. During each sampling activity, videography and geo-tagged photographs must be captured to provide transparent evidence of proper sampling locations, methods, and handling practices.	Agreed; will be complied. Environmental samples will be analyzed at nearby accredited laboratories with videography and geo-tagged photographs maintained as evidence.

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## 1 INTRODUCTION

### 1.1 PURPOSE OF THE REPORT

The purpose of EIA study is to assess the beneficial and adverse impacts of the proposed stone, boulder, bajri & sand mining project on the existing environmental parameters, so that suitable control measures could be taken to reduce impacts. Thus, the EIA report is a summarized presentation of base line information of air, water, soil, noise, flora, fauna, socio-economic study, and the prevailing environmental scenario of the project activity and the likely impacts due to proposed project, to decide the suitable mitigation measures for implementation to maintain healthy working environment and pollution content within permissible limits.

The Ministry of Environment, Forest, and Climate Change (MoEF&CC) through its EIA notification number SO1533 (E) of 14<sup>th</sup> September 2006 and its subsequent amendment under the Environment Protection Act, 1986, classifies All mining lease area in respect of minor mineral under Category B.

The proposed project covers an area of 2.7891 hectares, located on private land with a hill slope terrain. Additionally, the project forms a cluster within 500 meters of an existing mining lease covering 4.8063 hectares, resulting in a total cluster area of 7.5954 hectares. As per the Mining officer's letter stating that there is one another mine lease within the 500-m periphery of the lease area, detail given below:-

**TABLE 1-1: DETAIL OF MINE LEASES WITHIN 500 METERS**

Sr. No	Name of mine lease	Area in Hectare	Khasra No.	Status of Mining Lease
1	M/s Lakhwinder Stone Crusher VPO Gondpur bulla, Tehsil Haroli District Una HP	4.8063 Hect.	1228,1691/ 1227,1692/ 1227	Operational
2	M/s Lakhwinder Stone Crusher VPO Gondpur bulla, Tehsil Haroli District Una HP	2.7891 Hect.	1236	Proposed
<b>Total Area = 7.5954 hectare</b>				

Environmental Management plays a vital role in the sustainable development of the country. Recognizing its importance, the Ministry of Environment, Forest & Climate Change, and Government of India has formulated policies and procedures governing the industrial and other developmental activities to prevent indiscriminate exploitation of natural resources and to promote integration of environmental concern in project development.

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The major objectives of the report are:-

- To establish the present environmental scenario,
- To anticipate the impact of proposed project and
- To suggest preventive and mitigation measures

The sand, stone, and bajri mining project covers an area of 2.7891 hectares. Its Terms of Reference (TOR) were approved through letter No. T025B0108HP5915931N dated 04-12-2025, attached as **Annexure-I**.

This is a newly proposed mining project with no forest land involved. Mining operations will be carried out through open-cast methods, employing both manual and semi-mechanical techniques. No drilling or blasting will be undertaken, and excavation will be restricted to bench formations of 6 x 6 meters. Minerals will be transported by road, and M/s Lakhwinder Stone Crusher, located 1.0 km away, is associated with the project.

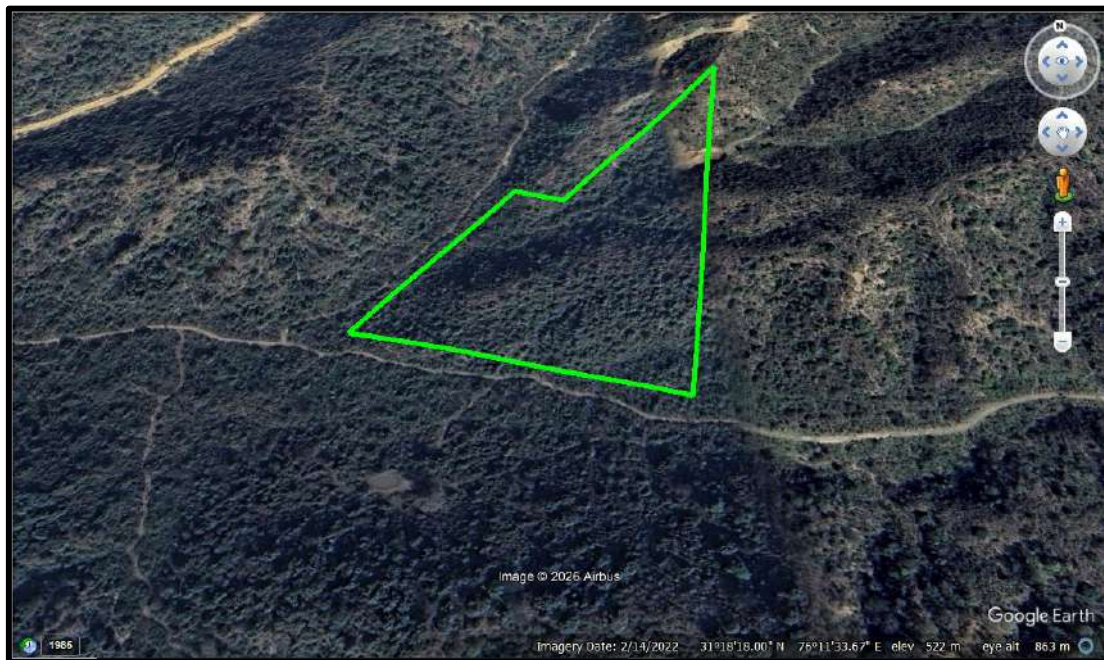
Environmental Baseline monitoring data has been taken from Dec 2025-Feb 2026.

## 1.2 IDENTIFICATION OF PROJECT

The proposed Hill Slope mining is for extraction of Sand, Stone & Bajri by Sh. Lakhwinder Singh, Proprietor of M/s Lakhwinder Stone Crusher, located at Khasra Nos. 1236, located at Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una, Himachal Pradesh.

The Letter of Intent has been sanctioned in favour of Sh. Lakhwinder Singh, Proprietor of M/s Lakhwinder Stone Crusher. This letter was issued by the Department of Industries, Himachal Pradesh, under reference No. Udyog-Bhu(Khani-4) Laghu-524/2025-13030 dated 28.03.2025. Letter of Intent is attached as **Annexure II** & joint Inspection Report & Tatima - Jamabandi attached as **Annexure II&VII**.

The Mining Plan has been approved vide letter no. Udyog-Bhu (Khani-4) Laghu-546/2025-524-4522 issued on dated 18.07.2025 is attached as **Annexure-IV**.



**FIGURE 1-1: LOCATION OF THE PROJECT**

### **1.3 PROJECT PROPONENT**

M/s Lakhwinder Stone Crusher is led by a team of committed and forward-thinking promoters with a vision to implement sustainable and regulated mining practices, while contributing to environmental conservation and regional.

The company has been actively involved in mining and allied activities since 2015 and is managed by highly trained and experienced professionals in the field of mining and resource management.

The key management personnel are as follows:- **Sh. Lakhwinder Singh , Proprietor of M/s Lakhwinder Stone Crusher.**

The owner possesses in-depth knowledge of Hill Slope mining operations and regulatory frameworks and are fully capable of managing and executing the project in an efficient, environmentally responsible, and legally compliant manner.

### **1.4 BRIEF DESCRIPTION OF THE PROJECT**

The proposed Sand, Stone, and Bajri mining project is located in Khasra Nos. 1236 located at Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una, Himachal Pradesh. The mining lease area covers 2.7891 hectares of Hill Slope and has been sanctioned in Favor of Sh. Lakhwinder Singh , Proprietor of M/s Lakhwinder Stone Crusher., vide letter Udyog-Bhu(Khani-4) Laghu-524/2025-13030 dated 28.03.2025. The project aims to extract 93,835 MTPA (excluding Waste) of minerals, with an estimated project cost of Rs. 10 lakhs. The Mining Plan has been approved on 18.07.2025. There are no litigations or court cases pending against the project.

**TABLE 1-2 SALIENT FEATURE OF THE PROJECT**

<b>Project Name</b>	Hill slope mining project for the extraction of sand, stone, and bajri proposed by Sh. Lakhwinder Singh , Proprietor of M/s Lakhwinder Stone Crusher
<b>Mining Lease Area</b>	2.7891Hectare
<b>Location of mine</b>	Khasra No. 1236, Mauza Gondpur bulla in Tehsil Haroli, District Una, Himachal Pradesh.
<b>Latitude</b>	31° 18' 30.34" N to 31° 18' 20.87" N
<b>Longitude</b>	76° 11' 35.01" E to 76° 11' 32.31"E
<b>Toposheet number</b>	H43E3
<b>Minerals of mine</b>	Sand, Stone and Bajri
<b>Proposed production of mine</b>	93,835 TPA (excluding Waste)
<b>Method of mining</b>	Semi mechanized
<b>No of working days</b>	270 days
<b>Cost of the Project</b>	10 lacs
<b>Water demand</b>	0.45 (Domestic) + 2.40 (Dust Suppression) =2.85KLD
<b>Sources of water</b>	Borewell is the water source for drinking and dust suppression.
<b>Manpower</b>	10
<b>Waste Generation</b>	40510 tons of mine waste in the form of Silty Sand and Topsoil and Clay will be mined.
<b>Nearest railway station</b>	Jaijon Doaba Railway Station: about. 7.30 km in the NW direction (Aerial Distance).
<b>Nearest state highway/national highway</b>	National Highway:- NH 503A (Mehatpur-Una Road) About 10.07 km in East direction (Aerial Distance) MDR 39 (Nangal Santokhgarh Taliwal Polian Jaijon Road) About 5.73 km in WSW direction (Aerial Distance)
<b>Nearest airport</b>	Ludhiana Airport: approx. 55.58 km in SSW Direction (Aerial Distance).
<b>Seismic zone</b>	Seismic zone -IV.

#### 1.4.1 Nature of the project

The proposed project involves mining sand, stone, and bajri from a hill slope lease area, following the guidelines of the Ministry of Environment, Forest and Climate Change (MoEF&CC) and the Himachal Pradesh State Government.



It is classified as a B1 category minor mineral activity under the EIA Notification, 2006 and its amendments. The mining lease area covers 5.611 hectares and is located in Khasra No.1236 , Mauza Gondpur bulla in Tehsil Haroli, District Una, Himachal Pradesh.

The site forms a cluster with three other mining leases within a 500-meter radius. Mining will be carried out using scientific and eco-friendly methods to minimize environmental impact and comply with all regulations.

Materials extracted will be used for construction activities like buildings, roads, and infrastructure development. The project is proposed by Sh. Lakhwinder Singh Prop. M/s Lakhwinder Stone Crusher, to meet the growing demand for construction aggregates in the region while maintaining environmental and safety standards.

#### **1.4.2 Importance of the Project to Country and Region**

The Hill Slope mining project is important for providing sand, stone, and bajri—key materials used in construction. It supports both local and national development by creating jobs, generating revenue, and helping build roads, bridges, and buildings. By following proper guidelines, the project also helps prevent illegal mining and promotes environmental care, making it vital for sustainable growth in the region.

### **1.5 SCOPE OF THE STUDY**

Based on the information contained in the documents submitted and the presentation made before the State Environment Impact Assessment Authority (SEIAA) during its meeting on 18/11/2025, the Terms of Reference (TOR) were issued on 04/12/2025, subject to specific and general conditions. TOR and its compliance have been already given above.

#### **1.5.1 Objective of the project**

- Identify safe hill slope mining zones using District Survey Reports, avoiding areas prone to landslides, erosion, or near infrastructure like roads and bridges.
- Adopt eco-friendly and scientific mining practices to extract sand, stone, and bajri without disturbing the natural slope or vegetation
- Monitor the quantity and quality of extracted minerals to prevent overexploitation and maintain resource balance.
- Comply with all environmental regulations and guidelines issued by central and state authorities.
- Implement safety measures such as retaining walls, drainage systems, and vegetation buffers to protect the slope and nearby habitat.
- Provide training to workers on safety, health, and environmental conservation specific to hill slope conditions.
- Engage with local communities and government bodies to ensure socially responsible mining operations.

- Submit regular updates and reports to authorities regarding mining progress and environmental safeguards.

### 1.5.2 Methodology

Based on a preliminary assessment of the environmental conditions at the Hill Slope Mining site and its surrounding areas, the central portion of the mining site has been designated as the **core zone**. This is the area most directly affected by mining operations, where fugitive emissions and other disturbances may significantly impact the nearby physical and biological environment.

A surrounding area within a **10-kilometer radius** has been identified as the **buffer zone**. In this zone, environmental impacts are expected to be minimal and occasional, primarily influenced by indirect or secondary effects of mining activities.

Environmental baseline monitoring for air, water, soil, and noise was conducted during the period of December 2025 to Feb 2026. The baseline data was generated by Noida Testing Laboratories, a NABL-accredited facility.

A comprehensive study was undertaken by the EIA team, led by an accredited EIA Coordinator and supported by approved Functional Area Experts. The team conducted detailed investigations covering all relevant environmental components, ensuring that the assessment reflects the site-specific characteristics and potential impacts of the proposed mining activity.

**Work Programme:-** The disciplines covered under the work programme are prerequisite information of the site, impacts and management plans. The above disciplines include the following method of collection & compilation of data and the resulting predictions.

i) Preparation of a checklist including the details of type and class of information required for preparing an environmental impact assessment report. Major environmental aspects (i.e., testing etc.) covered under the study area.

- a. Selection of the appropriate sampling stations for Soil, Water & Air within Core and Buffer zone of 10 km radius.
- b. Various offices of villages-Panchayat and Tehsils within the study area were approached for their socio-economic status, standards of living, and possible impacts on their status by the proposed mining activity.
- c. The concerned meteorological department was contacted for the meteorological data like Rainfall, Wind, Temperature and Humidity.
- d. The data was then compiled, and results were interpreted in the form of Graphs, Figures, Tabulations, and Illustrations.
- e. The impacts were predicted on the basis of baseline environmental data highlighting the positive & negative impact on account of proposed mining activities.
- f. Environmental Management Plan is prepared for mining project, suggesting various mitigation measures to reduce/eliminate adverse impacts of the hillslope mining and other aspects as may be required by the concerned authorities.

#### **1.5.2.1 Establishment of Baseline Environmental Status**

A comprehensive database detailing the baseline environmental conditions of the study area has been developed through the following approaches:-

**Review and analysis of existing secondary data**, including published literature, reports, and other relevant information sources.

**Collection of primary data** through initial site reconnaissance, field surveys, and environmental monitoring conducted specifically for this study.

#### **1.5.2.2 Environmental Impact Assessment**

The proposed project activities have been systematically analyzed in relation to the established baseline environmental conditions. This analysis identifies the environmental parameters likely to be affected and evaluates the potential impacts on each. Furthermore, the project's compliance with applicable national environmental standards and regulatory requirements has been thoroughly reviewed to ensure adherence to statutory norms.

#### **1.5.2.3 Preparation of Environment Management Plan**

The Environmental Management Plan (EMP) serves as a critical framework to ensure environmentally responsible and sustainable mining operations. Effective implementation of mitigation measures depends on a well-structured EMP that outlines strategies to minimize adverse environmental impacts arising from Hill Slope mining activities.

The EMP for the proposed Hill Slope Mining project has been developed to address the following key components:-

- Detailed management strategies for environmental protection during all phases of the project.
- Pollution control and mitigation measures aimed at reducing negative impacts during both the operational and post-operational phases.
- Post-project environmental monitoring programme to track the effectiveness of mitigation measures and ensure ongoing compliance.

The study area encompasses a 10-kilometer radius around the proposed mining site. Baseline environmental quality was assessed using primary data collected between Oct to Dec 2025 and supplemented with secondary data from credible sources.

#### **1.5.2.4 Structure of Eia Report**

The generic structure of the report is given below:-

Chapter 1: Introduction

Chapter 2: Project Description

Chapter 3: Description of the Environment

Chapter 4: Anticipated Environmental Impacts and Mitigation Measures

Chapter 5: Analysis of Alternatives (Technology & Site)

Chapter 6: Environmental Monitoring Program

Chapter 7: Additional Studies

Chapter 8: Project Benefits

Chapter 9: Environmental Cost Benefit Analysis

Chapter 10: Environmental Management Plan

Chapter 11: Summary and Conclusion

Chapter 12: Disclosure of Consultant Engaged

## **1.6 STATUS OF LITIGATION**

There are no litigation/ court cases pending against the project as on date.

## **1.7 REGULATORY REQUIRMENT**

The following rules and guidelines are applicable for the selection of site, establishment of mining operations, design of the facility, and environmental monitoring for hill slope mining projects:-

- ❖ Environmental Impact Assessment Notification S.O. 1533 (E) dated 14th September 2006, along with its subsequent amendments, governs the requirement for prior environmental clearance for mining activities.
- ❖ Mineral Conservation and Development Rules (MCDR), 2017, as amended, provide detailed provisions for sustainable mining practices, including environmental safeguards and reporting obligations.
- ❖ Guidelines for Preparation of Mining Plan and Mine Closure Plan (2025) issued by the Ministry of Coal, which emphasize restoration, remediation, and post-mining monitoring.
- ❖ Consent to Establish and Operate under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974, as mandated by the respective State Pollution Control Board.
- ❖ Forest (Conservation) Act, 1980, if the mining site involves forest land.
- ❖ The Himachal Pradesh Minor Mineral (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, which regulate riverbed mining activities within the state.

### **1.7.1 Guidance Applicable for Hill slope Mining by CPCB**

#### **i) Categorization of Hill Slope Mining Activities**

CPCB classifies riverbed/hillslope mining (excluding manual excavation) under the red and orange categories depending on the scale and clustering of operations:-

**Red Category:-** Mining lease area >5 hectares or part of cluster mining.

**Orange Category:-** Standalone mining lease area ≤5 hectares not part of any cluster.

## ii) Environmental Concerns Highlighted

CPCB emphasizes that Hill Slope mining can lead to:-

- Increased soil erosion and slope instability
- Alteration of hydro-geological conditions
- Disruption on nearby river systems and aquatic life

## iii) Cluster Mining Definition

Mining leases within 500 meters of each other are considered part of a cluster, which requires cumulative impact assessment and stricter monitoring.

## iv) Enforcement & Monitoring Guidelines for Sand Mining (2020)

These guidelines, adopted by CPCB and MoEF&CC, mandate:-

- Manual extraction methods in sensitive zones
- Restrictions on use of heavy machinery
- Compliance with District Survey Reports (DSRs)
- Seasonal bans during monsoon months (June to September in Himachal Pradesh).

## v) District Survey Reports (DSRs)

CPCB requires DSRs to be prepared for each district to assess mineral availability, environmental sensitivity, and regulatory compliance. The District Survey Report (DSR) outlines sustainable mining practices and monitoring protocols for the district.

### 1.7.2 Relevant Provision of Riverbed/Hill Slope Mining Rules

- Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2015 (Amended 2024)
- Himachal Pradesh Mineral Policy, 2024
- Forest (Conservation) Act, 1980
- District Mineral Foundation (DMF) Rules, 2025

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## 2 PROJECT DESCRIPTION

### 2.1 GENERAL

The proposed project is a Hill Slope mining project for extraction of Sand, Stone and Bajri situated at Khasra No. 1236 in Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una, Himachal Pradesh having lease area of 2.7891ha. The lease has been sanctioned in favour of Sh. Lakhwinder Singh , Proprietor of M/s Lakhwinder Stone Crusher vide letter no. Udyog-Bhu (Khani-4) Laghu- 524/2025-13030 Dated 28.03.2025. Copy of LOI is attached as **ANNEXURE-III**.

As per MoEF & CC New Delhi Gazette dated 14<sup>th</sup> September 2006 and amended thereafter, the proposed mining project is categorized as category 'B1' project. As per the mining officers letter stating that there are one another mine lease exist within the periphery of 500 meters from the project site. Resulting the total area of all mines are 7.5954 ha. The proposed mining activity will be carried out from Hill Slope. It has been proposed to collect 93,835 MTPA Sand, Stone & Bajri. Max. 40510 TPA of mine waste in the form Silt Sand and Topsoil will be generated as a waste. As per the approved mine plan vide letter no. Udyog – Bhu (Khani -4) Laghu-524/2025-4522 issued on dated 18.07.2025 attached as **ANNEXURE-IV**.

The lease area is situated in the Hill Slope. The height elevation point of the mining lease area is 524 Meters above MSL and the lowest point is 500 meters above MSL The proposed activity is to take place on the Hill Slope and hence there will be a temporary change in land use. The mining lease is a private land in the form of hill slope and is scarce of any kind of vegetation except small bushes and plants. After Ceasing mining operation, the site will be rehabilitated through tree plantation.

### 2.2 SITE HISTORY

The proposed mining site at the Hill Slope has been identified by the Joint Inspection Committee as a suitable location due to natural sediment deposition. Historically, the region has seen unregulated mining, prompting stricter policies by the Himachal Pradesh Government. The site has undergone environmental assessments and is free from erosion-prone zones or sensitive infrastructure. Mineral deposits like Sand, stone and Bajri have been evaluated for sustainable extraction. Mining will follow depth limits and environmental norms under the EIA Notification 2006 and Sand Mining Guidelines 2016.

The Joint Inspection Committee has identified the proposed mining site on the hill slope as suitable, owing to the presence of naturally deposited sediments. In the past, the region experienced unregulated mining activities, which led the Himachal Pradesh Government to implement stricter regulatory measures.

### 2.3 TYPE OF PROJECT

The proposed activity is a Hill Slope Mining Project for the extraction of minor minerals such as sand, stone, and bajri from Khasra No. 1236 in Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una, Himachal Pradesh. The project falls under Category 'B1' as per the EIA Notification, 2006 and its subsequent amendments. Although the individual mining lease area is 2.7891 hectares, it forms part of a cluster as defined under the MoEF & CC guidelines, with three other mining leases located within a 500-meter radius. The total cluster area of 7.5954 hectares requires an Environmental Impact Assessment (EIA) and appraisal by the State Expert Appraisal Committee (SEAC).

The proposed mineral extraction will be carried out using manual and semi-mechanized methods, without the use of drilling or blasting techniques, thereby ensuring minimal disturbance to the environment.

### 2.4 NEED FOR THE PROJECT

The mining activities as proposed are the backbone of all construction and infrastructure projects as the raw material for construction is made available only from such mining. The sand, stone and bajri extraction are in high demand at the local market for real estate and infrastructure industry. Project will also provide employment to local people. Some environmental benefits of the project are as follows:-

- ✓ Slope Stabilization and Erosion Control
- ✓ Improved Surface Runoff Management
- ✓ Protection of Agricultural Land
- ✓ Reduction in Illegal Mining Activities
- ✓ Dust and Noise Mitigation (with Eco-Friendly Methods)
- ✓ Reclamation and Afforestation Opportunities

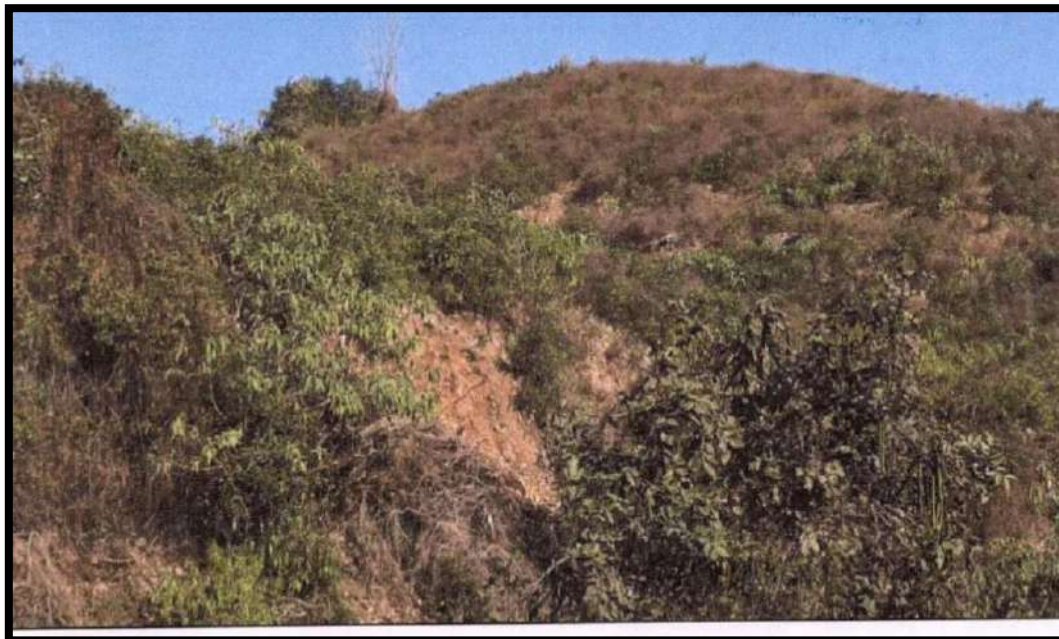
To meet the growing demand for materials in the region, the project will supplement the limited supply from government-leased mining areas, thereby supporting legal and sustainable mining practices.

### 2.5 LOCATION OF THE PROJECT

The mining lease area is situated in Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una, Himachal Pradesh, covering a total area of 2.7891 hectares, as delineated in Topographical Sheets No. H43E3. **Figure 2.3** presents the buffer map highlighting key features within a 10 km radius of the mining lease area. **Figure 2.1** illustrates the pillar coordinates delineating the boundaries of the lease site. According to the revenue records provided in the table below.



**FIGURE 2-1:-GOOGLE IMAGE SHOWING PILLAR CO-ORDINATE OF THE PROJECT SITE**



**FIGURE 2-2 SITE PHOTOGRAPH**

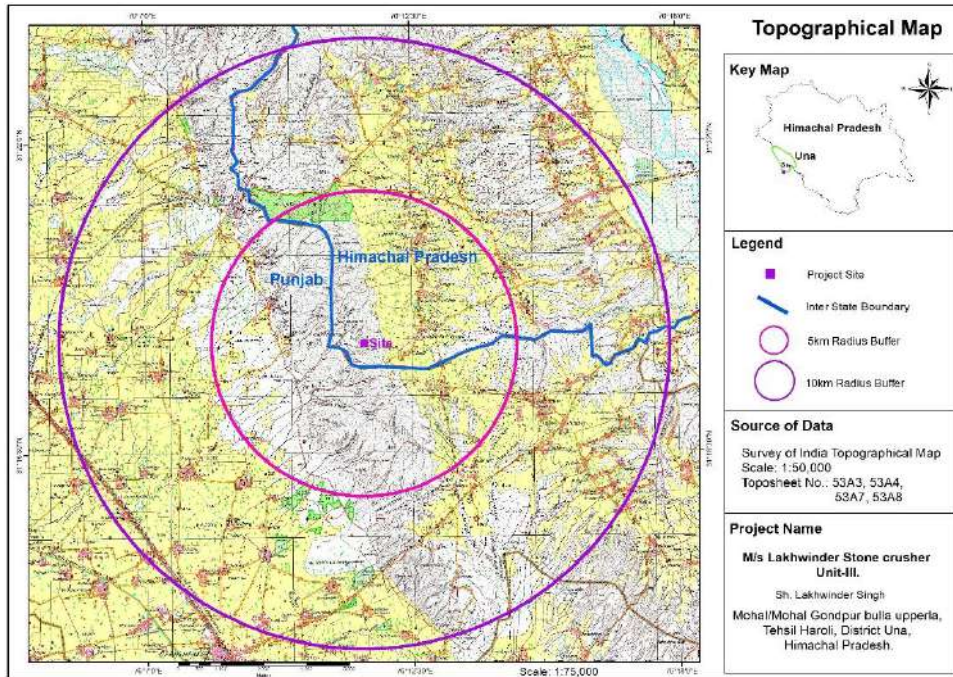


FIGURE 2-3:-MAP SHOWING 5 KM & 10 KM BUFFER FROM THE PROJECT SITE

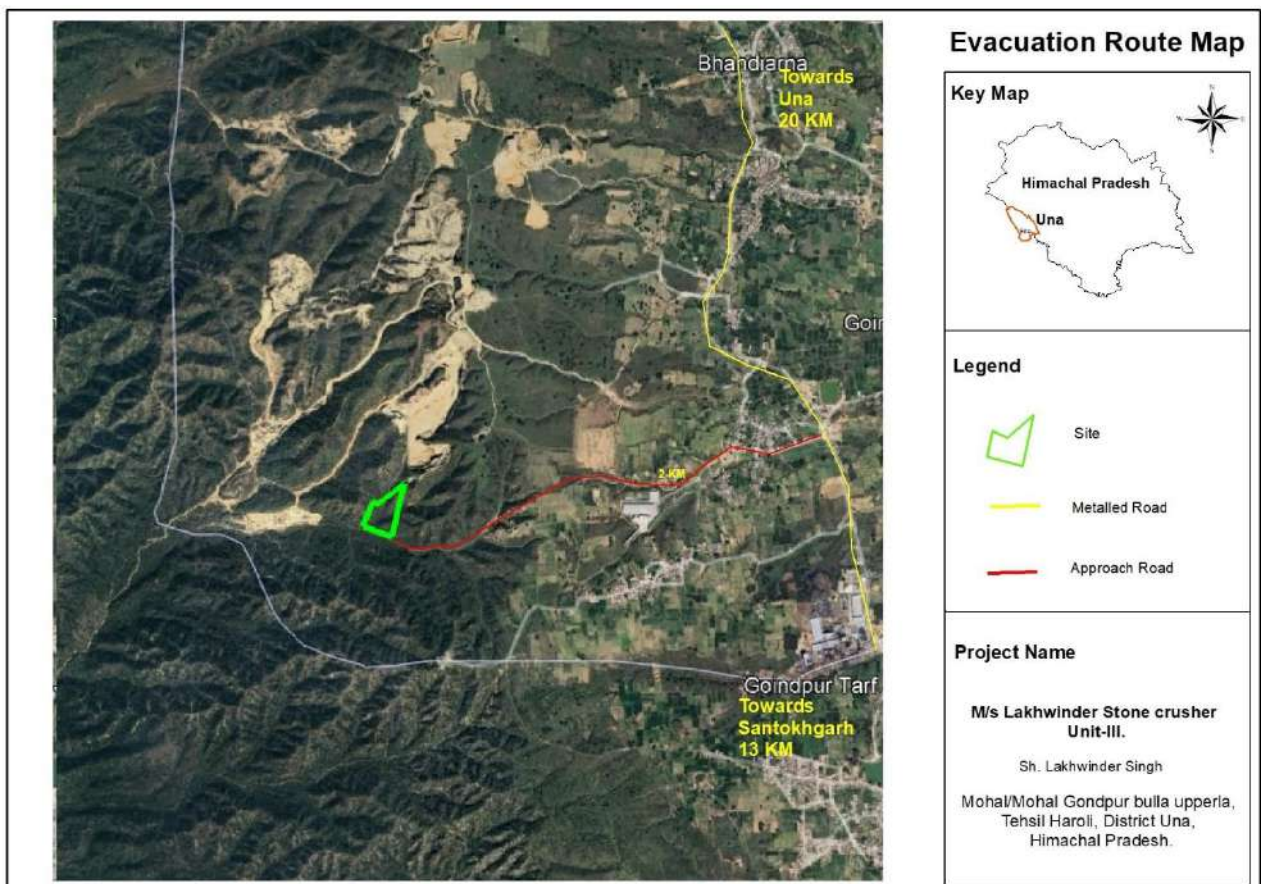


FIGURE 2-4 EVACUATION ROUTE MAP

Details of the area covered under the mining lease, as specified in the approved mine plan.

**TABLE 2-1: DETAILS OF MINING LEASE AREA**

Sr. No	Khasra Number	Area in Hectare	Owner of Land	Kisam	Mauza /Mohal	Name of Panchayat
1.	1236	2.7891Hectares	Private Land	Banjar Khadeem	Mauza Gondpur bulla	Gondpur bulla

## 2.6 SIZE AND MAGNITUDE OF OPERATION

The proposed Hill slope mining project by Sh. Lakhwinder Singh , Proprietor of M/s Lakhwinder Stone Crusher is located Khasra Nos. 1236, covering a total area of 2.7891 hectares of private hill slope land. The site falls within Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una, Himachal Pradesh. Due to the presence of one other leases within 500 meters, the project forms a cluster of 7.5954 hectares falling Category 'B1' project under EIA Notification, 2006. The project aims to extract 93,835 TPA of sand, stone, and bajri using manual as well as semi-mechanized methods, without drilling or blasting. Max. 40510 TPA of mine waste in the form of Silty sand and Topsoil, will also be collected.

## 2.7 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION

The implementation of the proposed Hill Slope mining project is expected to follow the schedule below, subject to timely approvals from regulatory authorities:-

S. No.	Activity	Estimated Time frame
1	Submission of EIA/EMP Report to SEIAA	Month 1
2	Public Consultation (if applicable)	Month 2-3
3	Appraisal and Grant of Environmental Clearance	Month 4-5
4	Grant of Mining Lease by State Government	Month 6

S. No.	Activity	Estimated Time frame
5	Site Preparation and Mobilization	Month 6-7
6	Commencement of Mining Operations	Month 7 onwards

## 2.8 TECHNOLOGY AND PROCESS DESCRIPTION

The project will use manual and semi-mechanized methods to extract sand, stone, and bajri from the Hill Slope. Tools like shovels etc will be used for collection and transport. Only Manual Mining will be carried out. No drilling or blasting will be involved. Mining will be limited to non-monsoon periods, and silt and clay mixed with sand will also be recovered and sold. All activities will follow the Sustainable Sand Mining Guidelines, 2016 and Himachal Pradesh Mineral Policy to ensure environmental compliance.

## 2.9 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY FOR THE RISK OF TECHNOLOGY FAILURE

The adoption of new and untested technology in Hill Slope mining requires careful scrutiny due to Himachal Pradesh's fragile terrain and ecological sensitivity. Operational reliability, environmental compatibility, and safety under local conditions must be prioritized to prevent risks such as soil erosion, slope destabilization, and hydrological imbalance. Pilot-scale trials and continuous monitoring are essential to validate performance before full-scale deployment. Robust contingency measures should be in place to address unforeseen failures swiftly. A phased and cautious approach ensures that mining activities remain sustainable. Ultimately, responsible technology assessment will help balance resource extraction with the preservation of the region's delicate mountain ecosystems.

## 2.10 GENERATION OF MINE WASTE AND ITS DISPOSAL

Max. 40510 TPA of Topsoil and Silt sand/Clay will be generated as waste during mining operation. Waste will be spread over abandoned and exhausted benches and Road Levelling ultimately so that it can be developed for plantation purposes.

## 2.11 GEOLOGY

### 2.11.1 Local Geology

The Shivalik group mainly represent the rock of the district. In addition to this at few places the newer alluvium of quaternary age is also present. The applied lease area forms a part of hill slope and is covered with B Members of the Upper Shivalik Formation. The Hill side is mainly comprised of thick boulder cobbles, pebbles, river borne Bajri, Clay and Sand/Silt deposits of terrace alluvium.



**TABLE 2-2 STRATIGRAPHY OF THE AREA**

Lithostratigraphy of District Una				
Group	Lithology		Age	
			Approx. Thickness	
Never Alluvium	Sand, silt, gravel and Pebbles		Quaternary	Variable
Shivalik Group	Upper Shivalik	B	Predominantly massive conglomerate with red and orange clay as matrix and minor sandstone and earthy buff and brown calystone	2300 meter
		A	Sandstone, clay and conglomerate alternation	
	Middle Shivalik	B	Massive Sandstone with minor conglomerate and local variegated claystone	1400 to 2000 meter
		A	Predominantly medium to coarse-grained sandstone and red clay alternation, soft pebbly with subordinate claystone, locally thick prism of conglomerate	
	Lower Shivalik	B	Alternation of fine to medium-grained sporadically pebbly sandstone, calcareous cement and prominent chocolate and medium maroon claystone in the middle part	1600 meter
		A	Red and mauve claystone with thin intercalations of medium to fine grained sandstone	

*Lithostratigraphy of Una District*

### 2.11.2 Geology of the Una District

The district Una lies in the south-western of Himachal Pradesh. It is bounded by Kangra district in the north and north-east, Hamirpur district in the east, Bilaspur in the south-east and Punjab in the west and south. The district is stretched between 31°17'52"-31°52'0" north longitudes and 75°58'0"-76°28'25" east longitudes. Una district covers an area of 1,550 sq. km. Himalayan foothill zone bounded by plains of Punjab in the east and Solasinghi Dhar in the east. In the western part also, there is hill range whose maximum height is about 600 meters. The ranges trend in a general NW-SE direction and the area between these forms' longitudinal valley of the Swan River. The altitudes of the area vary from 350 meters to 1,200 meters on the Solasinghi Dhar. The stratigraphy of the area is given in table 2-2.

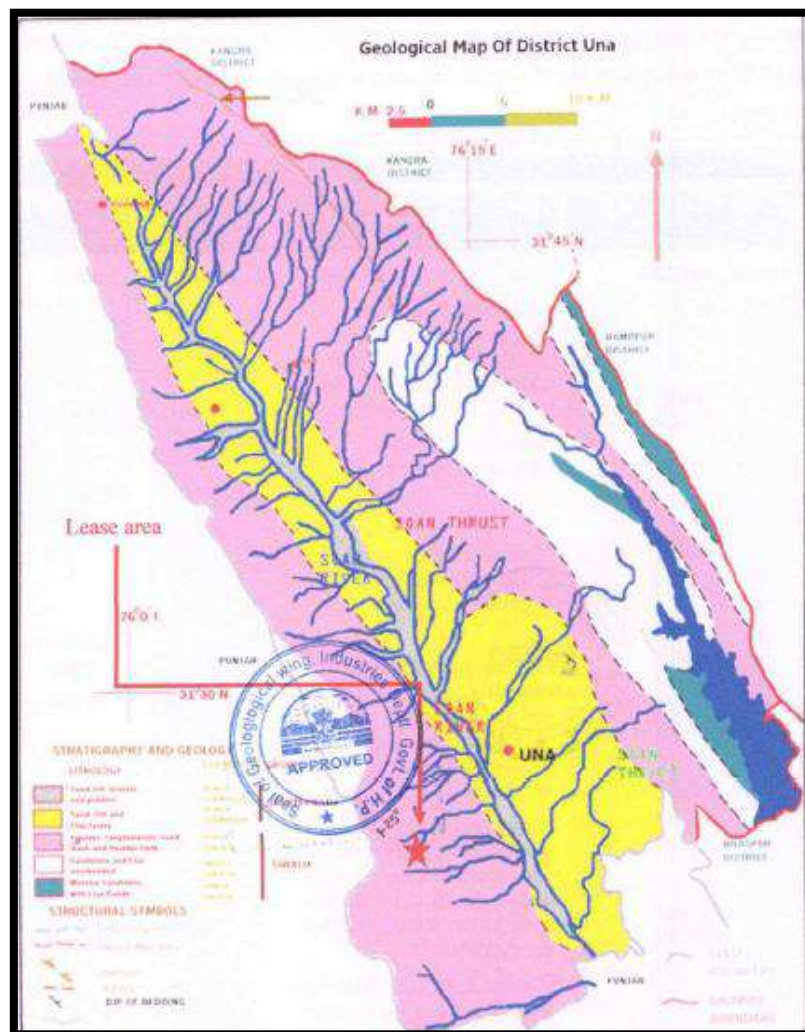
Shivalik range experience heavy rainfall. The Swan River is itself a tributary of Satluj river and the confluence is just south of Santokhgarh. The hill ranges covered by scanty vegetation comprising, mostly shrubs. The breadth of Jaswan Dun valley ranges from 7

Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III

kilometres to 14 kilometres and the town of Una which is not in the middle of the Dun is on the elevation of 427 above the sea level.

While Una is bounded by the river Beas on the north and river Satluj in the east, the Swan River which is basically a seasonal river flows right across the Jaswan valley towards south and submerges in the Satluj near Anandpur. The Swan River indeed is the life belt of Jaswan-Dun Valley which on its course receives innumerable tributaries both from left and right thereby abounds quick sands and is risky to cross when in speed. Geological map of the district Una is given in below figure 2.3.

\*Source- [http://cgwb.gov.in/District\\_Profile/HP/Una.pdf](http://cgwb.gov.in/District_Profile/HP/Una.pdf)



**FIGURE 2-5:-GEOLOGICAL MAP OF UNA DISTRICT**

## 2.12 TECHNOLOGY AND PROCESS DESCRIPTION

The mining is confined to extraction of Sand, Stone and Bajri from the proposed mine site. The extracted minerals will be collected in their existing form and sent to the existing stone crusher for making desirable grit. The mining lease area is located on a hilly terrain and suitable material is available in the whole of the mining lease area. Keeping in view the suitability of the material, the open cast mining method is proposed by formation of 6x6-meter benches from top of the mine lease area till bottom. This method of mining is adopted on the basis of concept of changing hill slope within the proposed limits of mining that the ultimate pit limit and restoring the area by making benches and terracing the hill slope thereby least disturbance of the area due to mining. Working in the mine lease area shall mostly be done through Semi-mechanical and mechanical means and wherever required, by manual operations however, no drilling blasting operation shall take place.

The size or amount of production of material from the lease area will depend upon following factors:-

### Considerations:-

- The size or amount of minerals production is depending upon the anticipated demand of the materials in the market.
- The extracted minerals will be used for construction industries.
- The top bench proposed at 524 meters level.
- The bottom bench is proposed at 500 meters level.
- Total 5 benches are proposed.
- The bench height & width would of 6 x 6 meters.
- The major mining activity will be undertaken during the dry seasons only.
- No mining will be undertaken during monsoon period.
- The average specific gravity of the minor mineral has been taken as 2.25 for calculation of reserves and one meter depth is taken for calculation reserve.
- Mined mineral i.e., sand, stone and bajri will be loaded in tractor trolley/trucks and transported through evacuation route shown in **Fig 2.4** for stone crusher unit for manufacturing Grit.
- The proposed mining lease area is measuring 2.7891 Hectare. It has been proposed to collect Maximum 93,835 TPA of Sand, Stone & Bajri and Max. 40510 TPA Mine Waste will be generated during mining process.

### (a) Mineable Reserve

An average specific gravity of 2.25 has been considered for reserve calculations. The mining operation will be carried out through open-cast methods, involving the development of benches measuring 6 meters in height and 6 meters in width, progressing downward from the top of the mine lease. In accordance with the mining policy, production is permitted at approximately 1,34,345 TPA (including waste) each year.

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## 2.13 PROJECT DISCRIPTION

The mining lease has been proposed by Sh. Lakhwinder Singh , Proprietor of M/s Lakhwinder Stone Crusher. The mining lease area is 2.7891 Hectare located Khasra 61236 in Mauza Gondpur bulla, Tehsil Haroli, District Una, Himachal Pradesh. It has been proposed to collect approximately 93,835 TPA of sand, stone & bajri including mine waste. 40510 TPA of mine waste in the form of Silty sand & Topsoil will be generated. The baseline monitoring for months Dec 2025 to feb 2026 has been done.

## 2.14 PRODUCTION PARAMETERS

The primary requirement of the project is the extraction of boulders to produce desirable grit. Accordingly, the lease holder proposes to mine mainly sand, stone, and bajri from the hill slope. The material will be extracted by Manually as well as Semi Mechanized manner & crushed to the required size, while the remaining material will be separated into sand and bajri through primary screening. Since the mining activity is carried out on a hill slope, the calculation of reserves is based on prevailing market technology and processing practices rather than conventional geological classification.

**TABLE 2-3 PERCENTAGE OF MINERAL IN MINE LEASE AREA**

Sr.No.	Minerals	Percentage in mine lease area(%)
1.	Stone	40%
2.	Bajri	30%
3.	Sand	15%
4.	Silt	15%
<b>Total</b>		<b>100</b>

\*Source:- Approved Mine Plan

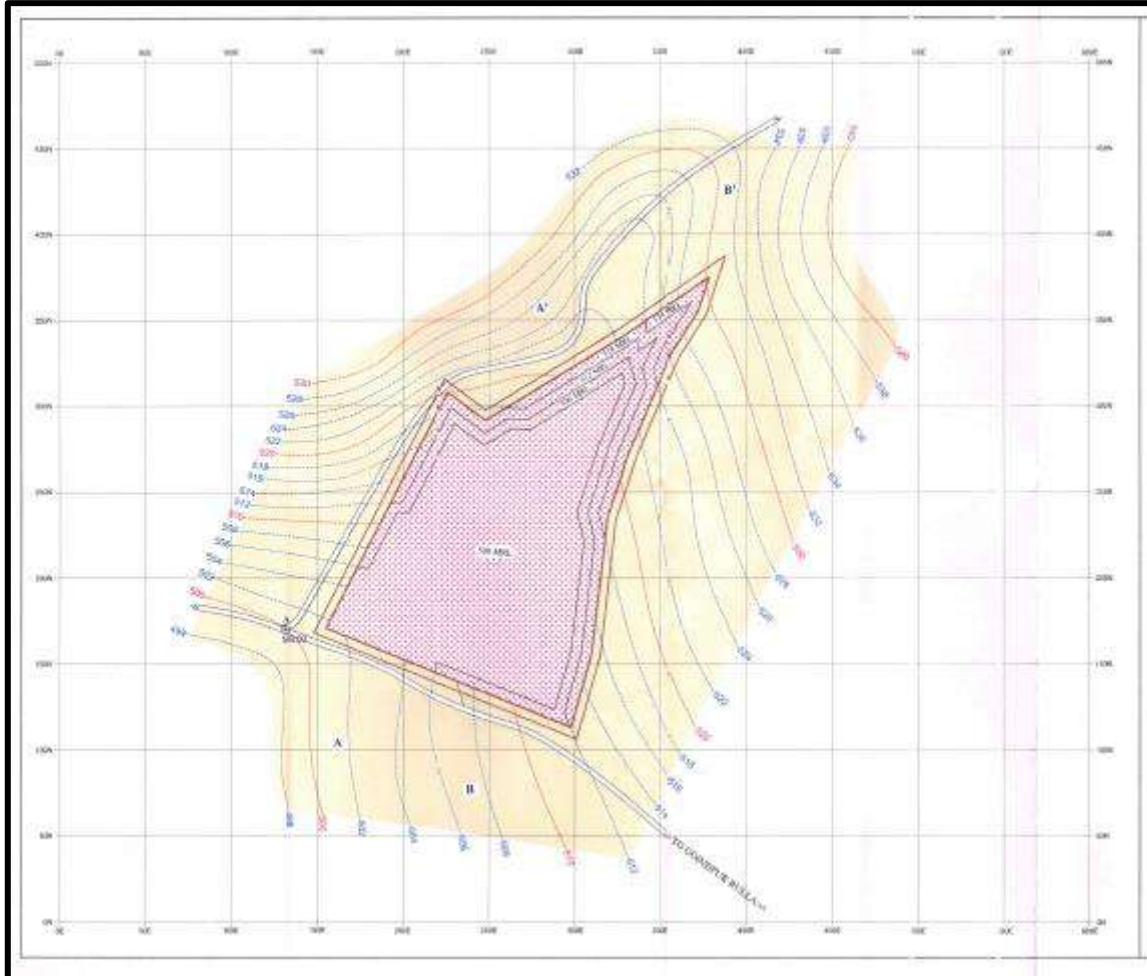
The Mineral production target for the Next five years is given below.

**TABLE 2-4 YEAR WISE PRODUCTION OF MATERIAL (IN MT)**

Year	Sand, Stone and Gravel/Bajri	Mine waste	Total
1 <sup>st</sup> Year	93,800	40,365	1,34,165
2 <sup>nd</sup> Year	93,800	40,172	1,33,972
3 <sup>rd</sup> Year	93,800	40,251	1,34,051
4 <sup>th</sup> Year	93,800	39,717	1,33,517
5 <sup>th</sup> Year	93,835	40,510	1,34,345
<b>Total</b>	<b>4,69,035</b>	<b>2,01,015</b>	<b>6,70,050</b>

### 2.15 WORKING DEPTH (BELOW GROUND LEVEL)

The mining activity will be carried out on a hill slope. During the lease period, material will be extracted progressively from the top surface down to the base through the systematic formation of benches, each measuring 6 meters in height and 6 meters in width.



**FIGURE 2-6: WORKING PLAN OF MINE LEASE AREA**

### 2.16 QUANTITY OF WASTE TO BE GENERATED (LIQUID & SOLID) AND Its MANAGEMENT:-

No liquid effluent will be generated during this process. 40510 TPA of mine waste will be generated as waste during the mining process. Waste will be used for road filling works & back filling of exhaust benches and Plantation purpose.

Municipal waste generation envisaged from the project is minimal i.e. 2.4 Kg/day as only 10 persons will be employed at site. Garbage bins for dry and wet waste will be provided in rest shelters. Biodegradable waste will be composted in compost pits. Other waste will be sent to crusher site from where it will be disposed to common disposal site of village. No waste will be disposed of the project site.

## 2.17 RECLAMATION AND RESTORATION

- The mined area lies on a hill slope and cannot be reclaimed for agriculture or other permanent land uses.
- The lease area will continue to remain a hill slope both during and after mining operations.
- Thus, the natural topography and land use of the khad bed will not undergo any permanent change.
- As per the mining plan, five check dams/retaining walls are proposed to be constructed at vulnerable locations to stabilize the area and prevent debris from collapsing.
- For restoration purposes, benches of 6 m × 6 m will be systematically formed to stabilize the hill slope, control erosion, and facilitate natural vegetation growth. This benching method ensures safe gradients, prevents debris movement, and supports long-term reclamation of the mined area.

### Plantation

As per the mining plan, the entire lease area lies within the hill slope. After the formation of benches, year-wise plantation has been proposed in the mined-out sections at the end of each year. This ensures that reclamation of the mined-out area is achieved through systematic plantation within the lease boundary. Fast-growing species have been selected and planted in consultation with the Forest Department of the relevant circle, thereby promoting ecological restoration, slope stabilization, and long-term environmental sustainability.

### Year Wise Survival Rate

Though the survival rate is about 70 percent in the area. However, after yearly review it will ensure that the plants will be looked after and in case of failure of some plants to survive, these will be promptly replaced. Thus, by the end of five years, the survival rate will be ensured to be at least 90 percent.

## 2.18 EMPLOYMENT GENERATION/MANPOWER REQUIREMENT

- The mining activity in the lease area will thus give direct employment to about 10 persons engaged in extraction of sand, stone & bajri: loading of material into tractor trolleys and tipper trucks.
- The sand, stone & bajri shall be transported to the existing crusher unit and then transported to the market after making desirable grit. Thus, for transportation of material about two staff, six drivers and ten helpers shall be engaged.
- Project will also generate indirect employment for skilled and semi-skilled workers. Thus, the project helps in increasing the socio-economic status or livelihood of the nearby villagers.

**TABLE 2-5: EMPLOYMENT DETAILED**

<b>Sr.No.</b>	<b>Category</b>	<b>Number</b>
<b>1.</b>	Administrative	1
<b>2.</b>	Supervisory	1
<b>3.</b>	Drivers	4
<b>4.</b>	Mining workers	4
<b>Total</b>		<b>10</b>

### **2.19 TRANSPORTATION OF THE MINERALS**

- The lease area is having gentle slope with a gradient of less than one degree, hence, tracks for the movement of trucks and tractors can be made and maintained in any part of the lease area.
- The loaded tractor trolleys/trucks would carry the material to the market for captive stone crusher. The crusher site, at a distance of about 1.0 km from the mining site. About 347 metric tons of sand, stone and bajri would be required to

#### **During mine operation traffic intensity**

Total Production : 93835 TPA (Excluding Waste)

No. of working days : 270 Days

Per day capacity of mine : 347 tonnes/day

Trolley/Truck capacity : 9 tonnes

No. of trip deployed : 39 trips/day

Working hours per days : 8 hours

No. of trucks deployed/h : Approx. 5 tractor trolley

be moved daily.

### **2.20 POWER, WATER SUPPLY AND OTHER ONSITE REQUIREMENTS**

#### **Conceptual Scheme of Mining**

- The mining is proposed in between 524 m R.L & 500 m R.L.
- In totals 05 number of benches are suggested at following levels:-

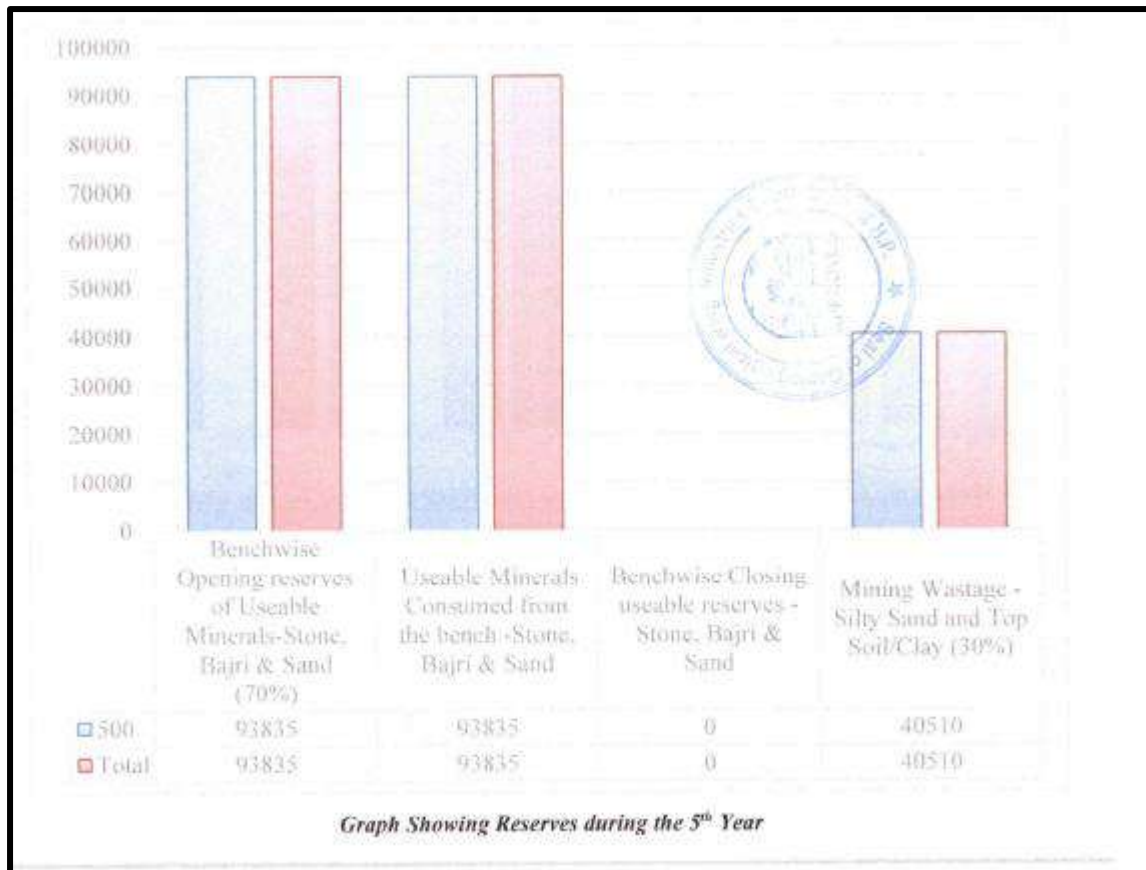
<b>Number of Benches</b>	524 meters level
	518 meters level
	512 meters level
	506 meters level
	500 meters level
	500 meters level

- The main commercially exploitable material is Sand, Stone & Bajri.
- 270 working days have been taken for the purpose of calculation.
- Check dam/Retaining walls shall be erected at vulnerable points, towards valley side of active working bench, so that no material rolls down on the slope.
- Mining shall be done manually & Semi mechanized. No blasting is required.
- The stone from the mining lease area will be used for captive stone crusher.
- The material shall be loaded into trucks & transported to the interlinked crusher.
- The Buffer zone of 5.0 meters has been kept around the boundary of the proposed mine site for safety point of view.

**TABLE 2-6 YEAR WISE PRODUCTION PROGRAMME IN METRIC TONES**

Year	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	Total
<b>Stone/Stone &amp; Bajri</b>	93800	93800	93800	93800	93835	<b>4,69,035</b>
<b>Mine Waste</b>	40365	40172	40251	39717	40510	<b>2,01,015</b>

\*Source: Approved Mine Plan



(\*Source:-Approved Mine Plan)

FIGURE 2-7: GRAPH SHOWING THE YEAR WISE EXCAVATED OF THE MATERIAL

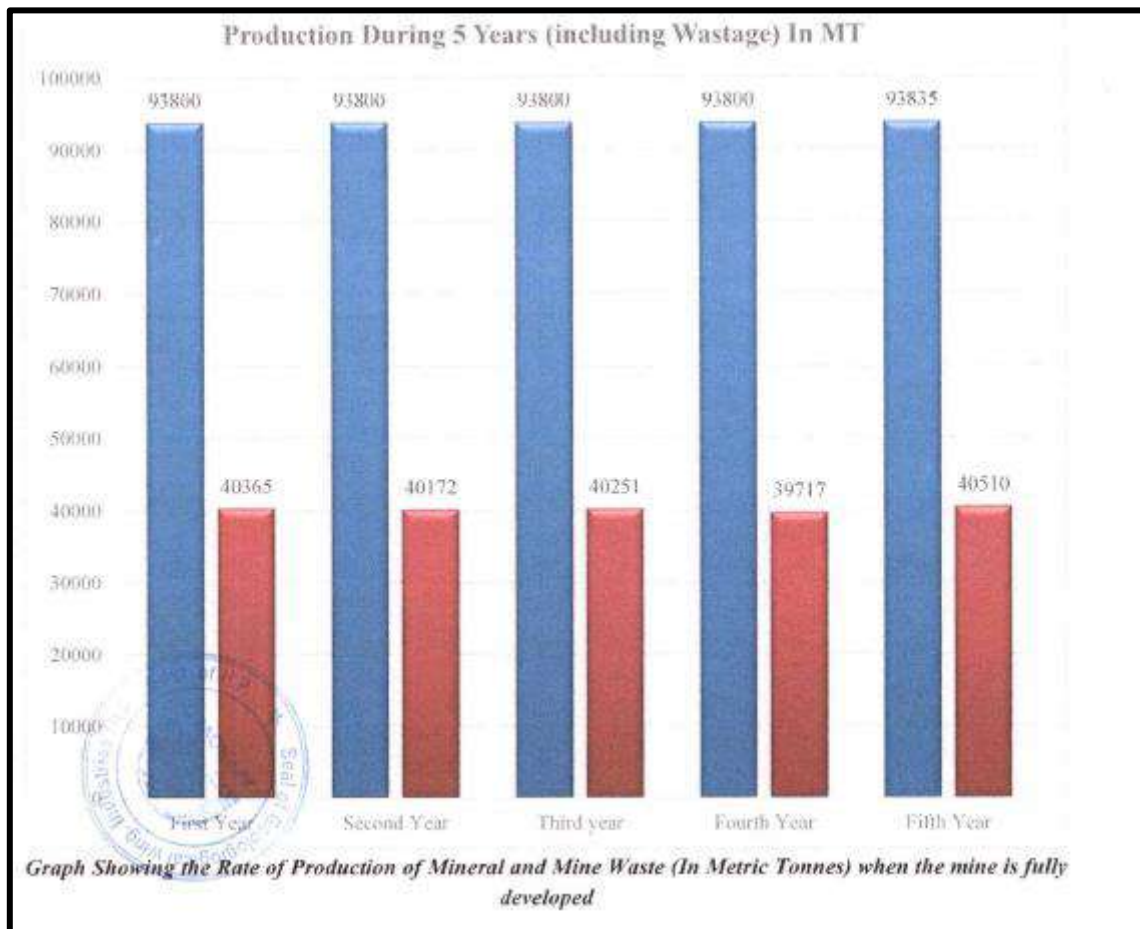
TABLE 2-7 YEAR WISE PRODUCTION

Year	Production of Material (in MT)		Total
	Sand, Stone and Bajri	Mine Waste	
1 <sup>st</sup> Year	93,800	40,365	1,34,165
2 <sup>nd</sup> Year	93,800	40,172	1,33,972
3 <sup>rd</sup> Year	93,800	40,251	1,34,051
4 <sup>th</sup> Year	93,800	39,717	1,33,517
5 <sup>th</sup> Year	93,835	40,510	1,34,345
<b>Total</b>	<b>4,69,035</b>	<b>2,01,015</b>	<b>6,70,050</b>

(\*Source:- Approved Mine Plan)

### 2.20.1 Mining Methodology

During the lease period, the mining will be done from the top to bottom.



**FIGURE 2-8: FIVE YEARS OF WORKING PLAN OF MINE LEASE AREA**

### 2.20.2 Proposed Year Wise Production Detail:-

**1<sup>st</sup> Year:** - Annual production proposed to meet the requirement of stone crusher unit would be around 93,800TPA Sand, Stone and Bajri and Sand for the 1<sup>st</sup> year. For this, benches in block at 524 m-512. R.L shall be opened with total useable reserve of 153720 metric tons.

#### 1st YEAR PRODUCTION

Bench	Duration	Rl of Bench	Benchwise Opening reserves of Useable Minerals-Stone, Bajri & Sand (70%)	Useable Minerals Consumed from the bench -Stone, Bajri & Sand	Benchwise Closing useable reserves - Stone, Bajri & Sand	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
1, 2 & 3	First Year	524	5670	5670	0	2430
		518	37800	37800	0	16200
		512	110250	50330	59920	21735
		<b>Total</b>	<b>153720</b>	<b>93800</b>	<b>59920</b>	<b>40365</b>

**2<sup>nd</sup> Year:** - During this year 93,800 metric tonnes of Sand, Stone and Bajri and Production is proposed to meet the requirement of the stone crusher unit. To fulfil this requirement, remaining material from the bench at 512 m. to 506 R. L. with total usable reserve of 222775 M.T. The remaining material of this bench shall be used in the next working year.

### 2<sup>nd</sup> YEAR PRODUCTION

Production Of Each Mineral in Second Year ( In MT)						
Bench	Duration	Rl of Bench	Benchwise Opening reserves of Useable Minerals-Stone, Bajri & Sand (70%)	Useable Minerals Consumed from the bench -Stone, Bajri & Sand	Benchwise Closing useable reserves - Stone, Bajri & Sand	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
3 & 4	Second Year	512	59920	59920	0	25515
		506	162855	33880	128975	14657
		<b>Total</b>	<b>222775</b>	<b>93800</b>	<b>128975</b>	<b>40172</b>

**3<sup>rd</sup> Year:** During this year, the remaining material from 506 m. R.L. requirement of 93,800 metric tonnes of Sand, Stone and Bajri. Total reserve of 128975 metric tonnes, the remaining material of this bench shall be used in the next working year.

### 3<sup>rd</sup> YEAR WISE PRODUCTION

Production Of Each Mineral in Third Year ( In MT)						
Bench	Duration	Rl of Bench	Benchwise Opening reserves of Useable Minerals-Stone, Bajri & Sand (70%)	Useable Minerals Consumed from the bench - Stone, Bajri & Sand	Benchwise Closing useable reserves - Stone, Bajri & Sand	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
4	Third year	506	128975	93800	35175	40251
		<b>Total</b>	<b>128975</b>	<b>93800</b>	<b>35175</b>	<b>40251</b>

**4<sup>th</sup> Year:** During this year, the remaining material from 506 & 500 m. R.L. requirement of 93,800 metric tonnes of Sand, Stone and Bajri. Total reserve of 187635 metric tonnes, the remaining material of this bench shall be used in the next working year.

### 4<sup>th</sup> YEAR WISE PRODUCTION

Production Of Each Mineral in Fourth Year ( In MT)						
Bench	Duration	Rl of Bench	Benchwise Opening reserves of Useable Minerals-Stone, Bajri & Sand (70%)	Useable Minerals Consumed from the bench - Stone, Bajri & Sand	Benchwise Closing useable reserves - Stone, Bajri & Sand	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
4 & 5	Fourth Year	506	35175	35175	0	14887
		500	152460	58625	93835	24830
		<b>Total</b>	<b>187635</b>	<b>93800</b>	<b>93835</b>	<b>39717</b>

**5<sup>th</sup> Year:** During this year 93,835 metric tonnes of Sand, Stone and Bajri and production is proposed to meet the requirement of the stone crusher unit. In order to meet the above

requirement of minor mineral, it shall be extracted from left out bench of 500 m R.L. shall be opened. All the material generated from these shall be used and shall be exhausted during this year.

### 5<sup>th</sup> YEAR WISE PRODUCTION

Production Of Each Mineral in Fifth Year ( In MT)						
Bench	Duration	Rl of Bench	Benchwise Opening reserves of Useable Minerals-Stone, Bajri & Sand (70%)	Useable Minerals Consumed from the bench - Stone, Bajri & Sand	Benchwise Closing useable reserves - Stone, Bajri & Sand	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
5	Fifth Year	500	93835	93835	0	40510
		<b>Total</b>	<b>93835</b>	<b>93835</b>	<b>0</b>	<b>40510</b>

(\*Source: Approved Mine Plan)

### 2.21 WASTE GENERATION (LIQUID & SOLID) DURING MINING PERIOD

The open cast mining has been proposed in view of the hilly nature of the site. During opening of benches of Silty sand mixed clay shall be generated. The waste material shall be dumped at dump yard (waste) within the applied mining lease area in the respective year wise specific location showing in mining plates no. 8 to 12. The waste material shall be spread over the worked-out benches for raising plantation.

The yearly waste generation of soil and inter burden is given below:-

#### WASTE GENERATION DURING FIVE YEARS IN TONES

Year	Mine waste
1st Year	40,365
2nd Year	40,172
3rd Year	40,251
4th Year	39,717
5th Year	40,510
<b>Total</b>	<b>2,01,015</b>

### 2.22 MODE OF WORKING

The mining shall be done mechanically by using excavators Loaders as well as manually by developing 6-meter face height. No blasting shall be carried out without the permission from the competent authorities.

#### PLANTATION

The afforestation programme is the most important programme to improve the environment and ecological balance of the area. Grasses and bushes which have fibrous roots are at the first instance grown which give the billing property to the soil. The fast-growing plantation and re grassing shall be done on the exhausted benches

as well as backfilling pits will be done in consultation of local peoples or Govt. Authorities like forest department etc. The applied mining lease shall be fenced properly in the entire periphery of the safety zone as per the details. The total mined out area of the benches shall be 2560 Sq. m. and this area shall be dedicated for plantation and re-grassing. The estimated survival rate proposed to be achieved shall be 80%. (As per mine plan). But there is a provision to planting trees year wise in total mined out area and rehabilitation the mining site after ceasing mining operation.

### **2.23 EMPLOYMENT GENERATION/MANPOWER REQUIREMENT**

- The mining activity in the lease area will thus give a direct employment to about 10 persons engaged in extraction of sand, stone & bajri and loading of material into tractor trolleys and tipper trucks.
- The stone and bajri shall be transported to crusher site. Thus, for transportation of material about four drivers along with helpers shall be engaged.
- Project will also generate indirect employment for skilled and semi-skilled workers. Thus, the project helps in increasing the socio-economic status or livelihood of the nearby villagers.

### **2.24 TRANSPORTATION OF THE MINERALS**

- The lease area is having gentle slope with the gradient of less than one degree hence, track for the movement of trucks and tractors trolley can be made and maintained in any part of the lease area.
- The loaded tractor trolleys/trucks would carry the material to the crusher site for making desirable grit.
- About 347 metric tons of sand, stone and bajri would be transported daily. Though route map shown in **Fig 2. 9**.

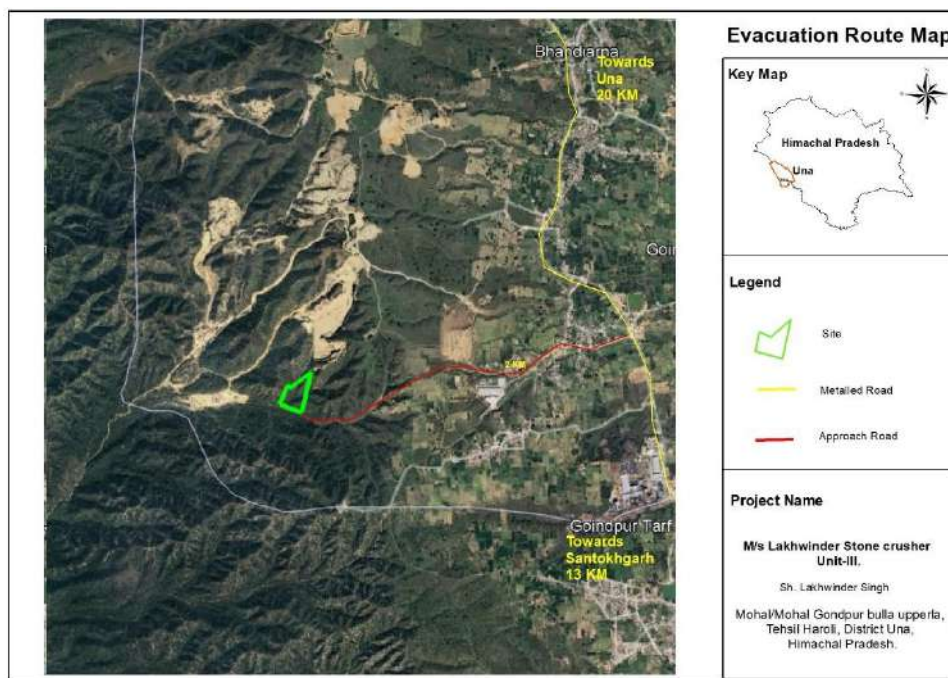
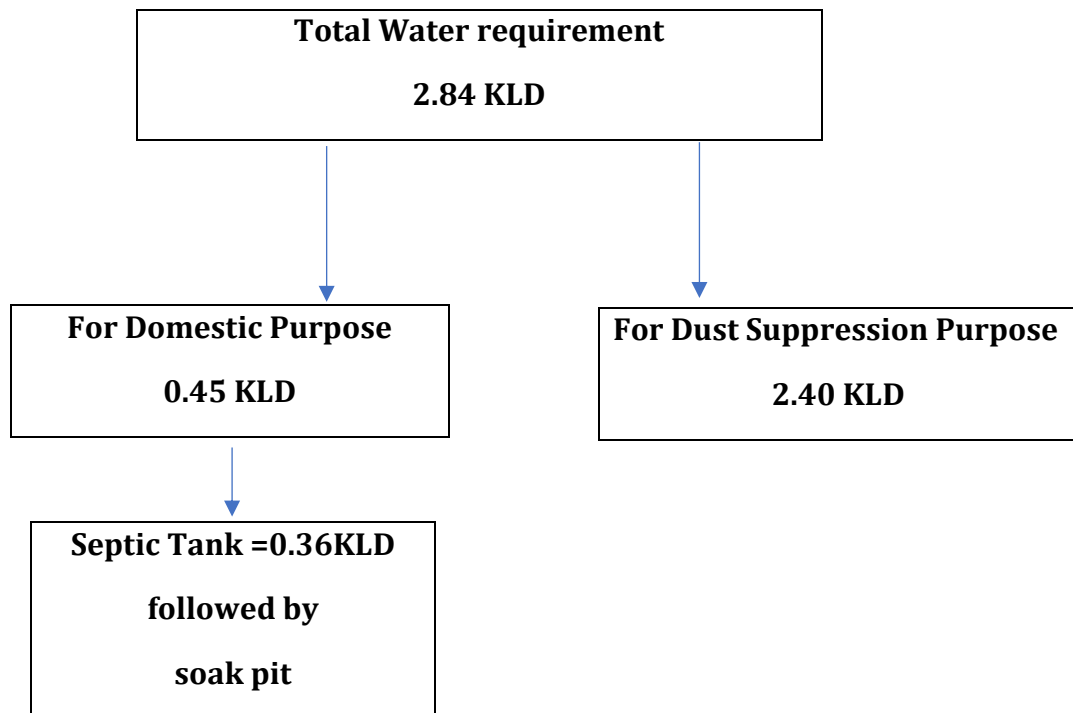


FIGURE 2-9: EVACUATION ROUTE MAP

## 2.25 POWER, WATER SUPPLY AND OTHER ONSITE REQUIREMENTS

- No raw material will be required in the proposed project. The operation involves the extraction of Sand, Stone and Bajri in its existing form and loaded into tractor trolleys and send to the stone crusher unit for manufacturing desirable grit.
- Minor mineral namely sand, stone & bajri and is used as raw material for construction and infrastructure projects like building, bridges, dams etc.
- The transportation of sand, stone & bajri will be carried out by tractor trolleys to the Crusher site after making desirable grit then finished product will be transported to the market. The practice is quite sound in the area and ensures continuous lifting of the material.
- **Power requirement**  
All the activities will be carried out manually. The operation will be done only daytime (9 a.m. to 6 p.m.) hence there will be no power requirement at the project site.
- **Water requirement & supply**  
Total amount of water required for the project is 2.85 KLD. This Water will be supplied from borewell for drinking purpose & dust suppression. Water balance diagram is shown. Water balance diagram is shown below:-



Water is required for drinking, domestic purposes and for dust suppression. The number of working people shall be 10 therefore water requirement will be 2.85 KLD. About 2.40 KLD will be required for dust suppression and 0.45 KLD for domestic purposes. Additional water per year will also be used for plantation purposes.

#### **Temporary rest shelter**

A temporary rest shelter will be provided for the workers near to the mine site for rest. In addition, first aid box along with anti-venoms to counteract poison produced by certain species of small insects, if any and Sanitation facility i.e., septic tank or community toilet facility will be provided for the workers.

#### **2.26 IMPACT OF MINING ACTIVITY & ITS CONTROL MEASURES**

The impact on environment due to this mining operation is generally:-The detailed mitigation measures are suggested in **Chapter - 4** of EIA report.

**DESCRIPTION OF ACTIVATES AND ANTICIPATED IMPACTS**

<b>Activities/issues of concern</b>	<b>Anticipated environmental impacts</b>
<p><b>Land alteration/regime modification.</b></p> <ul style="list-style-type: none"> <li>&gt; Mobilization of labor</li> <li>&gt; Mining of Hill Slope extraction of (Sand/Stone &amp; Bajri)</li> <li>&gt; Acquired land area~ 2.7891ha.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Undercutting and collapse of Hill Slope</li> <li>&gt; Hill cutting and erosion.</li> <li>&gt; Existing ecology and habitat</li> </ul>
<p><b>Waste generation due to mining</b></p> <ul style="list-style-type: none"> <li>&gt; Mine waste Silt Sand &amp; Topsoil/Clay</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Silty sand/Topsoil &amp; clay increase the turbidity &amp; total suspended solid</li> </ul>
<p><b>Mining of mineral &amp; transportation</b></p> <ul style="list-style-type: none"> <li>&gt; Machinery and equipment deployment</li> <li>&gt; Haulage of mined out material to the Crusher site.</li> <li>&gt; On-site storage and handling of material</li> <li>&gt; Laying of utilities–roads, &amp; water</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Pollution due to operation of equipment</li> <li>&gt; Pollution due to fill up of extracted materials.</li> <li>&gt; Silty sand/Topsoil/Clay management</li> <li>&gt; Haulage of material and on-site vehicular movement</li> <li>&gt; Waste generation due to on-site activity</li> <li>&gt; Safety and health issues of workers</li> </ul>
<p><b>Human settlements</b></p> <ul style="list-style-type: none"> <li>&gt; Temporary/permanent movement of population during operation phase</li> <li>&gt; Transportation requirements of public/civic amenities</li> <li>&gt; Waste generation due to mining Mine waste silty sand &amp; Topsoil</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Alteration in settlement patterns</li> <li>&gt; Alteration in traffic movement Socio-economic activities due to the proposed project</li> <li>&gt; Silty sand &amp; Topsoil increase the turbidity &amp; total suspended solid.</li> </ul>
<p><b>Waste generation due to mining</b></p> <p>Mine waste silt sand &amp; topsoil</p>	<ul style="list-style-type: none"> <li>&gt; Silty Sand &amp; Topsoil increase the turbidity &amp; total suspended solid</li> </ul>

<b>Health and safety</b>	<ul style="list-style-type: none"><li>&gt; <i>Health, safety, and welfare of workers during mining activity</i></li><li>&gt; <i>Safety provision for existing and Activities</i></li><li>&gt; <i>Probability and containment of natural hazards</i></li><li>&gt; <i>Emergency/disaster response Management</i></li></ul>
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### 3 DESCRIPTION OF ENVIRONMENT

#### 3.1 INTRODUCTION

The chapter contains information on the existing environmental status of land, air, water, biological & socio-economic environment. The mining activity will remain confined to a very small area and of little magnitude hence the zone of influence will be only surrounding fields of the leased-out area. To achieve these objectives, monitoring of the environmental parameters within the core zone and buffer zone has been undertaken in accordance with the terms of reference and guidelines for EIA issued by the Ministry of Environment & Forests, climate change Govt. of India.

Fresh environmental baseline monitoring has been conducted. Data on air, water, soil, and noise quality was systematically collected during the post-monsoon season (December 2025- February 2026). In addition to primary monitoring, secondary information was obtained from published sources of government and semi-government organizations. The main objectives of environmental baseline study are:-

- (i) To assess present environmental quality for prediction of environmental impacts.
- (ii) To identify environmentally significant factors for taking mitigating measures.

#### 3.2 STUDY AREA AT GLANCE

The study area for proposed mine's baseline study covers the total area within 10km radius from the mine lease periphery. Further the study area has been divided into two zones namely, "Core Zone" and "Buffer Zone". The core zone comprises of the mine lease area within the mine lease boundary while the area outside the mine boundary is buffer zone.

A Map showing study area of the proposed project is given in figure. The specific location of the project is detailed below: -

- Mauza/Mohal Gondpur bulla
- Tehsil Haroli
- District Una (Himachal Pradesh)

#### 3.3 STUDY PERIOD

Baseline monitoring was conducted during the winter season, from December 2025- February 2026.

### 3.4 COMPONENT OF THE STUDY

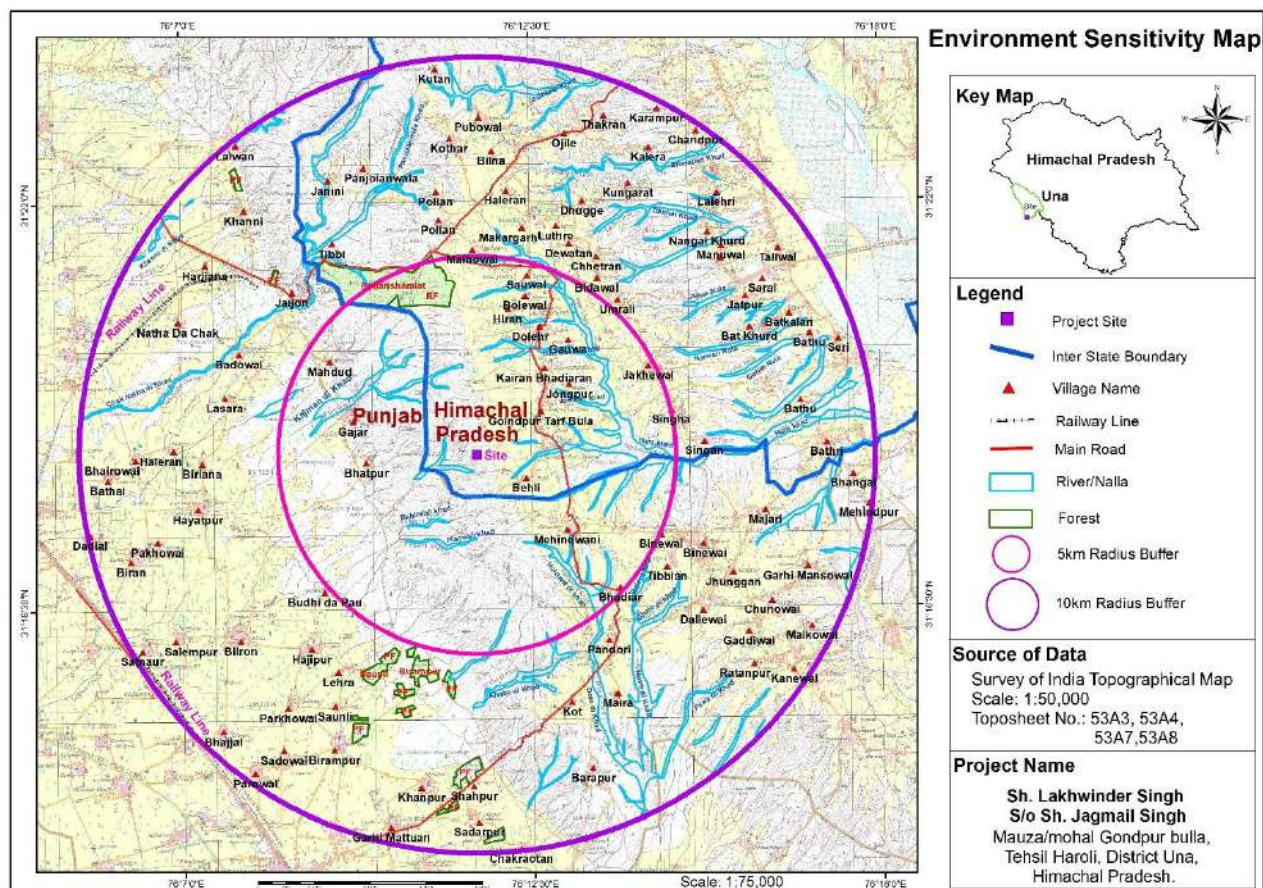
The component of the baseline data generated includes below:-

- **Meteorology:-** Temperature, Relative Humidity, Rainfall, Wind Speed & Direction.
- **Ambient Air Quality:-** Particulate matter <10-micron size (PM10), Particulate matter <2.5-micron size (PM2.5), Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>).
- **Ambient Noise Levels:-** Day equivalent noise levels, Night equivalent noise levels.
- **Water Quality:-** Groundwater Quality, Surface Water Quality.
- **Soil Quality**
- **Ecology**
- **Socio Economic Status**

### 3.5 METHODOLOGY

Hill Slope Mining in Himachal Pradesh is undertaken through a structured framework defined in the District Survey Reports (DSRs). These reports delineate suitable mining zones by analyzing erosion and slope stability. Operations are carried out using manual and semi-mechanized techniques, deliberately avoiding drilling and blasting to minimize environmental impacts.

The adopted methodology integrates geospatial mapping, field surveys, and slope stability assessments along with soil and vegetation regeneration studies to promote ecological sustainability. Furthermore, this chapter of the EIA report outlines the approaches employed to study key environmental components, including air quality, water resources, soil characteristics, noise levels, meteorological conditions, biodiversity, and socio-economic aspects. These investigations establish the baseline environmental status and provide the foundation for predicting potential impacts of mining activities.



**FIGURE 3-1 ENVIRONMENTAL SENSITIVITY MAP DEPICTING THE PROJECT SITE WITHIN 5 KM AND 10 KM RADIUS**

### 3.6 ESTABLISHMENT OF BASE LINE FOR VALUED ENVIRONMENTAL COMPONENT AS IDENTIFIED IN THE SCOPE

The baseline study captures the physiography and topography of the area, along with hydrology and drainage patterns, while demographic features of nearby settlements are assessed to provide a comprehensive foundation for impact evaluation.

### 3.7 PHYSIOGRAPHY, TOPOGRAPHY AND HYDROLOGY

#### 3.7.1 Physiography

stretching across the eastern portion of the district in a northwest-to-southeast orientation. The areas bordering Punjab are similarly hilly, with the eastern section being relatively higher than the western part. District elevations range between 332 meters and 1.162 meters APPROVED above mean sea level.

The Swan River, the district's primary watercourse, flows northwest to southeast, receiving numerous tributaries including Borewali Khad, Barera Khad, Garni Khad (right bank), and Panjoa Khad, Ambwali Khad, Badowali Khad, and Hum Khad (left bank). These waterways form the fertile Soan Valley before the seasonal Soan River eventually joins the

Satluj River beyond district boundaries. In the eastern sector, Lunkhar Khad flows southeastward to merge with the Satluj, creating another narrow but productive valley.

The area forms part of the Siwalik Range, which spans the political boundaries of Pakistan, India, Nepal, and Bhutan. Characterized by a width varying between 6 to 90 km, the Siwalik Hills exhibit progressively steeper and narrower topography from northern Pakistan to Bhutan across their 2,000 km length. The range's current morphology results from ongoing erosion and tectonic activity featuring hogback ridges, multiple valley types (consequent, subsequent, obsequent, and resquent), seasonal streams (choes), earth pillars, conglomerate formations, talus cones, and distinctive badlands topography marked by sparse vegetation, steep slopes, and rapid erosion rates.

Flanked by the Indo-Gangetic plains to the south and the Lesser Himalayas to the north, the Siwaliks intermittently contain duns flat-bottomed structural valleys with independent drainage systems. These longitudinal valleys, found exclusively in India and Nepal, consist of Middle Pleistocene to Holocene deposits including alluvial fans, lacustrine sediments, and fluvial terraces formed through tectonic processes. Originally narrower during formation, the duns have gradually expanded through continuous erosion of adjacent Siwalik sediments. In Nepal, these basins became repositories for alluvial deposits that preserved and later exposed paleolithic sites through erosional processes.

The region's hydrology features seasonal streams (locally termed choes, khads, or nalas) fed by monsoon rains, whose terraces yield abundant lithic artifacts due to the co-occurrence of water sources and raw materials. Within this geological context, the district is bounded by Punjab's plains to the west and the NW-SE trending Sola Singhi Dhar (Siwalik Range), with the Soan River valley lying between them. Elevations range from 300 meters to over 1,200 meters ASL on Sola Singhi Dhar, while the Jaswan Dun Valley varies from 7 to 14 km in width. The town of Una, centrally located in this valley at 427 meters ASL, lies within a district where most areas maintain elevations of 600-900 meters with slopes generally under 10°.

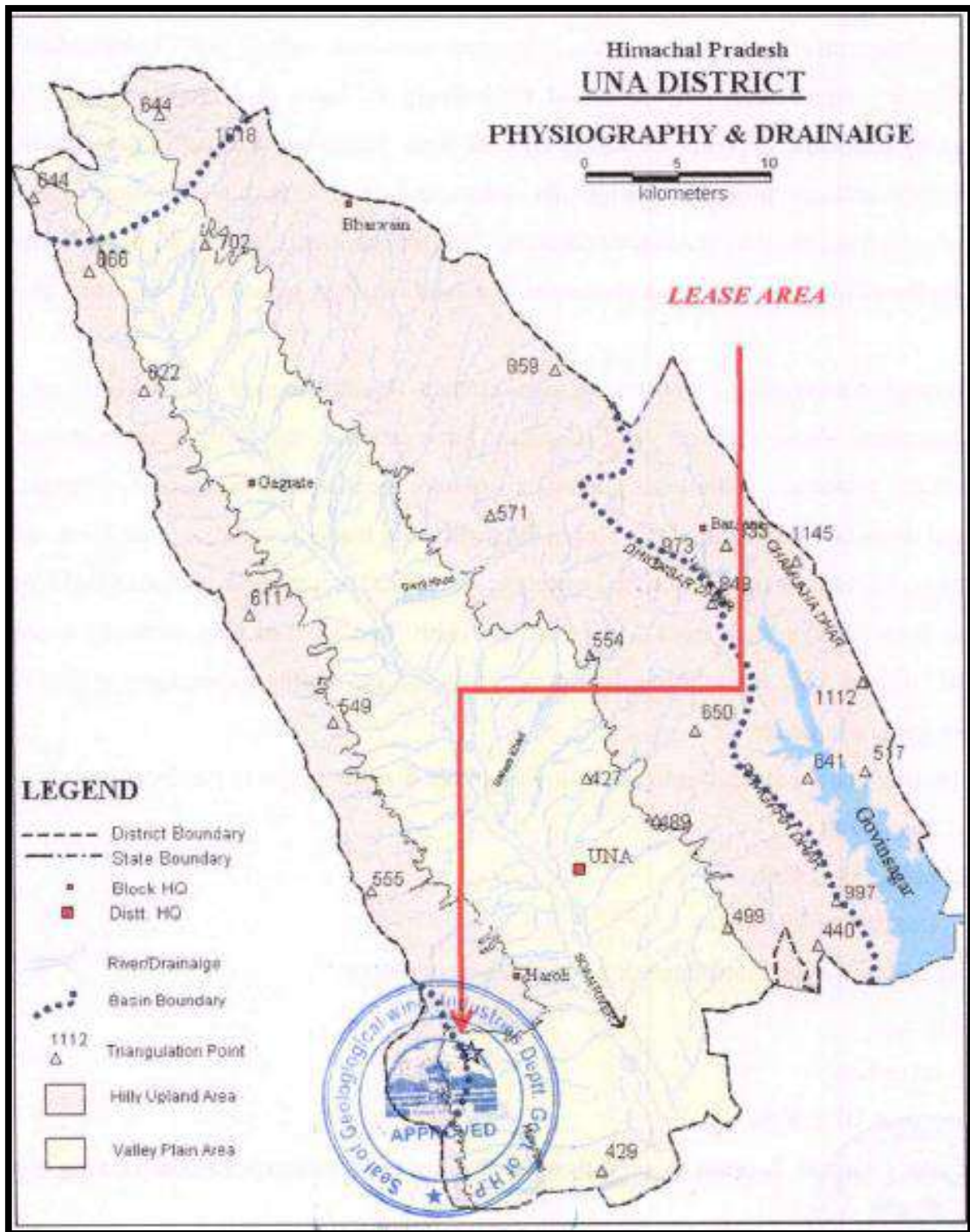
The Una District can be divided into the following three distinct zones as per elevation as:-

**1.** above 900 m., **2.** 600-900 meters., **3.** Less than 600 meters.

The district can be divided into three distinct zones as per slope.

20m/Km, 10-20m/Km, Less than 10m/Km

**\*Source:-** Mine plan



**FIGURE 3-2 PHYSIOGRAPHY AND DRAINAGE MAP OF DISTRICT UNA**

### 3.7.2 Topography

Una District's topography is a blend of hilly terrain (Shivalik ranges) and fertile plains, making it unique among Himachal districts. The variation in elevation and physiographic

diversity strongly influence its agriculture, settlement patterns, and connectivity with Punjab.

### 3.7.3 Drainage

The adjoining area shows a dendritic type of drainage with the formulation of gullies. Only small gullies pass beside the mining lease area. These Small gullies drain into the local Nallah and further drain into the Satluj River, which is a perennial stream of the area.

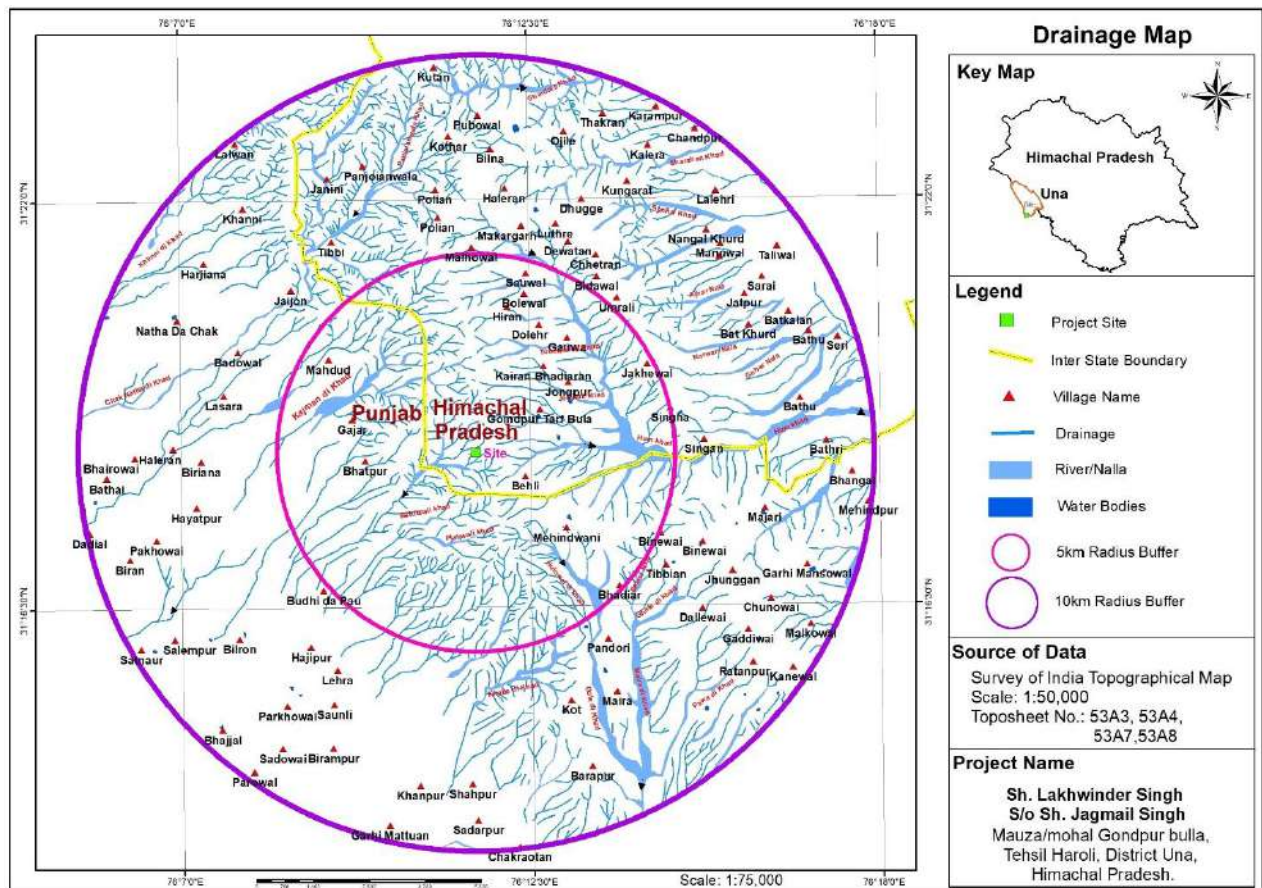


FIGURE 3-3 MAP SHOWING DRAINAGE NETWORK OF THE STUDY AREA

### 3.8 LAND USE COVER MAPPING

Since the mining is carried out by opencast mining method, studies on land environment of ecosystem play an imperative role in identifying susceptible issues and taking appropriate action to uphold ecological equilibrium in the region. The main objective of this section is to provide a baseline status of the study area covering 10 km radius around the proposed mine site so that Temporal Changes due to mining activities on the surroundings can be assessed for future.

Land use/Land cover Map has been broadly classified into five classes namely Agriculture, Forest Land, Built-up Area, Water Bodies and Waste Land and all other land uses have been categorized in others class. Using the image classification algorithm land use map is than generated.

### **3.9 METHODOLOGY ADOPTED FOR THEMATIC DATA EXTRACTION FROM THE SATELLITE IMAGERIES.**

ERDAS image processing software and Arc GIS Software were used for the project. Erdas 9.2 Image Processing Software was used for digital processing of the spatial data. Digital image processing techniques were applied for the mapping of the land use/land cover classes of the provided area from satellite data.

- **Image Extraction**

Satellite imageries were obtained, and a subset for the Area of Interest was created through ERDAS image processing software.

- **Geo-Rectification**

Geometric correction includes correction for geometric distortions due to sensor, earth geometry. variations and conversion of the data to real world coordinates (e.g., Latitude and Longitude) on the Earth's surface. The satellite imagery was geometrically rectified with reference to the geo-referenced Topo-sheets and vector data.

- **Image Enhancement**

Image enhancement is one of the important image processing functions primarily done to improve the appearance of the imagery to assist in visual interpretation and analysis. Various options of image enhancement techniques were tried out to get the best image for visual interpretation. Histogram equalized stretch enhancement techniques were applied to the imagery of the study area for better interpretation of different features in the satellite imagery.

- **Classification**

Satellites images are composed of array of grid; each grid have a numeric value that is known as digital number. Smallest unit of this grid is known as a pixel that captures reflectance of ground features represented in terms of Digital number, which represent a specific land feature. Using image classification technique, the satellite data is converted into thematic information map based on the user's knowledge about the ground area.

Hybrid technique has been used i.e., visual interpretation and digital image processing for identification of different land use and vegetation cover classes based on spectral signature of geographic feature. Spectral signature represents various land use classes Image interpretation keys are developed based on image characteristics like colour, tone, size, shape, texture, pattern, shadow, association etc. which enables interpretation of satellite images for ground feature. Training sites are then assigned based on their spectral signature and interpretation elements.

Land use/Land cover Map has been broadly classified into five classes namely Agriculture, Forest Land, Built-up Area, Water Bodies and Waste Land and all other land uses have been categorized in others class. Using image classification algorithm land use map is than generated.

### 3.10 LAND USE/LAND COVER STUDY

The present Land use/Land cover map for the proposed project activity is prepared by latest satellite image. This report thus will enable assessing the impact on land use pattern in the study area due to the proposed project activity. Land use in Una District is given in the table below:-

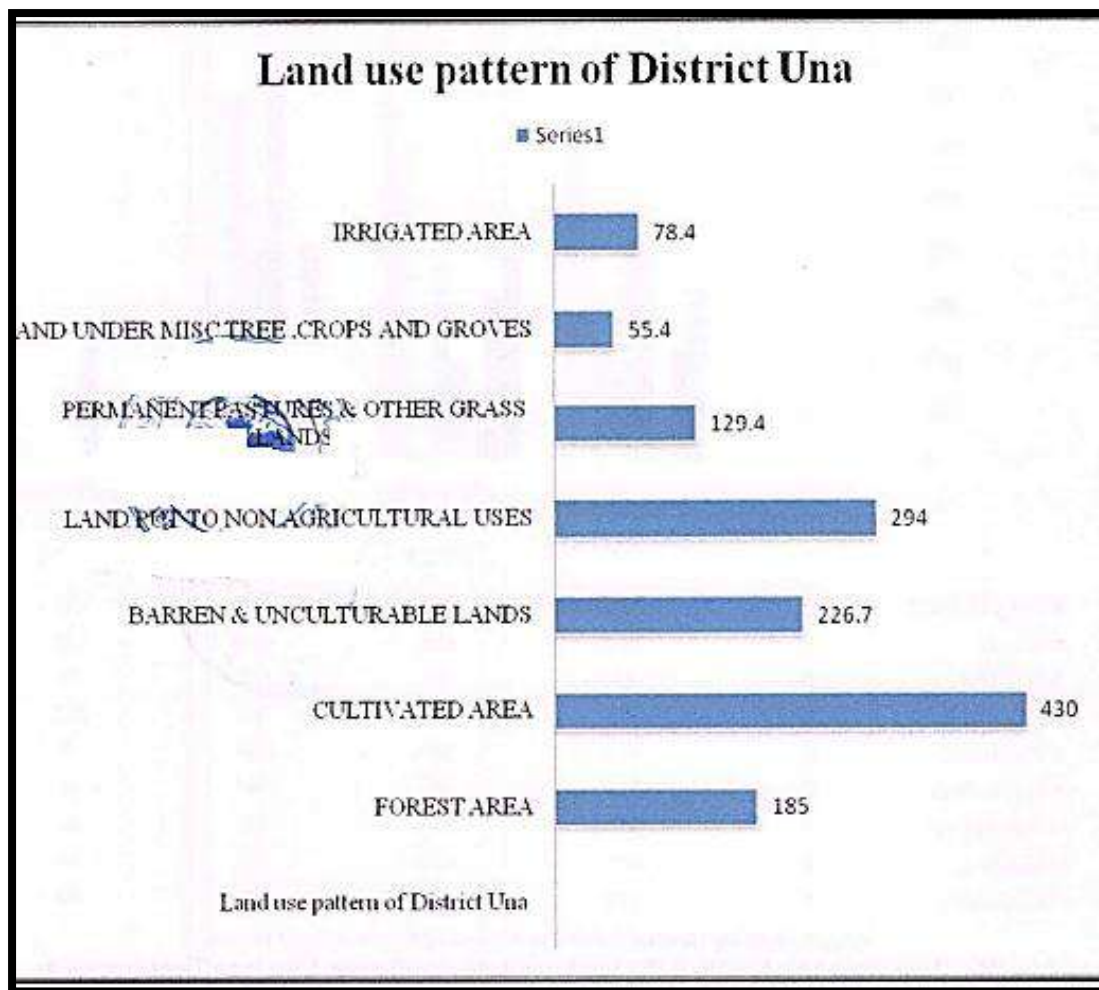


FIGURE 3-4 LAND USE PATTERN OF SORROUNDING VILLAGES IN UNA DISTRICT

\*Source:- Approved Mine plan

**(a) Data used**

Current vintage data of Landsat-8 OLI/TIRS FCC (False Colour Composite) downloaded from USGS Earth Explorer has been used for preparation of Land use/ Land cover thematic map of study area. The downloaded satellite data is already Georeferenced, and terrain corrected. A total number of seven bands have been stacked and resampled at 30 m resolution. Google earth was used as reference for the preparation of base layer data like road, rail network, villages, and plant site.

**i) Technical Details:-**

Satellite Image	Landsat-8OLI/TIRS
Satellite Data Source	USGS Earth Explorer
Software Used	ArcGIS 10.1 & e-Cognition 9.2

**(b) Methodology**

Land use/Land cover map preparation, base map creation; Layer Stacking of satellite image has been processed using ArcGIS 10.1 Software. The methodology used for present LU/study area is given below: - The LULC maps were generated using Landsat-8 satellite data for the date 09-Dec-2017, the bands used were ultra-blue, blue, green, red, Near Infra-Red (NIR), SWIR-1 and SWIR-2; these were stacked at 30 m of spatial resolution. Object oriented classification method was implemented in e-Cognition 9.2 software. In this classification approach the image is divided into objects by using multi-resolution segmentation. As this is a supervised classification algorithm sample objects are selected for all the classes from the segmented image. The mean of the selected bands is used as object features for differentiating classes from each other. Finally, nearest neighbourhood classification algorithm is applied. Certain anomalies in classified output are removed using manual editing tool. The results were then exported as ESRI shape files into ArcGIS 10.1 and area calculation for different classes was done. The final map was prepared using ArcGIS layout view by adding all the layers and map information like North arrow, scale bar, legend, and the title for the map.

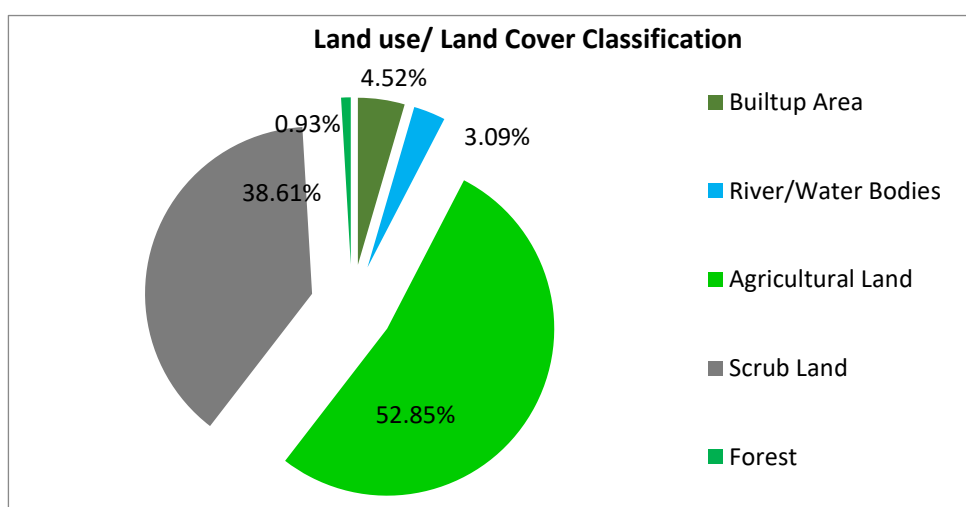
**Table 3-1 DIFFERENT CATEGORIES OF LAND AVAILABLE IN DISTRICT UNA**

GEOGRAPHICAL AREA		1549 m <sup>2</sup>
1	FOREST AREA	185 m <sup>2</sup>
2	CULTIVATED AREA	430 m <sup>2</sup>
3	BARREN & UNCULTURABLE LANDS	226.7 m <sup>2</sup>
4	LAND PUT TO NON-AGRICULTURAL USES	294 m <sup>2</sup>
5	PERMANENT PASTURES & OTHER GRASSLANDS	129.4 m <sup>2</sup>
6	LAND UNDER MISC TREE, CROPS AND GROVES	55.4 m <sup>2</sup>
7	IRRIGATED AREA	78.4 m <sup>2</sup>

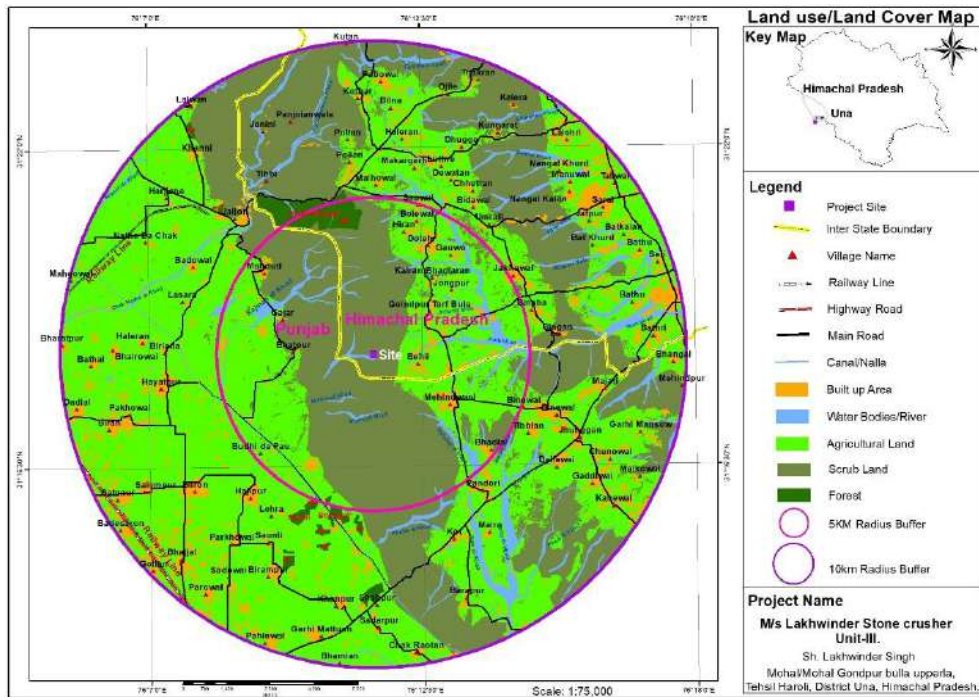
\*Source: Approved Mine plan

**Table 3-2 LAND USE COVER OF THE STUDY AREA**

S.no	Class	Area in Ha	Percentage
1	Builtup Area	1960	6.24
2	River/Water Bodies	1234	3.93
3	Agricultural Land	16305	51.90
4	Scrub Land	11490	36.57
5	Forest	426	1.36
<b>Total</b>		<b>31415</b>	<b>100</b>



**FIGURE 3-5 GRAPH GRAPHICAL PRESENTATION OF LAND USE/LAND COVER CLASSIFICATION**



**FIGURE 3-6 LAND USE/LAND COVER MAP WITHIN 5 AND 10 KM PERIPHERY FROM THE PROJECT SITE**

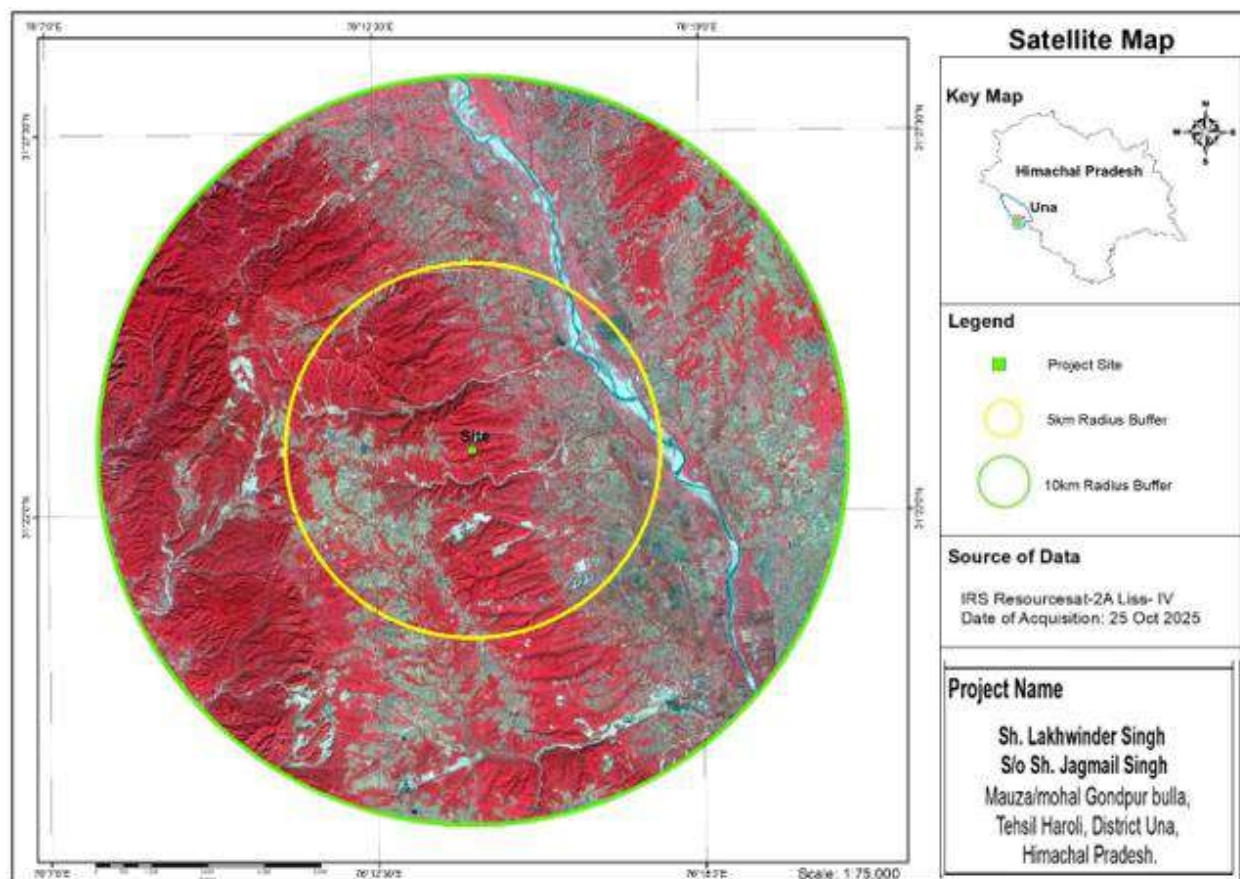


FIGURE 3-7 SATELITE MAP OF THE STUDY AREA WITHIN 10 KM

### 3.11 SOIL ENVIRONMENT

The soil of Una district in Himachal Pradesh are predominantly alluvial and loamy, formed in the Shivalik foothills. They vary from sandy loam in the plains to clay loam in upland areas, supporting diverse agriculture. Frequent erosion and deposition, soil fertility and texture across the district.

#### 3.11.1 Soil Characteristics

Soil fertility is an important aspect of the soil-plant relationship. Fertility status of the soils is primarily and importantly dependent upon both the macro and micronutrient reserve of the soil. Continued removal of nutrients by crops, with little or no replacement will increase the nutrient stress in plants and ultimately lowers the productivity. The fertility status of soil mainly depends upon the nature of vegetation, climate and topography, texture & decomposition rate of organic matter in the soil. Optimum productivity of any cropping systems depends upon adequate supply of plant nutrients.

The fertility of soil depends on the concentration of N, P, K, organic and inorganic materials, and water. Nitrogen is required for growth of plant and is a constituent of chlorophyll, plant protein, and nucleic acids. Phosphorus is most often limiting nutrients remains present in plant cell nuclei and act as energy storage. It helps in transfer of energy. Potassium is found in its mineral form and affect plant cell division, carbohydrate

formation, translocation of sugar, various enzyme actions and resistance to certain plant disease, over 60 enzymes are known to require potassium for activation.

It is essential to determine the potential of soil in the area to identify the current impacts of urbanization and industrialization on soil quality and predict impacts, which may arise due to the project operations. Accordingly, a study of assessment of the baseline soil quality has been carried out.

### 3.11.2 Protocol for assessment of soil physio-chemical properties

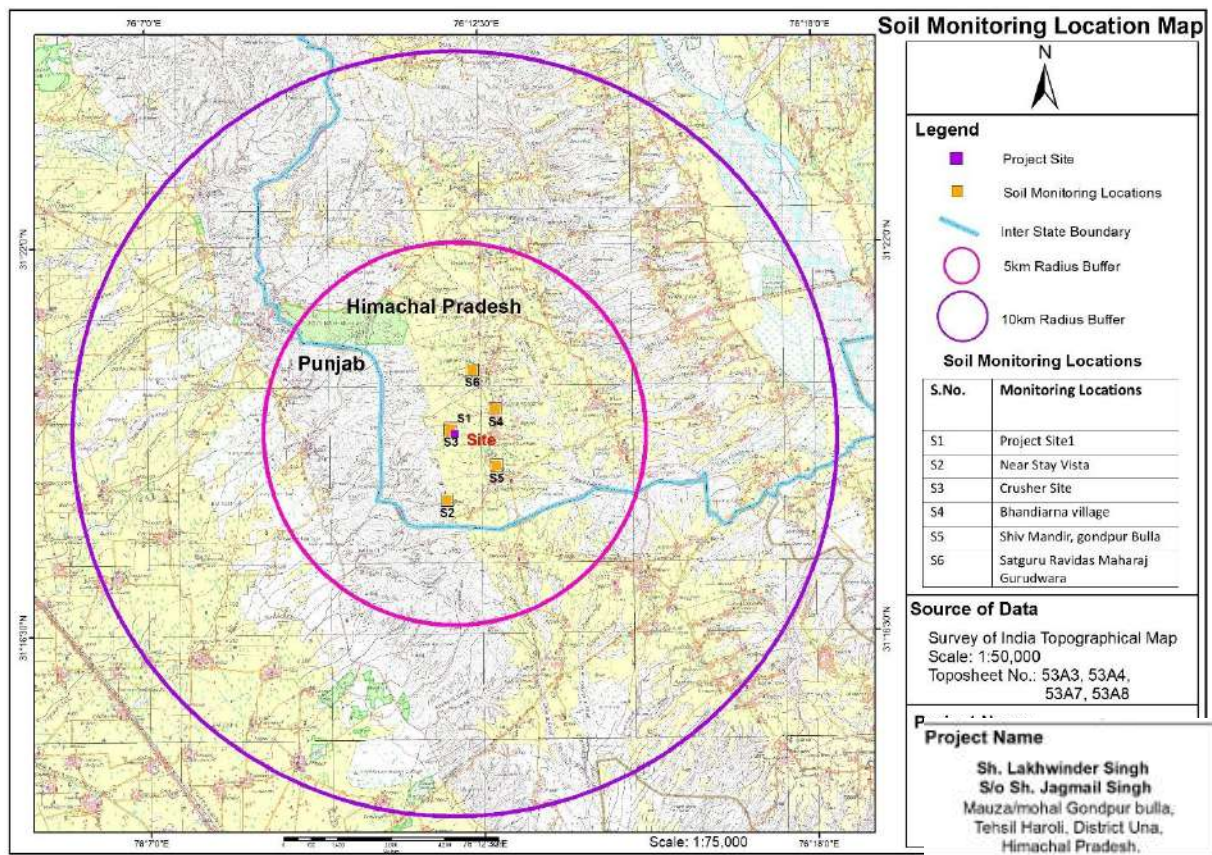
Manual Methods of Soil Testing in India, Department of Agriculture & Cooperation, Ministry of Agriculture, Government of India, New Delhi, shall be followed for collection of soil samples, its preparation for testing and analysing various physio-chemical properties of soil.

#### 3.11.2.1 Selection criteria for soil sampling location

For studying soil quality of the study area and with a view to ascertain the impacts due to construction activities on the nearby agriculture land forest land, six sampling locations, representing various land use conditions, were selected to assess the existing soil conditions in and around the project area of impact area. The location of the soil samples is presented in **Table 3-3** and shown in **Figure 3-8**.

**TABLE 3-3 SOIL SAMPLING LOCATION**

Station Code	Station Name	Distance (Km)	Direction	Latitude & Longitude	Type of Land
S1	Project Site	---	---	31°19'21.15"N 76°11'59.32"E	---
S2	Near Stay Vista	1.67	S	31°18'23.60"N 76°11'55.41"E	Non-Agriculture land
S3	Crusher Site	0.06	NW	31°19'23.66"N 76°12'0.07"E	Non-Agriculture land
S4	Bhandiarna village	1.19	ENE	31°19'40.60"N 76°12'44.78"E	Agriculture land
S5	Shiv Mandir, gondpur Bulla	1.27	SE	31°18'52.56"N 76°12'44.64"E	Agriculture land
S6	Satguru Ravidas Maharaj Gurudwara	1.68	NNE	31°20'13.96"N 76°12'21.79"E	Agriculture land



**FIGURE 3-8 SOIL SAMPLING LOCATIONS MAP**

**3.11.3 Soil reaction classes and critical limits for macro and micronutrients in soil**  
According to Soil Survey Manual (IARI, 1970), the soils are grouped under different soil reaction classes range of macro and micronutrients, organic carbon, SAR, and electrical conductivity, which are extracted in **Table 3-4**.

**TABLE 3-4 RANGE OF SOIL REACTION CLASS, MICRO AND MACRO NUTRIENTS**

S.N	Soil Nutrients					Soil Fertility Range				
						Low	Medium	High		
1	Organic carbon as a measure of available Nitrogen (%)					<0.5	0.5-0.75	>0.75		
2	Available N (kg/ha)					<280	280-560	>560		
3	Available P (Kg/ha)					<10	10-24.6	>24.6		
4	Available K (kg/ha)					<108	108-280	>280		
5	Soil Reactivity	Extremely acidic	Very strongly acidic	Strongly acidic	Moderately acidic	Slightly acidic	Neutral	Slightly alkaline	Moderately alkaline	Strongly alkaline

Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III

	pH Range	<4.5	4.5 – 5.0	5.1 – 5.5	5.6-6.0	6.1-6.5	6.6-7.3	7.4-7.8	7.9-8.4	8.5-9.0	
<b>6</b>	Micro Nutrients						Critical Levels (Deficient)	Critical Levels (Sufficient)			
(i)	Available Zinc (mg/l)						<0.6	>0.6			
(ii)	Available Boron (mg/l)						<0.5	>0.5			
(iii)	Available Iron (mg/l)						<4.5	>4.5			
(iv)	Available Manganese (mg/l)						<1.0	>1.0			
(v)	Available Copper (mg/l)						<0.5	>0.5			
<b>7</b>	Sodium Absorption Ratio										
	Excellent <1.0	Good 1-1.9	Fair 2- 3.9	Poor 4- 7.9	Very Poor 8- 14.9	Unacceptable >15					
<b>8</b>	Electrical Conductivity (mS/cm)										
	Salt free (0-2) Salinity effect negligible	Slightly Saline (4-8) Yield of many crops restricted			Moderately Saline (8-15) Only tolerant crops yield satisfactorily			Highly Saline >15, Only very tolerant crops yield satisfactorily			

### 3.11.4 Soil Quality Analysis

The six samples of soil have been collected from the depth of 5cm to 15cm and representative samples prepared by thoroughly mixing. The homogenized samples were analysed for physico-chemical characteristics. The physical and chemical analysis results of the soil samples collected at site during Winter Season 2025-26 are presented in **Table 3-5**

**TABLE 3-5 RESULT OF SOIL REPORTS (POST-MONSOON FROM Dec 2025-Feb 2026)**

		Location	Project Site	Near Stay Vista	Crusher Site	Bhandiarna Village	Shiv Mandir Gondpur Bulla	Satguru Ravidas Maharaj Gurudwara
Sr. No.	Parameters	Units	Results	Results	Results	Results	Results	Results
1	pH	-	7.87	7.54	7.38	7.76	7.52	7.89
2	Conductivity	µmhos/cm	387.0	362.0	415.0	398.00	436.0	340.0
3	Sodium (as Na)	mg/kg	260.0	258.0	260.0	251.76	292.0	264.0
4	Water holding capacity	%	28.22	25.04	27.08	26.43	30.02	27.02
5	Potassium (as K)	mg/kg	92.12	80.22	74.22	78.75	88.08	82.06
6	Sand	%	62.00	50.00	53.00	52.00	53.00	55.00
7	Clay	%	26.00	28.00	22.00	27.00	28.00	26.00
8	Silt	%	12.00	22.00	25.00	21.00	19.00	19.00
9	Calcium (as Ca)	mg/kg	872.0	946.0	962.02	954.36	838.0	970.0
10	Magnesium (as Mg)	mg/kg	351.0	362.0	454.06	495.97	370.0	442.0
11	SAR	-	0.96	0.98	0.95	0.98	0.96	0.96
12	CEC	meq/100gm	2.94	2.50	2.66	2.26	2.70	2.36
13	Phosphorus (as P)	mg/kg	11.20	12.68	10.10	12.34	12.88	10.02
14	Organic carbon	%	0.48	0.55	0.40	0.48	0.56	0.55
15	Porosity	%	42.04	44.12	46.12	42.91	44.02	42.02
16	Permeability	cm/hr	1.64	1.52	1.47	1.82	1.61	1.55
17	Bulk Density	g/cm <sup>3</sup>	1450	1130	1204	13340	1467	1226
18	Total Kjeldahl Nitrogen (TKN)	%	0.048	0.030	0.035	0.027	0.032	0.057

### 3.11.5 Interpretation of Soil Characteristics

Interpretation of Soil Characteristic has been dwelled in following sub-sections: -

**Soil Texture:-** The soil textures refer to proportion of mineral composition of soil i.e., sand, clay, and silt present in the soil sample. The most commonly observed soil textures are sandy loam.

**Soil pH:-** Soil pH is an important soil property, which affects the availability of several plant nutrients. It is a measure of acidity and alkalinity and reflects the status of base saturation. It measures the -ve logarithm of hydrogen ions activity of soil solution and defines the soil acidity and alkalinity. The soil pH ranges from 7.38 to 7.89, thereby indicating the soils are neutral to moderately alkaline in nature.

**Soil EC:-** The Soil EC ranges from 340  $\mu\text{S}/\text{cm}$  to 436  $\mu\text{S}/\text{cm}$ , indicating the soils are non-saline and suitable for most crops.

**Organic Carbon:** The effect of soil organic matter on soil properties is well recognized. Soil organic matter plays a vital role in supplying plant nutrients, cation exchange capacity, improving soil aggregation and hence water retention and soil biological activity. The organic carbon content of soil varied from 0.40% to 0.56% thereby implying that soils are medium in organic carbon.

**Total Kjeldahl Nitrogen (TKN):** Nitrogen is an essential element in plant nutrition, forming a key part of organic compounds such as chlorophyll and enzymes that drive growth processes. It constitutes the backbone of amino acids, the fundamental building blocks of plant tissues, cell nuclei, and protoplasm. Adequate organic nitrogen promotes vigorous vegetative growth and imparts a deep green coloration to leaves. Conversely, deficiency reduces protein synthesis, resulting in stunted growth and chlorosis. In the soils studied, the organic nitrogen content of the surface layer ranges from 0.027% to 0.057%, placing them in the low to medium category of organic nitrogen status

**Phosphorus:** Phosphorus is a key nutrient in plant metabolism, serving as an essential component of adenosine diphosphate (ADP) and adenosine triphosphate (ATP), which are central to energy transformation processes. It is also a fundamental part of deoxyribonucleic acid (DNA), the basis of genetic inheritance in both plants and animals. Phosphorus contributes to several vital functions, including photosynthesis, nitrogen fixation, crop maturation, root development, and strengthening of straw in cereal crops. Its availability in soils is often restricted due to fixation—under acidic conditions it binds with aluminium and iron, while under alkaline conditions it is fixed with calcium. The available phosphorus content in the soils ranges from 10.02 to 12.88 mg/kg, classifying them as medium in phosphorus availability

**Potassium:** Potassium serves as an activator of numerous enzymes that regulate vital plant processes such as energy metabolism, starch synthesis, nitrate reduction, and sugar degradation. Highly mobile within plants, it plays a key role in controlling stomatal opening and closing in leaves and facilitates water uptake by root cells. Potassium is also essential for grain formation and tuber development, while enhancing crop resistance against certain fungal and bacterial diseases. The available potassium content in the soils ranges from 74.22 to 92.12 mg/kg, classifying them as medium in potassium availability.

**Sodium Absorption Ratio:** The SAR values vary from 0.95 to 0.98, thereby indicating good to fair ratio.

### 3.12 AIR ENVIRONMENT

#### 3.12.1 Meteorology data

Meteorological study exerts a critical influence on air quality as it is an important factor in governing the ambient air quality. The meteorological data recorded during the study period is used for interpretation of the baseline information as well as input for air quality simulation models. Meteorological data was collected for post monsoon season. The Climate in the region shows broadly four seasonal variations namely.

Season	Months
Pre- Monsoon	March – May
Monsoon	June – September
Post Monsoon	October –December
Winter	December-February

Ambient air quality monitoring stations are selected primarily on the basis of surface, demographic and meteorological influence. The study of SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub> & PM<sub>2.5</sub> are carried out 24 hourly twice a week at each station. The study was done in post monsoon season for a period of 3 months December-2025 to February 2026.

#### 3.12.2 Climate of the area

The district's climate varies according to elevation, with terrain ranging from valleys and western regions below 300 meters to gradually higher elevations of several hundred meters in the math astern arcus. While similar to the adjacent Punjab Plain the district experiences milder summer temperatures and greater rainfall. Winters are notably crisp and refreshing.

The annual climate cycle comprises four distinct seasons:-

1. Winter season: November to March
2. Summer season: April to June
3. Southwest monsoon season: July to mid-September
4. Post-monsoon transition period: Late September through October

Temperature extremes range from an average minimum of 3°C to a maximum of 45°C throughout the year.

**TABLE 3-6 TABLE SHOWING CLIMATE AROUND THE APPLIED LEASE AREA**

Maximum & Minimum Temperature (°C) of District Una (2020-2024)						
Month	Temp	2020	2021	2022	2023	2024
January	Max	19.5	20.1	21.3	18.9	20.7
	Min	4.2	3.8	5.1	2.7	4.5
February	Max	23.7	24	25.5	22.3	24.8
	Min	7.5	6.9	8.3	5.8	7.6
March	Max	29.6	30.2	31.8	28.5	31
	Min	12.8	13.1	14.5	11.2	13.7
April	Max	35.9	36.5	38.1	34.7	37.2
	Min	18.3	17.9	19.4	16.1	18.8
May	Max	39.7	40.2	41.5	38.3	40.6
	Min	22.6	22.1	23.8	20.4	22.9
June	Max	38.2	39	40.3	37.5	39.4
	Min	24.1	23.7	25.2	22	24.5
July	Max	33.5	34.1	35.7	32.3	34.8
	Min	23.8	23.4	24.9	22.5	24.2
August	Max	32.8	33.3	34.5	31.6	-
	Min	23.2	22.9	24.1	21.8	-
September	Max	32.5	33	34.2	31.2	-
	Min	21.7	21.3	22.8	20.1	-
October	Max	30.8	31.2	32.6	29.4	-
	Min	16.5	16	17.3	14.8	-
November	Max	26.3	26.8	28.1	24.9	-
	Min	9.8	9.3	10.6	7.5	-
December	Max	21.4	21.9	23.2	20.1	-
	Min	5.6	5.1	6.4	3.2	-

*Source: Meteorological Department, Govt. of India*

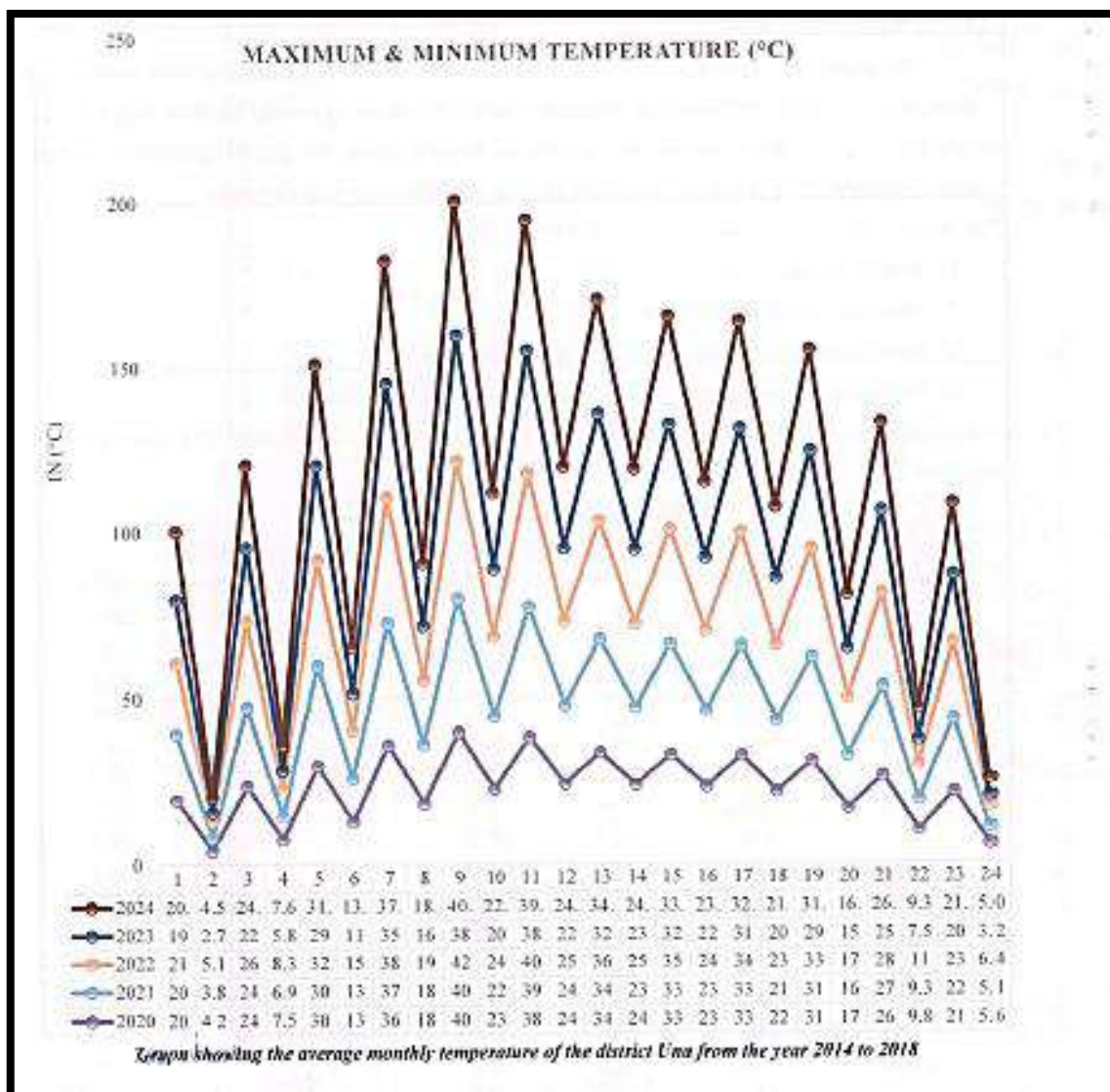


FIGURE 3-9 AVERAGE MONTHLY TEMPRATURE OF DISTRICT UNA

### 3.12.3 Rainfall

The Una district can be divided into three rainfall zones as:

- High Above 1400 mm
- Medium between 1400 to 1200 mm
- Low less than 1200 m

The average annual rainfall in the district is 1209.00 mm. about 70 % of the annual rainfall in the district is received during the short monsoon season July to September. July is the month with the heaviest rainfall. Rainfall amounting to about 14 % of the normal is received during the cold season in association with passing western distribution. The rainfall in the district generally increases from the southwest towards the northeast.

To have an idea about the morphogenetic zone on the basis of rainfall it will not be ideal to classify it on the basis of the annual rainfall because most of the precipitation of the year is received in the rainy season hence the precipitation of the monsoon season is deciding precipitation for annual replenishment, bank erosion and other factors.

Rainfall varies significantly with the altitude of the area. The catchment area receives rainfall due to western disturbances that pass over the north-western part of the country during the winter months. Rainfall in valleys is also received during the winter month. The rainy season generally starts from mid-July and extends up to mid-September. During winter the rains are scarce and extend from 15th December to 15th February. The following table shows the quantum of rainfall adjoining to the applied mining lease area. The following table shows the quantum of rainfall during the last 5 years from 2016 and 2020 adjoining to the applied lease area as per IMD.

Una DISTRICT RAINFALL IN MILLIMETERS (R/F)												
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	RAIN FALL (IN mm)											
2020	57.3	5.7	129.4	24.7	61.1	71.2	272.2	370.7	26.7	0	25.8	21.2
2021	20.2	4.1	12.1	55.6	35.9	94.4	298.5	149.3	167.2	66.7	0.4	1.4
2022	177	40.1	0.9	17	177	105.8	315.7	137.9	164.2	11.8	0	0.7
2023	38.5	22.3	15.8	18.2	42.6	138.4	402.1	388.9	145.3	3.2	1.1	8.6
2024	28.7	16.4	8.9	31.5	55.3	89.6	326.8	310.2	NA	NA	NA	NA

*Source: Meteorological Department, Govt. of India*

**FIGURE 3-10 AVERAGE MONTHLY RAINFALL OF THE DISTRICT UNA**

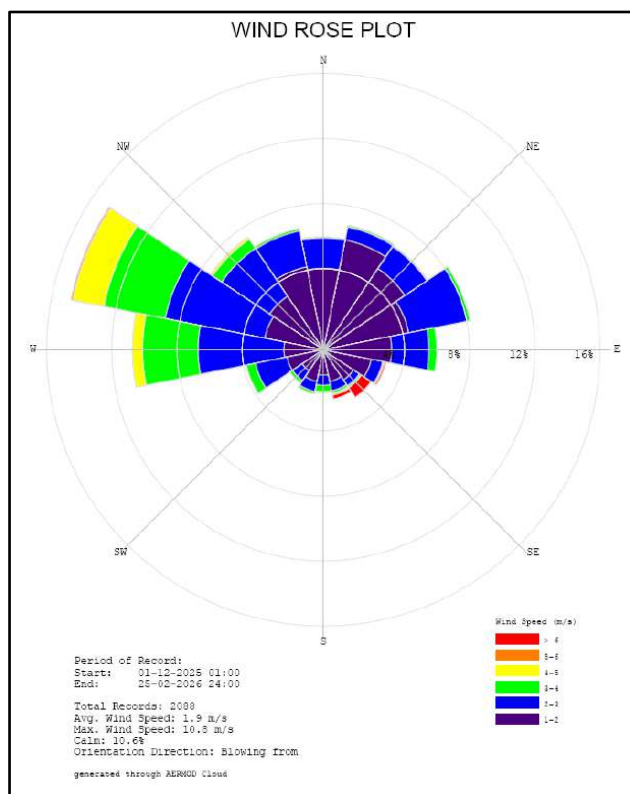
*\*Source\* Mining plan*

### 3.12.4 Micro-Meteorological Data

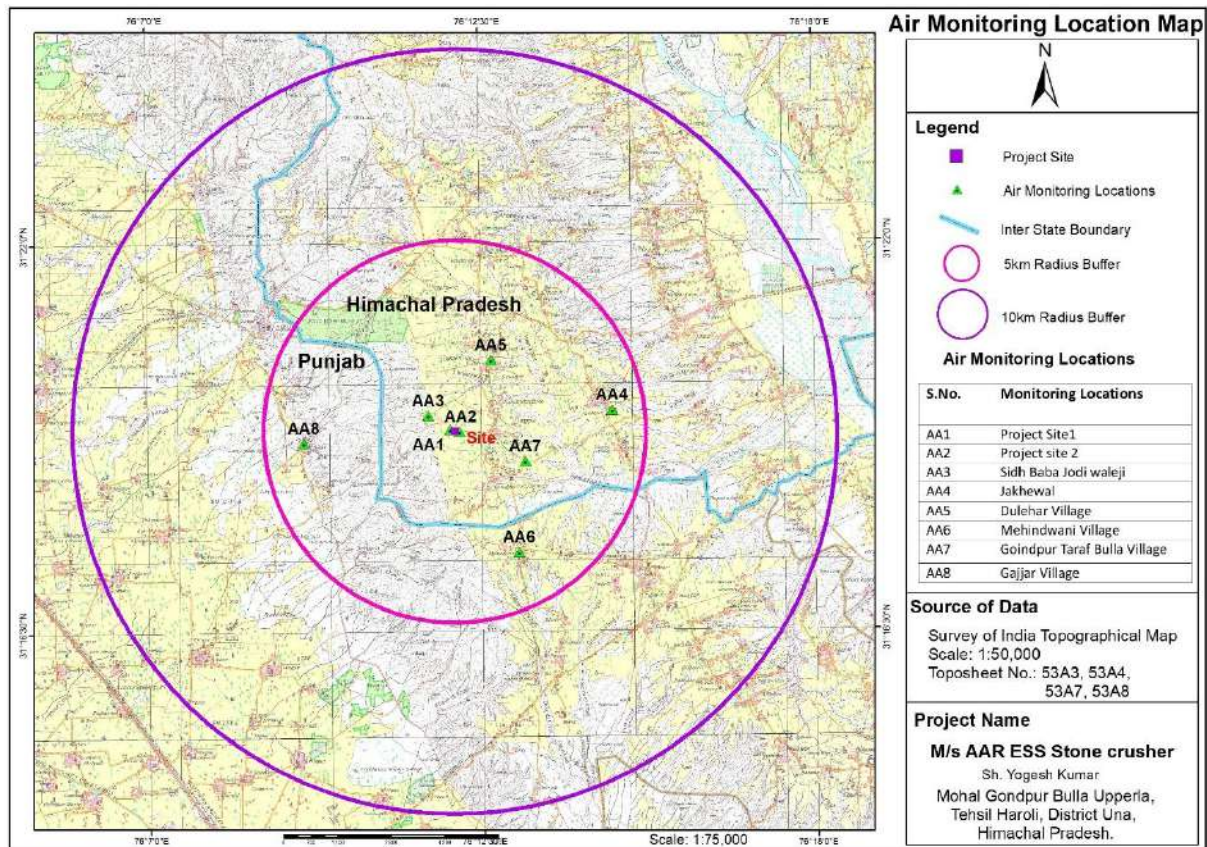
Period	Temperature (°C)		Precipitation (mm)	Wind Speed (Km/h r.)	% Relative Humidity	Pressure (mbar)
	Min.	Max.				
Oct-2025	16	30	61.9	2	71	1011
Nov-2025	12	27	5.8	2	71	1014
Dec'2025	7	23	15.1	2	73	1016

### 3.12.5 Wind Rose

Wind speed of a site plays a vital role in predicting the extent of air pollution. It gives a clear view about the extent to which air pollutants are carried before they touch the ground. Wind rose is a diagrammatic of wind speed in a specified direction with its arms representing sixteen directions; each arm gives a clear percentage frequency distribution of wind speed. During the study period Oct' 2025 to Dec' 2025 for 24 hourly intervals to plot wind rose. Wind Pattern During the Study Period is given below:-



**FIGURE 3-11 WIND ROSE OF MONITORING SEASON IN STUDY AREA**



**FIGURE 3-12 AMBIENT AIR MONITORING LOCATIONS**

### 3.12.6 Method of Monitoring

The Central Pollution Control Board (CPCB) has published comprehensive document on emission testing regulations ("Emission Regulations Part-3,1985"). Those procedures relevant to the particulate monitoring are summarized below.

#### a) Location of Ambient Air sampling Stations

Eight sampling stations were established around the core & Buffer zone within 10 km radius to study the present air quality. The locations are given below table.

**TABLE 3-7 LOCATION OF AMBIENT AIR SAMPLING STATIONS**

Station Code	Station Name	Distance (Km)	Direction	Latitude & Longitude	Criteria
AA1	Project Site 1	.....	.....	31°19'21.00"N 76°11'59.49"E	.....
AA2	Project Site 2	.....	.....	31°19'19.22"N 76°12'8.54"E	.....
AA3	Sidh Baba Jodi waleji	0.68	WNW	31°19'32.86"N 76°11'37.43"E	Upwind direction
AA4	Jakhewal	4.05	ENE	31°19'36.68"N 76°14'39.89"E	Cross Wind
AA5	Dulehar Village	2.06	NNE	31°20'19.94"N 76°12'40.16"E	Upwind direction
AA6	Mehindwani Village	3.53	SSE	31°17'36.61"N 76°13'6.67"E	Down Wind
AA7	Goindpur Taraf Bulla Village	1.91	ESE	31°18'53.97"N 76°13'13.82"E	Down Wind
AA8	Gajjar Village	3.54	W	31°19'10.37"N 76° 9'34.33"E	Cross Wind

### b) Sampling Schedule

The baseline data monitoring period was from Dec. 2025 to Feb. 2026 of. Eight hourly samples were collected from each station. twice a week for continuous three months one season.

### c) Air Quality parameter

The following parameters were analysed for each sample: -

- Particulate matter (PM10)
- Particulate matter (PM2.5)
- Sulphur dioxide (SO<sub>2</sub>)
- Nitrogen dioxide (NO<sub>2</sub>)
- Free Silica in PM<sub>10</sub>
- Carbon mono-oxide (CO)
- NH<sub>3</sub> (Ammonia)
- O<sub>3</sub> (Ozone)

The sampling and testing of ambient air quality parameters were carried out as per relevant parts of IS: 5182. The brief details of testing procedure adopted are given below:-

**TABLE 3-8: PROCEDURE FOR DETERMINING VARIOUS AIR QUALITY PARAMETERS**

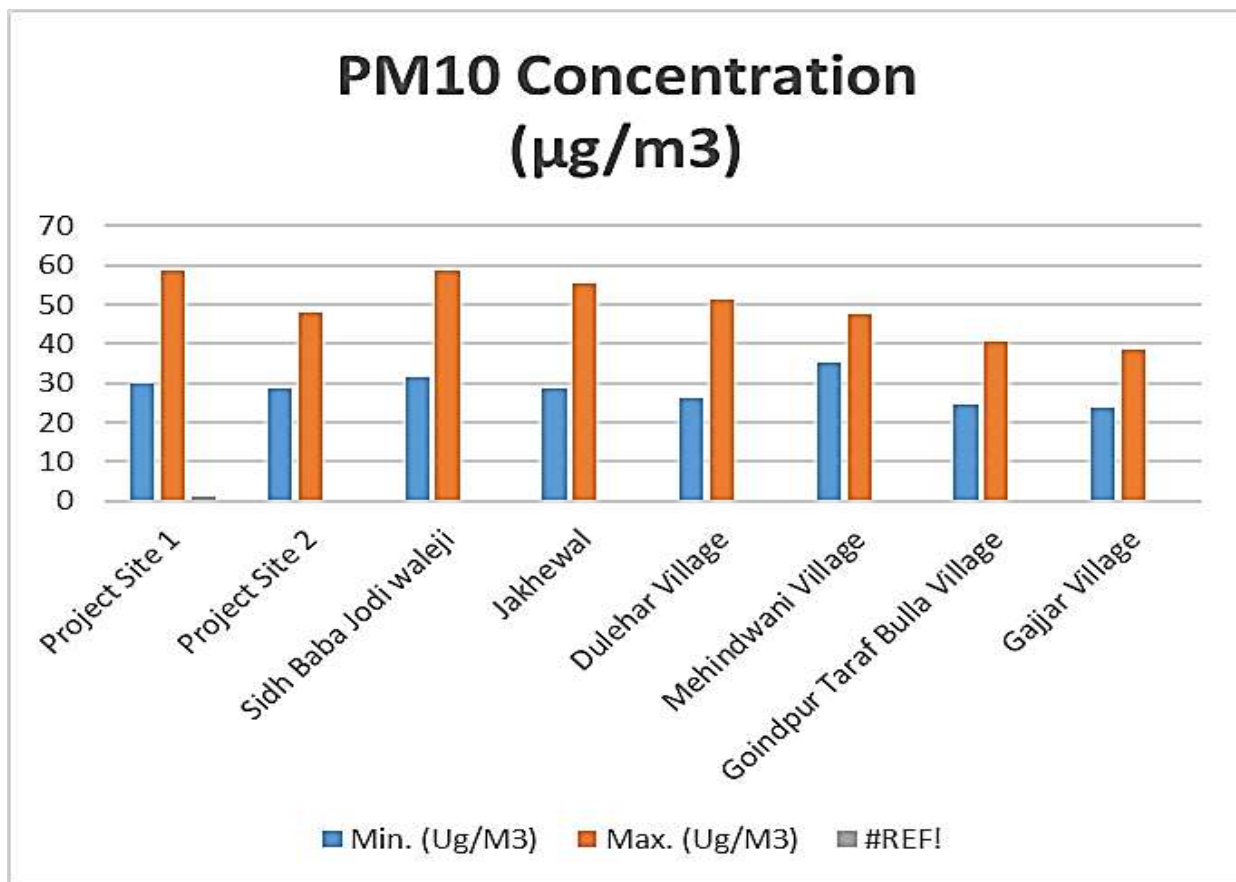
Sr. No.	Parameters	Testing Procedure	NAAQS 2009 Standard ( $\mu\text{g}/\text{m}^3$ )
1	PM10	Gravimetric method using "Repairable Dust Sampler" (RDS) IS: 5182 (P-23) 2004	100 ( $\mu\text{g}/\text{m}^3$ )
2	PM2.5	Gravimetric method using fine particulate Sampler (FPS) IS: 5182 (P-23) 2004	60 ( $\mu\text{g}/\text{m}^3$ )
3	NO2	Absorption in dilute Sodium Arsenic and then estimated calorimetrically with Sulphanilamide and N (I-Nephthayle) Ethylene diamine, Dihydrochloride and Hydrogen Peroxide IS: 5182 (P-6) 2006	80 ( $\mu\text{g}/\text{m}^3$ )
4	SO2	Absorption in Sodium Tetra Chloro Mercurate followed by Colorimetric estimation using P- Rosaniline hydrochloride and Formaldehyde IS: 51182(p-2)2001	80 ( $\mu\text{g}/\text{m}^3$ )
5	Free Silica in PM10	FTIR Method	.....
6	Carbon mono-oxide	Detection by handheld CO indicator with least count 0.1 ppm (125 $\mu\text{g}/\text{m}^3$ )	2 $\text{mg}/\text{m}^3$
7	NH3 (Ammonia)	O3 Liberation of iodine when ozone absorbed in a 1% solution of potassium iodine buffered at pH 6.8 + 0.2. Iodine is determined spectrophotometrically by measuring the absorption of tri-iodide ion at 352 nm. (Guidelines for measurement of ambient air pollutants by CPCB)	400( $\mu\text{g}/\text{m}^3$ )
8	O3 (Ozone)	NH3 Indophenol Blue Method (Guidelines for measurement of ambient air pollutants by CPCB)	100 ( $\mu\text{g}/\text{m}^3$ )

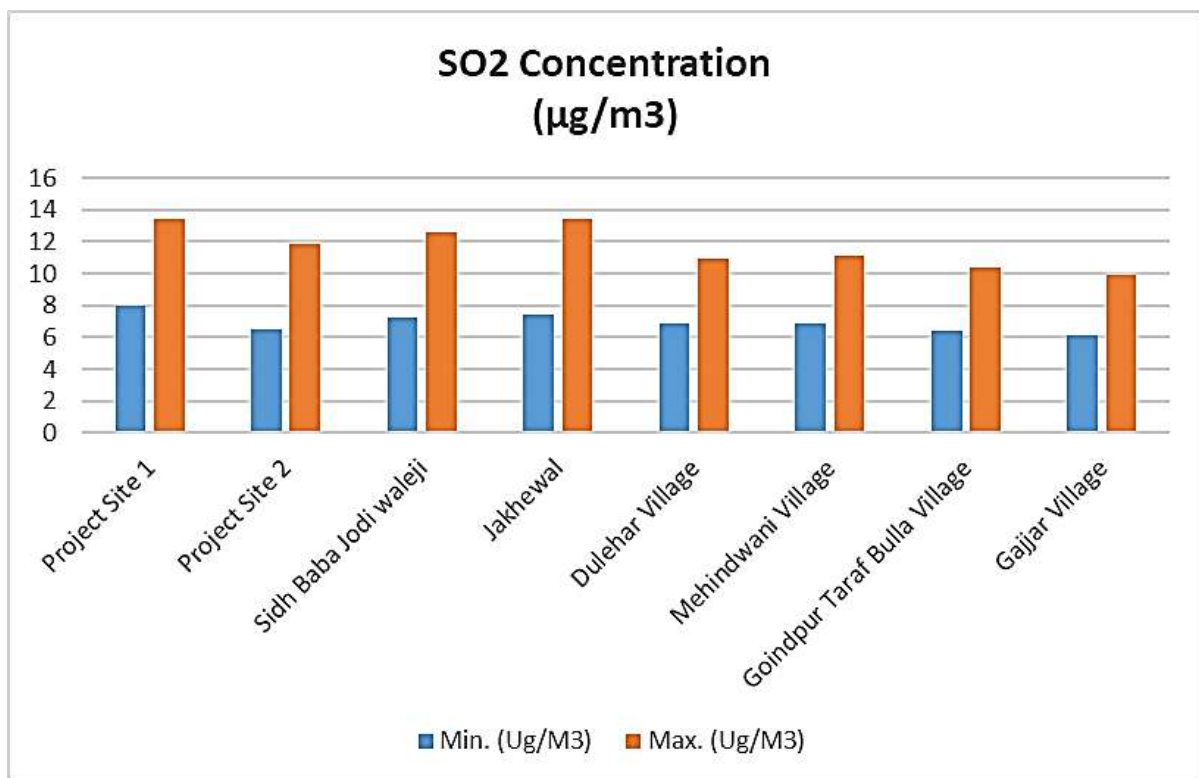
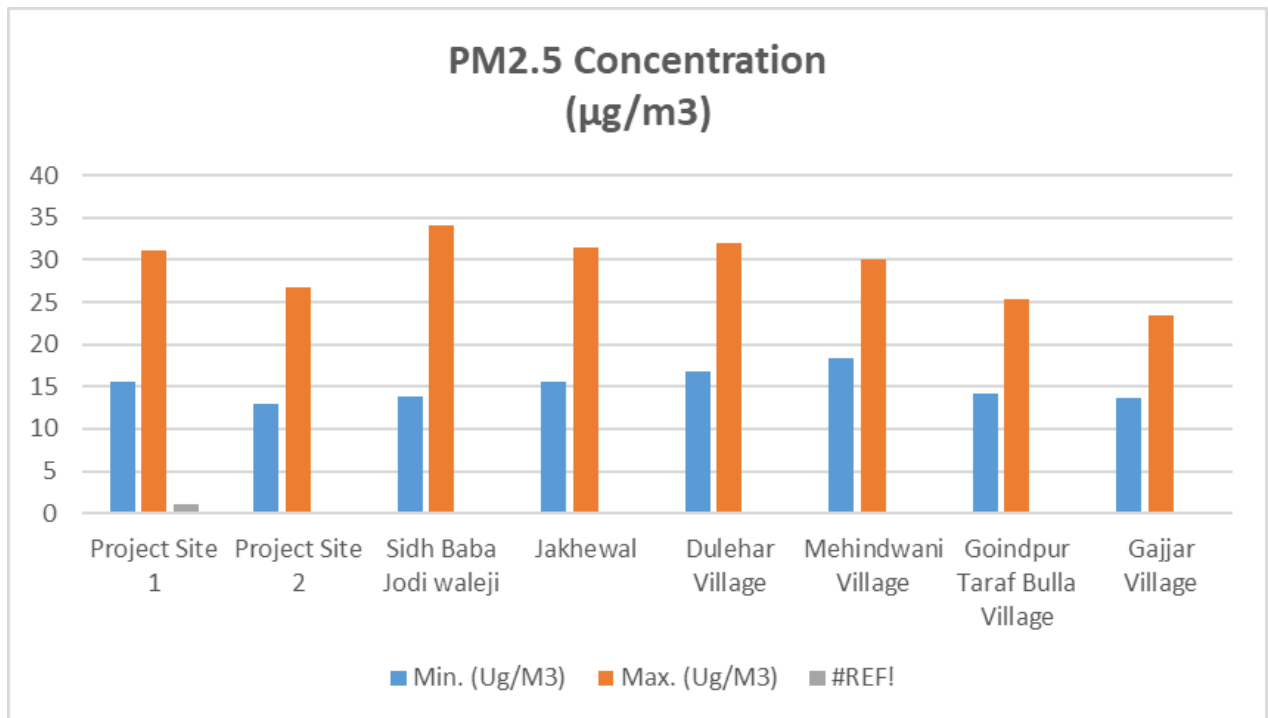
**TABLE 3-9 AMBIENT AIR QUALITY RESULTS**

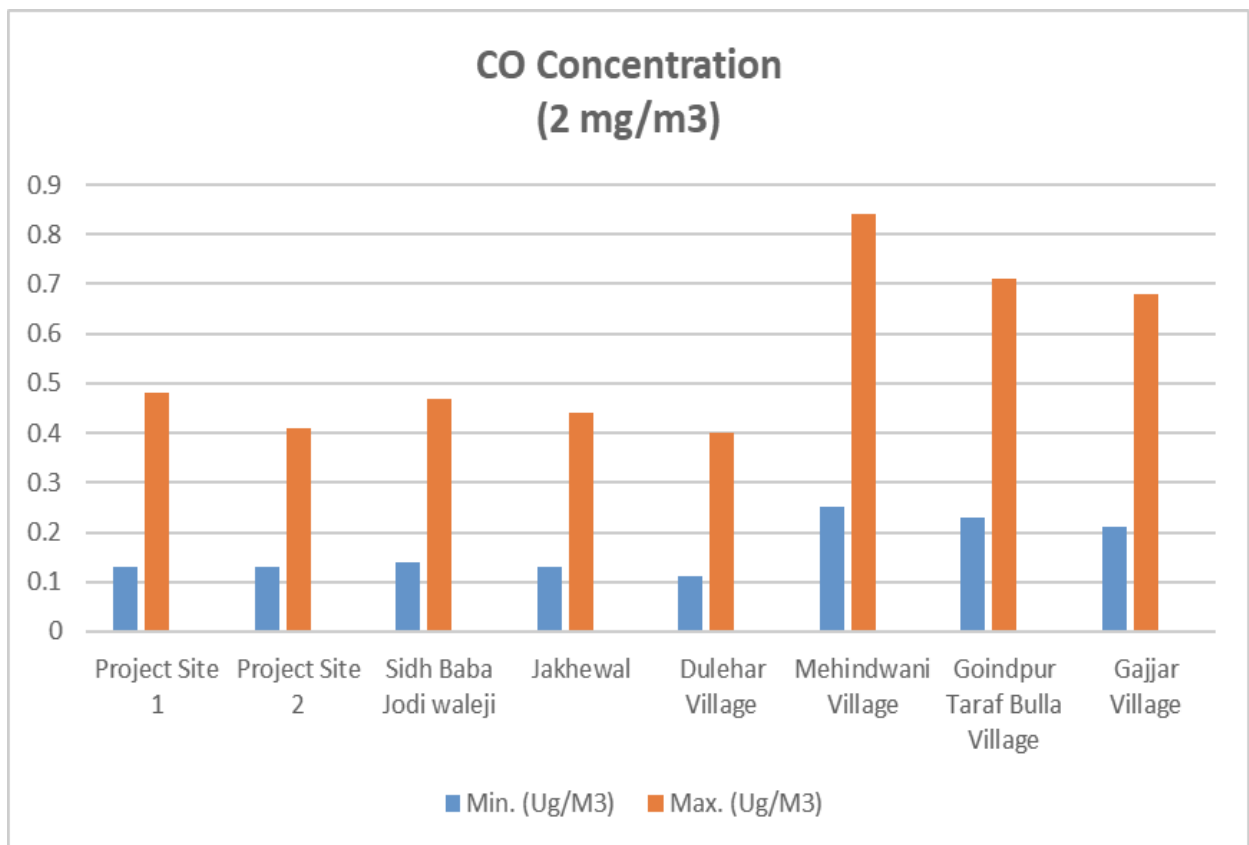
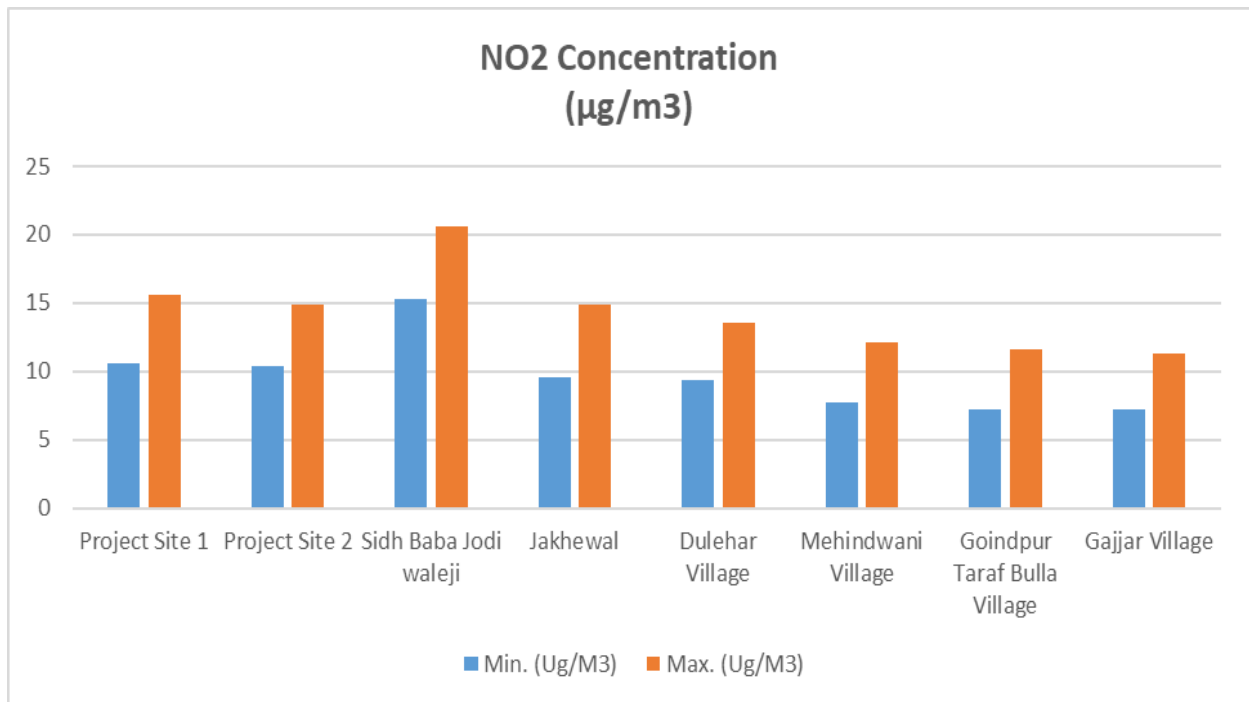
Air Quality Parameters	Location	Min. (Ug/M <sup>3</sup> )	Max. (Ug/M <sup>3</sup> )	Avg. (Ug/M <sup>3</sup> )	98% Percentile	NAAQS Limit
<b>PM<sub>10</sub></b> <b>(µg/m<sup>3</sup>)</b>	Project Site 1	29.93	58.69	41.95	57.28	<b>100</b> <b>(µg/m<sup>3</sup>)</b>
	Project Site 2	28.69	47.89	39.77	47.87	
	Sidh Baba Jodi waleji	31.69	58.69	44.03	58.20	
	Jakhewal	28.68	55.42	42.76	55.22	
	Dulehar Village	26.32	51.25	45.47	51.24	
	Mehindwani Village	35.43	47.75	41.44	47.29	
	Goindpur Taraf Bulla Village	24.46	40.48	32.10	39.65	
	Gajjar Village	23.67	38.56	30.87	38.23	
<b>PM<sub>2.5</sub></b> <b>(µg/m<sup>3</sup>)</b>	Project Site 1	15.56	31.11	22.30	30.36	<b>60</b> <b>(µg/m<sup>3</sup>)</b>
	Project Site 2	12.94	26.68	21.43	25.97	
	Sidh Baba Jodi waleji	13.89	34.05	24.41	34.05	
	Jakhewal	15.5	31.54	22.89	31.30	
	Dulehar Village	16.84	32.01	25.46	31.39	
	Mehindwani Village	18.32	30.03	22.98	29.35	
	Goindpur Taraf Bulla Village	14.24	25.32	18.15	24.33	
	Gajjar Village	13.65	23.35	17.35	23.01	
<b>SO<sub>2</sub></b> <b>(µg/m<sup>3</sup>)</b>	Project Site 1	7.96	13.45	11.32	13.45	<b>80</b> <b>(µg/m<sup>3</sup>)</b>
	Project Site 2	6.53	11.85	8.92	11.82	
	Sidh Baba Jodi waleji	7.25	12.54	11.20	12.53	
	Jakhewal	7.4	13.45	11.05	13.45	
	Dulehar Village	6.85	10.89	9.53	10.89	
	Mehindwani Village	6.83	11.09	8.85	10.89	
	Goindpur Taraf Bulla Village	6.41	10.34	8.39	10.26	
	Gajjar Village	6.14	9.88	8.35	9.79	
<b>NO<sub>2</sub></b> <b>(µg/m<sup>3</sup>)</b>	Project Site 1	10.55	15.55	12.82	15.55	<b>80</b> <b>(µg/m<sup>3</sup>)</b>
	Project Site 2	10.33	14.85	11.77	14.57	
	Sidh Baba Jodi waleji	15.25	20.65	17.31	20.20	
	Jakhewal	9.58	14.85	11.70	14.85	
	Dulehar Village	9.36	13.58	12.13	13.57	
	Mehindwani Village	7.73	12.14	10.06	12.02	
	Goindpur Taraf Bulla Village	7.25	11.58	9.46	11.49	
	Gajjar Village	7.17	11.32	9.44	11.15	

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CO	Project Site 1	0.13	0.48	0.31	0.48	<b>2 mg/m<sup>3</sup></b>
	Project Site 2	0.13	0.41	0.29	0.41	
	Sidh Baba Jodi waleji	0.14	0.47	0.33	0.46	
	Jakhewal	0.13	0.44	0.31	0.44	
	Dulehar Village	0.11	0.4	0.29	0.40	
	Mehindwani Village	0.25	0.84	0.53	0.81	
	Goindpur Taraf Bulla Village	0.23	0.71	0.47	0.70	
	Gajjar Village	0.21	0.68	0.49	0.67	







**FIGURE 3-13: GRAPHICAL REPRESENTATION OF AMBIENT AIR QUALITY FOR WINTER SEASON DEC 2025-FEB 2026**

The National Ambient Air Quality Standards as notified on dated 18<sup>th</sup> November 2009, for Industrial as well as Residential, Rural and Other Area and results of monitoring are compared with the standards in **Table 3-10**.

**TABLE 3-10 COMPARISON WITH AMBIENT AIR QUALITY STANDARDS ( $\mu\text{G}/\text{M}^3$ )**

Pollutants	Standard Laid Down by CPCB (18/11/2009)	Max. Value Monitored in Study Area
	Industrial, Residential, Rural and Other Area	
PM10 $\mu\text{g}/\text{m}^3$	100 (24-hours)	58.69
PM2.5 $\mu\text{g}/\text{m}^3$	60 (24-hours)	34.05
SO <sub>2</sub> $\mu\text{g}/\text{m}^3$	80 (24-hours)	13.45
NO <sub>2</sub> $\mu\text{g}/\text{m}^3$	80 (24-hours)	20.65
CO $\text{mg}/\text{m}^3$	2 (08- hours)	0.84
NH <sub>3</sub> $\mu\text{g}/\text{m}^3$	400 (24-hours)	ND (DL 20)
O <sub>3</sub> $\mu\text{g}/\text{m}^3$	180 (24-hours)	ND (DL 10)

From the above table, it can be concluded that the maximum value of ambient air quality monitored during monitoring season in the study area does not exceed the limit laid down by CPCB for all the parameters.

### 3.12.7 Air Quality Index (AQI)

The table given below shows the Air Quality Index (AQI) range & category:-

**TABLE 3-11 AMBIENT AIR MONITORING STATIONS**

Sr. No.	Monitoring Stations	PM10	PM2.5	SO <sub>2</sub>	NO <sub>2</sub>	CO	AQI value	AQI range
1	Project Site 1	41.95	22.30	11.32	12.82	0.31	42	Good
2	Project Site 2	39.77	21.43	8.92	11.77	0.29	40	Good
3	Sidh Baba Jodi waleji	44.03	24.41	11.20	17.31	0.33	44	Good
4	Jakhewal	42.76	22.89	11.05	11.70	0.31	43	Good
5	Dulehar Village	45.47	25.46	9.53	12.13	0.29	45	Good
6	Mehindwani Village	41.44	22.98	8.85	10.06	0.53	41	Good
7	Goindpur Taraf Bulla Village	32.10	18.15	8.39	9.46	0.47	32	Good
8	Gajjar Village	30.87	17.35	8.35	9.44	0.49	31	Good

**TABLE 3-12: AQI (IN  $\mu\text{g}/\text{m}^3$ ) OF THE SAMPLING LOCATIONS**

<b>Good (0-50)</b>	<b>Minimal Impact</b>	<b>Poor (201-300)</b>	<b>Breathing discomfort to people on prolonged exposure</b>
<b>Satisfactory (51-100)</b>	<b>Minor breathing discomfort to sensitive people</b>	<b>Very Poor (301-400)</b>	<b>Respiratory illness to the people on prolonged exposure</b>
<b>Moderate (101-200)</b>	<b>Breathing discomfort to the people with lung, heart disease, children and older adults</b>	<b>Severe (&gt;401)</b>	<b>Respiratory effects even on healthy people</b>

*\*Source:- CPCB AQI Calculator*

### 3.12.8 Observations of Results

**PM<sub>10</sub>** The maximum and minimum concentrations for PM<sub>10</sub> were recorded as 58.69  $\mu\text{g}/\text{m}^3$  and 23.67  $\mu\text{g}/\text{m}^3$  respectively. The maximum concentration was recorded at Sidh Baba Jodi waleji and minimum concentration was recorded at Gajjar Village.

**PM<sub>2.5</sub>**:-The maximum and minimum concentrations for PM<sub>2.5</sub> were recorded as 34.05  $\mu\text{g}/\text{m}^3$  and 12.94  $\mu\text{g}/\text{m}^3$  respectively. The maximum concentration was recorded at the Sidh Baba Jodi waleji, and minimum concentration was recorded at Project site 2.

**SO<sub>2</sub>**:- The maximum and minimum SO<sub>2</sub> concentrations were recorded as 11.32  $\mu\text{g}/\text{m}^3$  and 8.35  $\mu\text{g}/\text{m}^3$  respectively. The maximum concentrations were recorded at Project Site-1 & Jakhewal and minimum concentration was recorded at Gajjar Village.

**NO<sub>2</sub>** :- The maximum and minimum NO<sub>2</sub> concentrations were recorded as 20.65  $\mu\text{g}/\text{m}^3$  and 7.17  $\mu\text{g}/\text{m}^3$ . The maximum concentration was recorded at Sidh Baba Jodi waleji, due to vehicular activities and minimum concentration was recorded at Gajjar Village.

**CO**: - The maximum and minimum Carbon mono-oxide (CO) concentrations were recorded as 0.84 2mg/m<sup>3</sup> and 0.11 2mg/m<sup>3</sup>. The maximum concentration was recorded at Mehndwani Village, and minimum concentration was recorded at Dulehar Village.

### 3.13 AMBIENT NOISE

As part of EIA study for the proposed project, Noise study was conducted by measurement the existing noise levels at various places around the site. The noise assessment was carried out with respect to the existing as well as the predicted noise that may come from the proposed project.

#### 3.13.1 Noise level monitoring data

Noise level readings were recorded in 8 locations spread over, in the 10-km radius centring the proposed unit. Noise levels were recorded using a digital noise level meter;

the instrument was calibrated before and after each set of readings. The monitoring was carried out on 24-hourly basis and the hourly Leq. Values were derived and reported.

**TABLE 3-13 AMBIENT NOISE MONITORING LOCATION**

Sr. No.	Station Name	Distance(Km)	Direction	Latitude & Longitude	Criteria
N1	Project Site 1	.....	.....	31°19'20.96"N 76°11'59.12"E	---
N2	Project Site 2	.....	.....	31°19'17.75"N 76°12'6.17"E	---
N3	Sidh Baba Jodi Wale ji	0.68	WNW	31°19'32.86"N 76°11'37.43"E	Silence
N4	Crusher Site	0.06	NW	31°19'23.66"N 76°12'0.07"E	Industrial
N5	Gaushala Dulehar	0.89	NNW	31°19'50.34"N 76°11'53.41"E	Silence
N6	Dispensary & Healthcare Centre, Gondpur Bulla	0.90	ESE	31°19'1.29"N 76°12'34.24"E	Silence
N7	Bhandiarna Village	0.78	E	31°19'20.42"N 76°12'36.93"E	Residential
N8	Dulehar to Gondpur bulla road	0.86	ESE	31°19'9.12"N 76°12'38.05"E	Commercial

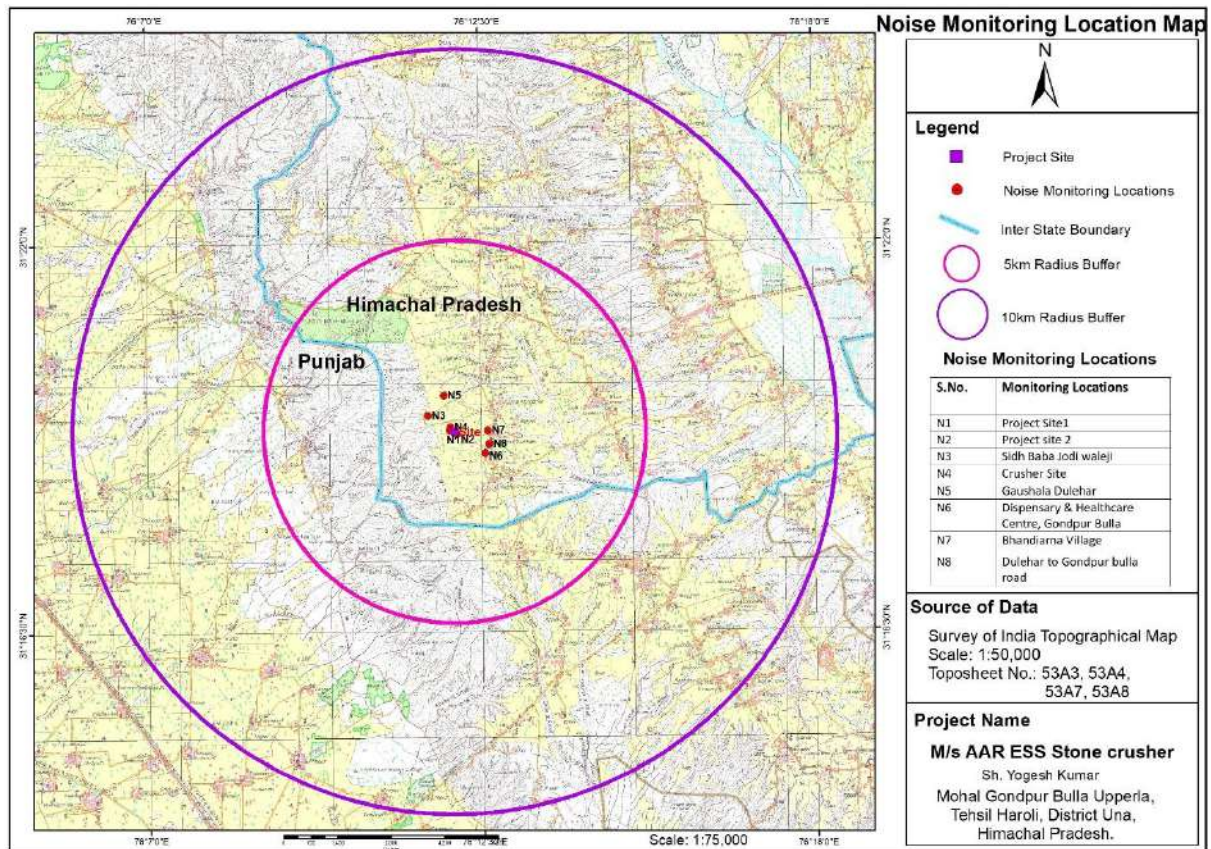


FIGURE 3-14: NOISE MONITORING LOCATIONS

TABLE 3-14 AMBIENT NOISE LEVEL OF STUDIED AREA

Sr. No.	Location Name	Results		Method
		Day Time Leq. dB (A)	Nighttime Leq.in dB(A)	
1.	Project Site 1	57.6	43.2	IS: 9989: 1981R-2002
2.	Project Site 2	55.4	41.8	
3.	Sidh Baba Jodi Wale ji	45.2	38.4	
4.	Crusher Site	62.5	45.6	
5.	Gaushala Dulehar	51.0	45.4	
6.	Dispensary & Healthcare	45.4	34.8	
7.	Bhandiarna Village	50.6	35.5	
8.	Dulehar to Gondpur bulla	54.2	43.6	

**TABLE 3-15 AMBIENT NOISE QUALITY STANDARD (CPCB, 2009)**

Area Code	Location Name	Day Time(6 AM to 10 PM db (A) Leg.	Night-time (10 PM to 6 AM db (A) Leg.
A	Industrial	75	70
B	Commercial	65	55
C	Residential	55	45
D	Silence Zone	50	40

### 3.13.2 Result and Interpretation

Ambient noise levels were measured at 8 locations around the mining site. Noise level varies from 45.2 to 62.5 dB (A) during daytime and during night-time levels ranges from 34.8 to 45.6 dB (A). Thus, ambient noise levels at all locations were observed to be within the prescribed limits and well.

### 3.14 WATER ENVIRONMENT

#### 3.14.1 Hydrogeology of the area

Hydro-geologically, the unconsolidated valley fills or alluvial formations, occurring in the valley area and semi-consolidated sediments belonging to Shivalik Group form aquifer system in the district. Porous alluvial formation forms the most prolific aquifer system in the valley area, whereas the sedimentary semi-consolidated formation form aquifer of low yield prospect. The ground water in the Shivalik group of rocks occur under the unconfined to semi confined conditions, mainly in the arenaceous rocks viz., sandstone, siltstone, gravel boulder beds etc. The occurrence and movement of ground water is controlled by inter granular pore spaces and the fracture porosity. Shivalik sediments underlie Hilly/undulating areas, where springs (mostly gravity/contact type) and bowties are the main ground water structures apart from hand pumps. The discharges of the springs, varies from seepages to 0.50 lps. Bowries are dug well type constructions on the hill slopes/ nalas for tapping the seepages. In the low-lying areas underlain by Shivalik rocks, dug wells and hand pumps are the main ground water structures, that range in depth from 3.00 to 25.00 m bgl, where in depth to water level ranges from 2.50 to 15.00 m bgl. In upland/plateau areas, the water level is generally deep. In Beet area water level is more than 60 m below land surface has been observed.

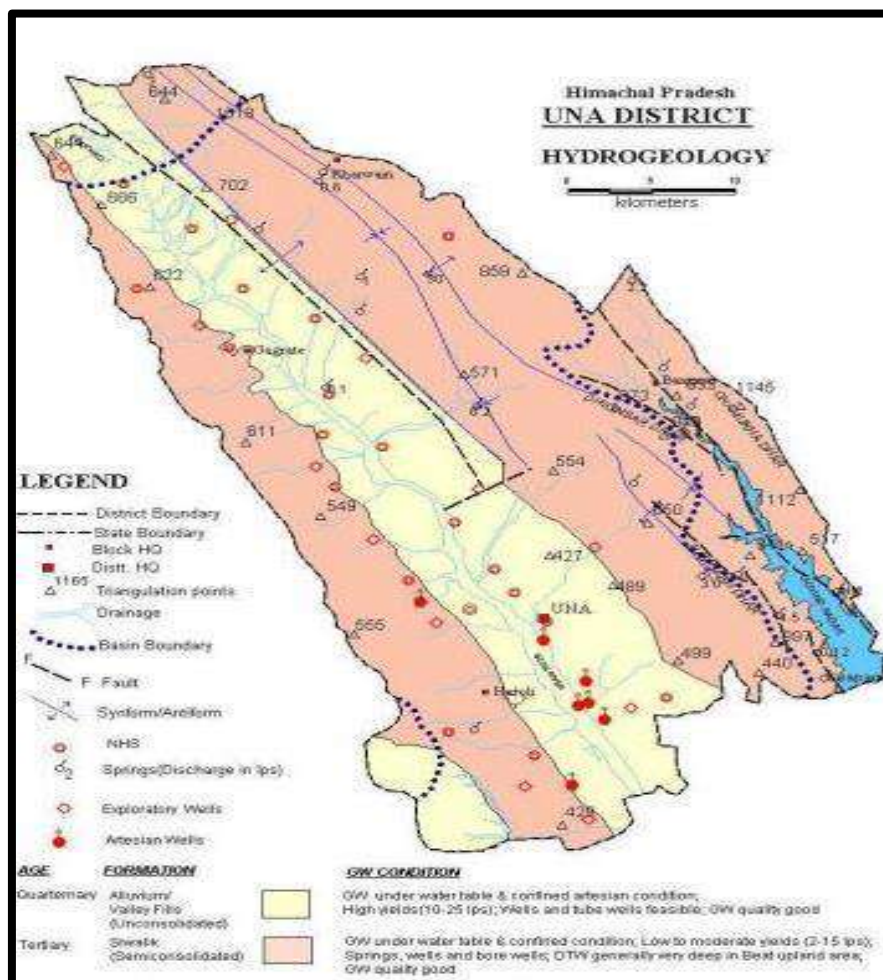


FIGURE 3-15: HYDROGEOLOGICAL MAP OF UNA DISTRICT

\*Source: - <https://cgwb.gov.in/District Profile/HP/UNA.pdf>

### 3.14.2 Depth to Ground Water

As on March 2011, the stage of groundwater development in Una and Hum valleys of the district is 108% & 99% and falls under Critical category of development. There is thus no scope for further ground water development by constructing additional wells and tube wells in the valley area. However, tube wells can be constructed by tapping deeper aquifers of depth range of 300 m.

### 3.14.3 Water quality in the study area

Chemical quality data of ground water from shallow as well as deep aquifers in the district, indicates that ground water is generally alkaline in nature and suitable both for domestic and irrigation use. All the parameters analysed are well within the permissible limit of safe drinking water, set by Bureau of Indian Standard (BIS). Proper monitoring is very much required.

\*Source: <http://cgwb.gov.in/District Profile/HP/Una.pdf>

### 3.14.4 Methodology for Ground Water Monitoring

Ground water samples were examined for physico-chemical & bacteriological parameters in order to assess effect of mining activities on surface and groundwater. The samples were collected and analysed as per procedures specified in 'Standard Method for the Examination of Water and Wastewater' published by American Public Health Association (APHA). Samples for chemical analysis were collected in polyethylene carbons. Samples for bacteriological analysis were collected in sterilized glass bottles. Selected physico-chemical and bacteriological parameters have been analysed for projecting the existing water quality status in the study area. Parameters like temperature, dissolved oxygen (DO) and pH were analysed at the time of sample collection. To evaluate the physico-chemical characteristics of the water resources existing in the study area, water samples from surface and ground water sources were collected during the post-monsoon season and analysed for physico-chemical parameters. Twelve samples of water drawn from different sources (six surface and Six ground water have been analysed as per prescribed testing standards. Surface water and Ground water monitoring locations are shown in **Figure 3-16**.

### 3.14.5 Location of Sampling Stations

Five sampling stations covering ground and two surface water were selected in the buffer zone of the study area is given in **Table 3-16**. The locations of water sampling stations have been shown in **Figure 3-16**.

**TABLE 3-16 GROUND WATER & SURFACE WATER MONITORING LOCATIONS**

GROUND WATER LOCATIONS				
Sr. No.	Station Name	Distance (Km)	Direction	Latitude & Longitude
GW1	Bhakhra Stone crusher near project site	0.11	NNW	31°19'25.15"N 76°11'59.40"E
GW2	Bhandiarna	1.17	NE	31°19'42.28"N 76°12'42.64"E
GW3	Govt. Senior Secondary School, Gondpur Bulla	1.46	E	31°19'16.83"N 76°13'2.40"E
GW4	Gaushala Dulehar	0.89	NNW	31°19'50.34"N 76°11'53.41"E
GW5	Lakhwinder Stone crusher	2.05	SSW	31°18'24.83"N 76°11'14.98"E
GW5	Gondpur village	1.57	SSE	31°18'37.84"N 76°12'42.51"E
SURFACE WATER LOCATIONS				

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Sr. No.	Station Name	Distance (Km)	Direction	Latitude & Longitude
SW1	Shiv Mandir Pond	1.10	ENE	31°19'38.01"N 76°12'42.68"E
SW2	Gondpur pond	1.69	ESE	31°18'44.87"N 76°12'57.42"E

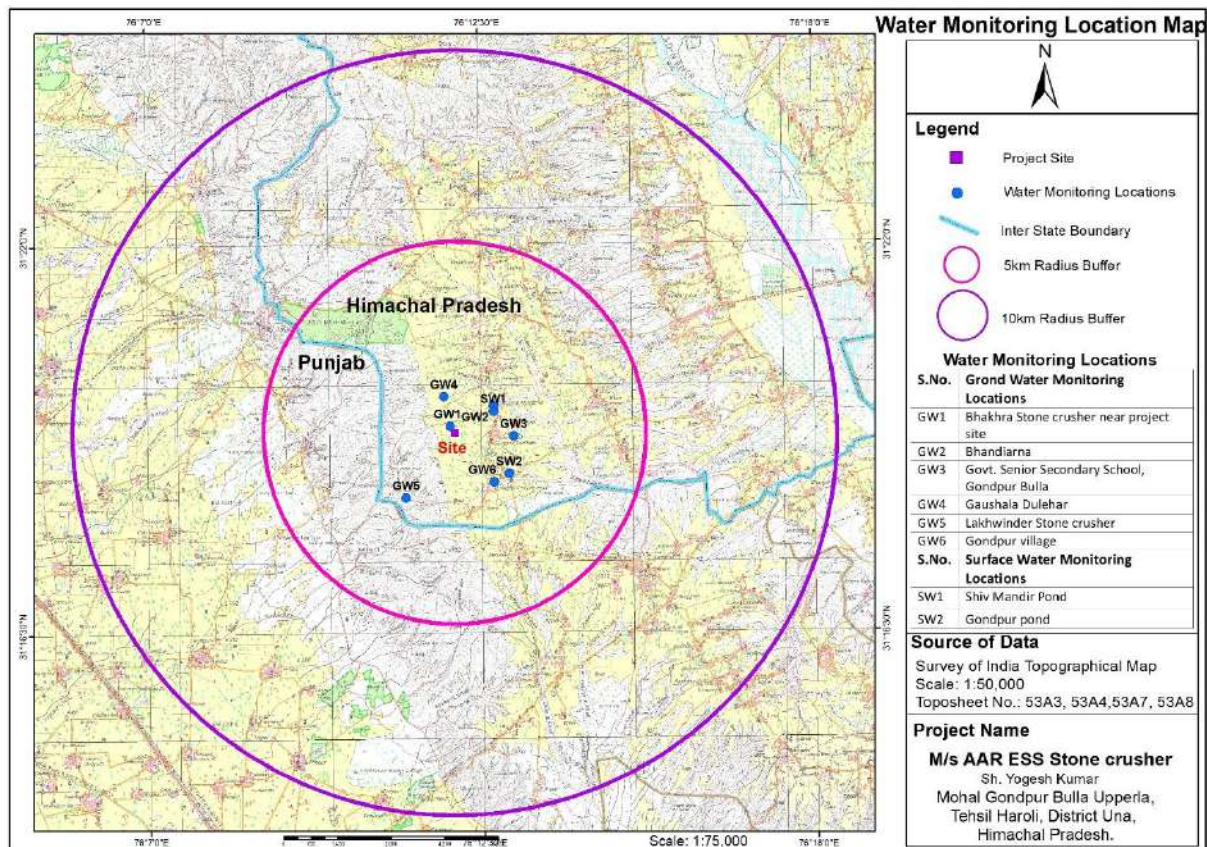


FIGURE 3-16: GROUND WATER & SURFACE WATER MONITORING LOCATIONS

TABLE 3-17: GROUND WATER TEST RESULTS

S. No.	Parameter	Unit	GW1 Bhakhra Stone Crusher near Project Site	GW2 Bhandi arna	GW3 Govt. Sr. Sec. School. Gondp ur Bulla	GW4 Gaushal a Dulehar	GW5 Lakhw inder Stone Crush er	GW 6 Gondpu r Village	Limit (as per IS:10500)- 2012/REV:2023	
									Desirab le	Permissi ble
1	Colour	Hazen	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	15
2	Odour	-	Agreeab le	Agreeab le	Agreeab le	Agreeab le	Agreeab le	Agreeab le	Agreeab le	-



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3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-
4	Turbidity	NTU	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1	5
5	pH	-	7.54	7.36	7.45	7.19	7.63	7.25	6.5-8.5	No Relaxation
6	Total Hardness (as CaCO <sub>3</sub> )	mg/l	175	152	168	146	152	160	200	600
7	Iron (as Fe)	mg/l	0.07	0.05	0.06	0.09	0.08	0.07	1.0	No Relaxation
8	Chlorides (as Cl)	mg/l	12.5	16.8	14.6	15.4	18.5	16.4	250	1000
9	Fluoride (as F)	mg/l	0.26	0.36	0.41	0.28	0.34	0.25	1	1.5
10	Conductivity	µmhos/cm	540.0	580.0	521.0	456.0	580.0	589.0	-	-
11	TDS	mg/l	346.0	372.0	334.0	292.0	372.0	378.0	500	2000
12	Calcium(as Ca <sup>2+</sup> )	mg/l	64.4	65.8	64.0	66.1	62.0	66.5	75	200
13	Magnesium (as Mg <sup>2+</sup> )	mg/l	10.5	8.90	6.75	10.2	8.50	9.21	30	100
14	Copper (as Cu)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	1.5
15	Manganese(as Mn)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.3
16	Sulphate (as SO <sub>4</sub> )	mg/l	26.0	25.4	28.0	25.0	24.2	26.6	200	400
17	Nitrate(as NO <sub>3</sub> )	mg/l	3.12	2.98	3.15	3.76	3.12	3.58	45	No Relaxation
18	Mercury (as Hg)	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	No Relaxation
19	Cadmium (as Cd)	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	No Relaxation
20	Selenium (as Se)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	No Relaxation
21	Arsenic (as As)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	No Relaxation



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22	Cyanide (as CN)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	No Relaxation
23	Lead (as Pb)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	No Relaxation
24	Zinc (as Zn)	mg/l	0.108	0.120	0.116	0.124	0.105	0.08	5	15
25	Anionic Detergent (as MBAS)	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.2	1
26	Chromium (as Cr6+)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	No Relaxation
27	Mineral oil	mg/l	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5	No Relaxation
28	Alkalinity as CaCO <sub>3</sub>	mg/l	146.0	162.0	145.0	166.0	178.0	154.0	200	600
29	Aluminium (as Al)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.2
30	Boron (as B)	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.5	2.4
31	Total Coliform	MPN /100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent/100ml	
32	<i>E. coli</i>	E.coli /100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent/100ml	

**3.14.6 Observations of Ground water Results**

All the parameters are well within the permissible limits as per the IS: 10500:2012 of drinking water standard. pH was found in the range of 7.19-7.63. Total dissolved solid was found in the permissible range as 378 mg/l at Gondpur Village. The presence of all heavy metal is found below detectable limit indicating there is no heavy metal contamination in ground water due to natural formation or industrial activity in the area. No toxicity was detected with respect to the presence of toxic metals.

**TABLE 3-18: SURFACE WATER TEST RESULTS**

S. No	Parameter	Test Method	Units	Shiv Mandir Pond	Gondpur Village
1	pH (at 250C)	IS:3025(Part-11)	---	7.46	7.58
2	Temperature	IS:3025(Part-9)	°C	21.0	20.0
3	Turbidity	IS:3025(Part-10)	NTU	1.8	2.5
4	Electric Conductivity @250C	IS:3025(Part-14)	µS/cm	320	338
5	Sulphate (SO <sub>4</sub> )	IS:3025(Part-24)	mg/l	18.0	21.0



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6	Nitrate (NO <sub>3</sub> )	IS:3025(Part-34)	mg/l	1.56	1.98
7	Total Hardness (as CaCO <sub>3</sub> )	IS:3025(Part-21)	mg/l	138.0	146.0
8	Chloride (as Cl)	IS:3025(Part-32)	mg/l	27.5	24.4
9	Fluoride (as F)	APHA 4500F	mg/l	0.28	0.20
10	COD (as O <sub>2</sub> )	APHA-5220 B	mg/l	34	42
11	Iron (as Fe)	IS:3025(Part-53)	mg/l	0.16	0.18
12	Dissolve Oxygen	IS-3025(Part-38)	mg/l	3.5	3.8
13	Total Dissolved Solid	IS:3025(Part-16)	mg/l	205	217
14	BOD (3 days at 270C)	IS:3025 (P-44)	mg/l	5.2	5.9
15	Calcium (as Ca)	IS:3025(Part-40)	mg/l	65.4	67.8
16	Magnesium (as Mg)	IS:3025(Part-46)	mg/l	9.80	7.60
17	Arsenic (as As)	IS:3025(Part-37)	mg/l	BDL (<0.01)	BDL (<0.01)
18	Lead (as Pb)	IS:3025(Part-47)	mg/l	BDL (<0.01)	BDL (<0.01)
19	Copper (as Cu)	IS:3025(Part-42)	mg/l	BDL (<0.05)	BDL (<0.05)
20	Zinc (as Zn)	IS:3025(Part-49)	mg/l	BDL (<0.01)	BDL (<0.01)
21	Manganese (as Mn)	IS:3025(Part-59)	mg/l	BDL (<0.10)	BDL (<0.10)
22	Total Chromium (as Cr)	IS:3025(Part-52)	mg/l	BDL (<0.05)	BDL (<0.05)
23	Sodium (as Na)	IS:3025(Part-45)	mg/l	18.5	16.8
24	Potassium (as K)	IS:3025(Part-45)	mg/l	1.32	1.27
24	Total Alkalinity (as CaCO <sub>3</sub> )	IS:3025(Part-23)	mg/l	145	152
26	Phosphate (as P)	IS:3025(Part-31)	mg/l	0.21	0.23
27	Nitrite (as NO <sub>2</sub> )	IS:3025(Part-34)	mg/l	0.16	0.18
28	Total Suspended Solid	IS:3025(Part-17)	mg/l	7.4	7.8
29	Faecal Coliform	IS-1622	MPN/100 ml	1.1 ×10 <sup>3</sup>	1.6 ×10 <sup>3</sup>
30	Total Coliform	IS-1622	MPN/100 ml	2.4×10 <sup>3</sup>	2.5×10 <sup>3</sup>



### 3.14.7 Result and Interpretation of surface water

The results for surface water samples collected within the study area were compared with standard limits. The pH was found to be in the range of 7.46-7.58, TDS was in the range of 205-217mg/l, enclosed as ANNEXURE-XI. Remaining all the parameters including trace elements were within the limits or below detectable limits as per standard prescribed under Environment Protection Rule 1986.

The analysis report of the water sample collected from the different surface water sources (River) in study area show that the water is used for the domestic purposes but only after conventional treatment & disinfection. As per the analysis the class of water is “C” as per the CPCB’s water quality criteria for designated best use.

\*Test reports are attached as ANNEXURE-XI.

The surface water quality comparison with CPCB water quality criteria is given below:-

**TABLE 3-19: CPCB WATER QUALITY CRITERIA**

Designated-Best-Use	Class of water	Criteria
Drinking water source without conventional treatment but after disinfection	A	Total Coliforms Organism MPN/100ml shall be 50 or less. PH between 6.5 and 8.5. Dissolved Oxygen 6mg/l or more
Outside bathing (organized)	B	Total Coliforms Organism MPN/100ml shall be 500 or less. PH between 6.5 and 8.5. Dissolved Oxygen 6 mg/l or more
Drinking water source after conventional treatment and disinfection	C	Total coliform organism MNP/100 ml shall be 5000 or less. PH between 6 to 9 Dissolved Oxygen 4 mg/l or more
Propagation of Wildlife and fisheries	D	PH between 6.5 and 8.5. Dissolved Oxygen 4 mg/l or more Free Ammonia (as N)1.2 mg/l or less

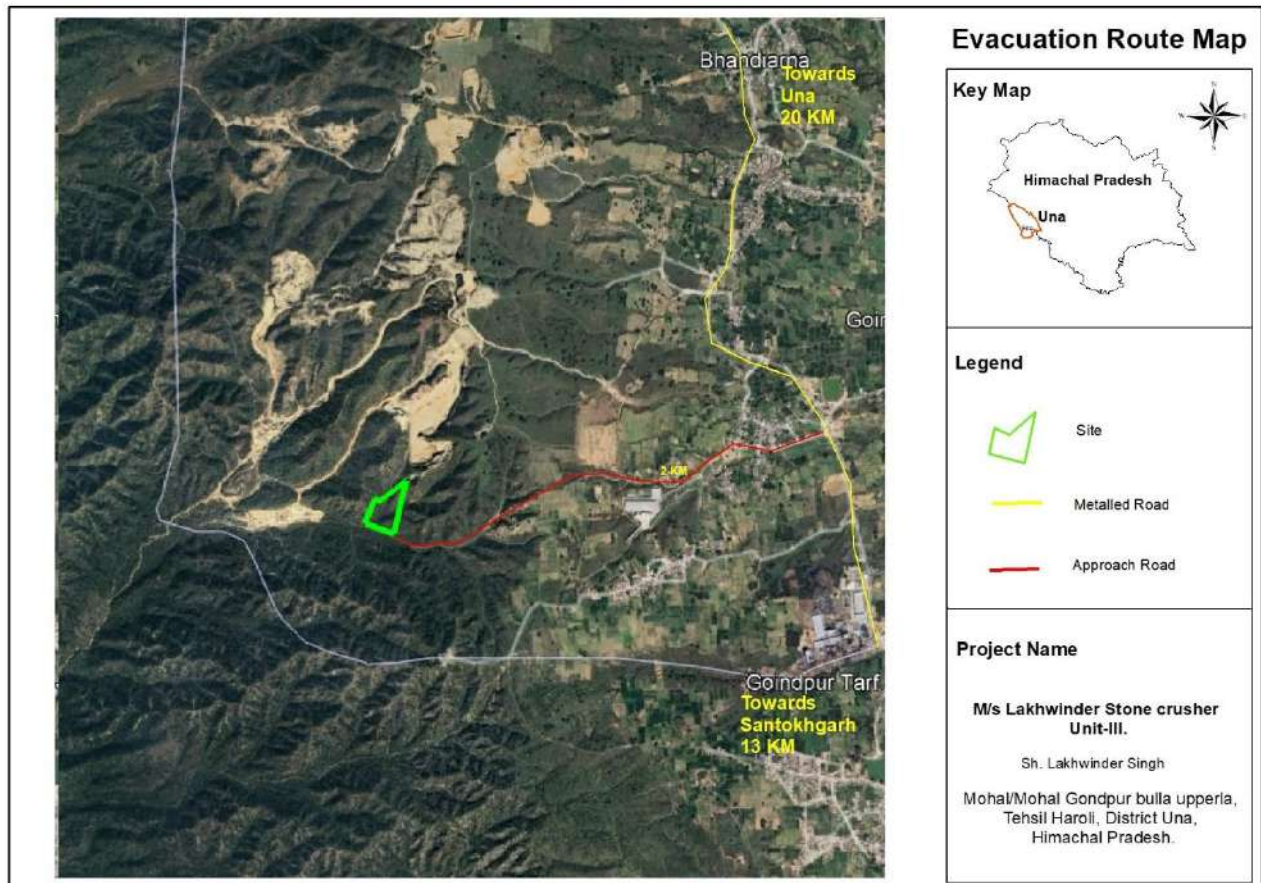
Irrigation, Industrial Cooling, Controlled waste disposal	E	PH between 6.0 and 8.5. Electrical conductivity at 25°C micro mhos/cm Max. 2250. Sodium absorption ratio 26 Boron Max. 2 kg/cm
	Below-E	Not meeting A, B, C, D and E criteria

### 3.15 TRAFFIC DENSITY

Traffic density measurements were performed at two locations for MDR-39 and NH-503 about 4.16 km in South Direction and NH about 10.23 km in East Direction. The Monitoring was performed during study period. The results of measurements are given in **Table 3-20**.

#### 3.15.1 Methodology

Traffic density measurement was made continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., heavy motor vehicles, light motor vehicles and two/three wheelers. Two skilled persons were deployed simultaneously at each station during each shift-one person on each of the two directions for counting the traffic. At the end of each hour, fresh counting and recording was undertaken. Total numbers of vehicles per hour under three categories were determined.



**FIGURE 3-17: TRAFFIC STUDY LOCATION**

**TABLE 3-20: EXISTING TRAFFIC SCENARIO & LOS**

Road	V	C	Existing V/C Ratio	LOS
MDR 39	480	1900	0.25	B
NH 503	1400	5800	0.24	B

\*Source: - Capacity as per IRC: 64-1990

**V= Volume of Vehicles in PCU's/day, C = Capacity of Road in PCU's/day**

The existing Level of Service (LOS) is "A" i.e., excellent.

V/C	LOS	Performance
0.0 - 0.2	A	Excellent
0.2 - 0.4	B	Very Good
0.4 - 0.6	C	Good/Average/Fair
0.6 - 0.8	D	Poor

0.8 - 1.0	E	Very Poor
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*\*Reference:- ENVIS Technical Report, IISc, Bangalore.*

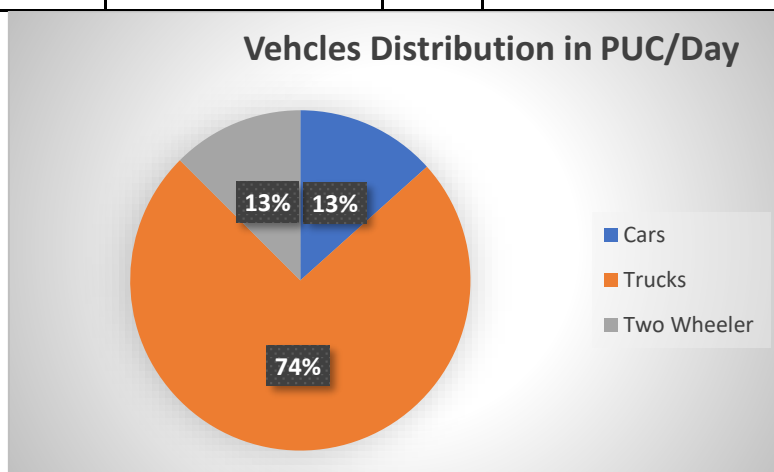
**During mine operation traffic intensity**

Total Production : 93,835 MTPA  
 No. of working days : 270 Days  
 Per day capacity of mine : 347 tonnes/day  
 Trolley/Truck capacity : 9 tonnes  
 No. of trip deployed : 38 trips/day.  
 Working hours per days : 8 hours  
 No. of trucks/Tractor trolley deployed/h : Approx. 5 trucks/tractor Trolley

**\*Increase in PCU/day will be 29.95 PCUs.**

**TABLE 3-21: TRAFFIC INCREASE DUE TO PROJECT ACTIVITY**

Sr. No.	Type of Vehicle	Additional Vehicle Distribution/day	PCU	Total No. of Vehicles in PCU/day	No. of Vehicles in PCU/hr.
1	Cars	4	1	4	0.5
2	Trucks	6	3.7	22.2	2.77
3	Two Wheelers	5	0.75	3.75	0.47
<b>Total</b>		<b>15</b>	<b>.....</b>	<b>29.95</b>	<b>3.74</b>



**FIGURE 3-18: GRAPHICAL REPRESENTATION OF VEHICLES**

**TABLE 3-22: MODIFIED TRAFFIC SCENARIO & LOS**

Road	V	C	Modified V/C Ratio	LOS
MDR 39	480+30=510	1900	0.26	B
NH 503	1400+30=1430	5800	0.24	B

### 3.15.2 Result of traffic assessment

Based on the traffic study, it has been observed that the increase in vehicular movement on the existing highways is minimal. Consequently, the additional load on the carrying capacity of the concerned roads is not expected to cause any adverse impact on the Level of Service (LOS). The LOS values will continue to remain unchanged, categorized as “Very Good” and “Good,” even after the implementation of the proposed project activity.

### 3.16 BIOLOGICAL ENVIRONMENT

The term biological environment would cover the prevalence of all living forms such as plants and animals both in terrestrial and aquatic in the study area. Living forms cover a very wide spectrum of species and even a small area may have thousands of species if all bacteria, protozoa, worms, insects, plants, animals, and birds are to be included. In the present study, higher taxa (trees, small trees, shrubs, under shrubs, climbers, and grasses) and fauna (mammals, birds, and aquatic) are covered. The Study area for the proposed project is of 10 km for the study of Biological Environment.

The basic purpose to exploring the biological environment under Environmental Impact Assessment (EIA) is to assist in the decision-making process and to ensure that the project options under consideration are bio-environmental-friendly. EIA identifies ways of improving project environmentally by preventing, minimizing, mitigating, or compensating for adverse impacts before construction and after construction phase. The present study on the floral assessment of the proposed project is based on field survey of the area supported by secondary data from various governmental and non-governmental source.

#### 3.16.1 Objectives of ecological and Biodiversity studies

The main objective behind gathering information about the ecology and biodiversity around the site is:

- To assess the existing baseline ecological conditions in the study area
- To assess the nature and distribution of vegetation in and around the project site
- To assess the distribution of animal life
- To understand possible implications of the project on the existing biodiversity.

### 3.17 EXISTING FORESTS IN THE STUDY AREA

### 3.17.1 Recorded Forest Area

The Forest Cover in the State is 15,580.35 sq. km which is 27.99 % of the State's geographical area. In terms of forest canopy density classes, the State has 3117.60 sq. km under Very Dense Forest (VDF), 7,280.29 sq. km under Moderately Dense Forest (MDF) and 5,182.46 sq. km under Open Forest (OF).

The Forest Cover in district Una is 639.84 sq. Km which is 41.55 % of Geographical Area.



\*Source:-ISFR 2023, Forest Survey of India, MoEF & CC

**TABLE 3-23: Forest cover in Himachal Pradesh**

District	Calculated Area by Sol	2023 Assessment				% of Calculated Area by Sol	Change w.r.t. 2021 Raster based*	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Bilaspur <sup>h</sup>	1,167	22.65	165.85	185.30	373.80	32.03	2.12	3.30
Chamba <sup>h</sup>	6,522	596.72	1,221.92	637.51	2,456.15	37.66	-1.82	21.27
Hamirpur <sup>h</sup>	1,118	42.41	101.95	217.17	361.53	32.34	0.00	12.40
Kangra <sup>h</sup>	5,739	229.24	1,301.44	869.52	2,400.20	41.82	5.70	12.81
Kinnaur <sup>h</sup>	6,401	84.24	325.72	238.11	648.07	10.12	-0.51	61.34
Kullu <sup>h</sup>	5,503	634.95	852.20	508.21	1,995.36	36.26	0.22	25.02
Lahaul & Spiti <sup>h</sup>	13,841	11.95	34.03	100.03	146.01	1.05	0.17	16.69
Mandi <sup>h</sup>	3,950	412.59	730.22	647.36	1,790.17	45.32	9.11	18.67
Shimla <sup>h</sup>	5,131	778.96	1,150.66	514.97	2,444.59	47.64	4.22	28.29
Sirmaur <sup>h</sup>	2,825	238.40	646.70	530.78	1,415.88	50.12	20.46	49.60
Solan <sup>h</sup>	1,936	45.84	439.72	423.19	908.75	46.94	12.08	46.55
<b>Una<sup>h</sup></b>	<b>1,540</b>	<b>19.65</b>	<b>309.88</b>	<b>310.31</b>	<b>639.84</b>	<b>41.55</b>	<b>2.98</b>	<b>12.75</b>
<b>Grand Total</b>	<b>55,673</b>	<b>3,117.60</b>	<b>7,280.29</b>	<b>5,182.46</b>	<b>15,580.35</b>	<b>27.99</b>	<b>54.73</b>	<b>308.69</b>

\*Source:-ISFR 2023, Forest Survey of India, MoEF & CC

### **3.17.2 Forests Cover in Una District**

#### **Northern Dry mixed deciduous forest (5B/C2)**

This type is characterized by the presence of *Anogeissus latifolia*, *Acacia catechu* on the upper dry Southern slopes and outer extensions of Siwaliks, mainly in the transition between dry to moist deciduous type. The upper canopy is light but fairly even and continuous in the climax form. Climax formations are rarely encountered, and mostly irregular, often broken canopy is seen. The mean annual temperature ranges from 24°C to 27°C and rainfall ranges from 900mm to 1,500 mm.

#### **Dry Siwalik Sal Forest(5B/C1a)**

This type is characterized by the prevalence of Sal of low quality mixed other deciduous species of height rarely above 18m forming irregular canopy. An undergrowth of grass is usual. The soil is derived from Siwalik sand rock and conglomerates and is shallow sandy and completely drained.

#### **Dry deciduous Scrub (5/DS1)**

This Type occurs throughout the dry deciduous forest zone and is stunted condition of tree growth. Usually it occupies stony sites, where fleshy *Euphorbia* spp. is the most important constituent. The thorny *Acacia* Species and their associates also occur but are usually stunted. Soil is bare, rocky with thin cover of wiry grasses.

#### **Dry bamboo brakes(5/E9)**

In this type only one species, *Dendrocalamus strictus* is found and forms relatively low but often dense brakes. Generally, this type occurs on well drained and loose textured Siwalik formations mainly on dry hill sides. A scattered over wood of hardier species of the dry deciduous forest indicates the dominance of bamboo to be secondary.

#### **Lower or Siwalik Chir pine forest(9/C1a)**

In this type of forest, *Pinus roxburghii* occurs pure or in the mixed forms with a Scattered lower deciduous tree storey. These forests occur between the elevations of 800m to 1700 m. At lower elevations, it is restricted to the cooler Northern and sheltered aspects while on higher elevations, it is restricted to the cooler Northern and sheltered aspects while on higher elevations it occurs all over, preferably on the ridges.

### **3.18 CLIMATE**

Climate of the district is tropical to temperate in nature, as the terrain varies from plains to high hills. Temperature varies from minimum of 4°C in winter to maximum of 46°C in summer. The area receives rainfall during monsoon period, extending from June to September and also non-monsoon period (winter). The annual average rainfall in the area is about 1040 mm, with about 55 average rainy days. The winter season starts from November and continues till the middle of March. Thereafter, the mercury continues rising till the onset of Monsoon which starts from the last week of June and continues till the middle of September.

### **3.19 METHODOLOGY ADOPTED FOR THE BIOLOGICAL SURVEY**

Detailed study of the area was undertaken within 10-km radius study area from the proposed Project. The different methods adopted for biological study were as follows:

- Collection and compilation of secondary data with respect to the study area from published literature and Government agencies.
- Generation of primary data by undertaking site visits and systematic ecological studies in the area; and
- interaction with local people to elicit information for local plants, animals, and their uses.

Biological studies in the study area were conducted during May 2025.

#### **3.19.1 Details of Methodology**

The primary objective of the survey is to describe the floral and faunal communities within the study area. The knowledge of species, habitats requirement, soil type, terrain, vegetation etc. were used to predict species occurrence. This Rapid biodiversity assessment was undertaken by identifying potentially rich sites from satellite imagery LISS-IV and Google Earth and conducting the field survey in potential habitats. GPS (Garmin e-trex-20) was used for locating field samples as well as gathering positional attributes of flora and faunal species.

The methodology adopted for faunal survey involved faunal habitat assessment, random intensive survey, opportunistic observations, diurnal bird observation, active search for reptiles, active search for scats and footprints and review of previous studies. The aim was to set baselines to monitor and identify trends after the commencement of production system activity. Emphasis has been placed on the presence of rare, endemic, migratory, and threatened species, if any present in the study area. Desktop literature review was conducted to identify the representative spectrum of threatened species, population and ecological communities as listed by IUCN and in Indian wildlife Protection act, 1972 amended in 2022.

**Field study period:-** The ecological survey has been conducted for one season. The details are given below:

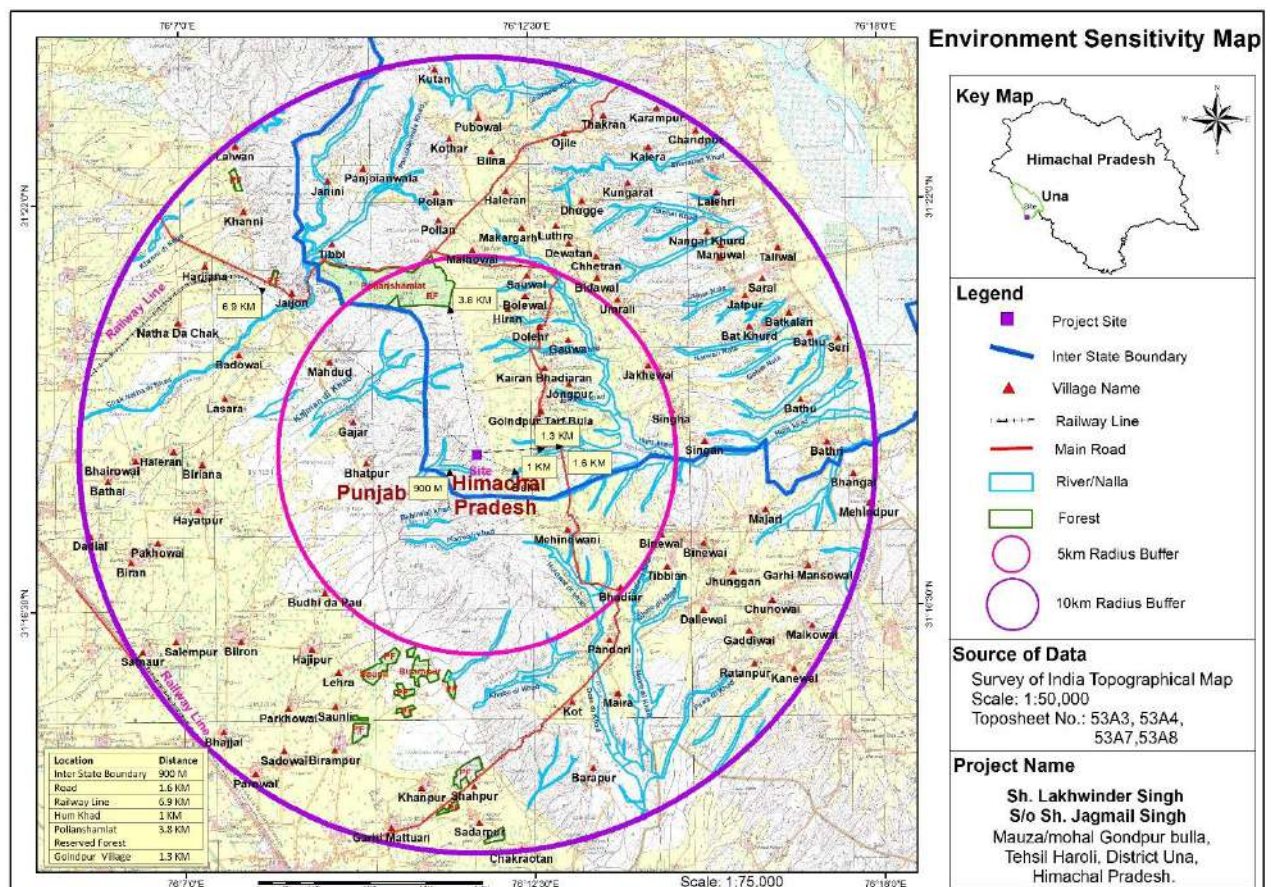
- Summer:- December 2025 – February 2026
- Core zone:- At the project site
- Buffer zone:- Around the project site in 10 km radius.

**TABLE 3-24: MODE OF DATA COLLECTION & PARAMETERS CONSIDERED DURING THE SURVEY**

Aspect	Mode of data collection	Parameters Monitored	Frequency	Source(s)
Terrestrial Ecology	Primary field survey and secondary literature survey	Floral and Faunal Diversity and their Importance	One Season (Summer)	Field studies, Forest & Wildlife Department, and literature review
Aquatic Ecology	Primary field survey and secondary literature survey	Diversity of Species and their Importance	One Season (Summer)	Field studies, Forest/ Wildlife Department, and literature review

**Ecological Study in the Study Area:-** The objective of the present study was undertaken with a view to understand the present ecosystem on the following lines:

- To assess the distribution of vegetation in the area.
- To assess the distribution of faunal life in the areas; and
- To assess the biodiversity resource potential.



**FIGURE 3-19: ENVIRONMENTAL SENSITIVITY MAP WITHIN 5 KM AND 10 KM RADIUS**

**Ecological pattern**

The project site (core zone) as well as buffer zone area were surveyed to assess the ecological status. The present study was carried out separately for floral and faunal community respectively.

**Flora:-** For studying flora of the area, Himachal Pradesh report on trees was consulted. Photographs were taken when plants are not identified for further search. Unidentified shrubs were collected following proper procedure and prepared into herbarium sheets for later identification.

**3.19.2 Diversity Index**

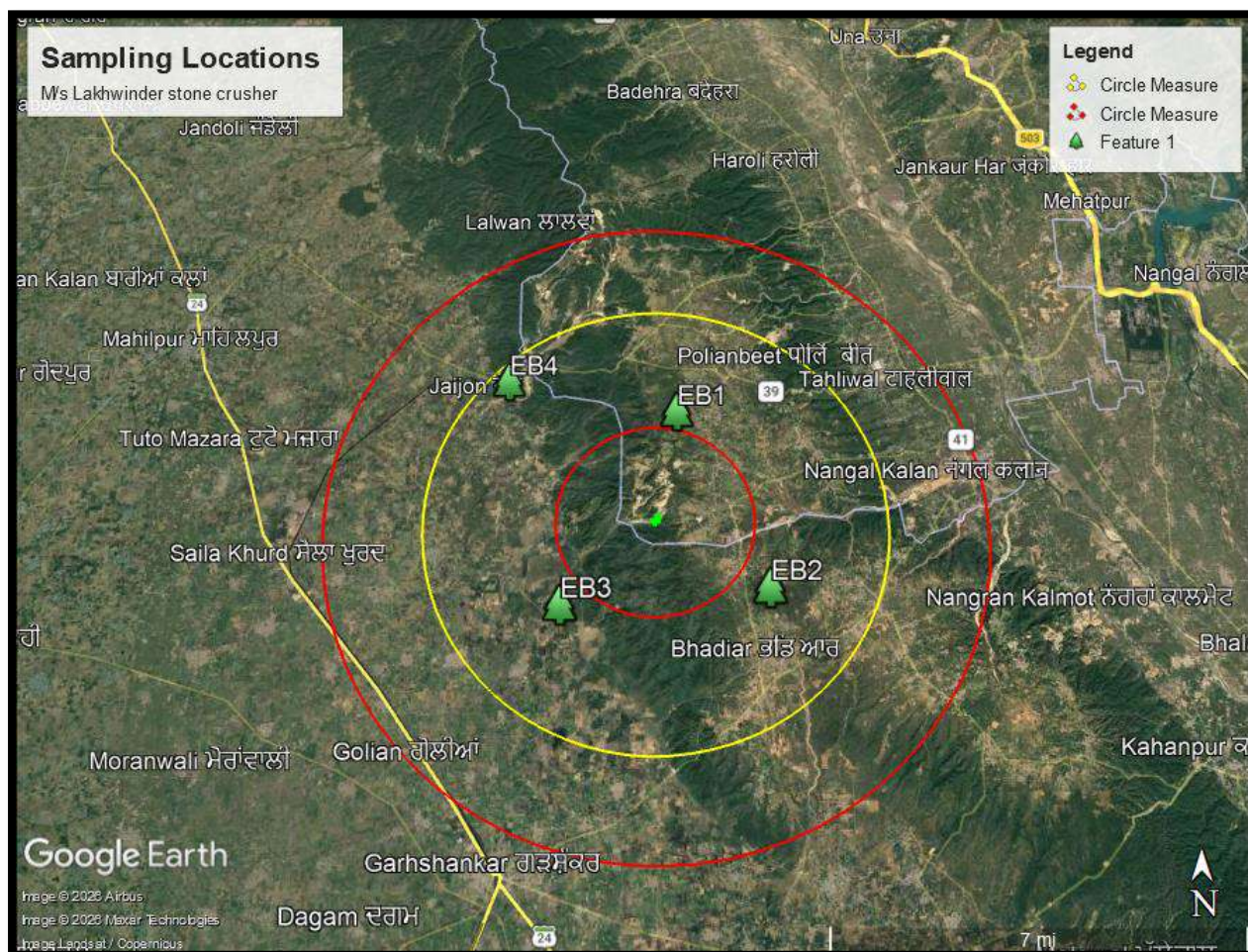
The Shannon-Wiener diversity index is one measure that to draw information from samples in the field. Historically, the index has been used to measure the effects of habitat quality such as effects of pollution of the area. The results of the Shannon-Wiener index need to be used with caution; it helps in comparing distinct habitats. It combines two quantifiable measures: the species richness (number of species within the community) and species equitability (how even are the numbers of individual species).

The project is hill slope mining and there is no Eco-sensitive zone located within 10 km periphery. The sampling points are depicted as EB-1, EB-2 EB-3 and EB-4 based on the maximum probable diversity within the study area. Details of sampling locations for floral studies are given in table below:-

**TABLE 3-25: DETAILS OF SAMPLING LOCATIONS FOR FLORAL STUDIES**

S. No.	Area Code	Area Range (Km)	Distance and Direction from project site
1.	EB-1	0-3	About 2.68 km in N direction.
2.	EB-2	3-7	About 4.25 km in SE direction.
3.	EB-3	7-10	About 4.17 km in SSW direction.
4.	EB-4	7-10	About 5.19 km in NW direction.

Google image showing sampling locations for floral studies is given in figure below:-



**FIGURE 3-20: SAMPLING LOCATIONS FOR FLORAL STUDIES**

**Shannon Wiener Diversity Index:**  $H = - \sum P_i (\ln P_i)$ , where  $P_i$  is the proportion of each species in the sample. The value ranges between 1 to 6. Lower values  $<1$  indicate less diversity, values between 1 to 3 indicate medium diversity and values  $>3$  indicate higher diversity.

**Calculations:-** Shannon-Wiener Diversity Index,  $H$ , is calculated using the following equation:  $H = - \sum P_i (\ln P_i)$  where  $P_i$  is the proportion of each species in the sample.

**TABLE 3-26: Distribution of Species**

Sr. No	Species	Frequency	Pi	ln(Pi)	Pi*ln(Pi)
<b>EB-1</b>					
1.	<i>Acacia catechu</i>	40	0.250	-2.079	-0.260
2.	<i>Albizia procera</i>	40	0.250	-1.386	-0.347
3.	<i>Dalbergia sissoo</i>	20	0.125	-2.079	-0.260
4.	<i>Solanum nigrum</i>	40	0.250	-1.386	-0.347
5.	<i>Xanthium stramonium</i>	40	0.250	-1.386	-0.347
		<b>160</b>			<b>-1.560</b>
<b>EB-2</b>					

Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III

1.	<i>Acacia nilotica</i>	20	0.091	-2.398	-0.218
2.	<i>Cassia fistula</i>	40	0.182	-1.705	-0.310
3.	<i>Ficus religiosa</i>	40	0.182	-1.705	-0.310
4.	<i>Eucalyptus sp.</i>	20	0.091	-2.398	-0.218
5.	<i>Euphorbia royleana</i>	40	0.182	-1.705	-0.310
6.	<i>Lantana camara</i>	20	0.091	-2.398	-0.218
7.	<i>Mangifera indica</i>	40	0.182	-1.705	-0.310
8.	<i>Populus deltoides</i>	40	0.182	-1.705	-0.310
		<b>220</b>			<b>-2.204</b>
	<b>EB-3</b>				
1.	<i>Albizia procera</i>	40	0.200	-1.609	-0.322
2.	<i>Bauhinia variegata</i>	20	0.100	-2.303	-0.230
3.	<i>Mangifera indica</i>	20	0.100	-2.303	-0.230
4.	<i>Malva parviflora</i>	40	0.200	-1.609	-0.322
5.	<i>Datura stramonium</i>	20	0.100	-2.303	-0.230
6.	<i>Lantana camara</i>	20	0.100	-2.303	-0.230
7.	<i>Populus deltoides</i>	40	0.200	-1.609	-0.322
8.	<i>Xanthium stramonium</i>	40	0.200	-1.609	-0.322
		<b>200</b>			<b>-2.209</b>
	<b>EB-4</b>				
1.	<i>Mangifera indica</i>	40	0.167	-1.792	-0.299
2.	<i>Acacia catechu</i>	40	0.167	-1.792	-0.299
3.	<i>Bauhinia variegata</i>	40	0.167	-1.792	-0.299
4.	<i>Ficus religiosa</i>	20	0.083	-2.485	-0.207
5.	<i>Malva parviflora</i>	40	0.167	-1.792	-0.299
6.	<i>Bombax ceiba</i>	20	0.083	-2.485	-0.207
7.	<i>Dalbergia sissoo</i>	40	0.167	-1.792	-0.299
8.	<i>Lantana camara</i>	40	0.167	-1.792	-0.299
		<b>240</b>			<b>-2.206</b>

**At location EB1 Diversity Index H is 1.560**

The SW index values (H) can range of 0 to ~4.6 using the natural log (ln). A value near 0 would indicate that every species in the sample is the same. A value near 4.6 would indicate that the number of individuals is evenly distributed between all the species. Here, the value of H is **1.560**, that indicates the area is lightly diversified.

**At location EB2 Diversity Index H is 2.204**

The SW index values (H) can range of 0 to ~4.6 using the natural log (ln). A value near 0 would indicate that every species in the sample is the same. A value near 4.6 would indicate that the number of individuals is evenly distributed between all the species. Here, the value of H is **1.760**, that indicates the area is lightly diversified.

**At location EB3 Diversity Index H is 2.209**

The SW index values (H) can range of 0 to ~4.6 using the natural log (ln). A value near 0 would indicate that every species in the sample is the same. A value near 4.6 would



indicate that the number of individuals is evenly distributed between all the species. Here, the value of H is **2.053**, that indicates the area is lightly diversified.

#### At location EB4 Diversity Index H is 2.206

The SW index values (H) can range of 0 to ~4.6 using the natural log (ln). A value near 0 would indicate that every species in the sample is the same. A value near 4.6 would indicate that the number of individuals is evenly distributed between all the species. Here, the value of H is 2.245 that indicates the area is lightly diversified. A list of flora of the study area is enclosed as Table 3-25.

**TABLE 3-27: FLORA IN THE STUDY AREA (CORE ZONE & BUFFER ZONE)**

S.No.	Species	Family	Habit	Source
1.	<i>Acacia catechu</i>	Fabaceae	Tree	P
2.	<i>Acacia nilotica</i>	Fabaceae	Tree	P
3.	<i>Achyranthes aspera</i>	Amaranthaceae	Herb	S
4.	<i>Adhatoda vasica</i>	Acanthaceae	Shrub	S
5.	<i>Ageratum conyzoides</i>	Asteraceae	Herb	S
6.	<i>Albizia procera</i>	Mimosaceae	Tree	S
7.	<i>Bauhinia variegata</i>	Fabaceae	Tree	P
8.	<i>Barleria cariatata</i>	Acanthaceae	Herb	S
9.	<i>Bombax ceiba</i>	Bombacaceae	Tree	P
10.	<i>Celtis australis</i>	Cannabaceae	Tree	S
11.	<i>Carissa carandas</i>	Apocynaceae	Shrub	S
12.	<i>Cassia fistula</i>	Fabaceae	Tree	P
13.	<i>Cordia dichotoma</i>	Boraginaceae	Tree	S
14.	<i>Cryptolepis buchanani</i>	Asclepiadaceae	Climber	P
15.	<i>Dodonaea viscosa</i>	Sapindaceae	Shrub	S
16.	<i>Dalbergia sissoo</i>	Fabaceae	Tree	S
17.	<i>Datura stramonium</i>	Solanaceae	Shrub	P
18.	<i>Dodonaea viscosa</i>	Sapindaceae	Shrub	S
19.	<i>Eucalyptus sp.</i>	Myrtaceae	Tree	P
20.	<i>Eupatorium species</i>	Asteraceae	Herb	P
21.	<i>Euphorbia royleana</i>	Euphorbiaceae	Shrub	S
22.	<i>Ficus benghalensis</i>	Moraceae	Tree	P
23.	<i>Ficus religiosa</i>	Moraceae	Tree	P
24.	<i>Ficus rumphii</i>	Moraceae	Tree	P
25.	<i>Jasminum dispersum</i>	Oleaceae	Shrub	S
26.	<i>Lantana camara</i>	Verbenaceae	Shrub	P
27.	<i>Mallotus philippensis</i>	Euphorbiaceae	Tree	S
28.	<i>Mangifera indica</i>	Anacardiaceae	Tree	P
29.	<i>Malva parviflora</i>	Malvaceae	Shrub	S
30.	<i>Murraya koenigii</i>	Anacardiaceae	Shrub	S
31.	<i>Morus alba</i>	Moraceae	Tree	S
32.	<i>Phoenix sylvestris</i>	Arecaceae	Tree	S
33.	<i>Populus deltoides</i>	Salicaceae	Tree	P

34.	<i>Sida acuta</i>	Malvaceae	Herb	S
35.	<i>Solanum nigrum</i>	Solanaceae	Herb	S
36.	<i>Saccharum munja</i>	Poaceae	Grass	S
37.	<i>Sapindus mukorossi</i>	Sapindaceae	Tree	S
38.	<i>Terminalia arjuna</i>	Combretaceae	Tree	P
39.	<i>Terminalia bellirica</i>	Combretaceae	Tree	S
40.	<i>Terminalia chebula</i>	Combretaceae	Tree	S
41.	<i>Tinospora cordifolia</i>	Menispermaceae	Climber	P
42.	<i>Urena lobata</i>	Malvaceae	Shrub	S
43.	<i>Vitex negundo</i>	Lamiaceae	Shrub	S
44.	<i>Xanthium stramonium</i>	Asteraceae	Shrub	S

**Note:** T=Tree, S=Shrub, C: Climber, H=Herb,

**Source:** Field Studies by SSWML and Secondary Data,

**P\*** primary source **S\*** secondary source

### Status of Threatened Floral Species

No rare, endangered, and threatened (RET) species of flora were reported in the core zone as well as buffer zone of the study area.

### 3.19.3 Faunal Diversity of The Study Area

The Faunal population in the area is composed mainly of domesticated animals like, Cows, Buffalos, Dogs, etc. however, there are reports of Weasel, Civets, Squirrel, Foxes and Rabbits in the area. The fauna of the study area is grouped into aquatic and terrestrial as the core area mostly comprises of aquatic fauna and the buffer area provides shelter to the terrestrial animals.

**Aquatic fauna:-** Aquatic fauna mostly comprises of Amphibians, Molluscs & Fish which cannot survive without water. The aquatic fauna of the project site is given as below.

**Avian fauna:-** No bird's habitats like nesting, breeding and forging patterns are noticed in the core zone. Local birds are noticed crossing over the banks in search of food. No fixed pattern in migratory behaviour is noticed.

**Amphibian:-** Amphibians are commonly found at places along the margin of aquatic and terrestrial systems. Due to the presence of water bodies like rivers, nalas, etc., the study area provides shelter to many amphibian species. Some of the commonly reported species are *Bufo melanostictus* (Common Indian toad), *Euphlyctis cyanophlyctis* (Indian skipper frog), *Hoplobatrachus tigerinus* (Indian bull frog) etc.

### 3.19.4 Terrestrial Fauna

**Mammals:** Many domesticated mammal species are reported from buffer zone during the field survey. Common grazing animals like Buffalo, cow, goat etc. can be noticed in open grass fields. Small mammals like Indian palm squirrel (*Funambulus palmarum*) and field mouse (*Apodemus sylvaticus*) are noticed in vicinity of village. Inquiry from village people regarding wild animals reveals that Rhesus macaque (*Macaca mulatta*), Indian

hare (*Lepus nigricollis*), fruits bat (*Pteropus conspicillatus*), Nilgai (*Boselaphus tragocamelus*), mongoose (*Harpsters edwardsii*), jackal (*Canis aureus*), etc. are often seen in the area.

**Avifauna:** Water birds like Gadwall (*Anas strepera*), Common teal (*Anas crecca*), White throated kingfisher (*Halcyon smyrnensis*), Pied kingfisher (*Ceryle rudis*), Red wattled lapwing etc are noticed. House crow (*Corvus splendens*), House sparrow (*Passer domesticus*), Common hill Myna (*Gracula religiosa*), Red-rumped Swallow (*Cecropis daurica*), Hoopoe (*Upupa epops ceylonensis*) are common occurrences.

**Reptiles:** The reptilian's species commonly reported are Agama (*Laudakia tuberculata*) in settlement area, Garden lizard (*Calotes versicolor*) and *Eutropis macularia* along shady places in agricultural field or where growth of bushes is noticed. Among non-poisonous snakes rat snakes (*Ptyas mucosus*) are commonly noticed in field, followed by poisonous snakes like Cobra (*Naja naja*) and Banded krait (*Bungarus multicinctus*) are reported to be seen by farmers. A list of Fauna of the study area is presented in the table below: -

**TABLE 3-28: LIST OF FAUNA IN THE CORE ZONE AND BUFFER ZONE**

S.No.	Common Name	Scientific name	Wildlife Schedule	IUCN Red Category
<b>Domestic Animals:</b>				
1	Cow	<i>Bos indicus</i>	-	NA
2	Buffalo	<i>Bos bubalis</i>	-	DD
3	Goat	<i>Capra aegagrus hircus</i>	-	DD
<b>Wild Animals (Mammals)</b>				
1	Field mouse	<i>Apodemus sylvaticus</i>	-	LC
2	Nilgai	<i>Boselaphus tragocamelus</i>	-	LC
3	Golden Jackal	<i>Canis aureus</i>	-	LC
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	-	LC
6	Indian Grey	<i>Herpestes edwardsii</i>	-	LC
7	Indian hare	<i>Lepus nigricollis</i>	-	LC
8	Rhesus macaque	<i>Macaca mulatta</i>	-	LC
9	Fruits bat	<i>Pteropus conspicillatus</i>	-	LC
10	Rat	<i>Rattus rattus</i>	-	DD
<b>Avian flora (Birds):</b>				
1	Jungle Myna	<i>Acridotheres fuscus</i>	-	LC
2	Common Myna	<i>Acridotheres tristis</i>	II	LC
3	Pintail (Duck)	<i>Anas acuta</i>	-	LC
4	Common Teal	<i>Anas crecca</i>	II	LC
5	Mallard (wild duck)	<i>Anas platyrhynchos</i>	-	LC
6	Gadwall	<i>Anas strepera</i>	-	LC
7	Pond Heron	<i>Ardeola grayii</i>	-	DD
8	Spotted Owlet	<i>Athene brama</i>	-	LC
9	Cattle Egret	<i>Bubulcus ibis</i>	II	LC
10	Red-rumped Swallow	<i>Cecropis daurica</i>	II	DD

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11	Pied kingfisher	<i>Ceryle rudis</i>	II	DD
12	Blue Rock Pigeon	<i>Columba livia</i>	-	LC
13	Oriental Magpie	<i>Copsychus saularis</i>	II	LC
14	Indian roller	<i>Coracias benghalensis</i>	-	LC
15	House Crow	<i>Corvus splendens</i>	-	LC
16	Common Cuckoo	<i>Cuculus canorus</i>	II	LC
17	Fork-tailed Drongo	<i>Dicrurus adsimilis</i>	-	LC
18	Asian Koel	<i>Eudynamys scolopacea</i>	-	NA
19	White-breasted King	<i>Halcyon smyrnensis</i>	-	LC
20	Small Green Bee	<i>Merops orientalis</i>	II	LC
21	House Sparrow	<i>Passer domesticus</i>	II	LC
22	Rose ringed Parakeet	<i>Psittacula krameri</i>	II	LC
23	Red vented Bulbul	<i>Pycnonotus cafer</i>	-	LC
24	Spotted Dove	<i>Streptopelia chinensis</i>	II	NA
25	Pied Myna	<i>Sturnus contra</i>	-	LC
26	Marsh Sandpiper	<i>Tringa stagnatilis</i>	II	LC
27	Common Babbler	<i>Turdoides caudatus</i>	-	NA
28	Hoopoe	<i>Upupa epops ceylonensis</i>	-	NA

### Reptiles & Amphibians

S.No.	Common Name	Scientific name	WPA	IUCN
1	Common Toad	<i>Bufo melanostictus</i>	-	LC
2	Skipping frog	<i>Bufo stomaticus</i>	-	LC
3	Krait	<i>Bungarus caeruleus</i>	-	NA
4	Banded krait	<i>Bungarus multicinctus</i>	-	NA
5	Kashmir Rock Agama	<i>Laudakia tuberculata</i>	-	NA
6	Bronze Grass Skink	<i>Eutropis macularia</i>	-	NA
7	Garden lizard	<i>Calotes versicolor</i>	-	NA
8	House lizard	<i>Hemidactylus frenatus</i>	-	LC
9	India bull frog	<i>Hoplobatrachus tigerinus</i>	-	DD
10	Cobra	<i>Naja naja</i>	-	LC
11	Rat snakes	<i>Ptyas mucosus</i>	-	NA

\*LC: Least Concern, NA: Not Assessed, DD: Data deficient, NT: Near Threatened  
No Schedule – I species found.

**Source:** Field Studies by SSWML and Secondary data

The birds in the area were studied by direct sighting, listening to the calls as well as by locating nest on the trees. The survey was conducted during dawn to midmorning, since most avian species are active during that time. All field observations were verified by using field guide “**The Book of Indian Birds**” by Dr. Salim Ali.



### **Status of Threatened Faunal Species**

No rare, endangered, and threatened (RET) species of fauna was reported from the core zone as well as buffer zone of the study area.

## **3.20 SOCIO-ECONOMIC REPORT**

### **3.20.1 Introduction**

A Social Impact Assessment (SIA) is an essential prerequisite for initiating any developmental project, whether it involves new construction, expansion, or modernization. The assessment is made through a socio-economic survey and secondary data analysis. The outcome of the study relies on both quantitative and qualitative measures of impacts. The impacts are evaluated in terms of changes in community demographics, housing, employment, wage income, market effects, public services, retail business, quality of life and artistic qualities of the community.

Positioning proposed projects within their socio-economic context enables project proponents, local authorities, and community stakeholders to identify potential equity concerns, assess the adequacy of social infrastructure and services, and determine whether the intervention may produce adverse effects on collective social well-being. This structured approach ensures that development decisions are informed, equitable, and socially sustainable.

### **Historical Background**

Una district, in southwestern Himachal Pradesh, was formed in 1972 after Kangra's reorganization. Once part of Jaswan State under Katoch rulers, it later came under Mughal, Sikh, and British control. The district is known for religious sites like Chintpurni Temple and Dera Baba Barbhag Singh, and has grown industrially due to its proximity to Punjab, with centers at Mehatpur, Gagret, Tahliwal, and Amb. Connectivity improved with the Nangal-Una railway line in 1991. Hindi, Punjabi, and Pahari are widely spoken, and the region experiences cool winters, hot summers, and a humid monsoon.

**Administrative Sub-divisions:** Una district consists of five Sub-Divisions (Una, Amb, Haroli, Bangana & Gagret), five Tehsils (Una, Amb, Bangana, Haroli and Ghanari) and seven Sub-Tehsils (Bharwain, Ispur, Jol, Bihru Kalan, Dulehar, Gagret at Kaloh, Mehatpur Basdehra).

**General information about the project site:** - The proposed project involves Hill Slope mining for the extraction of sand, stone, and bajri, undertaken by Sh. Lakhwinder Singh, proprietor of M/s Lakhwinder Stone Crusher Unit-III. The mining area covers 2.7891 hectares, identified under Khasra Nos. 1236. Within 500 meters, it forms a cluster with an existing mining lease of 4.8063 hectares, bringing the total cluster area to 7.5954 hectares. The site is located in Mauza/Mohal located at Gondpur Bulla, Haroli, Una, Himachal Pradesh.

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### Study Area

The study area consists of the core area and the buffer zone. The core area is where the project is located, and a buffer area encircling the project site with a radius of 10 kilometres from the periphery. The project site lies within 10 km of the interstate boundary with Punjab. The study area (10 km radius) covers twenty-five villages in Himachal Pradesh, where the project is located, and forty-three villages in Punjab. Specifically, the project is situated in Tehsil Haroli, District Una, Himachal Pradesh, while the Punjab portion of the study area includes Mahilpur and Garhshankar Tehsils in District Hoshiarpur.

Sr. No.	Latitude	Longitude
1	31° 18' 30.34" N	76° 11' 35.01"E
2	31° 18' 20.87" N	76° 11' 32.31"E

As a language Hindi is used by the majority of locals followed by Pahari and Punjabi.

### 3.21 OBJECTIVES OF THE SOCIO-ECONOMIC (SE) STUDY

- ✓ To study the existing baseline of socio-economic profile of communities in and around the project area.
- ✓ Assess existing infrastructure and public services including education, healthcare, transport, and livelihood resources.
- ✓ Evaluate potential positive and negative socio-economic impacts of the proposed mining activity on local communities.
- ✓ Recommend mitigation measures and community development initiatives to promote sustainable growth and reduce adverse effects.

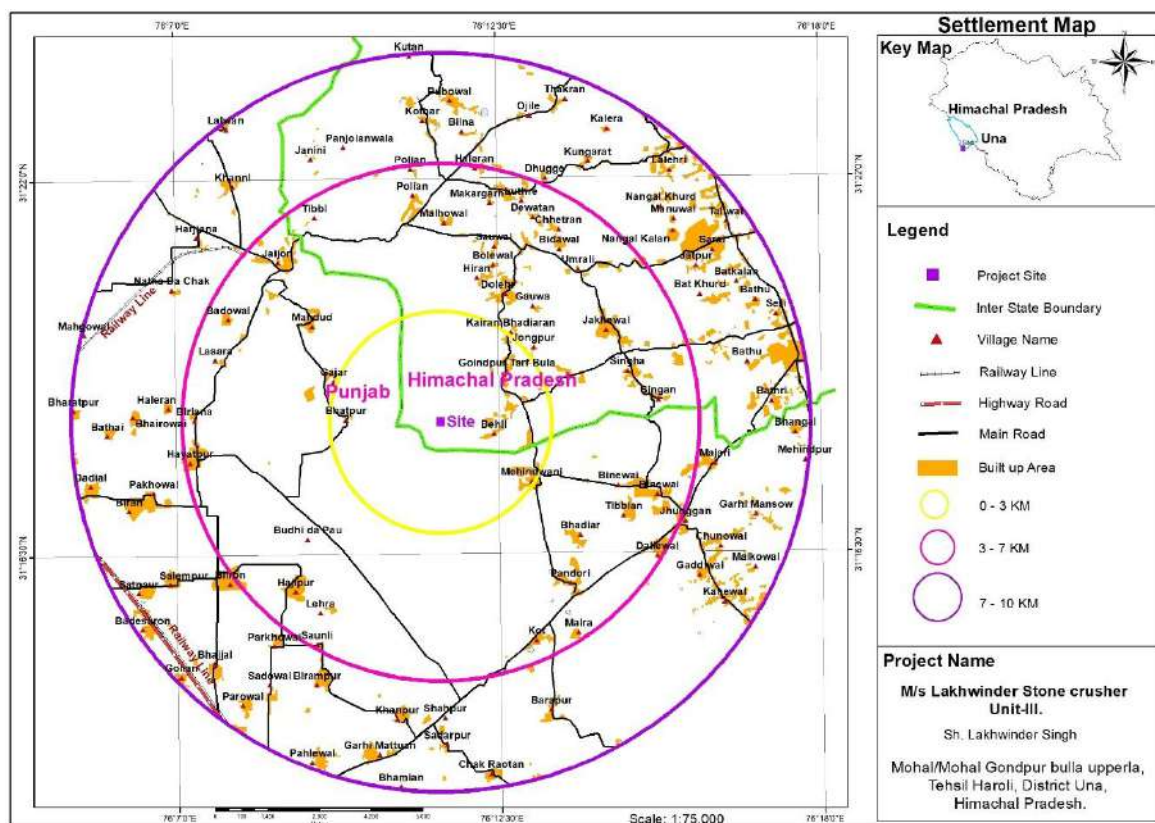
### 3.22 METHODOLOGY

Preliminary desktop study was done for the investigation area covering all villages falling within the distance of 10 km from the project site.

The socio-economic profile was studied through both the primary surveys and secondary data collection. Collection and evaluation of baseline data for various socio-economic parameters in and around the proposed site has been done. A questionnaire was used to undertake the primary survey fulfilling the objectives of the study. The data collected during the above survey was analysed to evaluate the prevailing socio-economic profile of the area. Accordingly, both qualitative and quantitative data were analysed from both primary and secondary sources. Primary Census Abstract (PCA) 2011 is the main source of secondary data.

For the socio-economic study, a settlement map prepared on a toposheet has been used to delineate the study area. A 10 km radius from the project site has been considered for the assessment and divided into three zones: the immediate impact area (0–3 km), the intermediate impact area (3–7 km), and the extended impact zone (7–10 km). The

primary survey focuses on the 0–3 km impact area. 10% of the total villages falling into the study area, are included in the primary survey. In cases where the number of villages in the 0–3 km zone is insufficient or not representative of the overall study area, villages from the 3–7 km intermediate impact area may also be included in the survey.



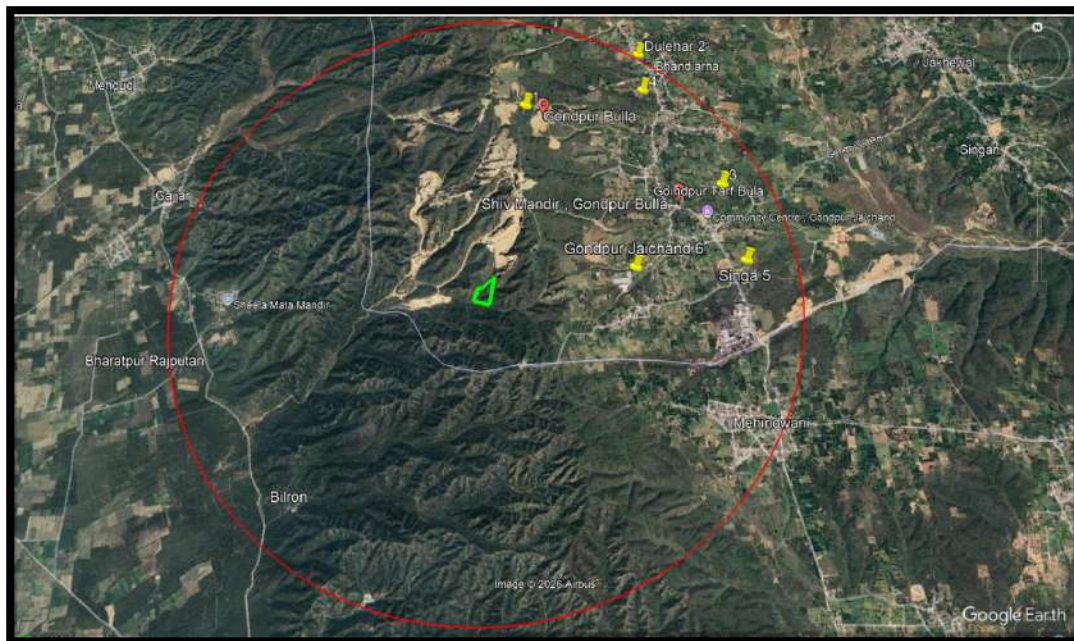
**FIGURE 3-21: SHOWING LOCATION OF VILLAGES WITHIN 10 KM RADIUS OF BOUNDARY**

### 3.23 BASELINE DATA

A total number of 68 Villages were found in a radius of 10 km from the project site as per the toposheet. Out of the total villages within the project area, 25 are located in Himachal Pradesh and 43 are in Punjab. The project site lies within a 10 km periphery of the interstate boundary between the two states. Himachal Pradesh serves as the main state where the project is situated. A comprehensive primary survey of the designated impact area has been carried out.

#### 3.23.1 Primary Survey:-

A comprehensive primary survey of the designated impact area has been carried out. A location map of the impact area, highlighting the villages selected for the primary survey, is shown below.



**FIGURE 3-22: MAP DEPICTING THE LOCATION OF FIVE VILLAGES WITHIN THE IMPACT AREA**

According to the toposheet analysis, a total of 68 villages lie within a 10 km radius of the project site in Himachal Pradesh. Six villages from Himachal Pradesh, located within the impact area (0–3 km), were selected for the primary survey. These include Gondpur Bulla, Dulehar, Goindpur Tarf Bula, Bhandiarna, Singan, Gondpur Jaichand, all of these villages are situated within Tehsil Haroli, forming part of the designated primary study area.

### SECONDARY DATA

Secondary data within a 10 km buffer of the project site, based on the 2011 Census, is presented below along with its interpretation.

**TABLE 3-29: DEMOGRAPHIC DETAIL OF THE STUDY AREA (10 KM) , AS CENSUS 2011**

Sr. No.	Tehsil	Name of the Villages	No_HH	TOT_P	TOT_M	TOT_F	P_06	P_SC	P_ST	P_LIT
1	Haroli	Pandogha Kairian (195)	127	672	366	306	82	138	0	478
2		Thakaran	78	353	179	174	31	1	0	243
3		Pubowal (523)	457	2154	1126	1028	224	827	0	1611
4		Ojale	32	165	95	70	17	8	0	112
5		Haleran	162	732	356	376	76	41	0	492
6		Makor Ghar	79	392	196	196	44	0	0	291

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7	Polianbeet (525)	259	1295	662	633	150	490	151	934
8	Maluwal	102	548	285	263	65	201	0	411
9	Janani	45	274	135	139	42	212	28	175
10	Tibian	22	113	62	51	9	100	0	83
11	Goindpur Tarf Bula (529)	248	1273	652	621	131	216	0	992
12	Singa Urf Sur Kalan (531)	486	2313	1157	1156	302	303	323	1716
13	Kungrat (527)	182	808	401	407	90	508	0	639
14	Chhetaran	336	1837	913	924	217	249	0	1365
15	Lalehri (470)	816	4242	2158	2084	485	545	12	3240
16	Nangal Khurd (471)	270	1498	760	738	188	304	0	1131
17	Manuwal	170	901	458	443	87	106	0	746
18	Nangal Kalan (472)	217	1169	608	561	139	106	0	877
19	Nangal Jatpur	383	1968	1025	943	219	238	0	1427
20	Tahaliwal Uparla	59	317	165	152	54	0	0	219
21	Tahaliwal Nichala	22	111	58	53	13	0	0	78
22	Bat Kalan (473)	142	752	397	355	87	27	0	519
23	Bat Khurd (474)	173	897	474	423	115	4	0	648
24	Bathu (475)	361	1862	931	931	215	278	0	1424
25	Bathri (476)	539	2684	1383	1301	364	971	62	1770
<b>Total Villages = 25</b>		<b>5767</b>	<b>29330</b>	<b>15002</b>	<b>14328</b>	<b>3082</b>	<b>5873</b>	<b>576</b>	<b>19851</b>

### 3.24 Demographic structure of study area within 10 km radius

The demographic profile of the study area includes 25 villages situated within a 10 km radius of the location where the Himachal region weather project is located, comprising 5767 households and a total population of 29330 in which Males constitute 51.15% (15002) and females 48.85% (14328). The sex ratio in the study area is 955, which is slightly lower than the overall state figure of 972. Children under 6 years total 3082 which is about 10.50%. The literacy rate is 67.68%, which is quite good, but still a little lower than the state average of 82.80%. Scheduled Castes form 20.02% of the population (6539 individuals), while minimal number of Scheduled Tribe population is present that is 1.96%. Detailed village-wise data is provided below."



**TABLE 3.30:- DEMOGRAPHIC DETAIL OF THE STUDY AREA (10 KM RADIOUS), BASES ON CENSUS 2011, PUNJAB REGION**

Sr. No.	Tehsils	Name of the Villages	No_HH	TOT_P	TOT_M	TOT_F	P_06	P_SC	P_ST	P_LIT
1	Mahilpur	Bhagtupur (88)	173	832	436	396	69	532	0	649
2		Khanni (340)	210	1013	532	481	133	214	0	692
3		Harjiana (341)	127	603	313	290	89	207	0	407
4		Jaijon (342)	242	1069	541	528	139	47	0	831
5		Meghowal (296)	385	1818	888	930	180	720	0	1384
6		Badowal (345)	118	554	280	274	60	133	0	359
7		Lasara (347)	225	1024	520	504	120	111	0	782
8		Mehdud (348)	171	825	429	396	114	481	0	552
9		Gajjar (349)	212	1059	550	509	131	97	0	640
10		Bharatpur Rajputan (352)	31	149	85	64	16	40	0	105
11	Garhshankar	Dadial (278)	286	1199	618	581	122	540	0	925
12		Bathal (283)	68	345	163	182	39	62	0	235
13		Hyatpur (280)	83	399	204	195	47	336	0	285
14		Bariana (346)	37	193	102	91	26	3	0	115
15		Bharowal (282)	207	975	496	479	112	516	0	680
16		Pakhowal (273)	236	1105	569	536	109	458	0	810
17		Bihran (274)	262	1299	667	632	161	577	0	838
18		Satnaur (271)	428	1997	1008	989	208	1086	0	1519
19		Salempur (272)	298	1373	676	697	155	260	0	1086
20		Badesron (270)	405	1995	991	1004	207	1332	0	1510
21		Golian (128)	264	1396	739	657	185	488	0	908
22		Matton (263)	55	235	120	115	28	11	0	148
23		Garhi (264)	284	1331	643	688	134	496	0	982
24		Pahlewal (144)	373	1841	901	940	198	516	0	1381

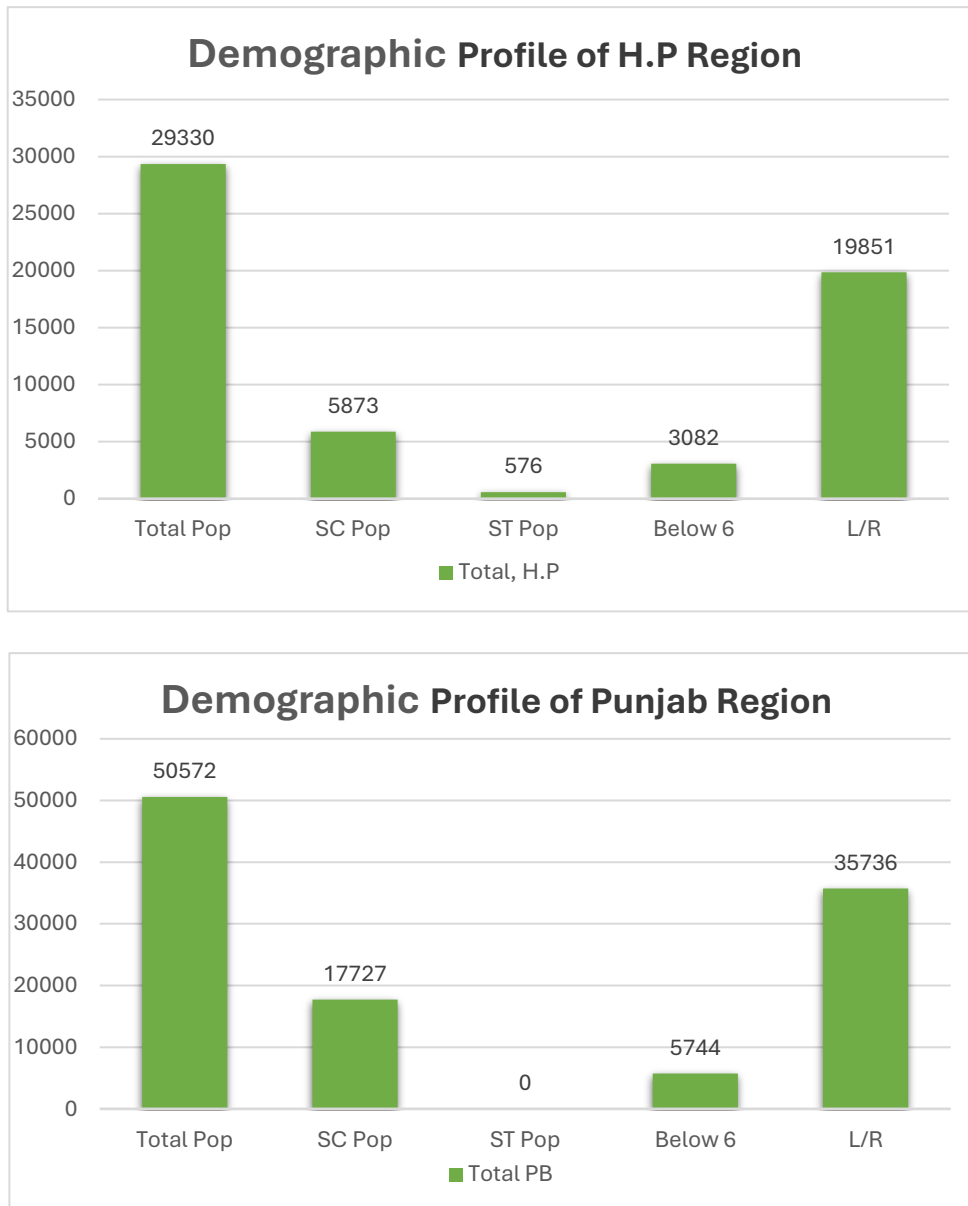
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25	Sadhowal (265)	182	907	473	434	100	674	0	682
26	Parowal (266)	270	1253	646	607	121	812	0	900
27	Bhajjal (269)	205	1023	529	494	94	261	0	788
28	Hajipur (354)	391	1827	929	898	203	495	0	1181
29	Lehra (355)	107	539	271	268	84	496	0	370
30	Birampur (357)	367	1759	895	864	220	834	0	1233
31	Khanpur (358)	270	1363	698	665	149	683	0	844
32	Shahpur (359)	97	447	244	203	56	361	0	338
33	Kot (480)	253	1331	687	644	174	183	0	858
34	Bhadiar (479)	575	2836	1422	1414	319	465	0	1803
35	Mehindwani (478)	491	2361	1192	1169	293	370	0	1589
36	Binewal (477)	979	4532	2307	2225	493	1131	0	3320
37	Majari (475)	144	636	307	329	75	0	0	490
38	Malkowal (486)	203	1003	518	485	120	143	0	745
39	Gaddiwal (483)	179	823	437	386	84	195	0	560
40	Barapur (361)	177	901	479	422	107	210	0	556
41	Saddarpur (360)	89	453	224	229	38	371	0	340
42	Bhambian (262)	224	1001	498	503	81	490	0	773
43	Chak Rautan (363)s	175	948	490	458	151	290	0	543
<b>Total Population = 43</b>		<b>10558</b>	<b>50572</b>	<b>25717</b>	<b>24855</b>	<b>5744</b>	<b>17727</b>	<b>0</b>	<b>35736</b>

**Demographic Profile of the study area within 10 Km, Punjab Region**

The demographic profile of the study area encompasses 43 villages located within a 10 Km radius of the Punjab region, comprising 10558 households and a total population of 50572. Males constitute 50.85% (25717) and females 49.15% (24855). The sex ratio in the study area is 966, which is marginally higher than the overall state average of 895. Children under 6 years total 5744 which is about 11.35%. The literacy rate is 70.66%, which is quite good, but still a little lower than the state average of 75.84%. Scheduled Castes form 35.05% of the population (17727 individuals), while minimal number of Scheduled Tribe population is not found. Detailed village-wise data is provided below."





**FIGURE 3-23: DEMOGRAPHIC STATISTICS OF THE STUDY AREA**

### 3.25 Occupational structure of study area

The economic development of the region is heavily shaped by factors such as its geographical location, natural resource availability, business activity, employment prospects, industrial presence, and workforce capacity.

In the Himachal region of the study area, the working population constitutes about 35.22% of the total. of this, 21% are identified as main workers while 10.94% are marginal workers. The remaining 58.90% of the population are classified under non-workers.

In the Punjab region of the study area, the working population constitutes 30.54% of the total with 23.76% are identified as main workers and 6.8% as marginal workers. The remaining 69.45% of the population are classified as non-workers.

Himachal Pradesh shows a slightly higher overall workforce participation rate of 34.25%, driven largely by a greater share of marginal workers (12.21%). In contrast, Punjab records a lower total workforce participation of 31.19%, but with a stronger proportion of main workers (24.27%), highlighting a more stable employment base compared to Himachal Pradesh.

This distribution indicates that a significant proportion of workers are engaged in stable, regular employment. reflecting the strength of main worker participation. At the same time, female involvement in economic activities remains relatively limited, and a substantial portion of the population is outside the workforce altogether. The data therefore highlights both the positive aspect of secure employment opportunities and the concern of low female participation in the labor force.

Agriculture remains the primary occupation for the majority of the population. However, with the proposed project, the area's workforce is expected to shift toward industrial and business activities, leading to greater diversification of employment opportunities.

**TABLE 3-30: OCCUPATIONAL PROFILE OF THE STUDY AREA (10 KM RADIUS) BASED ON CENSUS 2011 DATA; HIMACHAL PRADESH REGION AND PUNJAB REGION**

H.P Region						Punjab Region					
Tehsil	Total No. of villages	Total Working Population	Main Working Population	Marginal Working Population	Non - Working Population	Tehsil	Total No. of villages	Total Working Population	Main Working Population	Marginal Working Population	Non - Working Population

Ha ro li	25	10331		6159		3210		17277		Mahi lpur and Garh shan kar	43	15449		12016		3433		35123	
		M	F	M	F	M	F	M	F			M	F	M	F	M	F	M	F
		8	2	5	1	2	1	6	1			1	2	1	2	1	1	2	8
1	2	1	0	4	0	2	2	1	2	3	7	1	1	5	7	2	3	8	
2	0	6	5	4	3	7	7	9	2	5	6	1	6	6	2	0	9	1	
3	8	7	7	6	7	9	0	0	0	9	1	7	9	1	7	9	4	4	

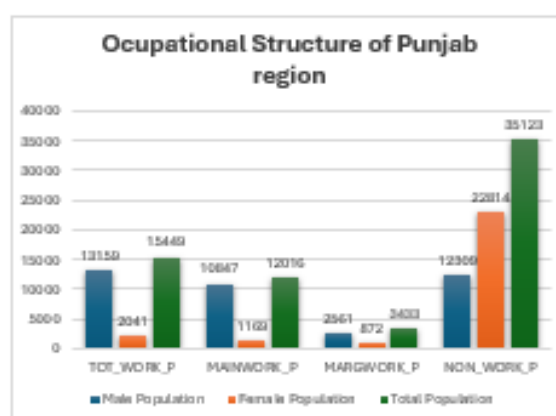
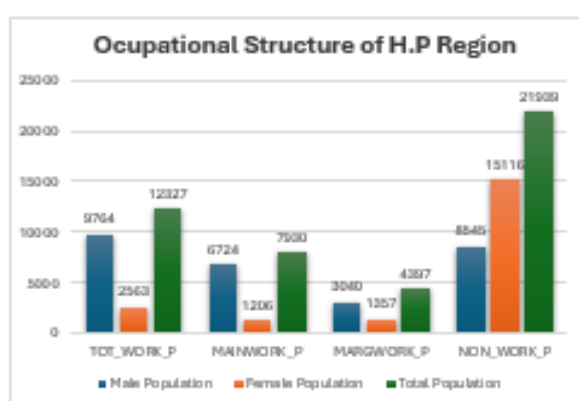


FIGURE 3-24: VISUAL REPRESENTATION OF OCCUPATIONAL STRUCTURE IN THE STUDY AREA (HIMACHAL PRADESH AND PUNJAB)

### 3.26 SOCIAL COMPOSITION

From the baseline data it is found that the population of Una district is predominantly Hindus and next come Sikhs and third being the Mohammedans. The majority of the population in these villages follows the Hindu religion with a sizable portion of Sikh. There is a sprinkling of Jains and Christians in the district. Hindi is the most widely spoken language with Pahari and Punjabi.

#### A) Culture

The culture of Una we will find a mix of people, both from their roots in Punjab and Himachal Pradesh along with settlers from the nearby states. The Himachal's Hindu people worship Hindu deities (devtas), Sikh Worship Gurus and various customs and rituals are observed by the people. Hindi remains the most commonly spoken language in this region; Pahari and Punjabi also have definite prominence. The Navaratra fairs, especially Shravani Navartras, are very popular among the devotees of goddess. Devotees from all walks of life have been visiting to this place for centuries to seek blessings from the goddess Chhinmastika. A number of fairs and festivals are celebrated in Una i.e., Hola Mohalla fair, Chintpurni fair, Sawan Ashtami Fair, Paanch Bhisham fair, Piplu fair, Baisakhi festival, Prakash Utsav.

### **B) Employment**

The project would be promoting employment and ancillary business opportunities and improving the standard of living of locals. Most of the villagers in this region are engaged in agricultural activities as well as industrial activities. The mining operations will provide employment in the form of Skilled, Semiskilled, and unskilled workers. People are engaged in extraction of Sand, Stone & Bajri, loading of material into tractors, trolleys, and tipper trucks. Stone will be transported to the stone crusher and after that it will be transported to market for sale along with Sand and Bajri. Moreover, the construction industry using the raw material from mine will generate employment for 20 people for various activities. Thus, the production of construction aggregates, such materials have a tremendous impact on multiple generations of employment in downstream activities.

### **C) Economy**

The local economy is mainly based on Agriculture. Most of the land in the district are used for agricultural purposes. In recent years there has been growth in various light industries including pharmaceuticals and textile manufacturing in Una. This has been mainly because of the town's location and proximity to other state borders. The state government has also provided subsidies on taxes to entrepreneurs and an industrialist to set up their operations in the town. The district has mineral resources such as sand, stone and bajri are available in plenty in various river/stream beds.

Una district is well developed in the industrial sector due to close proximity to Punjab. Mehatpur, Gagret, Tahliwal & Amb are the main industrial centres of Una.

### **D) Crops**

The major crops are Maize, wheat, and Paddy. In vegetables tomatoes, Cabbage, Cauliflower, Peas, Cucurbits and Potatoes etc. are the main cash crops grown in many parts of the district.

### **E) Rail & Road Connectivity**

Una is a nearby town about 10.06 Km in NNE direction away from the mine site which is well connected with road & railway. The Nearest Railway Station is Jaijon Doaba Railway Station about 10.04 km in the WSW direction (Aerial Distance). The Nearest Airport is Ludhiana Airport in SW at 64.45 km (Aerial Distance). The Nearest Highway is National Highway is NH-503A (Hoshiarpur-Una Road) which is about 9.88 km in East direction.

### **F) Place of Historical or Archaeological Interest**

There is no place of Historical or Archaeological importance near the proposed project area. But Una is about 11.80 km (arial distance) away from the project site which contains Historical or Archaeological importance. On the border with Punjab, Una is known as the gateway to Himachal Pradesh. This city is set on the banks of the gurgling Swan River. Within the state it has borders with Kangra, Hamirpur and Bilaspur Chintpurni Mata mandir is a famous religious place in Una, Himachal Pradesh. Sunday is a special day for visiting here. People Comes to this place from Neighbouring states like Haryana and Punjab.

### **3.27 BASIC AMENITIES**

#### **i) Educational**

The Una has facilities of all levels of schools and colleges and educational institutes which is approx. 11.80 km arial distance from the project. The nearest school from the project site is Govt. Primary School Baliwal, Una at the distance of 11.80 km (Arial distance), Govt Post Graduate Degree College Una is at the distance of 12.31km (Arial distance), from the project site, ICFAI University Una is approx. at a distance of 12.38 km (Arial distance) in NE direction.

#### **ii) Medical**

The Una has facilities of Nursing Homes, Charitable Hospitals, Health Centers, and Civil Hospitals besides many private clinics which is about 10.06 km from the project site, Civil Hospital Haroli, Una is situated at the 4.67 Km (Arial distance) in north direction from the project site.

#### **iii) Electricity**

Electricity for all purposes is available in all villages of the study area.

#### **iv) Housing and Drinking water**

A major part of the houses in the study area is Pucca Houses. All villages in the study area have water supply for domestic purposes. The sources of water supply in most of the villages are through pipelines, however people have preference for ground water. The water source in these areas is through the Himachal Pradesh Jal Shakti Vibhag Scheme connection and private bore wells.

#### **v) Transport**

The main mode of transportation is by road. A network of both paved (Pucca) and unpaved (Kucha) roads exist in the study area; both are suitably interconnected. Private vehicles like rented Cars, Taxis and services share the major responsibility of the transport in the study area. A number of buses, private and State Government are operating public transport like Himachal Road Transport Corporation (HRTC) on state highways. The existing local transport facility appears to be sufficient.

#### **vi) Post and Telegraph**

The Post and telecommunication facilities such as post office, telegraph office, telephone services, FAX, STD, and ISD are available in the nearby villages. The study area is also well connected through mobile networks, ensuring reliable communication. For advanced and modern facilities, Una town is located approximately 10.06 km from the project site.

**BASIC INFRASTRUCTURES AVAILABLE IN SIX SURROUNDING VILLAGES SELECTED FOR PRIMARY SURVEY**

The following details have been identified through both primary and secondary surveys

**Table 3-31: INFRASTRUCTUREDETAIL IN SIX SURROUNDING VILLAGES**

Sr. No.	Name of Infrastructure	Name of the villages											
		Goindpur Bulla		Dulehar		Goindpur Tarf Bula		Bhandiar na		Singa n		Gondpur Jaichan d	
		2011	2026	2011	2026	2011	2026	2011	2026	2011	2026	2011	2026
1.	<b>Medical Facilities</b>												
	Dispensary	√	√	×	×	√	×	×	×	√	×	√	×
	PHC	×	×	√	√	×	×	×	×	×	×	×	×
	Hospital	×	×	×	×	×	×	×	×	×	×	×	×
	Veterinary Hospital	×	×	×	×	√	×	×	×	×	×	√	×
2.	<b>Educational Facilities</b>												
	Primary School	√	×	√	√	√	×	√	√	√	×	√	√
	Secondary School	×	√	√	×	×		√		√		×	
	Sr. Sec. School	×	√	×	√	×	×	×	×	×	×	×	×
	College	×	×	×	×	×	×	×	×	×	×	×	×
	ITI	×	×	×	×	×	×	×	×	×	×	×	×
3.	<b>Transport</b>												
	Kuccha Road (Gravel)	√	√	√	√	√	√	√	√	√	√	×	√
	Puccha Road (Black Topped)	√	√	√	√	√	√	√	√	√	√	√	√
	Bus Services (within 5 km)	√	√	√	√	√	√	√	√	√	√	√	√
4.	<b>Communication</b>												
	Post Office	√	√	√	×	√	×	×	×	√	×	√	×
	Telephone	√	√	√	√	√	√	√	√	√	√	√	√

5.	<b>Civic Amenities</b>												
	Water	√	√	√	√	√	√	√	√	√	√	√	√
	Electricity (Power Supply)	√	√	√	√	√	√	√	√	√	√	√	√
6.	<b>Social/ Cultural Facilities</b>												
	Community Center	×	×	×	×	×	×	×	×	√	×	×	√
	Banks	×	×	√	√	×	√	√	×	×	×	√	×
	Sports Field (Playground within 5 Km)	×	×	√	√	×	×	√	√	√	√	×	×

### 3.28 DATA INTERPRETATION

The comparative data from 2011 to 2026 shows that villages in Himachal Pradesh have achieved universal access to water and electricity, along with improved road connectivity and communication facilities. Healthcare remains weak, with only a few dispensaries, scarce PHCs, no hospitals, and limited veterinary services. Primary education is available everywhere, but access to secondary and senior secondary schools is uneven, and higher education facilities like colleges and ITIs are Currently lacking. Transport services have expanded, with both kuccha and pucca roads and bus services within reach of all villages. Communication infrastructure has improved, though post offices and telephones are not uniformly presented. Social and cultural amenities such as community centers, banks, and sports fields are limited. Overall, while basic infrastructure has progressed steadily, healthcare, higher education, and social facilities remain critical gaps that require focused development for inclusive rural growth.

### 3.29 NEED IDENTIFICATION

The villages demonstrate a significant demand for strengthening healthcare infrastructure, including the establishment and upgradation of dispensaries, Primary Health Centers (PHCs), and hospitals to meet growing medical needs. Expanding higher education institutions such as colleges and ITIs will help bridge learning gaps and create opportunities for skill development. Enhancing basic amenities like sanitation, clean water, and transport services will further improve living standards. Promoting social awareness programs on health, education, and gender equality can encourage inclusive community participation. At the same time, economic upliftment through skill training and job creation is vital to empower rural populations. Collectively, these initiatives will foster sustainable and inclusive rural development, ensuring balanced progress across all sectors.

### 3.30 RECOMMENDATIONS

In the socio-economic context of an EIA, Hill slope mining projects should generate employment, revenue, and local enterprise growth while ensuring inclusivity and sustainability. Key recommendations include:-

- Support local businesses such as dhabas, shops, and transport.
- Strengthen healthcare facilities and expand higher education with vocational training.
- Provide skill training for youth, women, and marginalized groups.
- Strengthen healthcare outreach and vocational initiatives.
- Prioritize local workforce participation in mining activities.
- Integrate sustainable mining practices for community and environmental well-being.

### **3.31 CONCLUSION**

The proposed Hill slope mining project will contribute to regional socio-economic growth by diversifying income sources, generating state revenue, creating jobs, and supporting local enterprises. By reducing dependence on agriculture and stimulating ancillary businesses, it fosters income stability and enables communities to invest in education, healthcare, and better living standards, ensuring balanced and sustainable development. The proposed project is expected to bring socio-economic benefits through job diversification, income stability, improved infrastructure and healthcare, environmental safeguards, and empowerment of women and youth.

### **3.32 REHABILITATION & RESETTLEMENT (R&R) ACTION PLAN**

The project will not cause any displacement of people; therefore, no R&R action plan is required, and no land acquisition is involved.

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## 4 ANTICIPATED IDENTIFICATION OF IMPACTS AND MITIGATION MEASURES

### 4.1 INTRODUCTION

Identification of all potential environmental impacts due to project is an essential step of Environmental Impact Assessment. In the case of mining projects, impacts on biodiversity, air pollution, water pollution, waste management and social issues are significant. Both direct and indirect environmental impacts will be created on various environmental attributes due to proposed mining activity in the surrounding environment, during the operational phase. The occurrence of stone, boulder, bajri & sand (minor mineral) deposits, being site specific, their exploitation often does not allow for any choice except adoption of eco-friendly operation. Positive impacts on the socio-economic environment are expected due to the creation of employment opportunities. Mining activities are normally carried out over a long period which also encourages development in the area such as roads, schools, hospitals etc. Several scientific techniques and methodologies are available to predict impacts of physical environment. Mathematical models are the best tools to quantitatively describe the cause-and-effect relationships between sources of pollution and different components of the environment. In cases where it is not possible to identify and validate a model for a situation, predictions have been arrived at based on logical reasoning/consultation/extrapolation.

### 4.2 GENERAL IMPACTS

The environmental baseline scenario is detailed in Chapter 3 and proposed Mining Project for Extraction of Sand, Stone & bajri located at Khasra No.1236 , Mauza Gondpur bulla in Tehsil Haroli, District Una, Himachal Pradesh as described in Chapter 2, it is attempted to assess the likely impact and its extent on various environmental parameters in this Chapter. The parameters, which are relevant within the context, are as detailed below.

- Land use/ Landcover (LU/LC)
- Air Environment (AP)
- Ambient Air Quality (AQ)
- Noise levels and vibration (NV)
- Water resources
  - Ground Water (GW)
  - Surface Water (SW)
- Soil (S)
- Ecology & Biodiversity (EB)
- Socio Economic (SE)
- Solid and Hazardous Waste Management (SHW)
- Hydrogeology (HG)
- Geology (GEO)
- Occupational health, community health and safety (OH/CH &S/ RH)

### 4.3 IMPACT ASSESSMENT METHODOLOGY

To carry out the impact assessment during mining operation the methodology adopted for impact assessment in operation phase activity adverse or positive impact is identified and divided into the following sections here under:-

- ❖ Identification of project activities & aspect
- ❖ Impact Prediction, evaluation due to these activities and its mitigation measures
- ❖ Impact analysis i.e., consequence/Score analysis.

### 4.4 IMPACT ASSESSMENT METHODOLOGY

Applicable components of the environment on which the environmental aspects can cause an impact were identified. Environmental impacts have been identified based on an assessment of environmental aspects associated with the proposed project of hillslope mining. The symbol '–' indicates an adverse impact, '+' indicates a beneficial impact and '+/–' indicates both positive and negative and 'N' indicates not applicable impacts.

**TABLE 4-1: IMPACT IDENTIFICATION**

Sr. No.	ASPECT /PROJECT ACTIVITIES	POTENTIAL IMPACT AREAS									Remarks
		Land-use/ land-cover (LULC)	Air Quality (AQ)	Noise and Vibration (NV)	Surface Water (SW)	Ground Water (GW)	Soil(S)	Ecology & Biodiversity	Socio-Economic (SE)	OH/CHS	
		LU	A P	NV	S W	G W	S	EB	SE	RH	
1	Operational Phase										

Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III

4.1	Deterioration of Air, Water, and Soil, Noise quality, due to mining operation	N	-	-	-	-	N	-	+	-	<p><b>AQ/NV:-</b> Air pollution due to dust emission &amp; increase in Noise by transportation.</p> <p><b>WP:-</b> No Wastewater generated from mining activity which can cause water pollution.</p> <p><b>RH:-</b> Accident during loading &amp; unloading of material and due to transportation.</p> <p><b>OH/OH&amp;S:</b> risk of injury to worker during loading and unloading of material</p> <p><b>SE:</b> Employment generation for local people.</p> <p><b>EB:</b> Impact on</p>
4.2	Contamination of water due to wastewater generated during Mining	N	N	N	N	-	N	N	N	-	<p><b>GW:-</b> Ground water contamination might be possible, wastewater not</p>



4.3	Intersect ground water level due to mining activity Mining activity	N	N	N	N	-	N	N	N	N	<b>GW:</b> Ground water may intersect ground water level if restrictions in evacuation is not followed (up to 1 meter)
4.4	Contamination in air quality,	N	-	N	N	N	N	N	N	N	<b>AQ:</b> Fugitive dust emission due transportation of material

#### 4.5 IMPCAT PREDICTION/EVALUATION AND ITS MITIGATION MEASURES

For prediction of environmental impacts arising from activities associated with hill slope mining operations, several scientific techniques and methodologies are employed. Mathematical models and analytical tools are used to quantitatively describe the cause-and-effect relationships between sources of disturbance (such as excavation and slope modification) and different components of the hill ecosystem. In situations where validated models are not available for the specific terrain, predictions are derived through logical reasoning, expert consultation, extrapolation of similar case studies, or overlay methods using slope stability and erosion mapping. For each environmental component, the methods adopted to arrive at the likely impacts are clearly described.

Evaluation in this context refers to the assessment and prediction of impacts expressed in numerical or qualitative terms. Assessment is the process of identifying and interpreting the environmental consequences of significant mining actions, while prediction involves mapping the potential outcomes of slope disturbances. Significant actions include direct adverse changes such as soil erosion, slope instability, loss of vegetation cover, and alteration of hydrological regimes, which in turn affect the health of flora, fauna, human settlements, socio-economic conditions, landforms, and the quality of the surrounding bio-physical environment. In most cases, predictions indicate whether there will be degradation, stabilization, or improvement of environmental quality.

An impact indicator is a parameter that provides a measure of the significance and magnitude of slope-related impacts. In India, indicators are available in the form of soil erosion indices, slope stability ratings, biological water quality criteria, and national ambient standards for noise and air. Predictions for biological components are often uncertain, as the response of hill ecosystems to stress (such as vegetation removal or altered drainage) cannot be determined in absolute terms.

The impacts of the proposed hill slope mining project have been considered based on site-specific data and information provided by the project proponents. Primary impacts are those directly attributed to mining activities, such as slope cutting, dust emissions, and water runoff. Secondary impacts are indirectly induced, including changes in land use, altered socio-economic patterns, and associated infrastructure development.

During the operation phase, each mining activity excavation, transportation, waste dumping, and slope reshaping has been analyzed to assess its impact on environmental parameters. Following preliminary studies, environmental indices likely to be affected (air quality, noise levels, water resources, soil stability, and socio-economic conditions) have been identified. Impact activities are assessed using both subjective and objective criteria. The types of potential impacts for the various components of the hill environment air, noise, water, land, slope stability, and socio-economic factors are summarized and shown in above **Table No.- 4.1.**

#### **4.6 ASPECT, QUANTIFICATION OF IMPACT AND PROPOSED MITIGATION MEASURES**

Mitigation measures required are formulated for implementation for all high risk and moderate risk activities. A programme to implement all mitigation measures is then prepared and presented as an Environmental Management Program.

For various activities at different stages of mining operation impacts identified are listed in following section along with the mitigation measures proposed for these activities.

#### **4.7 LAND ENVIRONMENT**

The lease area is situated in the in the form of Hill Slope. The highest point of the mining lease area is 524 meters above MSL and lowest point in 500 meters above MSL. The Mining lease area is private land and in the form of a hill Slope which contains small bushes and plants as vegetation. As per the dimension and shape of the mining lease area. The open cast mining operations by the formation of benches proposed.

##### **4.7.1 Anticipated Impacts**

- Undercutting and slope failure
- Surface erosion and soil loss
- Deposition at lower slopes and valleys
- Changes in slope stability and habitat conditions
- Excavation of silty sand and mine waste will produce material needing safe storage in dump yards.
- Stored material will be reused for backfilling and plantation from the first year to restore land.

**Mitigation measures:-**

- A safety zone of 5 Meters will be maintained, with grasses and bushes having fibrous roots planted along the lease area to strengthen soil binding and prevent erosion.
- Grasses and shrubs with fibrous root systems will be planted on disturbed slopes to enhance soil binding capacity and prevent erosion.
- Mining activities are proposed to be undertaken manually in sensitive areas to minimize adverse impacts associated with heavy machinery.
- Operations will be restricted to non-monsoon seasons, allowing natural replenishment and stabilization of slopes during the rainy season.
- Slope restoration and stabilization measures, including vegetation cover, will be ensured at the end of each mining cycle and during mine closure.
- Backfilled areas will be levelled and prepared for future agricultural use.
- Post-mining rehabilitation will include year-wise plantation of local fast-growing species to restore ecological balance.

#### **4.8 WATER ENVIRONMENT**

**Anticipated Impacts:**

- Excavation activities can expose subsurface layers and potentially intersect groundwater aquifers, affecting their quality and yield.
- Wastewater generated from the mining operation (e.g., from washing or dust suppression) may contaminate nearby streams and surface water bodies.
- Domestic wastewater from temporary facilities such as toilets can seep into the soil, causing localized contamination of groundwater and surface water resources.

**Mitigation measures**

Excavation will be restricted through compulsory 6×6-meter bench formation to ensure slope stability.

- Mining in the area will be done well above the water table.
- No process wastewater will be generated as only extraction of minerals is involved.
- Domestic wastewater will be treated in septic tanks with soak pits to prevent contamination.
- Deposits will be worked up to 1 meter or above the groundwater table to protect aquifers.
- Mining will stop during monsoon to allow slopes to replenish and regain natural stability.

The Extraction will proceed from the top surface downward through bench formation to maintain slope stability. Hence mining will not affect the ground water regime as well. Further mining will be completely stopped during the monsoon seasons.

#### **4.9 AIR ENVIRONMENT**

A number of sources from the proposed project which can cause potential impacts on Air environment during operation phase are discussed below.

##### **4.9.1 Operational Phase**

The mine activity has only fugitive emission due to mine operation and loading /transportation activities.

##### **4.9.2 Anticipated Impacts**

Emission of fugitive dust is envisaged due to:

- i.** Mining Activities includes excavation and lifting of minerals. The dust generated from mining processes involving such as drilling, mechanized loading etc. because
- ii.** Whole process will be done manually as well as semi-Mechanized.
- iii.** Minerals will be transported by trucks through road. Fugitive dust emission is expected from the haul road due to the transportation of trucks.
- iv.** In Operational Phase:- The mine activity has only fugitive emission due to mine operation and loading/transportation activities.

##### **4.9.3 Air Modelling**

Air modelling is a way to mathematically simulate atmospheric conditions and behaviour; it is usually performed using computer programs. Air models can calculate pollutant concentrations in the air, or the amount of pollution deposition estimates on the ground from the air by using various inputs such as meteorological parameters viz. temperature, wind speed and direction, mixing depths, inversion level, etc. and source emissions. Air models can predict pollutant concentrations at almost any location and provide an efficient way to examine air quality over large areas.

Further air models can predict the impacts of new sources before they are built and also allow an examination of the effects of different types of pollution controls before any actual changes are made to the sources of pollution. In addition, air modelling is sometimes used to locate air quality monitors in areas where high pollutant concentrations are most likely to occur.

Considerable sources of impact on air environment will be fugitive emission and transportation emission from lease. To identify the incremental load on ambient air quality, it is necessary to assess the impact of existing ambient air quality with respect to the proposed fugitive and transportation emission. In order to predict the impact of air pollutants on ambient air quality, the incremental Ground Level Concentration (GLC) has been computed using Industrial Source Complex-Short Term (ISCST – 3) model, which is a steady-state Gaussian plume model.

##### **About AERMOD Cloud™**

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AERMOD CCloud™ is an Integrated Graphical User Interface of AERMOD, ISCST3, AERMAP and AERMET. The application incorporates popular U.S. EPA air dispersion models.

**AERMOD and ISCST3:-** into one integrated graphical interface. AERMOD and ISCST3 models are used extensively for Environmental Impact Assessment (EIA) studies to assess air pollution concentration. ISCST3 (Industrial Source Complex Short Term) is a Gaussian plume model and is widely used to assess pollution concentration and/or deposition flux on receptors from a wide variety of sources. AERMOD is the next generation air dispersion model which incorporates planetary boundary layer concepts.

The ISCST3 (Industrial Source Complex-Short Term version 3) dispersion model is a steady-state Gaussian plume model which can be used to assess pollutant concentrations and/or deposition fluxes from a wide variety of sources associated with an industrial source complex. The ISCST3 dispersion model from the U. S. Environmental Protection Agency, was designed to support the EPA's regulatory modelling options, as specified in the Guidelines on Air Quality Models (Revised). Some of the ISCST3 modelling capabilities are:-

- ISCST3 model may be used to model primary pollutants and continuous releases of toxic and hazardous waste pollutants.
- ISCST3 model can handle multiple sources, including point, volume, area, and open pit source types. Line sources may also be modelled as a string of volume sources or as elongated area sources.
- Source emission rates can be treated as constant or may be varied by month, season, hour-of-day, or other optional periods of variation. These variable emission rate factors may be specified for a single source or for a group of sources.
- The model can account for the effects of aerodynamic downwash due to nearby buildings on point source emissions.
- The model contains algorithms for modelling the effects of settling and removal (through dry deposition) of large particulates and for modelling the effects of precipitation scavenging for gases or particulates.
- Receptor locations can be specified as gridded and/or discrete receptors in a Cartesian or polar coordinate system.
- ISCST3 incorporates the COMPLEX1 screening model dispersion algorithms for receptors in complex terrain.
- ISCST3 model uses real-time meteorological data to account for the atmospheric conditions that affect the distribution of air pollution impacts on the modelling area.
- Results can be output for concentration, total deposition flux, dry deposition flux, and/or wet deposition flux.

**Key features:-**

- Integrated GUI of AERMOD (v18081), AERMET (v18081), AERMAP (v18081) and ISCST3 (v02035)
- Source type: POINT, VOLUME, AREA, CIRCULAR AREA, LINE AREA, OPENPIT, LINE

- Incorporated Indian regulatory requirements
- Inbuilt meteorological data processor
- Wind rose plot and overlay on isopleth
- Inbuilt Indian Terrain Elevation Data
- Integrated emission factor calculators
- Export to Google Earth™
- Report-ready output/summary
- Overlay isopleth on sitemaps

#### **ISCST3 Model:-**

Area/ Line Area sources resembling loading, transportation in mine site were setup in the ISCST3 model. Grid receptors were setup in 10km radius for prediction of incremental concentrations. The model was run for 24-hour duration. The predicted incremental concentrations of pollutants were added to corresponding baseline concentrations to obtain the cumulative concentration level at baseline stations.

#### **Input of Model:-**

The air pollution caused by the fugitive emissions from a mine lease is a local phenomenon. Its impact will occur at a distance ranging from within the immediate vicinity of the lease area to 2.5 km away from the area. To evaluate the impact on air quality following data is required to input in simulation.

- ✓ Co-ordinates (X & Y) of sampling location within study area,
- ✓ Micro-metrological data such as Cloud Cover, Temp (°C), Relative Humidity (%), Wind Direction (Deg), Wind Speed(km/h), Hourly Precipitation for study period (October-December 2022)
- ✓ Predicated fugitive emission rate after taking of pollution control measures.

#### **OUTPUT OF ISCST-3:-**

The simulation was made to evaluate incremental short-term concentrations of Particulate Matter (SPM) to be emitted from mining project. In the short-term simulations, the incremental concentrations were estimated to obtain an optimum description of variations in concentrations within study area.

#### **Output of the simulation is as under:-**

- ✓ Maximum Ground Level Concentration (GLC),
- ✓ Isopleths of Pollutant PM, & NOx.

From the output of the ISCST3 dispersion model, the highest/maximum ground level concentration can be worked out, which will indicate the incremental value in that pollutant. The mine lease area considered as source to predict the impact on ambient air quality during the operational phase. The prediction has been done by using ISCST-3 based on Gaussian Plume Air Dispersion model.

#### **4.9.4 Methodology**

##### **Emission of PM10**

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The major sources of PM10 emission in case of Sand, Stone and Bajri mining project are the loading activity at mine site (loading of material over trucks / trucks by excavators) and the movement of vehicles on unpaved haul roads. The emission rates for these sources are given in latest USEPA's AP-42 guidelines.

### Loading of Material

The stone bajri & sand will be loaded on trucks using excavators. Eight excavators will be used for loading total 1066 MT/Day of material during the working of 8 hours/day. The PM10 emission rate due to loading activity is calculated.

$$E = k \times 0.0016 \times \left( \frac{u}{2.2} \right)^{1.3} \left( \frac{M}{2} \right)^{1.4}$$

Where,

E = Emission Factor, kg/ton

k = Particle size multiplier, 0.35 for PM10 M = Moisture Content, %

u = Mean wind speed, m/s

### 4.9.5 Emission of PM10 due to Transportation

The hauling of sand, stone and bajri from the mine lease area to the end users via haul road (unpaved road) will cause emission of particulate matters. This emission will be limited to the extent of unpaved haul road starting from mining pit to nearest paved road connectivity. As per the mining plan the material will be transported during the working only. Each day maximum 15 to 20 trucks tripper/ tractor trolley to ply in an hour for transportation of materials and capacity 9 tonnes and will make 50 trips/day for transporting Sand, Stone and Bajri from mine to end user. The loaded tractor trolleys/trucks would carry the material (Stone) will be transported to the stone crusher and after that it will be transported to market for sale along with Sand and Bajri. The following empirical expressions is used to estimate the quantity in pounds (lb) of size-specific particulate emissions from an unpaved road in industrial sites, per vehicle mile traveled

(VMT).

$$E = k \left( \frac{s}{12} \right)^a \left( \frac{W}{3} \right)^b + C$$

Where,

k, a, b are empirical constants i.e., different for different particle size.

E = size-specific emission factor (lb/VMT)

s = surface material silt content (%)

W = mean vehicle weight (tons)

C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

In NAAQS (2009) the PM10 concentration standard is given at 24-hour averaging time, the model was used to predict 24-hour GLC using Turner Equation2.

**Emission of NOx & CO from Vehicles-** There will be no source of NOx and CO emission from mining except from vehicles. The ARAI emission factors for NOx and CO emitting from heavy vehicles (diesel) is 10.51 g/mile/v and 6.32 g/mile/v.

**Emission of SO2 from Vehicles-** There will be no source of SO2 emission from mining. Also, there is no emission factor defined for exhaust emission of SO2 from diesel vehicle. Further, the model also do not have option for modelling SO2 emissions from vehicle exhaust

**Meteorology:-**

- Wind direction
- Wind speed
- Ambient temperature
- Stability class
- Mixing height

**Boundary Conditions:-** Pollutant concentrations at the domain boundaries which reflect transport from outside the region modelled.

**Meteorological Parameters:-** Surface meteorological data at the project site was collected for Dec 2025 to Feb 2026. The hourly meteorological data considered during this period were:-

- Wind speed & direction.
- Ambient atmospheric temperature.
- Cloud cover.
- Relative humidity.

**The Following parameters were considered for dispersion modelling-Area source**

- Quantity of per day production.
- The Emission rate of pollutants.
- No. of trucks used for transportation per day and provision to control fugitive emission.

**Source of Emission**

- Area of mine- PM, & Nox, CO

**Assumptions**



The dispersion modelling assumptions considered are as follows:-

- The fugitive emission rate for PM was calculated based on rate of production per day and transportation of mined out material.
- The terrain of the study area was considered as rocky.
- The mathematical equations used for the dispersion modelling assumes that the earth surface acts as a perfect reflector of plume and physico-chemical processes such as dry and wet deposition and transformation of pollutants are negligible.

**TABLE 4-2: EMISSIONS RATES**

S.No.	Activities	Units	Emission Rates
1.	Loading	g/s	0.000495
2.	Transportation on Haul Road (PM10 Emission)	g/mile/vehicle	80.28034
4.	Transportation (NO <sub>x</sub> Emission)	g/mile/vehicle	10.51
5.	Transportation (CO Emission)	g/mile/vehicle	6.32

#### 4.9.6 Incremental Increase and resultant Concentration

For the impact assessment, the more relevant determination for anticipated pollutants is the incremental increase in the background concentration rather than the determination of maximum GLC values. In the present study, an attempt has been made to determine the increase in the concentration of PM10, CO & NO<sub>x</sub> for receptors where the ambient air quality stations were established through a substitution of relevant data in the model.

Ambient air quality monitoring was carried out during (December 2025 to February 2026) including project site.

**TABLE 4-3 SUMMARY OF RESULTS**

S.No.	Pollutants	1st Maxm. Incremental Levels (µg/m <sup>3</sup> )	Distance (m)	Direction	Land use area of deposition
1	PM10-worst	4.24	100	East [100°]	Near project area
	PM10-control	2.15	100	East [100°]	Near project area
2	NO <sub>x</sub>	2.55	100	East [100°]	Near project area
3	CO	2.01	200	NNE [20°]	Near project area

**Resultant Concentration after Implementation of the proposed establishment of the plant:**



The cumulative impact on baseline ambient air quality, after the implementation of the proposed plant has been arrived at by superimposing the present baseline maximum air quality levels of each pollutant. The resultant ambient air quality after the implementation of the proposed plant is given in **Table 4-4**.

**TABLE 4-4: SUMMARY OF AREA/LINE AREA SOURCE MODELING**

Pollutants	1 <sup>st</sup> Max <sup>m</sup> . Incremental Concentration (µg / m <sup>3</sup> )	Location		Max. AAQ Concentration Recorded within project area during study period (µg / m <sup>3</sup> )	Resultant Concentration (µg / m <sup>3</sup> )	NAAQS Standard (µg / m <sup>3</sup> )/
		Distance in Meter	Direction			
PM <sub>10</sub> -worst	4.24	100	East	58.69	63.03	100.00
PM <sub>10</sub> - control	2.15	100	East	58.69	60.84	100.00
NO <sub>x</sub>	2.55	100	East	20.65	23.20	80.00
CO	2.01	200	NNE	840	842.01	2000

The predicted GLCs of Polluants after the commissioning of the proposed project area are not significant to add up to the existing ambient air quality. However, the proposed air pollution control systems Will further improve the existing ambient air quality and help in bringing down the concentrations in ambient air quality. The estimated cumulative GLCs after the commissioning of the proposed project are found to be within the National Ambient Air Quality Standards 2009 prescribed by CPCB. The incremental concentrations of CO and NO<sub>x</sub> are likely to be well within the AAQ standards However, the baseline concentrations of PM<sub>10</sub> were also within the AAQ standard. The incremental concentration of the PM<sub>10</sub> is not as much due to the proposed project. The maximum incremental concentration of PM<sub>10</sub> is 4.24 µg/m<sup>3</sup> in worst-condition and is 2.15 µg/m<sup>3</sup> in control-condition, NO<sub>x</sub> 2.55 µg/m<sup>3</sup> and CO 2.01 µg/m<sup>3</sup> at a distance of 100/ 200 m towards the East/NNE direction near the project area, it will decrease with the increase in distance. Thus the impact of the proposed project on air quality is not much significant. The resultant concentration of contour map are shown in Figure below. Hence, it can be concluded that the impact on Ambient Air Quality of the nearby areas by the proposed project will be insignificant. However, proper and effective air pollution control measures will be adopted to minimized and control the adverse impact due to proposed project.

### Wind Rose Diagram

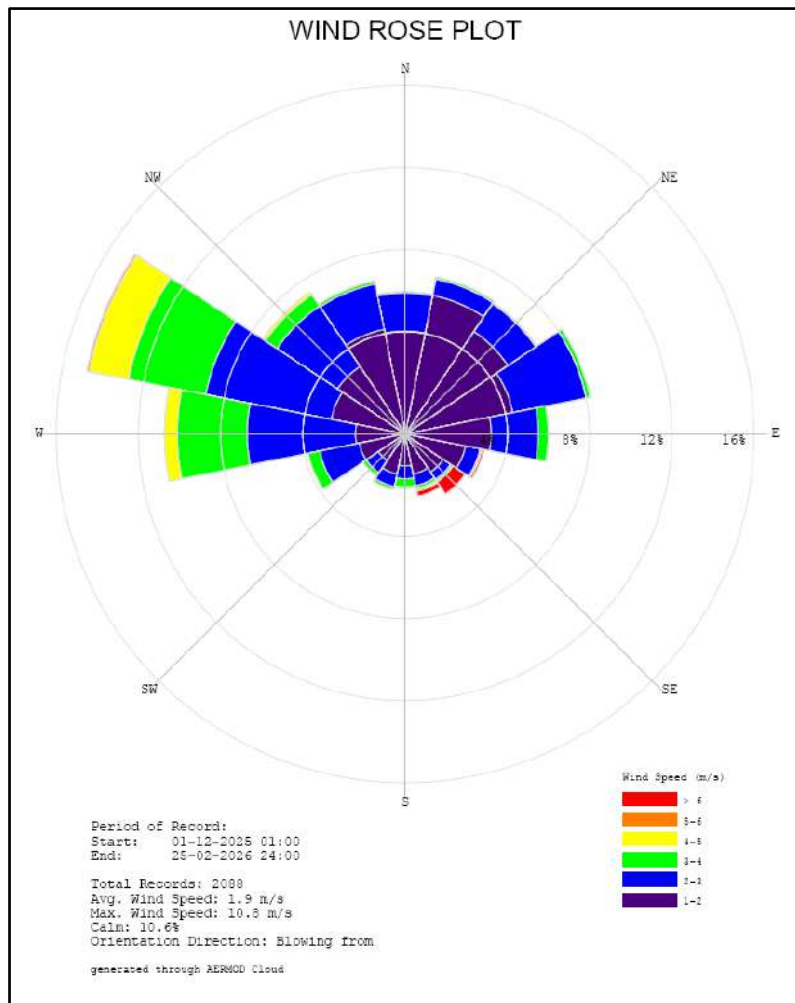
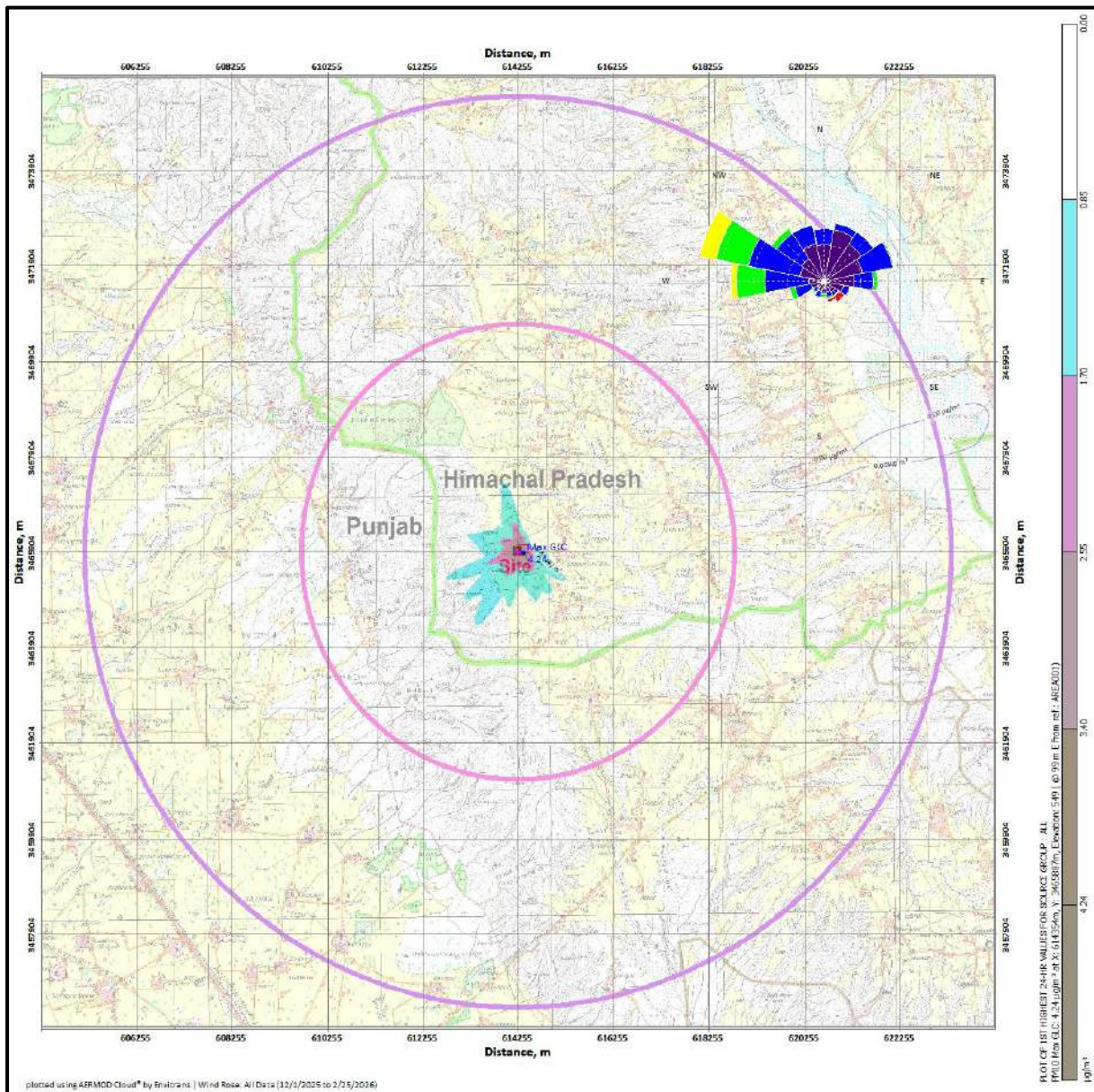


FIGURE 4-1: WIND-ROSE DIAGRAM (Dec 2025 to Feb 2026)



**FIGURE 4-2: SPATIAL DISTRIBUTION OF PREDICTED GLCs OF PM10 DUE TO MINING ACTIVITY**

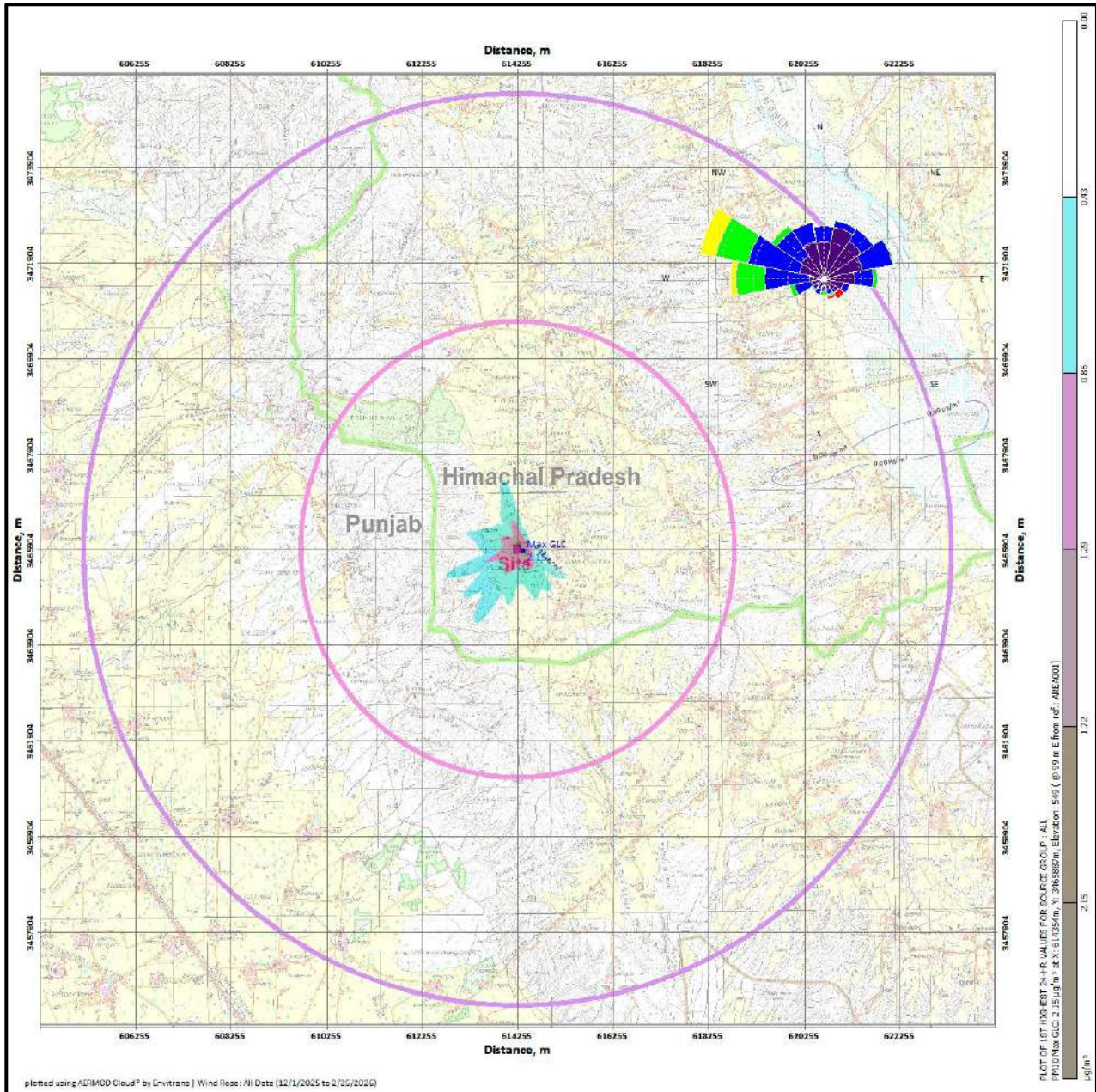


FIGURE 4-3: SPATIAL DISTRIBUTION OF PREDICTED GLCs OF NOx DUE TO MINING



#### 4.9.7 Prediction of Incremental GLC of Pollutants on Air Environment

The incremental increase in GLC of PM<sub>10</sub> due to mining operation (Area/Line Area source) presented in **Table below**.

**TABLE 4-5: SUMMARY OF AREA/LINE AREA SOURCE MODELING**

S.No	Within project area	Pollutant	98th Percentile Baseline Concentration ( $\mu\text{g}/\text{m}^3$ )	Incremental GLC ( $\mu\text{g}/\text{m}^3$ )	Total Predictive GLC ( $\mu\text{g}/\text{m}^3$ )	NAAQS Concentration Limit ( $\mu\text{g}/\text{m}^3$ )
1	Within project area	PM <sub>10</sub> -worst	57.28	4.24	61.52	100
2	Within project area	PM <sub>10</sub> -control	57.28	2.15	59.43	100
	Within project area	NO <sub>x</sub>	20.20	2.55	22.75	80
	Within project area	CO	810	2.01	812.01	2000

#### Conclusion

It is noted that the maximum impact zone is within 100 to 200 meters radial zone from the mine lease area because of wind speed and low concentration. The modeling study proved that the air emissions from the proposed project of mining having ~447.31 TPD or 120775 TPA would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the project site will remain well within the NAAQS limit. NAAQS are indicative air quality criteria that are adequate to protect the human health and vegetation. The maximum PM<sub>10</sub> is 4.24  $\mu\text{g}/\text{m}^3$  in worst-condition and is 2.15  $\mu\text{g}/\text{m}^3$  in control-condition, NO<sub>x</sub> 2.55  $\mu\text{g}/\text{m}^3$  and CO 2.01  $\mu\text{g}/\text{m}^3$  at a distance of 100 to 200 m towards the East/ NNE direction near the project area, it will decrease with the increase in distance.

**SO<sub>2</sub>** : There will be no source of SO<sub>2</sub> emission from mining. Also, there is no emission factor defined for exhaust emission of SO<sub>2</sub> from diesel vehicle.

- All activities related to mining i.e. and transportation, loading are contributing to the air emission load due to proposed project. However, the increase would be marginal. The cumulative emission levels of PM<sub>10</sub> and will not go beyond the threshold limit of NAAQS.
- The concentration NO<sub>x</sub> due to vehicle exhaust is very low concentration due to small number of vehicles plying on haul road.
- The concentration CO due to vehicle exhaust is very low concentration due to small number of vehicles plying on haul road.
- The concentrations of SO<sub>2</sub> from mining area and transportation are expected to be low due to absence of any major source.

- The Isopleths for the different modelling conditions are illustrated in the Figure to Figure.

### **Mitigation Measures**

- The drop height during loading and unloading shall be maintained just above the truck height.
- Trucks shall not be over loaded.
- Regular water sprinkling on haul roads shall be used for suppression of dust.
- Strict speed limits shall be imposed on trucks/vehicles.
- Water sprinkling system shall be installed at locations of unloading.
- Multiple transportation routes in different directions shall be planned to minimize dust generation.
- Planning paved roads outside mine lease area to minimize the dust generation.
- Plantation of trees along haul roads, and near settlements, to help to reduce the impact of dust on the nearby villages.
- Transportation of material shall be carried out during day time only.
- Covering of material during transportation on trucks to prevent spillage from the trucks. The trucks shall be covered by tarpaulin.

### **4.9.8 AIR QUALITY INDEX**

The Minister for Environment, Forests & Climate Change Shri Prakash Javadekar launched The National Air Quality Index (AQI) in New Delhi on 17 September 2014 under the Swachh Bharat Abhiyan. It is outlined as 'One Number One Colour-One Description' for the common man to judge the air quality within his vicinity. The index constitutes part of the Government's mission to introduce the culture of cleanliness.

Air Quality Index (AQI) is one such tool for effective dissemination of air quality information to people. As such an Expert Group comprising medical professionals, air quality experts, academia, advocacy groups, and SPCBs was constituted, and a technical study was awarded to IIT Kanpur. IIT Kanpur and the Expert Group recommended an AQI scheme in 2014.

There are six AQI categories, namely Good, Satisfactory, moderately polluted, Poor, Very Poor, and Severe. The proposed AQI will consider five pollutants (PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, SO<sub>x</sub>, and Free Silica) for which short-term **(up to 24-hourly averaging period)** National Ambient Air Quality Standards are prescribed. Based on the measured ambient

concentrations, corresponding standards and likely health impact, a sub-index is calculated for each of these pollutants. The worst sub-index reflects overall AQI.

AQI to be calculated by using the pollutant concentration data, the following table, and the following equation (linear interpolation):

$$I_p = \frac{I_{Hi} - I_{Lo}}{BP_{Hi} - BP_{Lo}} (C_p - BP_{Lo}) + I_{Lo}$$

Where,

$I_p$  = the index for pollutant p

$C_p$  = the rounded concentration of pollutant p

$BP_{Hi}$  = the breakpoint that is greater than or equal

to  $C_p$   $BP_{Lo}$  = the breakpoint that is less than or

equal to  $C_p$   $BP_{Hi}$  = the breakpoint that is greater

than or equal to  $C_p$   $I_{Hi}$  = the AQI value

corresponding to  $BP_{Hi}$

$I_{Lo}$  = the AQI value corresponding to  $BP_{Lo}$

**TABLE 4-5 SUMMARY OF RESULTS HOURLY AQI IS DEVIDED INTO SIX CATEGORIES**

Air Quality index(AQI) values	Levels of health concern	Description	Color
0 - 50	Good	Minimal Impact	Dark Green
51 - 100	Satisfactory	Minor breathing discomfort to sensitive people	Light Green
101 - 150	Moderate	Breathing discomfort to the people with Lung, heart disease, children, and other adults.	Lemon Yellow
151- 200	Poor	Breathing discomfort to people on prolonged exposure	Yellow
201 - 300	Very Poor	Respiratory illness to the people on prolonged exposure	Red
301 - 500	Severe	Respiratory effects even on healthy people.	Brown

\*Source:- Central Pollution control board series CUPS/8z/2014-15

**TABLE 4-6 AIR QUALITY INDEX OF 10 KM BUFFER AREA**

Sr.No.	Locations	SUB INDEX					AQI Value
		PM10	PM2.5	SO2	NO2	CO	
1.	Project Site 1	41.95	22.30	11.32	12.82	0.31	65
2.	Project Site 2	39.77	21.43	8.92	11.77	0.29	61
3.	Sidh Baba Jodi waleji	44.03	24.41	11.20	17.31	0.33	40
4.	Jakhewal	42.76	22.89	11.05	11.70	0.31	36
5.	Dulehar Village	45.47	25.46	9.53	12.13	0.29	43
6.	Mehindwani Village	41.44	22.98	8.85	10.06	0.53	44
7.	Goindpur Taraf Bulla Village	32.10	18.15	8.39	9.46	0.47	49
8.	Gajjar Village	30.87	17.35	8.35	9.44	0.49	41

The Air Quality Index (AQI) across eight monitored locations in the study area has been recorded as good to satisfactory. AQI values for all four parameters were calculated based on running 24-hour averages, indicating overall satisfactory air quality. Within the 10 km radius of the project site, the primary pollutants contributing to air quality levels are PM10 and PM2.5. The maximum AQI observed in the project area is attributed to these parameters, yet the ambient air quality remains within the satisfactory category.

#### 4.10 NOISE ENVIRONMENT

The proposed mining activity is manual as well as semi-mechanized in nature. No drilling and blasting is to be used for the mining activity. Hence the only impact anticipated is due to the movement of vehicles deployed for transportation of minerals.

##### 4.10.1 Anticipated Impacts:-

The exposures to excessive noise levels can lead to:-

- Disturbed sleep, insomnia, and fatigue.
- Decrease in speech reception, communication.
- Distraction and diminished concentration thus adversely affecting the performance efficiency.
- Potential cardiovascular, respiratory, and neuralgic damages in certain extreme cases.

**4.10.2 Mitigation Measures:-**

- Limit vehicle movement to daytime; maintain equipment; provide quiet rest shelters.
- Install noise barriers; mandate ear protection; rotate shifts to reduce exposure.
- Allow regular breaks; train workers on noise risks; use acoustic insulation in work areas.
- Ensure only PUC-certified vehicles are operated
- Minimize use of sharp horns.

The noise level in the working environment is compared with the standards prescribed by Occupational Safety and Health Administration (OSHA-USA) which has been adopted and enforced by the Govt. of India through model rules framed under Factories Act, 1980 and CPCB 2000 norms. The summary of the permissible exposures in cases of continuous noise as per above rules is given below:-

**TABLE 4-7: DAMAGE RISK CRITERIA FOR HEARING LOSS OSHA REGULATIONS**

Maximum allowable duration per day in hour	Sound pressure db (A)	Remarks
(1)	(2)	(3)
8.0	90	1. For any period of exposure falling in between any figure and lower figure as indicated in column (1), the permissible sound is to be determined by extrapolation or proportionate scale. 2. No exposure in excess of 115 db (A) is permissible.
6.0	92	
4.0	95	
3.0	97	
2.0	100	
1 ½	102	
1	105	
¾	107	
½	110	
¼	115	

Noise at lower levels (sound pressure) is quite acceptable and does not have any bad effect on human beings, but when it is abnormally high, it incurs some maleficent effects. The area in general represents calm surroundings. There is no heavy traffic, industry, or noisy habitation near the proposed leased mining area. As there will be no heavy earth moving machinery there will not be any major impact on noise level due to proposed mining and other associated activities. A detailed noise survey has been carried out, and results were cross-referenced with standards and were found to be well within limits. Blasting technique shall not be used for lifting of sand and stone, hence no possibility of land vibration. It was found that the proposed mining activity will not have any significant impact on the noisy environment of the region. The only impact will be due to transportation of sand, stone and trucks to the stone crushing unit located at distance of 1.0 Km.

During mining operation, i.e. collection of stone and loading into transporting vehicle noise levels shall be higher but well within limit of the noise levels in the working area when compared with standards prescribed by occupational safety and health administration (OSHA-USA) and CPCB New-Delhi.

**TABLE 4-8: AMBIENT NOISE LEVEL OF STUDIED AREA**

Sr. No.	Location Name	Results		Method
		Day Time Leq. dB (A)	Nighttime Leq.in dB(A)	
1.	Project Site 1	57.6	43.2	IS: 9989: 1981R-2002
2.	Project Site 2	55.4	41.8	
3.	Sidh Baba Jodi Wale ji	45.2	38.4	
4.	Crusher Site	62.5	45.6	
5.	Gaushala Dulehar	51.0	45.4	
6.	Dispensary & Healthcare Centre,	45.4	34.8	
7.	Bhandiarna Village	50.6	35.5	
8.	Dulehar to Gondpur bulla road	54.2	43.6	

During mining operation *i.e.*, collection of stone and loading into transporting vehicle noise levels shall be higher but well within limit of the noise levels in the working area when compared with standards prescribed by occupational safety and health administration (OSHA-USA) and CPCB.

#### **4.11 Biological environment**

Mining on hill slopes, which involves excavation and removal of surface material, can lead to ecological impacts. These impacts may include:

##### **4.11.1 Anticipated Impacts**

- ❖ Loss of slope vegetation and associated habitats.
- ❖ Disturbance to terrestrial and soil-dwelling species dependent on slope ecosystems.
- ❖ Increased soil erosion and sediment runoff into adjoining valleys and watercourses.
- ❖ Reduction in soil fertility and decline in primary productivity due to topsoil removal.
- ❖ Decreased feeding and nesting opportunities for fauna reliant on slope vegetation.
- ❖ Reduction in the yield of agriculture due to deposition of dust on the leaves, etc. of the crops.

##### **Mitigation Measures**

As the proposed mining will be carried out in a scientific manner, not much significant impact is anticipated, however, the following mitigation measures will be taken to further minimize it:-The basic objectives of plantations are as follows:-

- ❖ To Stabilize slopes and re-vegetate with native species.
- ❖ Limit excavation; protect sensitive zones with buffers.
- ❖ Build check dams, trenches, and erosion controls.
- ❖ Create green belts; keep refuge patches intact.
- ❖ Sprinkle roads, cover trucks, and plant dust-barrier trees.
- ❖ Develop green belts around the lease area; maintain undisturbed patches as refuge zones.
- ❖ Regular water sprinkling on haul roads to prevent dust settling on crop leaves and reducing yield.

##### **4.11.2 Green Belt Plantation**

###### **Purpose**

Green belt is created for protecting sensitive areas and to maintain ecological balance, but they also act as an efficient biological filter or sinks for particulate and gaseous emissions, generated by vehicular movements and various industrial activities.

Green Belt Development provides an important tool to address the issue of mitigating the adverse effects of industrial and infrastructure projects. Green belt is recommended for containment and abatement of air pollution in urban-industrial environment. An optimally designed green belt is effective in reducing the impact of fugitive emission and pollutants accidentally or otherwise released at ground levels.

### **Design of Green Belt**

The present plan comprises the details on field investigations, choice of plant species for greenbelt development as per CPCB guidelines, areas identified for development under greenbelt, feasibility in implementation, and development of landscape for identifying the feasibility of greenbelt development within proposed Bio-medical facility.

A detailed survey was conducted with respect to existing vegetation diversity and density etc in and around the study area for development of greenbelt and plantation. The greenbelt development plan has been formulated considering the parameters such as climate, soil types, topography etc

#### **a. Characteristic features of plants to be used for Absorption of pollutant gases.**

- Plant species should be perennial and evergreen with thick canopy covers.
- The crown of tree (mass of foliage/leaves and branches growing outward from the trunk of the tree) should be either Oblong, Round or Spreading for effective absorption of pollutant gases.

#### **b. Plantation technique**

The plant species should be planted using pitting technique. The pit size should be 45cm X 45cm X 45cm for Shrubs and 70cm X 70cm X 70cm for trees. Soil used for filling the pit should be mixed with well decomposed Farmyard Manure (FYM) or Sewage sludge at the rate of 2.5 kg (on dry weight basis) and 4 kg (on dry weight basis) for shrubs and trees respectively. The filling of soil should be completed at least a week before actual plantation.

The pits measuring 70cm X 70cm X 70cm for trees are to be dug up at desired points in triangular pattern. For planting tall shrubs and dwarf trees 4.5m spacing between the plant rows is sufficient while medium and tall trees in middle and rear rows are to be planted 6-7 m and 7-9 m respectively depending upon the space available.

#### **c. Three Tier System for Plantation**

Close planting keeping dwarf trees with round canopy exposed to the source of emission followed by medium and tall trees with cylindrical canopy is ideal for the present situation.

Planting trees in staggering arrangements in multiple rows across the direction of the wind is recommended for better trapping and absorption of pollutants. The trees of the front row act as absorptive layers while the core area (rear rows) cleans the air. The width of the outer area of the plantation should be 3-4 times wider than the core area depending upon the availability of the space.

Though, the study area harbours good diversity; some species for green belt development are suggested, which are summarized as below:-

Though, the study area harbours good diversity; some species for green belt development are suggested, which are summarized as below:-

**TABLE 4-9: List of plant species suggested for Greenbelt development.**

S. No.	Botanical name	Local name
1	<i>Albizia lebbbeck</i>	White siris
2	<i>Bauhinia variegata</i>	Kachnar
3	<i>Berberis spp.</i>	Kashmal
4	<i>Bombax ceiba</i>	Simbal
5	<i>Celtis australis</i>	Khirak
6	<i>Cenchrus ciliaris</i>	Anjan
7	<i>Cynodon dactylon</i>	Dhoob
8	<i>Dodonaea viscosa</i>	Hop bush
9	<i>Grewia optiva</i>	Behul
10	<i>Olea ferruginea</i>	Kahu
11	<i>Pinus roxburghii</i>	Chir
12	<i>Prinsepia utilis</i>	Bhekal
13	<i>Pyrus pashia</i>	Kainth
14	<i>Saccharum bengalense</i>	Munj
15	<i>Zanthoxylum armatum</i>	Tirmira

#### 4.11.3 Management & Conservation Measures for Biodiversity

It is an irrefutable scientific fact that there cannot be any developmental activity which is completely devoid of causing any environmental impact. Industrial sectors too are no exception to that. However, it is also a fact that environment is a dynamic entity and has a built-in during the Mining operations are likely to settle down in the core area premises. The biodiversity is a resilient entity of the environment and can tolerate impacts and recuperate if their renewal mechanisms are unaffected over a long period of time. Therefore, focus should be laid on ensuring that the renewal dynamics of various floral and faunal taxa is not impeded by the mining activity.

Green belt will be developed according to CPCB guidelines. Plants of various species will be developed in the plant and peripheral areas. The Mine waste will be used for Plantation by planting local trees and bushes. Plantation shall be done in 2.7891ha area, and 6,732 trees shall be planted (1200 trees/hectare) along with grass. The improvement in the agricultural production will also increase the vegetal cover in the surrounding area. This when coupled with Greenbelt development/ plantation is a favourable and eco-friendly measures to reduce the impact of the proposed mining activity on the biodiversity of the area.

Adequate measures will be adopted as a part of the Environmental Management Plan (EMP) to prevent entrainment of fugitive dust emissions. Thus, adverse impacts due to fugitive emissions are not expected to be significant.

This requires sensitization of stakeholders at various level involved in the process of development to realize the importance of biodiversity and the role biodiversity in maintaining the ecological balance. Practically this can be achieved by:

- Scaling up the Green Belt development in and around the site.
- Controlling the fugitive emissions and other airborne pollutants by appropriate technology at point source.
- Adherence to the strategies outlined in the EMP.
- Using paved roads for transportation to minimize fugitive emissions.
- Emission of particulate matter during operation phase will be controlled at source by using appropriate pollution control devices as per the CPCB guidelines.
- Maintain the preferred routes of animal's movement.
- Signboards in fluorescent ink should be placed along the major animal's route to make them readable in night-time.
- Built a clause in contract document for the contractor that would not permit the labours, workers, supervisors, contractors, and other employees to collect and utilize forest produce, including firewood. Frequent visits to the forest habitats for collection of resources might scare the wildlife and may also result in human - wildlife conflict.
- Creating a live hedge of sturdy woody shrubs along the periphery of treatment facility to restrict the wildlife to enter treatment facility. Closely packed *Azadirachta indica*, *Cassia fistula*, *Delonix regia*, *Opuntia*, *Ziziphus* can be used for the purpose.
- Undertaking educational and awareness drive in the labour camps to ensure traps are not laid by the labours for trapping small animals.
- Weed control method should be conformed to the ecological conservator officer to prevent any undesirable secondary impact.

- Removal or picking of any protected or unprotected plants shall not be permitted.
- The grass mix should consist of indigenous grasses adapted to the local environment conditions.
- In the event of animals present and pose a risk to human safety, a suitable animal handler must be requested to catch the animal in a friendly and responsible manner. This specifically refers to the snakes and scorpions.

#### 4.14 CONCLUSION

- Before detailing the study area, a cursory understanding of the state scenario was prudent. The biodiversity of this region is largely related to the tropical moist sub deciduous.
- The entire study area (Terrestrial and Aquatic) was covered in the best possible manner. To enlist the flora, fauna, and avifauna (terrestrial and aquatic), nocturnal and insect study was carried out as per objective of visit.
- The Vegetation in study area is sparsely located and moderately rich. The air borne emission will not affect forest growth due to enough distance and wind direction as per result of air pollutant dispersion modelling.
- Raising of plantation with suitable indigenous species will improve the environment.
- Agriculture is very less as entire study area is located on top of the hillock and surrounded by forest.
- Design & Development of greenbelt needs to be done with spreading and round canopy, Fruit bearing, local and resilient plant species like Ficus spp., Gulmohar, Amaltas, Neem, Arjun, Mango, Jamun, Jackfruit, Amla, Guava, Chiku and some fuel wood tree spp.
- For developing greenbelt in and around study area, care shall be taken to plant evergreen species like *Azadirachta indica*, *Delonix regia*, *Cassia fistula*, *Terminalia arjuna*, *Mangifera indica*, *Tectona grandis*, *Dalbergia sissoo*, *Tamarindus indica*, *Annona squamosa*, *Achras sapota*, *Zizyphus* spp. etc. Planting of such trees will support foliage and thus protection all around the year.
- Survival rate of the planted trees shall be closely monitored and the trees which could not survive shall be counted and replaced.

#### 4.12 SOLID & HAZARDOUS WASTE:-

During mining as such no solid & hazardous waste will be generated. Nominal amount of domestic waste will be generated at the mine site by the workers, which will be disposed off by municipal way. Silty Sand and Topsoil in the form of Mine waste will be generated during the mining of sand, stone and bajri which will be further use for back-filling purpose and also plantation purpose along the roadsides & crusher site.

#### **4.13 TRAFFIC ANALYSIS**

Vehicle movement on hill slopes may increase traffic congestion and accident risks. Proper route planning and regulated transport schedules will minimize these impacts.

##### **Transportation Route:-**

The excavated minerals will be directly loaded into trucks and trolleys, transported to the existing stone crusher for processing into the required grit, and then dispatched to the market or end users. A single evacuation route has been proposed to streamline transportation and distribute traffic load, thereby minimizing congestion.

##### **Traffic Management:-**

1. Roads will be repaired regularly and maintained in good conditions.
2. Regular sprinkling of water to control the dust emission
3. Traffic movement will be regulated near the site.
4. Speed breakers will be constructed accident prone areas to calm the traffic and its speed.
5. Signage will be erected at the sensitive & precarious places to caution or provide information to road user.

#### **4.6 SOCIO-ECONOMIC ENVIRONMENT**

##### **Human settlement**

The villages and their inhabitants in the buffer zone will not be disturbed from their settlements due to the mining operations.

There is no inhabitation within the lease area. Therefore, neither villages nor any part of village or any hamlet will be disturbed during the entire life of the mine. As the mining operations will not disturb or relocate any village or settlement, no adverse impact is anticipated on any human settlement.

##### **Sensitive targets**

There are no places of Tourist, religious & historical importance in core zone.

##### **Socio economic status**

There are some people who are engaged in trading of Sand, Stone and Bajri Therefore, due to mining of these minerals the per capita income of local people has been improved.

The job/business opportunities have improved the economic condition of the people. They are able to utilize this money for purchase of tractors, trucks, jeeps, etc. which may be put into use for business purposes. Part of money has also been utilized in starting of some business as per person's skills.

The results of the field survey conducted based on a questionnaire prepared to understand the knowledge and perception of the people living around the project area, gives a clear idea about the need for the project. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes. However, there is an apprehension that local people may get engaged in illegal activities if they are not involved in the proposed mining operation or the project is shelved.

#### **4.7 CONCLUSION**

All possible environment aspects have been adequately assessed, and necessary control measures have been formulated to meet statutory requirements. Thus, implementing this project will not have any appreciable negative impacts.

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## 5 ANALYSES OF ALTERNATIVES (TECHNOLOGY & SITE)

### 5.1 GENERAL

Consideration of alternatives to a project proposal is a requirement of the EIA process. During the scoping process, alternatives to a proposal can be considered or refined, either directly or by reference to the key issues identified. A comparison of alternatives helps to determine the best method of achieving the project objectives with minimum environmental impacts or indicates the most environmentally friendly and cost-effective options.

### 5.2 ALTERNATIVE FOR MINE LEASE

**Site:** The Mining is Naturally a site-specific activity, and the lease has been granted for this designated location based on the availability of mineral resources. Therefore, no alternative site has been considered or proposed.

### 5.3 ADVERSE IMPACTS

- Disturbance to aquatic habitat due to human activity.
- Increased turbidity affecting water quality.
- Occupational health risks to workers.
- Limited extraction capacity may lead to illegal mining.

### 5.4 MITIGATION MEASURES

- ❖ Restrict mining to non-monsoon periods.
- ❖ Provide PPE and training to workers.
- ❖ Designate specific zones for manual mining.
- ❖ Regular monitoring of water quality and biodiversity.

\*\*\*\*\*

## **6 ENVIRONMENTAL MONITORING PROGRAMME**

### **6.1 GENERAL**

The monitoring and evaluation of environmental parameters indicates potential changes occurring in the environment, which paves way for implementation of rectifying measures wherever required to maintain the status of the natural environment. Evaluation is also a very effective tool to judge the effectiveness or deficiency of the measures adopted and provides insight for future corrections.

The main objective of environmental monitoring is to ensure that the obtaining results in respect of environmental attributes and prevailing conditions during operation stage are in conformity with the prediction during the planning stage. In case of substantial deviation from the earlier prediction of results to identify the cause and suggest remedial measures. Environmental monitoring is also mandatory to meet compliance of statutory provisions under the Environment (Protection) Rules, 1986, relevant conditions regarding monitoring covered under EC orders issued by the SEIAA as well as the conditions set forth under the order issued by State Pollution Control Board while granting CTE/CTO.

### **6.2 AREAS OF CONCERN**

In case of mining projects, the changes relating to water, aquatic biota, air, noise, biodiversity of the area, stability of pit slopes, river hydraulics and plantation programme need special attention, from monitoring point of view, during the conceptual mine plan period to judge the efficiency of measures implemented for conservation of environment.

### **6.3 ENVIRONMENTAL MONITORING PROGRAMME**

All the environmental parameters viz. air, water, noise, and soil will be monitored regularly in order to detect any changes from the baseline status. Environmental Monitoring program will be followed till the mining operations ceases.

#### **6.3.1 Air Quality Monitoring**

Air Quality monitoring is essential for evaluation of the effectiveness of abatement programmes and to develop appropriate control measures. The project proponent will monitor ambient air quality in and around the proposed ordinary sand mining projects at a frequency of once in a fortnight or any other frequency as stipulated by MoEF and take appropriate air pollution control measures in order to ensure that the concentration of PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>2</sub> are within limits.

### 6.3.2 Water Quality Monitoring

Water quality monitoring involves periodical assessment of quality of surface water and the ground water near the mine site. Surface water samples will be analyzed for all the parameters as per EPA, 1986 ground water samples will be analyzed for all the parameters as per IS-10500. Phreatic surface levels will be monitored throughout the life of the project to study the impact of mining operations on the ground water regime. A network of observation wells will be located in the villages around the projects area for monitoring of phreatic surface levels. The water levels will be monitored during pre-monsoon and post-monsoon seasons four times in a year.

### 6.3.3 Noise level monitoring

Noise level monitoring will be done for achieving the following objectives:

- a) To compare sound levels with the values specified in noise regulations.
- b) To determine the need and extent of noises control of various noise generating sources.
- c) Correlation of noise levels with community response to noise levels.

Noise level monitoring will be done at the work zone to assess the occupational noise exposure levels. Noise levels will also be monitored at the noise generating sources like mineral handling arrangements, vehicle movements and also nearby villages for studying the impact due to higher noise levels for taking necessary control measures at the source.

**TABLE 6-1: MONITORING SCHEDULE AND PARAMETERS**

Sr. No.	Aspect	Parameters to be	Frequency
1	Air Quality monitoring	PM10, PM2.5, SO2, NO2, Free Silica	As per CPCB/ SPCB requirement on a monthly basis.
2	Noise Quality monitoring	Leq for day and night	As per SPCB/MoEF & CC requirements of compliance.
3	Water Quality Monitoring	Comprehensive monitoring as per IS:10500 Ground water level (bgl) and Surface water quality as per IS 2296:1991.	Periodic during operation phase as per SPCB/ CPCB guidelines.
4	Soil	Organic matter, Texture, pH, EC, Permeability, Water holding capacity, porosity etc.	Periodic during operation phase as per SPCB/ CPCB guidelines
5	Plantation	Plants and shrubs in the Green belt area and their mortality status	Periodic during operation phase as per SPCB/CPCB compliance requirements

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## 7 ADDITIONAL STUDIES

### 7.1 GENERAL

All and allied industries are prone to various hazards and disasters that can impact workers, infrastructure, and nearby communities. It is essential to identify project-specific risks and implement preventive measures. Safe working conditions and environmental safeguards must be ensured. A robust framework for risk assessment, emergency preparedness, and compliance with safety regulations is vital for sustainable operations.

### 7.2 PUBLIC CONSULTATION

In compliance to provision of the EIA notification dated 14.9.2006, the copy of Draft EIA report and Executive summary in English & Hindi is being submitted to Himachal Pollution Control Board to conduct the public hearing.

### 7.3 IDENTIFICATION OF RISK & HAZARDS

The mining of Sand, Stone and Bajri will be done manually as well as semi-mechanically so, there will not be any major risk hazard associated with the process. The possible scenarios selected for this project are as below:-

- Accident during sand loading, transporting, and dumping.
- Accident due to vehicular movement.
- Occupational injuries.
- Possibility of earthquake.
- Fires on large surface vehicles through ignition of fuel/Hydraulic fluids.

#### 7.3.1 Inundation/Flooding

The consequences of flooding/inundation are catastrophic or fatal. The likelihood of the occurrence of flooding is occasionally possible. As per mining plan the mining work will not be carried out during monsoon season. The likelihood of the occurrence of drowning is rare due to dry season mining.

#### 7.3.2 Accident due to vehicular movement

The consequences of this scenario are moderate and may result in hospitalization and day loss. The likelihood of occurrence is occasionally possible.

### 7.4 RECOMMENDATION FOR RISK REDUCTION

#### 7.4.1 Measures to Prevent Inundation/Flooding

- Formation of deep pits should not be allowed.
- Check dams will be constructed & maintained.
- Mining operation will be prohibited during monsoon season.
-

#### **7.4.2 Measures to Prevent Accidents during Loading**

- The truck should be brought to a lower level so that the loading operation suits to the ergonomic condition of the workers.
- The loading should be done from one side of the trucker trolley only.
- The workers should be provided with gloves and safety shoes during loading.
- Operations during daylight (9 a.m. to 5 p.m.) only.
- Harvested material should not be piled up on the hill slope area to prevent erosion and instability.
- Necessary first aid kit will be always kept in the mine site.

#### **7.4.3 Measures to Prevent Accidents during Transportation**

- Vehicles must be periodically checked and maintained in good condition and must not be overloaded.
- Overloading should not be permitted.
- To avoid danger of accident roads and ramp near site should be properly maintained.
- The truck should be covered and maintained to prevent any spillage.
- The maximum permissible speed limit should be ensured.
- The truck drivers should have proper driving license.

#### **7.4.4 Preventive and Corrective Measures for Occupational Injuries**

- Training will be given to the workers on how to use hand equipment.
- First aid will be provided on-site only if any accident occurs.
- In-case of poor condition of any equipment, it will be changed immediately.

#### **7.4.5 Preventive and Corrective Measures for Fires on large surface vehicles through ignition of fuel/hydraulic fluids**

- Availability of fire extinguishers on-site throughout the operational phase of mine Maintenance of vehicles on monthly bases.

### **7.5 SOCIAL IMPACT ASSESSMENT**

Socio- Economic Impact Assessment (SEIA) refers to systematic analysis of various social and economic characteristics of human being living in a given geographical area during a given period. The study area has been considered 10 km radius from the project site. The total 10 Km area has been divided into three sections. These different sections are namely (0- 3 Km primary Impact area and 3-7 km secondary Impact area and 7-10 km non-impact zone). For the primary survey 0-3 km Impact area has been considered. The Socio-economic Impact Assessment focuses the effect of the project on social and economic well-being of the community. The impact may be direct or indirect. Further, the impact may be positive or negative.

### **7.5.1 Objectives of SEIA**

The prime objective of the current study is to assess the impact of the proposed Mining Project on socio-economic characteristics of people living in the neighborhoods. Further, it is to be established whether the impending impact would be direct or indirect. Furthermore, it has to be examined whether the said impact would be positive or negative.

### **7.5.2 Scope**

The Scope of the study is as follows:

- To collect baseline data of the study area.
- To comprehend socio-economic status of the people living in the study area.
- To assess probable impact of the project on social and economic aspects in the study area.
- To measure the impact of the project on Quality of life of the people living in the study area.
- To ensure sustainability of positive impact.
- To suggest mitigation measures and agency responsible for taking action in case of adverse impact.

## **7.6 SOCIO-ECONOMIC IMPACT OF THE PROJECT**

### **7.6.1 Impact on demographic composition**

The proposed Mining Project at Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una Himachal Pradesh will hardly make any difference in the demographic composition of the study area as the additional employment it envisages to create will be met locally to the maximum extent. Hence, the chances of immigration of people from outside the study area are remote. Accordingly, there will be no variation in the total population of the study area including that of sex ratio when the mine starts operating. But because of extrapolating the data of the last two census showing some increase in total population.

### **7.6.2 Employment Opportunities**

The proposed Project will provide employment to the local people. The number of workers to be deployed in the mining project will depend upon the quantity of minerals to be extracted from the mine by the lease holder. Both the miners and the unskilled workers will be recruited locally. It has been estimated that 10 people will get direct employment in this mining project. It is a positive impact of the project since it provides employment opportunities to the local people. The project will not affect vulnerable groups of people.

### **7.6.3 Increased supply of minerals in the market**

Both Government departments and private developers have taken up construction of roads, bridges, and buildings in a big way.

Hence, the demand for sand, stone & bajri is ever increasing with the growth of the infrastructure development in our country. The requirement for building materials is always high, there is already an acute shortage of sand in the market, and the construction industry is the main sufferer. It is a critical component of concrete mixture. It is also used for filtering waste. With the commencement of the proposed mining project the supply of sand, stone & bajri will increase at least in the local market.

### **7.6.4 Impact on road development**

Movement of trucks and other vehicles to and from the mining site is expected to increase when mining starts. The existing roads connecting the quarry with the national highways are connected by metaled and unmetalled roads. Hence, there is a need for road maintenance and repairing regularly in the mining area. Further, there are risks of accidents during loading extracted minerals into tractor-trolleys and transportation to markets for sales. However, accidents can be avoided by taking due care and precautions.

### **7.6.5 Impact on health**

There is no chance of diseases occurring, due to manual mining of Sand, Stone & Bajri is non-toxic. However, sand-using activities such as sand blasting require precautions since it creates respiratory problems among mine workers. Excessive inhalation of sand is a serious health concern. To avoid respiratory problems from sand, necessary protection should be taken.

### **7.6.6 Few safety measures are outlined below:-**

- a) It is ensured that health and safety of all the employees at work will provide. Efforts will be made to provide and maintain a safe work environment and ensure that the machinery and equipment in use is safe for employees. Further, it will be ensured that working arrangements are not hazardous to employees.
- b) The first aid treatment reflects the hazards associated with the mining of stone, boulder, bajri & sand. The first aiders will be well trained in handling patients working in the above Mining Project.
- c) For all mine workers regular health examination will be made compulsory. Treatment for respiratory diseases or asthma, skin diseases, lung function test (pre and post Ventolin), Audiograms, Chest X- ray etc., as required will be given.
- d) To meet the medical needs of the mine workers tie-up with nearest hospitals will be made. This will ensure timely medical aid to the affected persons.
- e) For protection from dust, it will be made compulsories for all workers to wear masks and gloves while working in the mine.

## 7.7 CONCLUSION

The Mining of sand, stone and bajri from Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una Himachal Pradesh will provide employment to local people who are in search of the same. The granting of Environment Clearance to the project will make mining of sand, stone & bajri legally valid and it will generate revenue for the state. With the implementation of the project there will be an increase in the employment opportunities for the local villagers. The study area is still lacking in health and educational facilities. It is expected that same will improve to a great extent with the opening of the project and associated activities. Also, Proposed CER activity will improve the socio-economic status of the villagers of the study area.

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## **8 PROJECT BENEFITS**

### **8.1 BENEFIT OF MINING**

The proposed project is mining of sand, stone and bajri from the Hill slope mining, which has no major impact on surrounding environment. The proposed activity shall provide raw material to Stone crusher there by boosting production of construction material. This will bring overall improvement in infrastructure development and economic growth of the area.

- Generating useful economic resource for construction.
- Generating employment and improvement of socio-economic conditions of the study area.

### **8.2 EMPLOYMENT POTENTIAL**

The socio-economic conditions of the surrounding villages indicate that employment generation is seasonal. The occupational activities are agriculture and cattle rearing. The mining activity will provide employment to local people which will increase socio-economic status of the area. Sand, Stone & Bajri are the main raw material for making roads and filling material. The mining activity will provide direct employment to 10 skilled local people and indirect employment of semiskilled and unskilled workers engaged in transportation, trading, and other allied activities, which will improve socio- economic status of the area.

### **8.3 IMPROVEMENTS IN THE PHYSICAL INFRASTRUCTURE**

The proposed sand, stone and bajri and mine will have numerous induced impacts on society such as growth in schools, hospitals, hotels & resorts, transport etc. It will also attract other entrepreneur to establish their venture in the region.

### **8.4 IMPROVEMENTS IN THE SOCIAL INFRASTRUCTURE**

The social infrastructure like religious places (Temple, Mosque, Church, Gurudwara); marriage homes, Bus stations, railway stations, playgrounds will be improved.

### **8.5 OTHER TANGIBLE BENEFITS**

Extraction of Sand, Stone and Bajri and mining has become a widely spread activity and does not require a huge set up or technology, the number of ventures has increased extensively, and it has become a footloose industry in itself, but the backward-forward linkages are becoming stronger as many are getting employed as well as the construction activity/industry requires this mineral at consistent rates.

The sand, stone and bajri extraction in mining industry directly and indirectly provides employment to the skilled or unskilled people which help to improve the economic

condition of village. The CER activities and environmental safeguards are taken by project proponent who helps in further improvement of locality.

### **8.6 CORPORATE ENVIRONMENT RESPONSIBILITY**

Corporate Environment Responsibility (CER) refers the responsibility of corporate or company or the proponent of any project towards environment and society. The project proponent will spend 2% of the project cost for CER activities. This will be part of the environmental management plan. Activities to be done under CER will be based on the issued raised during public hearing.

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## 9 ENVIRONMENTAL COSTS BENEFIT ANALYSIS

### 9.1 GENERAL

Various benefits are envisaged while planning for the mining of sand, stone & bajri from Hill slope. Stone, bajri & sand are very important minor mineral and is the principal raw material for meeting the huge demand of construction material required in building construction and infrastructure works, road material for construction and maintenance of roads/highway, elastic ballast material for rail tracks in the State of Himachal Pradesh and nearby cities and towns of Punjab.

### 9.2 SOCIAL INFRASTRUCTURE

- ❖ Extraction of sand, stone & bajri will help in land cutting from nearby agricultural fields and forests.

### 9.3 EMPLOYMENT POTENTIAL

- The proposed project will provide direct employment to skilled/unskilled and semiskilled labourers.
- The proposed project will also provide indirect employment to local people in different activities such as transportation, food points, plantation activities, water tanker supply, hand equipment's etc.
- Besides labours managerial and administrative staff will also be employed.

### 9.4 TANGIBLE SOCIAL BENEFITS

- Proponent will undertake awareness program and community activities like health camps, medical aids, family welfare camps, and AIDS awareness programme etc.
- A massive plantation will be done in mined out area after ceasing mining operation.

### 9.5 DIRECT/INDIRECT BENEFITS

- It will generate revenue for the State of Himachal Pradesh.
- It will cater the demand of raw material for construction purpose.

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## 10 ENVIRONMENT MANAGEMENT PLANS

### 10.1 INTRODUCTION

The environment management plan has been developed with a view to bringing down the levels of impacts as discussed in the preceding chapters within limits. In each of the areas of impact, measures have to be taken to reduce potentially significant adverse impacts and where these are beneficial in nature, such impacts are to be enhanced/augmented so that the overall adverse impacts are reduced to as low level as possible. Measures to be taken for each of the impact areas are detailed in the following paras:

The EMP has therefore been made considering implementation and monitoring of environmental protection measures during and after mining operations.

Objectives

#### 10.1.1 Objectives

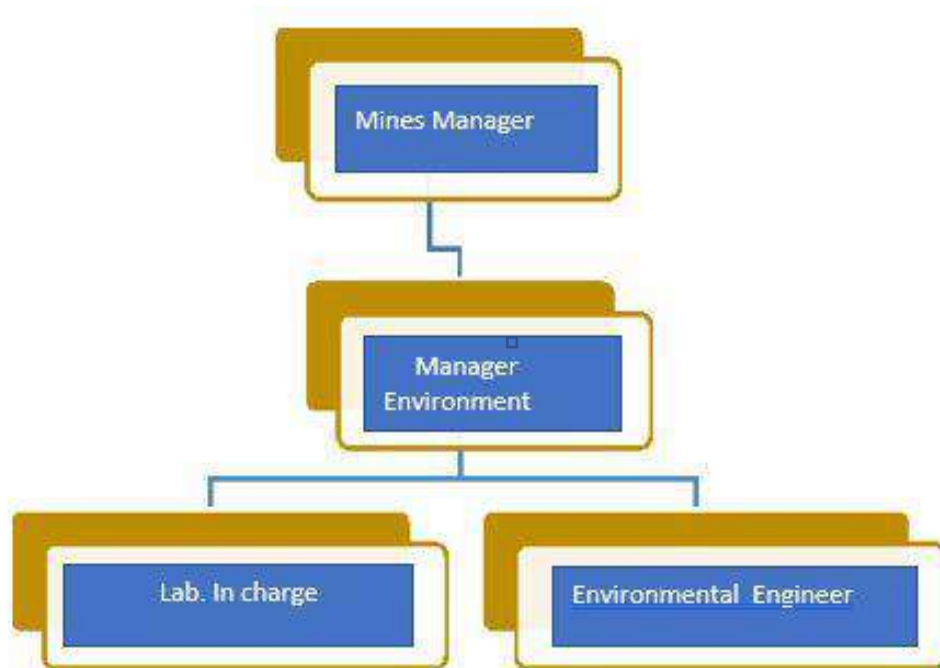
The Environmental Management Plan (EMP) for the Hill slope mining project is designed to achieve the following objectives:-

- Ensure compliance with environmental regulations and statutory norms related to Hill slope mining activities, including those under the Environmental Protection Act and relevant mining guidelines.
- Implement sustainable mining practices that minimize ecological disturbance.
- Establish clear principles for responsible resource extraction, waste management, and site rehabilitation.
- Conduct awareness programs for workers and staff to promote understanding of occupational health and safety, environmental conservation, and best practices in mining.
- Adopt mitigation measures to reduce environmental impacts such as air and water pollution, noise, and erosion caused by mining operations.
- Maintain transparent reporting and documentation for submission to regulatory authorities, ensuring accountability and continuous improvement in environmental performance.

### 10.2 ENVIRONMENTAL MANAGEMENT CELL (EMC)

It is imperative to establish an effective organization to implement, maintain, monitor, and control the environmental management system. A separate Environmental Management Cell

(EMC) will be formed to look after the environment related matter of the mine. The structure of EMC is as follows:-



**FIGURE 10-1: HIERARCHY OF ENVIRONMENTAL MANAGEMENT CELL (EMC)**

#### 10.2.1 Duties of EMC

- EMC will oversee that environmental control measures are implemented as per the plan.
- EMC will ensure ambient Field monitoring like air monitoring, meteorological monitoring, and noise monitoring in coordination with outside agencies.
- Reporting the status report to the statutory authorities.
- Systematically document and record keeping w.r.t. environmental issues.
- Plantation and their maintenance.
- Collection statistics of health of workers and population of surrounding villages.
- Environmental Compliance to the regulatory authority.
- Communication with the concerned department on the environmental issue.
- Monitoring the progress of implementation of environmental management programme.

### 10.3 LAND ENVIRONMENT MANAGEMENT

Degradation of land is not a very significant adverse impact of mining due to creation of access roads, mining operations, and transportation of mined material. In order to prevent the environmental degradation of leased mine area and its surroundings, the following measures shall be taken.

- Mineral will be mined out after leaving 5-meter safety zone.
- In this activity, the work is proposed to be done manually as well as semi mechanically which will avoid adverse effects associated with heavy machinery and their functioning.
- The mining is planned in non-monsoon seasons only.
- Operations during daylight only.
- No foreign material shall be allowed to remain/spill in lease area and catchment area, or no pits/pockets will be allowed to be filled with such material.

Movement of the vehicles on the road will be increased; however, non-metalled road leading to mining area will be sprinkled with water at regular intervals. In addition to prevent spillage by trucks/tractor trolley, over loading should be controlled along with speed limit.

There is no soil over mineralized area. Soil Quality will be monitored on yearly basis in the area surrounding the core zone used for agricultural activity to check for any negative impacts on the soil quality.

Since mining lease area is a restored after mining so plantation will be done in the lease area however, plantation of suitable species like Kachnar, Neem, Amaltas, Toon, Bihul, Khirk, Seris, Shisham, Khair, Paja, Robinia, Ban, *Bauhinia vahlii* species etc. will be planted. It is suggested to carry out plantation within five years with suitable species from the date of operation.

### 10.4 WATER POLLUTION CONTROL MEASURES

#### 10.4.1 Surface water

The major source of surface water pollution due to sand mining is insignificant, however the following measures shall be undertaken to prevent water pollution.

- Utmost care will be taken to minimize spillage of sand.
- Drains and their Catchments will be constructed just beside the access roads so that the storm water gets settled before flowing to the river/Nallah.
- The washing of trucks and tractor trolleys in the mining lease will be avoided.
- Plantation will be done to restore the affected mining lease area.

#### **10.4.2 Ground water**

There would not be any adverse effect on the ground water quality. The mineral formation does not contain any harmful element, which could percolate into the ground and pollute the ground water.

Hence, no control measures are required.

- However, regular monitoring of quality in the existing hand pumps/tube wells in the vicinity would be carried out both with reference to area and times intervals to study the hydrodynamics of the strata.

#### **10.5 AIR POLLUTION CONTROL MEASURES**

The proposed mining operations are not anticipated to raise the concentration of the pollutants beyond prescribed limits. However, the following measures would be adopted to mitigate the PM10 level in the ambient air. Dust particles generated during various mining activities when becoming airborne lead to an increase in PM10 level in the ambient air. The major source of dust generation is the transport of material by trucks and tractor trolleys. Adequate control measures shall be taken during mining operations as well as transportation of minerals.

The following steps shall be adopted to prevent air pollution due to airborne dust.

- Year wise plantation has been proposed within mine site by the end of the year.
- Dust mask provided to the workers engaged at dust generation points like excavations, loading and unloading points.
- The only air pollution sources are the road transport network of the trucks. The dust suppression measures like water spraying will be done on the roads.
- Utmost care will be taken to prevent spillage of sand from the trucks/tractor Trolley.
- Water sprinkling will be done to reduce the emission of dust due to transportation of minerals.
- Overloading will be prevented. The trucks/tractor trolley will be covered by tarpaulin covers.

#### **10.6 NOISE POLLUTION CONTROL MEASURES**

As there will be no heavy earth moving machinery there will not be any major impact on noise level due to mining and other association activities a detailed noise survey has been carried out, and results were cross referenced with standards and were found to be well within limits.

Blasting technique is not used for sand and stone lifting, hence no possibility of land vibration. It was found that the proposed mining activity will not have any significant impact on the noise environment of the region. The only impact will be due to transportation of sand, stone and bajri by trucks and tractor trolleys.

As the only impact is due to transportation of stone to the stone crushing unit and sand to the market through village roads, the following control measures shall be taken to keep the ambient noise levels well within limits:

- Minimum use of horns and speed limit of 10 kms in the village area.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Phasing out of old and worn-out trucks.
  
- Provision of green belts in consultation with village panchayat along the road networks.
- Care will be taken to produce minimum sound during sand and stone loading.

## **10.7 BIOLOGICAL ENVIRONMENT**

The mining activity will have insignificant effect on the existing flora and fauna. Data have been collected from various Government Departments such as forests, agriculture, fisheries, animal husbandry and various offices to establish the pre project biological environmental conditions. It was found that the sand and stone mining activity will not have any significant impact on the biological environment of the region.

### **10.7.1 Mitigation measures of impacts on biological environment**

1. It will be ensured that no mining activity will be carried out during the monsoon season.
2. As the mining site has no vegetation, no clearance of vegetation will be done.
3. Sprinkling will be done on the haul roads with water to avoid the dust emission, thus avoiding damage to the crops.
4. Mining will be carried out daytime only.
5. No discard of food, polythene waste etc. will be allowed in the lease area which would distract/attract the wildlife.
6. No night-time mining will be allowed which may catch the attention of wild.
7. Corridor for movement of wild mammals (If exists) will be avoided for mining/travelling purposes.
8. Workers will be made aware of the importance of the wildlife and signage will be displayed at the sensitive area to caution worker and other passer-by.

## **10.8 SOCIO-ECONOMIC ENVIRONMENT**

This project operation will provide livelihood to the poorest section of society. The overall impact of mining of sand, stone and bajri on the social economics of the area shall be a very positive one, as not only it will generate employment opportunities for local population at mine site but also in associated activity i.e. at stone crushing plant, for transportation of mined material, etc. It will also give a good boost to the general economy of the area. About 10 persons shall be employed at the mine site and these people are to benefit directly or indirectly from the project.

### **10.8.1 Anticipated impacts and evaluation**

The results of the field survey conducted based on a questionnaire prepared to understand the knowledge and perception of the people living around the project area, gives a clear idea about the need for the project. A major portion of the houses in the study area are pucca type structures. The solid waste generated and Garbage bins for dry and wet waste will be provided in rest shelters. Biodegradable waste will be composted in compost pits.

Other waste will be sent to crusher site from where it will be disposed to common disposal site of village. No waste will be disposed of the project site.

The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes. However, there is an apprehension that local people may get engaged in illegal activities if the proposed mining operation or the project is shelved or there is inordinate delay in its execution.

## **10.9 OCCUPATIONAL HEALTH MANAGEMENT**

There will be routine observation of health as certain sufferings are likely to appear as result of exposure by the workers during operations of various facilities. All the employees shall be required to undergo a medical checkup before joining the facility. Medical checkup will be conducted on regular basis, and the health conditions will be monitored. First aid facilities required to attend immediately for meeting emergency situations shall be made available at the facility.

## **10.10 ENVIRONMENTAL MONITORING PROGRAM**

The following monitoring program is proposed for the project to undertaken on commencement of mining activity. The monitoring of liked project i.e., Stone Crusher shall be carried out as per the norms of State Pollution Control Board to meet the prescribed standards under EPA Act 1986.

### 10.10.1 Methodology of environment management

The proponent shall follow the standard methods for half yearly monitoring of various environmental parameters i.e., Air Water and Soil. The estimated cost of EMP is given in Table below: -

**TABLE 10-1: ESTIMATED EXPENDITURE ON ENVIRONMENTAL MEASURES**

S.No	Title	Activities	Capital cost INR lakhs)	Recurri ng cost per year (INR lakhs)	Recur ring cost for 5 yrs (INR lakhs )	Timeline of implementati on
<b>ENVIRONMENT MANAGEMENT PLAN (EMP)</b>						
1.	Pollution Monitoring (Testing of Air, Water, Soil pollution)	1.Ambient Air 2.Surface Water 3.Ground Water 4. Soil 5. Noise	-----	0.8	4.0	Once in six months. (As per CPCB guideline)
2.	Air Pollution Control- Haulage Roads, Mining Areas & surroundings	Management of Haulage Roads & mine road of 1500 meters including Sprinkling. Tractor trolley with sprinkler <i>*Depreciation cost of water sprinkler</i>	3.0	0.81	4.05	Twice a day Or as per requirement
3.	Green Belt Development & Plantation	Area for Plantation = 2.7891 Ha. No. of plants = 3347 Plants Plantation is proposed @* 1200 plants per Hect. <b>*Cost and No. of plants are as per the *No.Ft.1790-/71(D)2011-12/Vol-VIII(Norms), Himachal Pradesh Forest Department, Shimla Dated 07 June 2019</b>	3.40	0.34	1.7	After formation of each Benches
4.	Retaining Structures /Check-Dams	Check Dam/Retaining wall structure. Check Dam 1,2,3,4,5 *(L-35m W- 1.0m X H- 2.0m) Each 70 Cu.m X 5 = <b>350 Cu.m.</b> <b>*@1469.25/cu.m*(@ Rs. 979.50/cum and 50% escalation cost). Dry rubble masonry in breast wall and</b>	5.14	0.51	2.57	As per mining plan, five numbers of Check dams /Retaining Wall of (350 meters' length 1 meters' Width and 2.0 meter's height) has been proposed for

Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III

		<b>retaining walls revetment walls and parapets etc. as per Standard Schedule of Rate 2009 H.P.)</b>				protect the debris to move downwards.
5.	Sub-grade mineral / Top Soil Management	Protection wall for waste dump Dimension* R1* (L -72 m X W- 1 m X H- 3m) =216 Cu.m @1469.25/cu.m*(@ Rs.979.50/cu.m And 50% escalation cost). <i>Dry rubble masonry in breast wall and retaining walls revetment walls and parapets etc. as per Standard Schedule of Rate 2009 H.P.)</i>	3.17	0.31	1.58	Protection wall constructed around the waste dump at the 1st year of mining
6.	Occupational Health and Safety Measures.	Provision of PPE, First Aid and other miscellaneous expenditure.	0.18	0.09	0.45	Once in year
7.	Sanitation Facility and Domestic Water Management	Septic Tank	0.20	0.06	0.30	Once mining operations starts
8.	Additional Activity, if any	-----NA-----	-----	-----	-----	-----
<b>Total EMP</b>			<b>15.09</b>	<b>2.92</b>	<b>14.47</b>	
<b>B. Corporate Env. Responsibility (CER)</b>						
1.	Fodder for nearest Gaushala for 5 years	Fodder for Shri Naina devi Gaushadan Kuthera	-----	1.0	5.0	After Grant of EC.
2.	Solar Plant	5 KVA Solar Plant at Govt. Sr. Sec. School Talwara	3.0	0.20	1.0	After Grant of EC.
3.	Sanitary Napkin Machine	1 no. Sanitary Napkin Machine at Govt. Sr. Sec. School Gondpur bulla	0.15	0.01	0.5	After Grant of EC.
<b>Total CER</b>			<b>3.15</b>	<b>1.21</b>	<b>6.5</b>	
<b>Total (EMP+CER)</b>			<b>18.24</b>	<b>4.13</b>	<b>20.97</b>	

**NOTE:** It is suggested to construct a check dam in the mining lease area. This structure will help in stop erosion. The cost shall be contributed by owners of mine lease namely Sh. Lakhwinder Singh .



**CONCLUSION**

All possible environment aspects have been adequately assessed, and necessary control measures have been formulated to meet statutory requirements. Thus, implementing this project will not have any appreciable negative impacts.

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## 11 SUMMARY AND CONCLUSION

### 11.1 INTRODUCTION

The proposed Hill Slope Mining for Extraction of Sand, Stone and Bajri located at Khasra Nos. 1236, Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una, Himachal Pradesh by Sh. Lakhwinder Singh, Proprietor of M/s Lakhwinder Stone Crusher. The total lease area for the project is 2.7891 Hectare.

As per the Ministry of Environment and Forests (MoEF), Government of India, Gazette Notification S.O. 1533(E) dated 14th September 2006 and its subsequent amendments, the proposed mining project for the extraction of Sand, Stone, and Bajri from the hill slope mining by Sh. Lakhwinder Singh, Proprietor of M/s Lakhwinder Stone Crusher, falls under Category "B1" of activity 1(a)(i). Accordingly, the project requires prior Environmental Clearance from the State Environment Impact Assessment Authority (SEIAA), Himachal Pradesh.

The EIA study has been carried out based on standard Terms of Reference (TOR) issued vide TOR Identification no. TO25B0108HP5915931N dated 04.12.2025 by State Expert Appraisal Committee, Himachal Pradesh.

Shivalik Solid Waste Management Limited (SSWML), Zirakpur (Punjab), a NABET-accredited consultant (Certificate No. NABET/EIA/23-26/RA 0310, valid until August 17, 2026), was entrusted with conducting the Environmental Impact Assessment (EIA) studies for the project.

The Environmental baseline monitoring period of the said project is from Dec 2025 to Feb 2026.

### 11.2 SALIENT FEATURES OF THE PROJECT

The proposed project is the Hill Slope mining for extraction of Sand, Stone & Bajri; the salient feature of the project is given in **Table 11-1 below**.

**TABLE 11-1: DETAILS OF MINING PROCESS & LOCATION**

Sr. No.	Parameters	Description
1	Project name	Hill slope mining project for the extraction of sand, stone, and bajri proposed by Sh. Lakhwinder Singh, Proprietor of M/s Lakhwinder Stone Crusher
2	Mining Lease Area	2.7891 Hectare
3	Location of mine	Khasra No.1236, Mauza Gondpur bulla in Tehsil Haroli, District Una, Himachal Pradesh.
4	Latitude	31° 18' 30.34" N to 31° 18' 20.87" N

5	<b>Longitude</b>	76° 11' 35.01" E to 76° 11' 32.31"E
6	<b>Toposheet number</b>	H43E3
7	<b>Minerals of mine</b>	Sand, Stone and <i>Bajri</i>
8	<b>Proposed production of mine</b>	93,835 TPA (including Waste)
9	<b>Method of mining</b>	Semi Mechanized
10	<b>Waste Generation</b>	40510 TPA of mine waste will be generated as waste during the mining process.
11	<b>No of working days</b>	270 days
12	<b>Cost of the Project</b>	10 Lakhs
13	<b>Water demand</b>	0.45 (Domestic) + 2.40 (Dust Suppression) =2.85 KLD
14	<b>Sources of water</b>	Borewell is the water source for drinking and dust suppression.

### 11.3 BASELINE MONITORING STATUS

The Environmental Baseline data in this EIA report was taken from Dec 2025 to Feb 2026 for Air, water, soil, and noise. This data was used to assess conditions for the proposed project.

The ambient air quality was monitored within 10 km radius of the project. The detailed baseline is summarized as below:-

- The ambient air quality results obtained and found that all recorded values within the applicable limits of residential and rural area limits.
- Baseline noise levels results shows that the day equivalents and the night equivalents were within the Ambient Noise standards.
- Water samples in the study area were analysed for physical and chemical characteristics. Overall, all the ground water samples collected from the study area were found to be fit for human consumption as per IS 10500 drinking water standards.
- There is no notified/protected ecologically sensitive area including forest, national park, sanctuary, Elephant/Tiger reserves existing in the study area.

### 11.4 LAND ENVIRONMENT

Degradation of land is not a very significant adverse impact of mining due creation of access roads, mining operations, transportation of mined material. In order to prevent the environmental degradation of leased mine area and its surroundings, the following measures shall be taken:

As per the policy guidelines, no mining shall be allowed within five meters safety zone.

- To stop erosion 5 check dams and retaining structure will be constructed during mining activities in vulnerable location.
- Thus, no mining will be undertaken during monsoon period. It will be undertaken only during dry seasons.

Movement of the vehicles on the road will be increased; however, non-metalled road leading to mining area will be sprinkled with water at regular intervals. In addition to prevent spillage by trucks/tractor trolley, over loading should be controlled along with speed limit.

#### **11.4.1 Plantation And Soil Conservation**

Prior to the onset of the monsoon, plantation activities will be initiated and continued progressively until final mine closure.

Annual soil quality monitoring will be conducted around the core zone, especially in areas used for agriculture, to detect any adverse impacts.

Plantation will be carried out along the hill slopes in contour lines to stabilize the terrain and prevent erosion.

Native species will be prioritized to enhance ecological balance and improve visual aesthetics. These measures aim to restore land productivity and ensure long-term environmental sustainability.

#### **11.4.2 Post mining land use**

Mining operations are planned to allow concurrent land reclamation. Reclamation will begin at the end of each mining year for individual pits. Backfilled areas will be levelled to match the original topography. Restored land will be made suitable for agricultural use. This approach ensures sustainable post-mining land utilization.

### **11.5 WATER POLLUTION CONTROL MEASURES**

#### **11.5.1 Surface water**

While surface water pollution from hill slope sand mining is minimal, the following preventive measures will be implemented:

- Careful handling of sand will be ensured to minimize spillage during excavation and transport.
- Contour drains and catchment basins will be constructed along access roads to allow stormwater to settle before reaching natural water bodies.
- Washing of trucks and tractor trolleys will be strictly avoided near water sources to prevent contamination.
- Post-mining, plantation will be carried out on reclaimed slopes to stabilize soil, enhance aesthetics, and reduce runoff

### **11.5.2 Ground water**

Hill slope mining is not expected to adversely affect groundwater quality, as the mineral strata lack harmful elements that could leach into the subsurface.

Therefore, no specific control measures are necessary. However, periodic monitoring of groundwater quality will be conducted in nearby hand pumps and tube wells. This will help assess any changes in water characteristics and understand the hydrodynamic behaviour of the underlying strata over time. Such monitoring ensures early detection of any unforeseen impacts and supports sustainable water resource management.

### **11.6 AIR POLLUTION CONTROL MEASURES**

The proposed mining operations are not anticipated to raise the concentration of the pollutants beyond prescribed limits. However, the following measures would be adopted to mitigate the PM10 levels in ambient air.

Dust particles generated during various mining activities when become airborne lead to increase in PM10 level in the ambient air. The major source of dust generation is the transportation of material by trucks and tractor trolleys. Adequate control measures shall be taken during mining operations as well as transportation of minerals.

The following steps shall be adopted to prevent air pollution due to airborne dust.

- Green belts shall be developed on Exhausted benched in mined out area.
- Dust mask provided to the workers engaged at dust generation points like excavations, loading and unloading points.
- The only air pollution sources are the road transport network of the trucks/Tractor Trolley. The dust suppression measures like water spraying will be done on the roads.
- Utmost care will be taken to prevent spillage of sand and stone from the trucks.
- Water sprinkling will be done to reduce the emission of dust due to transportation of mineral.
- Overloading will be prevented. The trucks/tractor trolley will be covered by tarpaulin covers.

### **11.7 NOISE POLLUTION CONTROL MEASURES**

As there will be no heavy earth moving machinery there will not be any major impact on noise level due to sand, stone and bajri mining and other association activities a detailed noise survey has been carried out, and results were cross referenced with standards and were found to be well within limits.

Blasting technique is not used for lifting material, hence no possibility of land vibration. It was found that the proposed mining activity will not have any significant impact on the noise environment of the region. The only impact will be due to transportation of sand, stone and bajri by trucks and tractor trolleys.

As the only impact is due to transportation of stone to the stone crushing unit and sand to the market through village roads, the following control measures shall be taken to keep the ambient noise levels well within limits:

- Minimum use of horns and speed limit of 10 kms in the village area.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Phasing out of old and worn-out trucks.
- Provision of green belts has been proposed in mined out area after formation of benches in every year & after ceasing mining operation.
- Care will be taken to produce minimum sound during sand and stone loading.

## **11.8 BIOLOGICAL ENVIRONMENT**

The mining activity will have insignificant effect on the existing flora and fauna. Data have been collected from various Government Departments such as forests, agriculture, fisheries, animal husbandry and various offices to establish the pre project biological environmental conditions. It was found that the sand, stone and bajri mining activity will not have any significant impact on the biological environment of the region.

### **11.8.1 Mitigation measures of impacts on biological environment**

1. As the mining site has no vegetation, no clearance of vegetation will be done.
2. It will be ensured that no mining activity will be carried out during the monsoon season.
3. Sprinkling will be done on the haul roads with water to avoid the dust emission, thus avoiding damage to the crops.
4. Mining will be carried out daytime only.
5. No discard of food, polythene waste etc. will be allowed in the lease area which would distract/attract the wildlife.
6. No night-time mining will be allowed which may catch the attention of wildlife.
7. Workers will be made aware of the importance of the wildlife and signage will be displayed at the sensitive areas to caution the workers & other passer-by.

## **11.9 SOCIO-ECONOMIC ENVIRONMENT**

This project operation will provide livelihood to the poorest section of the society. The overall impact of mining of sand, stone and bajri on the social economics of the area shall be a very positive one, as not only it will generate employment opportunities for local population at mine site but also in associated activity i.e., at stone crushing plant, for transportation of mined material, etc. It will also give a good boost to the general economy of the area.

### **11.9.1 Anticipated impacts and evaluation**

The results of the field survey conducted based on a questionnaire prepared to understand the knowledge and perception of the people living around the project area,

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gives a clear idea about the need for the project. A major portion of the houses in the study area are *pucca* type structures. The awareness level regarding the proposed mining activity is good. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes. However, there is an apprehension that local people may get engaged in illegal activities if the proposed mining operation or the project is shelved or there is inordinate delay in its execution.

#### **11.10 BUDGETARY PROVISION FOR ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

To ensure effective implementation of environmental protection and safety measures, a comprehensive budgetary allocation has been made. This includes a capital investment of Rs. 15.09 lakhs, a recurring annual expenditure of Rs. 2.92 lakhs, and an additional recurring investment for five years of Rs. 14.65 lakhs over a period of five years to support sustained environmental management activities.

#### **11.11 CORPORATE ENVIRONMENT RESPONSIBILITY**

Corporate Environment Responsibility (CER) refers the responsibility of corporate or company or the proponent of any project towards environment and society. The project proponent will spend 2% of the project cost for CER activities.

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## 12 DISCLOSURES OF CONSULTANTS

### 12.1 INTRODUCTION

M/s Shivalik Solid Waste Management Ltd. has been engaged as consultant by Sh. Lakhwinder Singh Prop. M/s Lakhwinder Stone Crusher to conduct Environmental Impact Assessment study of the Proposed hill slope mining project situated at Mauza/Mohal Gondpur bulla, Tehsil Haroli, District Una, Himachal Pradesh. The brief about the consultant is given below in **Table 12-1**.

**TABLE 12-1: BRIEF DETAILS OF CONSULTANT**

<b>Name of the Consultancy Company</b>	<b>M/s Shivalik Solid Waste Management Ltd.</b>
<b>Address</b>	<b><u>Registered Office:-</u></b> Village-Mujra, P.O. Dabhota, Tehsil Nalagarh, Distt. Solan, Himachal Pradesh – 174101. Phone/Telefax: 01795-260427, 260227. <b><u>Zirakpur Office:-</u></b> SCO 20-21, 1 <sup>st</sup> Floor, Near Hotel Dolphin, Baltana, Zirakpur Punjab- 140604. Phone/Telefax: 01762 – 509496.
<b>Website</b>	<a href="http://www.sswml.com">www.sswml.com</a>
<b>Nature of Services</b>	Treatment, Storage & Disposal Facility, <b>EIA Consultancy</b> , Environmental, Health & Safety Auditing, EMS, Environmental Monitoring & Laboratory Analytical Services, Wastewater Management, Energy Audit Greens Concept Development, etc.

SSWML is striving positively forward with progressive efforts to maintain global standards of excellence and maximize quality output across its various initiatives.

“At SSWML, we believe in the importance of sustaining the balance of nature and therefore are committed to be a complete solutions provider for environmental problems.



We are dedicated to provide innovative waste management services to maintain a high standard of environmental care."

**Key Areas of Expertise at SSWML Include:-**

- Treatment, Storage & Disposal Facility (TSDf) for hazardous waste
- E-waste recycling facility
- MoEF&CC and NABL-accredited environmental laboratory
- QCI-NABET accredited consultancy for Environmental Impact Assessment (EIA).

**Shivalik Solid Waste Management Limited (SSWML)**, EIA Division is offering high quality technical services in the field of EIA, Environment, Health & Safety (EHS), and Environmental Monitoring & Laboratory Analytical Services etc.

SSWML is supported by distinguished professionals, engineers & scientists having excellent experience in executing EIA and other environmental projects.

SSWML is equipped to provide EIA consultancy in the following sectors:

- Mining of minerals 1(a)
- River Valley, Hydel, Drainage and Irrigation projects 1 (c)
- Cement plants 3 (b)
- Pesticides industry and pesticide specific intermediates 5 (b)
- Common hazardous waste treatment, storage, and disposal facilities (TSDfS) 7 (d)
- Biomedical Waste Treatment Facilities 7(da)
- Common Municipal Solid Waste Management Facility 7 (i)
- Building and large construction projects including shopping malls, multiplexes, commercial complexes, housing estates, hospitals, institutions 8 (a)
- Townships and Area development projects 8(b)
- Metallurgical Industries (ferrous & non-ferrous)- both primary & secondary 3 (a)
- Synthetic organic chemicals industry 5 (f)
- Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones(SEZs), Biotech Parks, Leather Complexes 7 (c)
- Common Effluent Treatment Plants (CETPs) 7(h)

**Various other services being offered under Environmental Consultancy are:-**

- Social Impact Assessment
- Impact Assessment Report
- Ecology and biodiversity Studies
- Preparation of Mining Plan
- Environment Management Plan
- Environment Due Diligence
- Resettlement & Rehabilitation Action Plan
- Risk Assessment
- Green Audit/Environmental Audit/Energy Audit
- Detail Project Reports (DPR) / Pre-Feasibility Report (PFR)



- Compliance to the conditions of Environment Clearance
- Designing, Engineering, Supplying, Erection & Commissioning of Water and Wastewater Treatment Plant's i.e. STP's, ETP's, R. O's, Evaporator, MEE, APCD, CETP's, TSDF etc.
- Design and detailing of Rainwater Harvesting Structure's

### **Environmental Monitoring & Laboratory Analytical Service:**

SSWML has MoEF&CC and NABL approved Laboratory for conducting the Environment monitoring & Analysis of Stack Emissions, Ambient Air, Noise, Water & Wastewater, Soil, Solid Wastes & Hazardous Wastes etc.

SSWML has strong client base which includes Industrial, Government, Public & Private sector reputed clients @ PAN India.

### **12.2 RECOGNITIONS**

We are a QCI-NABET accredited EIA Consultant organization, MoEF&CC recognized Environment Consultant, MoEF&CC recognized Laboratory, NABL accredited Laboratory as per ISO/IEC 17025:2017, ISO 9001:2015, ISO 14001:2015, OHSAS 45001: 2018 Certified as well as 5 "S" Certified Organization.



Draft EIA Report of Hill Slope Mining for Extraction of Sand, Stone and Bajri proposed by Sh. Lakhwinder Singh Prop. of M/s Lakhwinder Stone Crusher Unit-III




## Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

This is to certify that: **Shivalik Solid Waste Management Limited**  
 Village: Majra  
 P.O.: Dabhota  
 Teh.: Nalagarh  
 Dist. Solan 174 101  
 Himachal Pradesh  
 India

Holds Certificate No: **FS 589717**  
 and operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the following scope:

I. Collection, Treatment, Storage and Disposal of Hazardous Waste; and  
 II. Providing Environmental Related Analytical and Monitoring Services and Environmental Consultancy.

For and on behalf of BSI:   
 Theuns Kotze, Managing Director Assurance - IMETA

Original Registration Date: 2012-09-05      Effective Date: 2024-08-20  
 Latest Revision Date: 2024-06-20      Expiry Date: 2027-08-19

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This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.  
 An electronic certificate can be authenticated at [www.bsi.com/verify](https://www.bsi.com/verify).  
 Further enquiries regarding the scope of this certificate and the applicability of ISO 9001:2015 requirements may be obtained by consulting the organization.  
 This certificate is valid only if provided original copies are in complete set.  
 Information and Contact: BSI, Kilnbank Court, Davy Avenue, Kilmarnock, West Lothian MK5 8EP, UK. +44 345 080 9000  
 BSI Assurance UK Limited, registered in England under number 2803217 at 389 Chiswick High Road, London W4 4AL, UK.  
 A Member of the UK Group of Companies.




## Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that: **Shivalik Solid Waste Management Limited**  
 Village: Majra  
 P.O.: Dabhota  
 Teh.: Nalagarh  
 Dist. Solan 174 101  
 Himachal Pradesh  
 India

Holds Certificate No: **EMS 589718**  
 and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

I. Collection, Treatment, Storage and Disposal of Hazardous Waste; and  
 II. Providing Environmental Related Analytical and Monitoring Services and Environmental Consultancy.

For and on behalf of BSI:   
 Theuns Kotze, Managing Director Assurance - IMETA

Original Registration Date: 2012-09-05      Effective Date: 2024-08-20  
 Latest Revision Date: 2024-06-20      Expiry Date: 2027-08-19

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 BSI Assurance UK Limited, registered in England under number 2803217 at 389 Chiswick High Road, London W4 4AL, UK.  
 A Member of the UK Group of Companies.









National Accreditation Board for  
Testing and Calibration Laboratories

**CERTIFICATE OF ACCREDITATION**

**SHIVALIK SOLID WASTE MANAGEMENT LIMITED**

has been assessed and accredited in accordance with the standard

**ISO/IEC 17025:2017**

**"General Requirements for the Competence of Testing &  
Calibration Laboratories"**

for its facilities at

VILLAGE -MAJRA, P.O. -DABHOTA, SOLAN, HIMACHAL PRADESH, INDIA

in the field of

**TESTING**

Certificate Number: TC-12094

Issue Date: 11/08/2025

Valid Until: 10/08/2029

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.  
(To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

Name of Legal Entity: SHIVALIK SOLID WASTE MANAGEMENT LIMITED

Signed for and on behalf of NABL



*Anuja*  
Anuja Anand  
Director

*Kannan*  
Chakravarthy T. Kannan  
Chief Executive Officer




**भारतीय गुणवत्ता परिषद्  
QUALITY COUNCIL  
OF INDIA**  
Creating an Ecosystem for Quality

**NATIONAL ACCREDITATION BOARD FOR EDUCATION AND TRAINING**

**Certificate of Accreditation**

**Shivalik Solid Waste Management Limited, Zirakpur**

SCO 20-21, 1st Floor, Near Hotel Dolphin, Dhakoli, Zirakpur - 140604, Punjab

The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA/EMP reports in the following Sectors

S.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including open cast and underground mining	1	1 (a) (i)	A
2.	River Valley projects	3	1 (c)	A
3.	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	B
4.	Cement plants	9	3 (b)	B
5.	Pesticides industry and pesticide specific intermediates	17	5 (b)	A
6.	Synthetic organic chemicals industry	21	5 (f)	B
7.	Industrial estates/ parks/ complexes/ Areas, export processing zones (EPZs), Special economic zones (SEZs), Biotech parks, Leather complexes	31	7 (c)	B
8.	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	32	7 (d)	A
9.	Bio-medical waste treatment facilities	32A	7 (d a)	B
10.	Common Effluent Treatment Plants (CETPs)	36	7 (h)	B
11.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
12.	Building and construction projects	38	8 (a)	B
13.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated October 27, 2023 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACQ/23/3065 dated Dec 13, 2023. The accreditation needs to be renewed before the expiry date by Shivalik Solid Waste Management Limited, Salan following due process of assessment.

Issue Date  
December 13, 2023

  
Mr. Ajay Kumar Jha  
Sr. Director, NABET



Certificate No.  
NABET/EIA/23-26/RA 0310

Valid up to  
August 17, 2026

  
Prof (Dr) Varinder S Kanwar  
CEO- NABET

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

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File No: HP SEIAA/2025/1352

**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**(Issued by the State Environment Impact Assessment**  
**Authority(SEIAA), HIMACHAL PRADESH)**

\*\*\*



Dated: 04/12/2025



To,

Lakhwinder Singh  
Mauza/Mohal Gondpur bulla Tehsil Haroli, District Una H.P.  
R/o House no.- 1238, Sector-90, Mohali, Punjab, Mohali, S.A.S Nagar, PUNJAB, NA, 140308  
lakhwindersinghmine@gmail.com

**Subject:** Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding.

**Sir/Madam,**

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project Mining of Sand Stone and Bajri from Khasra no. 1236 Mauza/Mohal Gondpur bulla Tehsil Haroli, District Una H.P. by Sh. Lakhwinder Singh Prop. M/s Lakhwinder stone crusher unit-III submitted to Ministry vide proposal number SIA/HP/MIN/554952/2025 dated 14/10/2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0108HP5915931N
(ii) File No.	HP SEIAA/2025/1352
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals Mining of Sand Stone and Bajri from Khasra no. 1236 Mauza/Mohal Gondpur bulla Tehsil Haroli, District Una H.P. by Sh. Lakhwinder Singh Prop. M/s Lakhwinder stone crusher unit-III
(vii) Name of Project	LAKHWINDER PANAG
(viii) Name of Company/Organization	UNA, HIMACHAL PRADESH
(ix) Location of Project (District, State)	SEIAA
(x) Issuing Authority	no
(xi) Applicability of General Conditions	no
(xii) Applicability of Specific Conditions	no

a) Proposal No. SIA/HP/MIN/ 554952/2025, **TOR's**  
HP SEIAA/2025/1352

b)	Processing fee	UTR reference no. HDFCN52025101331014771 on dated 13/10/2025 having amount of Rs. 20,000/-
c)	Project type	Extraction of Sand, Stone and Bajri
d)	Project Location	Khasra number 1236 falling in Mauza/Mohal Gondpur Bulla, Tehsil Haroli, District Una, Himachal Pradesh.
e)	Jamabandi	Jamabandi for the year 2023-2024
f)	Land Status	Private land /hill slope
g)	Capacity	93,835 MT/year
h)	Mining Area	2-78-91 ha
i)	Leases with in 500 meter from the periphery of the area applied.	One mining leases exist within 500 meters:
j)	Letter of Intent	LoI issued on dated 28.03.2025, valid for two years.
k)	EMP Cost	-
l)	CER cost	-

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the Ministry for an appraisal by the State Environment Impact Assessment Authority(SEIAA) Appraisal Committee (SEIAA) in the Ministry under the provision of EIA notification 2006 and its subsequent amendments.
4. The above-mentioned proposal has been considered by State Environment Impact Assessment Authority(SEIAA) Appraisal Committee of SEIAA in the meeting held on 18/11/2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B, Part C EIA, EMP)] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
5. The brief about configuration of plant/equipment, products and byproducts and salient features of the project along with environment settings, as submitted by the Project proponent in Form-1 (Part A, B and C)/EIA & EMP Reports/presented during SEIAA are annexed to this EC as Annexure (1).
6. The SEIAA, in its meeting held on 18/11/2025, based on information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to stipulation of specific and general conditions as detailed in Annexure (2).
7. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the State Environment Impact Assessment Authority(SEIAA) Appraisal Committee hereby decided to grant Terms of Reference for instant proposal of M/s. Lakhwinder Singh under the provisions of EIA Notification, 2006 and as amended thereof.
8. The Ministry reserves the right to stipulate additional conditions, if found necessary.
9. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
10. This issues with the approval of the Competent Authority.

### **Copy To**

- 1.The Secretary (Environment), Ministry of Environment, Forests & Climate Change (MoEF&CC), GoI, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110003 .
- 2.The Chairman, Central Pollution Control Board, Him Parivesh Bhawan, CBD-cum-office Complex, East Arjun Nagar, New Delhi-110032.
- 3.The Chairman, Himachal Pradesh State Pollution Control Board, Shimla-171009.
- 4.The Director (Environment, Science Technology & Climate Change) to the GoHP, Shimla-171001.
- 5.The Adviser (IA), MoEF&CC, GoI, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110003.
- 6.The Integrated Regional Office, MoEF&CC, CGO Complex, Shivalik Khand, Longwood, Shimla, HP-171001.
- 7.The Monitoring Cell, MoEF&CC,GoI, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110003
- 8.Record File.

## Standard Terms of Reference for (Mining of minerals)

## 1.

S. No	Terms of Reference
1.1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)
1.5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics
1.6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority
1.7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided
1.9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period
1.10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass

S. No	Terms of Reference
	preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given
1.11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered

S. No	Terms of Reference
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report
1.22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given
1.23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map
1.24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided
1.26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided
1.27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished

S. No	Terms of Reference
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed
1.36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of

S. No	Terms of Reference
	Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc
1.44	<p>Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&amp;CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&amp;CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area</p>
1.45	<ol style="list-style-type: none"> <li>1) The project proponent shall include the detailed analysis of GLC-2.5 with air modeling and shall prepare the wind-rose diagram of the site to plan the installation of PCDs.</li> <li>2) The project proponent will assess and erasure that, after ceasing mining operations, to undertake-re-grassing the mining area and any other area which may have been disturbed due to their mining activities and for restoration of the land to a condition which is fit for growth of fodder, flora, fauna etc.</li> <li>3) The project proponent shall conduct and submit a comprehensive mineral replenishment study to assess the rate and extent of natural replenishment of minerals in the leased area.</li> <li>4) The project proponent shall submit a certificate from the Director (Industries) to the fact that the proposed mining site is recommended/approved on the basis of the District Survey Report prepared &amp; approved by SEIAA authorities in conformity with the SO No. 141 (E), SO No. 3611(E) and as per Sustainable Sand Mining Management Guidelines, 2016 and Enforcement &amp; Monitoring Guidelines for Sand Mining, 2020 published by MoEF&amp;CC, GoI.</li> <li>5) Hard copy of the application along with the relevant document shall be ink signed &amp; submitted in the office of SEIAA Secretariat.</li> <li>6) The project proponent shall submit compliance report to the issue raised during public hearing.</li> <li>7) The project proponent shall submit proposed EMP and including CER activities as its part. All</li> </ol>

S. No	Terms of Reference
	<p>the commitment made under EMP &amp; CER shall be made in the form of affidavit.</p> <p>8) The project proponent must ensure that environmental samples are analyzed at laboratories located in close proximity to the project site to maintain the accuracy and integrity of results. During each sampling activity, videography and geo-tagged photographs must be captured to provide transparent evidence of proper sampling locations, methods, and handling practices.</p>

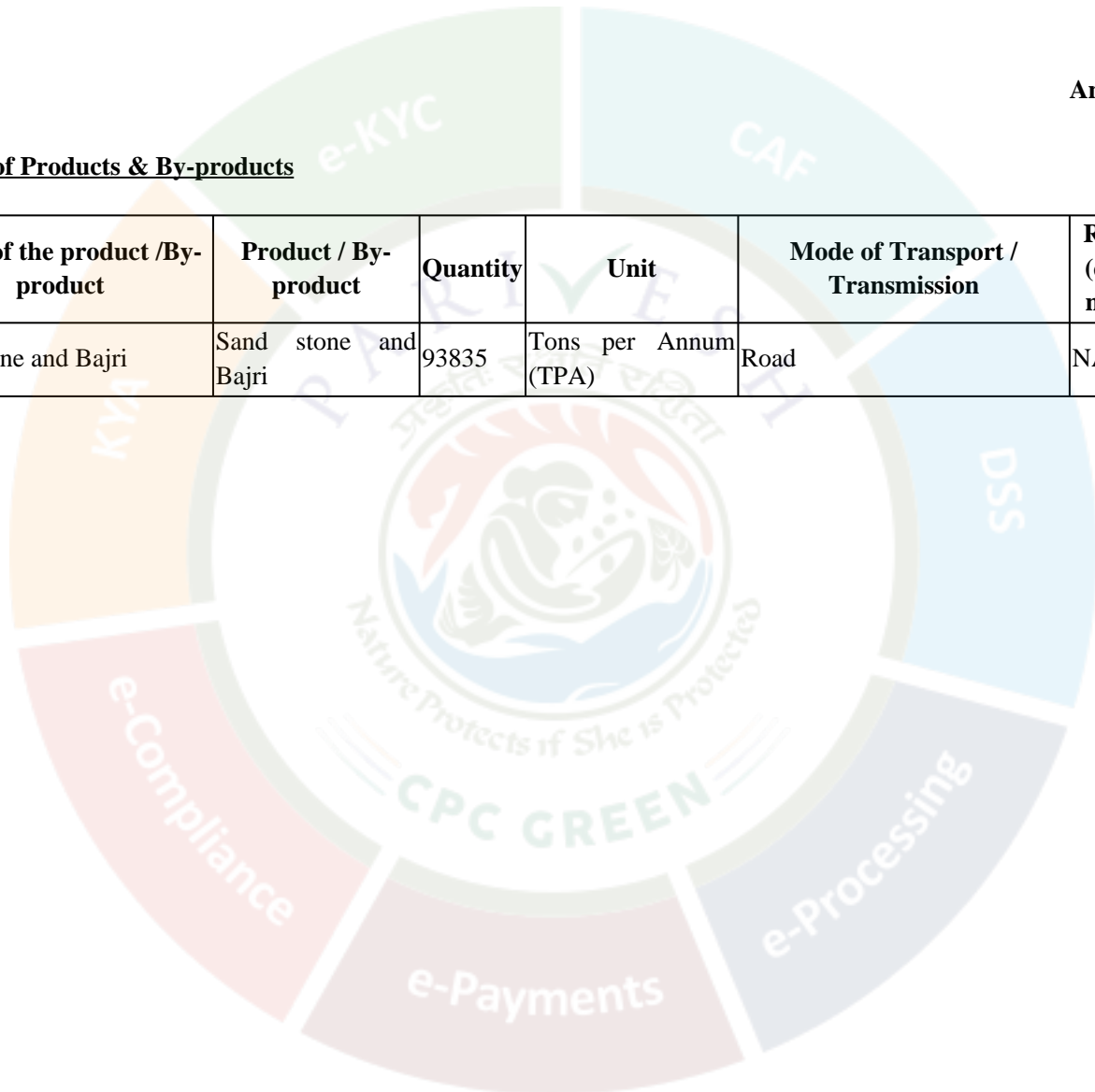
**Additional Terms of Reference**

N/A

Annexure 2

**Details of Products & By-products**

Name of the product /By-product	Product / By-product	Quantity	Unit	Mode of Transport / Transmission	Remarks (eg. CAS number)
Sand stone and Bajri	Sand stone and Bajri	93835	Tons per Annum (TPA)	Road	NA



Signature Not Verified

Digitally Signed by : Sh Duni Chand Rana  
Member Secretary, SE/IAA

Date: 04/12/2025

**PERFORMA FOR THE JOINT INSPECTION OF THE AREA APPLIED  
FOR A FRESH MINING LEASE**

**1. General**

<b>1.1 Name of the applicant</b>		Sh. Lakhwinder Singh Panag Prop. Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & PO Gondpur Bulla, Tehsil Haroli District Una (H.P.) (IUID 52332743)
<b>1.2 Address of the applicant</b>	<b>Father's Name</b>	Sh Jagmail Singh
	<b>Village</b>	HIG-824 Phase-II, Mohali
	<b>P.O.</b>	Phase-II, Mohali, Punjab
	<b>Tehsil</b>	Mohali
	<b>District</b>	SAS Nagar Mohali
	<b>Pin No</b>	160055
<b>1.3 Approach and location of the area</b>	The site applied for a mining lease is located in Mohal & Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P. and is approachable from approximately 3Km kutchra road diverting RHS from CHC Gondpur bulla.	
<b>1.4 Purpose for which lease is applied e.g. For setting up of stone crusher, Hollow block, Screening unit, free sale etc</b>	For use in Stone crusher under name & Style M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & PO Gondpur Bulla, Tehsil Haroli District Una (H.P.)	
<b>1.5 Date of Joint Inspection</b>	22-10-2024	
<b>1.6 Members present during joint inspection</b>		
<b>Sr. No</b>	<b>Name &amp; Designation</b>	<b>Particulars</b>
1.	Shri Vishal Sharma HAS S.D.O (Civil) Haroli, District Una	Chairman
2.	Sh. Nitin Choudhary AE HPPWD Subdivision Haroli	Representative of Executive Engineer HPPWD
3.	Sh. Desh Raj A.E. JSV Tahsiwal	Representative of Executive Engineer JSV
4.	Sh. Rahul Thakur Range Forest Officer Una	Representative of Divisional Forest Officer Una
5.	Sh. Rajesh Kumar JE Flood Protection	Representative of AE FPD Gagret
6.	Sh. Praveen Kumar AEE HPS/PCB Una	Member
7.	Sh. Parvesh Kumar JE, SDSCO Una	Representative of Subdivisional Soil Conservation officer Una.
8.	Sh. Rajan Sharma	Naib Tehsildar Dulehar
8.	Sh. Baljit Singh	Kanungo
9.	Sh. Jagtar Singh	Halqa Patwari
10.	Sh. Neezaj Kaant Mining Officer Una	Member Secretary

Mining Officer  
Distt. Una

JIR of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over Khusras No 1236 measuring 02-78-51 Hect (Private land, hill slope) Mohal & Mauza Gondpur Bulla upperla Tehsil Haroli District Una H.P. for use in stone crusher unit conducted on 22.10.2024.

## 2. Revenue Department

**2.1 Status w.r.t. Demarcation of Applied for area:** The area was demarcated on 23.06.2023.

### 2.2 Detail of area applied

Kh. No	Area (In Kaul)	Owner Govt. / private	Kism	Mohal	Mauza	Panchayat	Any other
1236	02-78-91	Private	Banjar kadeem	Gondpur Bulla upperla	Gondpur Bulla upperla	Gondpur Bulla	
	02-78-91						

Point of public utility in the area/nearby village footpath, road, school, residential house, hospital, cattle shed, charitable building, water channel, cemetery/ cremation ground, place of worship etc. Nil

**2.3 Consent of Gram Panchayat:** Resolution No. 02 dated 21.06.2023

**2.4 Whether marked on the location plan attached with the application, If not then please mark**

YES

[Any special recommendation with respect to the above points]

The applied area for the mining lease does not fall within the limits of Municipal Corporation /Municipal Committee & Nagar Panchayat.

### 2.5 Any other observation/condition

The area was shown physically by Halqa Patwari, along with the concerned staff. As per entries of Revenue Records the land applied for a mining lease is Private land Hill Slope & kism of the land is Banjar Kadeem.



### Recommendations: -

Since the area applied for the mining lease for collection/extraction of Sand, Stone & bajri to be used in the Stone crusher unit, applied by Sh. Lakhwinder Singh Panag Proprietor M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & PO Gondpur Bulla, Tehsil Haroli District Una (H.P.) is a private land, Revenue department has no objection in the grant of this mining lease over Khasra No. 1236 measuring 02-78-91 Hectares (Private Land, Hill slope) falling in Mohal & Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.

JIR of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over Khasra No 1236 measuring 02-78-91 Hect (Private land, Hill slope) Mohal & Mauza Gondpur Bulla upperla Tehsil Haroli District Una H.P., for use in stone crusher unit conducted on 22.10.2024.

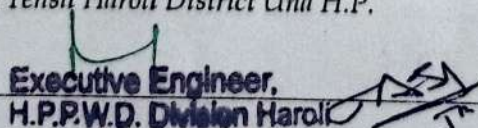
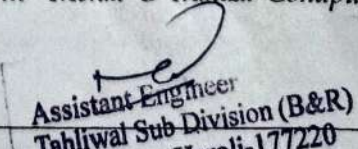
Mining Officer  
Distt. Una

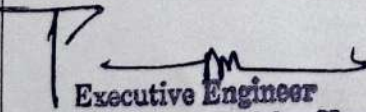
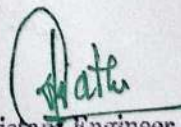
Signature  
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<b>3. Forest Department</b>	
<b>3.1 Types of land i.e. Reserve Forest/Protected Forest/Demarcated Forest/ Non Forest Government Land/ Private Land etc.</b>	<i>Private land</i>
<b>3.2 Whether attract FCA, 1980</b>	<i>No</i>
<b>If yes, then specify Kh. Nos, which attract FCA</b>	
<b>3.3 Whether there is any activity of the forest department in the area such as soil conservation works, nursery plantation, check dams, taming of nalls/stream etc., if yes please specify and mark on location plan and what precautions are required: <i>No soil conservation works, nursery plantation, check dams, taming of nalls/stream etc. exists near the applied area for mining lease.</i></b>	
<b>3.4 Whether there is any property of the Forest Department nearby which may have a direct effect if mining is allowed</b>	
<i>No</i>	
<b>3.5 Any other observation/condition</b>	
<b><u>Recommendations:-</u></b>	
<p><i>Since the area applied for the mining lease for collection/extraction of sand, stone &amp; bajri to be used in Stone crusher unit, applied by Sh. Lakhwinder Singh Proprietor M/s Lakhwinder Singh Stone Crusher &amp; Screening Plant Unit-III Village &amp; PO Gondpur Bulla, Tehsil Haroli District Una (H.P.) (Private land/ Hill slope) . The area is covered with vegetation in form of shrubs. The Forest department has no objection to the grant of this mining lease over Khalsa No. 1236 measuring 02-78-91 Hectares (Private Land, Hill slope) falling in Mohal &amp; Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.</i></p>	
 Range Officer Forest Range Una H.P.-174303	 Divisional Forest Officer Una Forest Division, Una (H.P.)

Mining Officer  
 Distt. Una

*JIR of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over Khalsa No 1236 measuring 02-78-91 Hect (Private land, Hill slope) Mohal & Mauza Gondpur Bulla upperla Tehsil Haroli District Una H.P. , for use in stone crusher unit conducted on 22.10.2024.*

4. PWD Department					
4.1 Whether any road exists near area				Yes	<input checked="" type="checkbox"/> No
If Yes then	Type of road	Distance from area	Marked on location plan as	The minimum safe distance required for mining	
	NH	N.A		75 m	
	State highway			75 m	
	Link road			50 m	
	Village road			50 m	
4.2 Whether any road exist within area				Yes	<input checked="" type="checkbox"/> No
Type of road	Distance from area	Marked on location plan as	The minimum safe distance required for mining		
NH		N.A.			
State highway		N.A.			
Link road		N.A.			
Village road		N.A.			
4.3 Whether there exist any bridge, culvert etc. within area/near area				Yes	<input checked="" type="checkbox"/> No
If yes, than No. of bridges etc.					
Whether marked on location plan			yes	If not, please mark	
Minimum safe distance required from bridge etc.	Bridge	Minimum distance required		Any special precaution required	
		U/S	D/S		
	Bridge No.1	200m	500 m	No Bridge site exists near the applied area	
	Bridge No.2				
4.4 Any other structure of PWD importance, if yes (Please mark on location plan) than specify any special precaution					
No					
4.5 Any other observation/condition					
4.6 Is there any objection if intake point from PWD road to the leased area is used in case lease is grant, if not, whether to allow with conditions					
The proponent will always maintain the intake point from PWD road and will not ply the heavy vehicle carrying mined material/Machinery through the small village roads.					
<b>Recommendations: -</b>					
No public property/utility like road, bridge or structure belonging to the PWD department exists near the area applied for the mining lease for collection/extraction of sand, stone & bajri to be used in Stone crusher unit, applied by Sh. Lakhwinder Singh Proprietor M/s Lakhwinder Singh Stone Crusher & Plant Unit-III Village & PO Gondpur Bulla, Tehsil Haroli District Una (H.P.), PWD department has no objection in grant of this mining lease over Khasra No. 1236 measuring 02-78-91 Hectares (Private Land, Hill slope) falling in Mohal & Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.					
 <b>Executive Engineer,</b> <b>H.P.P.W.D. Division Haroli</b>			 <b>Assistant Engineer</b> <b>Tahliwal Sub-Division (B&amp;R)</b> <b>P.P.W.D at Haroli-177220</b>		
<small>JIR of M/s Lakhwinder Singh Stone Crusher &amp; Screening Plant Unit-III Village &amp; Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone &amp; Bajri over Khasra No. 1236 measuring 02-78-91 Hect (Private land, Hill slope) Mohal &amp; Mauza Gondpur Bulla upperla Tehsil Haroli District Una H.P., for use in stone crusher unit conducted on 22.10.2024.</small>					

5. JAL SHAKTI VIBHAG				
5.1 Whether there exist any water supply scheme within/near the area			✓ No	
Type of Scheme	Scheme	The minimum safe distance required		
		U/S		D/S
	Water supply tank	200 m	200 m	200 m
	Water supply bore well			
	Lift Irrigation Scheme			
Any other source				
Whether marked on location plan			If not please mark	
Any special recommendation with respect to above schemes				
5.2 Any other important point with respect to IPH department, if yes. Please mark on location plan. Whether any special precaution is required, please specify				
5.3 Any other observation/condition				
<u>Recommendations: -</u>				
<p>No public property/utility like tube well, bore well, water supply scheme (irrigation/drinking) ,pipeline or structure belonging to the IPH department exists near the area applied for the mining lease for collection/extraction of sand, stone &amp; bajri to be used in Stone crusher unit , applied by Sh. Lakhwinder Singh Panag Proprietor M/s Lakhwinder Singh Stone Crusher &amp; Screening Plant Unit-III Village &amp; PO Gondpur Bulla, Tehsil Haroli District Una (H.P.), Jal Shakti Vibhag has no objection in grant of this mining lease over Khasra No. 1236 measuring 02-78-91 Hectares (Private Land,Hill slope) falling in Mohal &amp; Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.</p>				
 <b>Executive Engineer</b> <b>Jal Shakti Division Haroli</b>			 <b>Assistant Engineer,</b> <b>Jal Shakti Sub-Division</b> <b>Tahliwal Distt. Una (H.P.)</b>	

Mining Officer  
 Distt. Una

JIR of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over Khasra No 1236 measuring 02-78-91 Hect (Private land,Hill slope) Mohal & Mauza Gondpur Bulla upperla Tehsil Haroli District Una H.P. , for use in stone crusher unit conducted on 22.10.2024.

**Environment Protection & Pollution Control Board**

**(Summary of method for environment Protection)**

*The site of the applied mining lease was inspected jointly on dated 22.10.2024. Himachal Pradesh State Pollution Control Board has no objection from a pollution point of view and mining lease may be granted subject to the following conditions:*

1. *The Mining lease area measuring 02-78-91 Hectares is a Hill slope area (Pvt. Land) bearing Khasra No. 1236 Mauja & Mohal Gondpur Bulla upperla Tehsil Haroli Distt. Una HP, so the mining shall be carried out scientifically and per the Mining department's policy.*
2. *No blasting shall be carried out.*
3. *Natural Course of river/nalla shall not be disturbed and especially steps shall be taken to control the soil erosion*
4. *The proponent shall obtain/renew the consent to operate from the State Pollution Control Board and EC from the competent authority as per the orders of Hon'ble Supreme Court dated 27/02/2012 and Hon'ble High Court dated 15/06/2012 and 14/09/2012. The proponent shall not conduct any mining activity without obtaining consent from the State board and EC from competent authority.*
5. *Water sprinkling shall be carried out on approach roads and covering of material shall be done during transporting of the material from the mining lease area*
6. *After ceasing mining operations, the mining lease holders shall re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.*

Mining Officer  
Distt. Una

  
ASSISTANT ENVIRONMENTAL ENGINEER  
HP State Pollution Control Board  
Una (H.P.) 174303

*JIR of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over Khasra No 1236 measuring 02-78-91 Hect (Private land, Hill slope) Mohal & Mauza Gondpur Bulla upperla Tehsil Haroli District Una H.P. , for use in stone crusher unit conducted on 22.10.2024.*

<b>6. Industries Department</b>	
<b>6.1 Location of applied for area (nearest village/important features)</b>	<i>The site applied for a mining lease is located in Mohal &amp; Mauza Gondpur Bulla upperla Tehsil Haroli Distt. Una HP and is approachable from approximately 3Km kutcha road diverting RHS from CHC Gondpur bulla.</i>
<b>6.2 Purpose of Mining Lease.</b>	<i>For the Stone crusher unit</i>
<b>6.3 Overlapping of areas with any other lease/contract</b>	<input checked="" type="checkbox"/> <b>NO</b>
<b>If yes please give detail</b>	<b>N.A</b>
<b>6.4 Location of the nearest mining area/quarry:</b> <i>M/s Lakhwinder Singh Stone Crusher &amp; Screening Plant Unit-III Village &amp; PO Gondpur Bulla, Tehsil Haroli District Una H.P. (Khasra No. 1228, 1691/1227, 1692/1227 falling in Mauza /Mohal Gondpur Bulla Tehsil Haroli Distt. Una HP)</i>	
<b>6.5 Average daily production anticipated in Metric Tons</b>	<i>250-300 ton per day</i>
<b>If yes, please mark on location plan and suggest precaution</b>	<i>Attached</i>
<b>6.6 Suitability of mineral as per the purpose given above (Give detail)</b>	<i>The applied area is in form of hillock &amp; is mostly comprised of conglomerate beds with soil matrix &amp; is suitable to be used in a crusher.</i>

Mining Officer  
 Distt. Una

*HR of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over Khasra No 1236 measuring 02-78-91 Hect (Private land.Hill slope ) Mohal & Mauza Gondpur Bulla upperla Tehsil Haroli District Una H.P. , for use in stone crusher unit conducted on 22.10.2024.*

**6.7 Feasibility of Mining****(i) Name of Mineral:***Sand, Stone & Bajri***(ii) Type of mining Hill Slope/River Bed:***Hill Slope***(A) Hill Slope**

**(i) Average angle of slope:** *Uniform slope angles are observed in the area. The hill slope has a gentle slope with an angle of 20° to 25° in the applied mining lease area. The conglomerate deposit, where the mining lease is applied is slightly undulating with 2-4 meters elevation difference from one end to other.*

**(ii) Nature of rock:****(iii) Scientific mine ability considering the orientation of revenue record:**

**(iv) Availability of mineral w.r.t anticipated production:** *The applied area comprises of conglomerate beds with a soil matrix & is suitable to be used in crusher.*

**(v) Availability of area for disposal of waste:** *The waste so generated will be backfilled for reclamation of the mined area.*

**(vi) Approach to the Mine area:** *The crusher site is adjacent to area applied for the mining lease. For transportation of loaded trucks/tractors to the crusher site, the vehicles will pass through the Private Land as well as Govt. Land. Project proponent will make necessary arrangements between the land owners and will take care of other issues on his own for the mineral transportation to the nearest road and shall indemnify of Government against claims of third parties.*

**(vii) Whether areas are prone to land slide if yes**

**then the protection measures needed thereof:** *As the mining lease area is in form of hillock with a gentle slope and as the adjoining lands are almost flat with very less gradient, there is no scope for landslide in the vicinity of the applied mining lease area. The hill slope is mostly comprised of conglomerate beds with thin soil cover in the mining lease area. The slope at places is uniform and if the mining operations would be carried out in a systematic and scientific way, there are negligible chances of any landslide. However, for the safety of adjoining lands the buffer of 5-7.5 m is suggested.*

**(B) River Bed: NA****(C) Additional information on case of Grant of Mining Lease****(i) Report under Rule 18(2) of Himachal Pradesh Minor Mineral rule:****(i) Investment for developing the area :****(ii) Investment on machinery & equipment :****(iii) Laborers Employed :****(ii) Production of mineral for the last tenure:****(iii) Violation of condition mining noticed in the tenure****(iv) Detailed note on scientific mining w.r.t working cum Environment Management Plan in the last tenure:**

**Mining Officer**  
**Distt. Una**

**6.8 Whether mining can pose threat to existing object of Public Utility or private property? If any, give detail and precaution required**

*No public utility structure of HPPWD, IPH, Forest departments exist near the area applied for the mining lease.*

**If no, the reason thereof:**

**6.9 Any other special point pertaining to Industries Department**

1. The area applied for fresh mining lease for collection /extraction of Stone & Bajri to be used in stone crusher unit is a Hill slope private land comprising Khasra No. 1236 measuring 02-78-91 Hectares falling in Mohal & Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.
2. The applied land for a mining lease is leased out by land owners in favour of Sh. Lakhwinder Singh Panag S/o Sh. Jagmail Singh Proprietor M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & Post Office Gondpur Bulla Tehsil, Haroli District Una H.P.
3. During the scrutiny of the revenue record it was found that the applicant has applied Khasra No. 1236 totaling measuring 02-78-91 Hectares.
4. The Google coordinates of area are 31°18'22" N 76°11'26" E.
5. The area applied forms a compact block and approximately 60-70% usable material is available to be used in stone Crusher unit.
6. The proposed area falls under Gram Panchayat Gondpur Bulla.
7. As per the revenue record kism of the applied area for the mining lease is Banjar Kadeem.
8. The applicant will plan the mining activities keeping 5-7.5m as buffer zone so that the adjoining lands may not be disturbed/damaged.
9. The crusher site is adjacent to the applied area for mining lease the Project Proponent will be made necessary arrangements between the land owners (Private) as well as Govt. (in case) and will take care of other issues if any on his own for the mineral transportation to the nearest road and shall indemnify of Government against claims of third parties.
10. In order to avoid the annoyance of local habitants, the project proponent will not use narrow village roads for plying vehicles carrying mined material through village roads and will use separate roads bypassing the narrow village roads.
11. The working in the mining lease area will be strictly as per the Himachal Pradesh Mineral policy 2024 & the provisions of The Himachal Pradesh Minor Minerals (concession) and Mineral (Prevention of illegal mining, Transportation and Storage) Rules, 2015 & stipulation of SEIAA.
12. The applied area was demarcated on 23.06.2023.
13. The applicant will start mining operations after obtaining EIA clearance from the competent authority.
14. The land is private (Hill Slope) and has thick vegetation growth, Forest department has issued no objection to granting a mining lease.
15. No Structure of public utility of PWD & Jal Shakti Vibhag exists within the prescribed limit hence PWD & IPH department has no objection in granting mining lease. However the applicant will all time maintain the takeoff point (T point) from PWD Road.
16. After ceasing mining operations, the Project proponent shall re-grass the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for the growth of fodder, flora, fauna etc.
17. No structure of a Flood protection department exists near the applied area for lease.
18. Since no agricultural land exists near the applied area Subdivisional Soil conservation department has no objection in grant the area applied for a mining lease.

Mining Officer  
Distt. Una

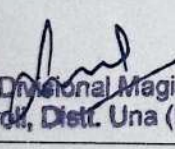
*JIR of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over Khasra No 1236 measuring 02-78-91 Hect (Private land, Hill slope) Mohal & Mauza Gondpur Bulla upperla Tehsil Haroli District Una H.P. , for use in stone crusher unit conducted on 22.10.2024.*

Additional Information in light of observation made by the Govt. vide letter no Govt. Ind-II(F)6-1/2014 dated 6.2.2014/ Udyog-Bhu(Khani-4)Laghu-350/13-12531 12.02.2014

S.No	Information	Reply
1	Status of applied area in Survey Document	The proposed area in which mining lease is applied is Private land & Hill slope & is recommended in District Survey Report for Sand Mining Or River Bed Mining And Of Minor Minerals Other than Sand Mining Or River Bed Mining.
2	Mineral potential of the area	The applied Mining lease is located on a hilly terrain and suitable material for crushing is available in the whole of the applied mining lease area. The exact reserve calculations will be estimated during the preparation of "Mining plan" of the proposed area.
3	Mineral analysis & Source of replenishment	The mining lease area comprises predominantly boulders, cobbles, pebbles, bajri, with Clay and silt matrix. The boulders are white, spotted white, greenish white pink, purple and dark green in colour. Quartzite fragments are rounded, sub-rounded and discoidal in shape having smooth surfaces. The size of minerals varies from silt to boulder. Since the applied area is private land hill slope there are no chances of replenishment & approximately 60-70% usable material is available to be used in stone crusher unit.
4	Length of river, location of proposed site w.r.t origin of the river, Distance of existing /proposed crushers or leases from proposed mining lease area.	The applied mining lease area is private land Hill slope & the nearest mining lease belongs M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-I III Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. (Khasra No. 1228, 1691/1227, 1692/1227 falling in Mauza /Mohal Gondpur Bulla Tehsil Haroli Distt. Una HP)

Mining Officer  
Distt. Una

HR of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over khasra No 1236 measuring 02-78-91 Hect (Private land, Hill slope) Mohal & Mauza Gondpur Bulla upperia Tehsil Haroli District Una H.P. for use in stone crusher unit conducted on 22.10.2024.

<b>8.Recommendations</b>		
<b>8.1 Whether whole of the area is being recommended for mining</b>		<b>YES</b>
<b>If no, please specify the Kh. Nos. being recommended</b>		
<b>Any other recommendation in addition to recommendations given at top</b>		
NO		
<b>Final recommendation of the Committee</b>		
<p>Keeping the facts &amp; stipulations stated above, the Committee recommends the fresh mining lease (Private land, Hill slope) for collection/extraction of Sand, Stone &amp; Bajri for use in the stone crusher unit applied by Sh. Lakhwinder Singh Panag Proprietor M/s Lakhwinder Singh Stone Crusher &amp; Screening Plant Unit-III Village &amp; Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for use in stone crusher over Khasra No. 1236 measuring 02-78-91 Hect falling in Mohal &amp; Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.</p>		
<b>Signatures: -</b>		
<b>Sub Divisional Magistrate</b>   Sub Divisional Magistrate Haroli, Distt. Una (H.P.)	<b>Divisional Forest Officer</b> Divisional Forest Officer Una Forest Division, Una (H.P.)  Forest Officer Forest Range Una (H.P.) 174302	<b>Executive Engineer P.W.D.</b> Executive Engineer, H.P.P.W.D. Division Haroli Distt. Una (H.P.)  Assistant Engineer Tahliwal Sub Division HPPWD at Haroli-177220
<b>Executive Engineer JSV</b> Assistant Engineer, Jal Shakti Sub-Division Tahliwal Distt. Una (H.P.)	<b>Environmental Engineer H.P.EP&amp;PCB</b> ASSISTANT ENVIRONMENTAL ENGINEER HP State Pollution Control Board Una (H.P.) 174302	<b>SubDivisional Soil Conservation Officer, Una</b> Section Incharge Soil Conservation Section Haroli Tehsil Haroli, District Una (H.P.) 11/12/2024
<b>Mining Officer Una</b> Mining Officer Distt. Una	Surveyor P.P. 56 014 9924	Sub Divisional Soil Cons. Officer Una, Distt. Una (H.P.) Incharge 11/12/24

JIR of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over Khasra No 1236 measuring 02-78-91 Hect (Private land, Hill slope) Mohal & Mauza Gondpur Bulla upperla Tehsil Haroli District Una H.P., for use in stone crusher unit conducted on 22.10.2024.

Executive Engineer  
Shakti Division Haroli

11/12/24  
FIS

No. Udyog-Bhu(Khani-4)Laghu-524/2025 -13030  
Government of Himachal Pradesh,  
Department of Industries  
"Geological Wing"  
Dated Shimla-171001, the

28/08/2025

LETTER OF INTENT

Sh. Lakhwinder Singh Panag, Prop. M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III, Village & P.O. Gondpur Bulla, Tehsil Haroli, Distt. Una, has applied for grant of mining lease over an area measuring 02-78-91 hecets. (Private land, hill slope) bearing Khasra No.1236, falling in Mohal/Mauza Gondpur Bulla upperla of Tehsil Haroli, District Una for extraction of sand, stone & bajri to meet out the requirement of already established stone crusher unit in the name and style of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III under the provisions of the Himachal Pradesh Minor Minerals (Concession) and Mineral (Prevention of illegal Mining, Transportation and Storage) Rules, 2015. The case was referred to the Joint Inspection Committee for inspection of the area applied for mining lease and the Committee after inspecting the site, recommended the area for the grant of mining lease in favour of the applicant. Accordingly on the basis of recommendations of the joint inspection Committee and with approval of competent Authority, the 'Letter of Intent' for the grant of mining lease for extraction of sand, stone & bajri, for use in already established stone crusher unit in favour of Sh. Lakhwinder Singh Panag, Prop. M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III, Village & P.O. Gondpur Bulla, Tehsil Haroli, Distt. Una, over an area measuring 02-78-91 hecets. (Private land, hill slope) bearing Khasra No. 1236, falling in Mohal/Mauza Gondpur Bulla upperla of Tehsil Haroli, District Una, H.P. is hereby issued subject to the following conditions:-

1. The party shall get the area demarcated from the revenue authorities and shall erect permanent boundary pillars up to the satisfaction of the Mining Officer, so as to clearly depict the letter of intent issued area. A copy of the demarcation report shall also be submitted to the Mining Officer.
2. The party shall have to submit the approved Mining Plan under Rule 35 of the Himachal Pradesh Minor Minerals (Concession) and Mineral (Prevention of illegal Mining, Transportation and Storage) Rules, 2015.

3. The party shall have to obtain Environment clearance under Environment Protection Act, 1986 and Environment Impact Assessment, notification, 2006 and amendment issued time to time in this regard from the competent authority.
4. The party shall submit a certificate from the revenue authority to the effect that Khasra No.1236 is free from all encumbrance and all the co-sharers of above said land have given their consent.
5. The party shall settle the dispute, if arises between him and land owners/co-sharer/right holders at his own level and shall indemnify the Govt. in this behalf.

The letter of intent is subject to any orders passed by Hon'ble Supreme Court of India/National Green Tribunal/High Court of Himachal Pradesh or other concerned Departments from time to time in this regard. This letter of intent is valid only for obtaining requisite clearance from the Competent Authority.

The grant order imposing all the conditions and stipulations relevant as per the rules shall be issued only after submission of documents as mentioned at condition No. 1 to 5 above and after completing codal formalities. This letter of intent shall be valid for a period of two years. Thereafter, extension of provisional period shall be granted only after reviewing of the progress made for fulfillment of the above said documents. The Party shall not resort to any mining activities till the execution of mining lease.

Sh. Lakhwinder Singh Panag,  
Prop. M/s Lakhwinder Singh stone Crusher  
& Screening Plant Unit-III,  
Village & P.O Gondpur Bulla,  
Tehsil Harolii & District Una, H.P. 12021-032  
Endst. No. Udyog-Bhu(Khani-4)Laghu-524/2025

Copy to the following for information and necessary action:

1. The Mining Officer, Una, Distt. Una, H.P.
2. Guard file.

Sd/-  
Director of Industries,  
Himachal Pradesh

Dated 28/03/2025

Geologist Zone-II  
Himachal Pradesh

**Letter of Intent issued for the mining site as per DSR certificate.**

LOI is granted as per the provisions contained in the Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2015, the areas are inspected by the Joint Inspection Committee under the Chairmanship of SDO (Civil) concerned comprising members from other department like Irrigation & Public health, State Pollution Control Board, Forest Department, HP Public Works Department, Geologist or Mining Officer and as such, the letter of intents are issued only after recommendations of the Joint Inspection Committee which is continuous process. The project proponent has been granted an LOI after the submission of the District Survey Report from the Geologist Wing to the SEIAA committee. Therefore, the project proponent is not mentioned in the table of LOI holders as per the approved DSR.

No. Udyog-Bhu(Khani-4) Laghu-366/2024-DSR - 7317 By Hand  
Government of Himachal Pradesh  
Department of Industries  
"Geological Wing"

Dated; Shimla-171001,

14-11-2024

To

The Member Secretary (HPSEIAA)-cum-Director,  
Department of Environment, Science Technology & Climate Change,  
GoHP, Shimla-171001.

Subject:-

Requirement of information for technical appraisal of mining proposals before granting Environmental Clearance by State Level Environment Impact Assessment Authority, Himachal Pradesh- reg.

Sir,

Kindly refer to your office File No. HPSEIAA/2008/22/Vol-XII 15083 dated 29.10.2024 on the subject cited above.

In this regard, the point wise reply of the department is as under: -

1. The point No. 4.1.1(m) of the Enforcement & Monitoring Guidelines for Sand Mining provides that;

*"The mining outside the riverbed on Patta land/Khatedari land be granted when there is possibility of replenishment of material. In case, there is no replenishment then mining lease shall only be granted when there is no riverbed mining possibility within 5 KM of the Patta land/Khatedari land. For government projects, mining could be allowed on Patta land/Khatedari land but the mining should only be done by the Government agency and material should not be used for sale in the open market. Cluster situation as mentioned in para k above is also applicable for the mining in Patta land/Khatedari land."*

In the State of Himachal Pradesh, this department has neither issued any Letter of Intent for the grant of mining lease nor has granted any mining lease over Patta land/Khatedari land. In case, in future, such type of land is applied by the applicant, the necessary certificate shall be issued by the department.

2. In this regard, it is informed that as per the provisions of the Rule 10 of the Himachal Pradesh Minor Minerals (Concession) And Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2015, the joint inspection committee has been constituted under the Chairmanship of concerned Sub-Divisional Officer (Civil) comprising of members from

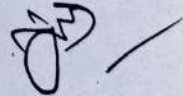
Department of Forest, HPPWD, Jal Shakti Vibhag, HP State Pollution Control Board (HPSPCB), Industries (Mining Officer) etc. The above representatives of departments at the time inspection provide their observations/recommendations for grant of mining lease. Since, in the afore committee, Environment Engineer of HPSPCB is also a member who after carrying out inspection, expresses opinion on the issue of impact on surrounding environment on account of proposed mining activities and suggests preventive measures thereof. Accordingly, keeping in view the recommendations of joint inspection committee including the Environment Engineer, this department processes the case for issuance of Letter of Intent. Furthermore, in order to ensure the mining activities in ecofriendly manner, sufficient provisions are also made in Rule 35 of ibid Rules wherein all aspects w.r.t protection of environment etc. have been taken care of as per the mandate of this Rule.

3. As far as the issue regarding issuance of certificate about the no violation/illegal mining done by the applicant is concerned, it is to inform that issuance of no mining dues certificate from concerned Mining Officer is pre-requisite document to apply for the grant of mining lease as per Rule 7(d) of the ibid Rules which clearly indicates that any person who is applying for mining lease is not involved in illegal mining. Thus, the Letter of Intent is only issued to the applicant who is not in violation of mining Rules.

Keeping in view the facts stated above, it is informed that this department can issue only the relevant certificate(s) which are permissible under the Mines and Minerals (Development & Regulation) Act, 1957 and Rules framed thereunder. If any document/certificate is required under the Environment Protection Act, 1986, the same may be procured directly from the concerned department otherwise an undertaking from the applicant may be obtained.

You are therefore requested to process the pending environment clearance cases at the earliest so as to ensure legal supply of minerals in the State and in the larger interest of Govt. revenue.

Yours faithfully,



9c Director of Industries,  
Himachal Pradesh.

No. Udyog-Bhu(Khani-4)Laghu-524/2025 - 4522  
Government of Himachal Pradesh  
Department of Industries  
"Geological Wing"  
Dated; Shimla- 171009,

18/07/ 2025

To

Sh. Lakhwinder Singh Panag,  
Prop. M/s Lakhwinder Singh Stone Crusher,  
& Screening Plant Unit-III,  
Village & P.O. Gondpur Bulla,  
Tehsil Haroli & District Una, H.P.

**Subject:-**

**Approval of Mining Plan of area applied for mining lease for the collection/extraction of sand, stone & bajri from Khasra No. 1236, measuring 02-78-91 hecets (Pvt. land, hill slope) falling in Mohal/Mauza Gondpur Bulla Upperla, Tehsil Haroli, Distt. Una, for which Letter of Intent has been issued on 28.03.2025.**

Dear Sir,

In exercise of powers conferred by Rule 36 of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015, I hereby approve the above said Mining Plan for the purpose of obtaining Environment Clearance of the area applied for grant of mining lease for which the letter of Intent has been issued on 28.03.2025. The mining plan is approved for a period of five years from the date of execution of mining lease deed. This approval is subject to the following conditions:-

1. That the Mining Plan is approved without prejudice to any other laws applicable to the mine/area from time to time whether made by the Central/State Government or any other authority.
2. That this approval of the Mining Plan does not in any way imply the approval of Government in terms of any other provisions of the H. P. Minor Minerals (Concession) Revised Rules, 1971 now repealed as Himachal Pradesh Minor Mineral (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015 or any other laws including Forest (Conservation) Act, 1980, Environment Protection Act, 1986 and the rules made there under and other relevant statutes, orders and guidelines as may be applicable to lease area from time to time.
3. That the Mining Plan is approved without prejudice to any orders or directions from any court of competent jurisdiction.
4. That in case State Geologist, Geologist or any other inspecting officer/official of Geological Wing Department of Industries, after field inspection notices that proposals made and workings shown in the mining lease by the RQP need certain corrections/amendments due to change in conditions either natural or manmade, the inspecting officer can recommend necessary amendments in the said Mining Plan at any point of time in the interest of environment and mineral conservation.
5. That the lease holder shall procure/renew Environment clearance from the Competent Authority as per Environmental Impact Assessment Notification, 2006 and amendments/notifications issued time to time in this regard.
6. That the approval of proposed mining operations is restricted to the mining lease area only.



7. That in case additional conditions are imposed by the Ministry of Environment & Forests, Govt. of India while according clearance under EIA notification dated 14.9.2006 and any condition imposed by the State Govt. while granting mining lease the same shall have to be incorporated by making necessary amendments in the Mining Plan by the lessee through R. Q. P.
8. That in case Mining lease is not granted or is terminated or working is suspended before the expiry of the lease period due to any reason, the approval of Mining Plan shall stand automatically cancelled.
9. That the lease holder shall carry out production of mineral in accordance to the production shown in Mining Plan and Environment Clearance whichever is less.
10. That no person shall undertake mining operations in any mining lease area, except in accordance with a Mining Plan approved under sub rule (2) of Rule 39 of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015.
11. That the lease holder shall carry out working in the mining lease area as per Mining Plan only after obtaining permission to work in the mining lease area from the Competent Authority.
12. That if the mining operations are not carried out in accordance with the approved Mining Plan, the State Geologist, Geologist, Assistant Geologist and the Mining Officer, made order suspension of all or any of the mining operations and permit continuation of only such operations as may be necessary to restore the conditions in the mine as envisaged under the said Mining Plan.
13. That anything is found to be concealed as required under various Rules and guidelines pertaining to mining in the context 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.
14. That in case of any violation of terms and conditions of the approved Mining Plan, the financial assurance deposited by the said lessee shall be liable to forfeited.

Enclosed:- Copy of approved Mining Plan.

Yours faithfully,

Geologist Zone-II  
Himachal Pradesh  
Dated; 2025

Endst. No. As above.

Copy for kind information to:-

1. The Mining Officer Una, District Una, H. P. alongwith a copy of Mining Plan for further necessary action.
2. Sh. Arun Dhiman, Village & P.O. Dhaloon(Panchpuli), Tehsil Nagrota Bagwan, Distt. Kangra, H.P. 176056..

Geologist Zone-II  
Himachal Pradesh

# MINING PLAN

(INCLUDING PROGRESSIVE MINE CLOSURE PLAN)  
OF AREA APPLIED FOR MINING LEASE

## MINERAL

SAND, STONE & PEBBLES(BOULDER & BAJRI)

## KHASRA NOS.

1236 (PVT. LAND)

## AREA

02-78-91 HECTARES (HILL SLOPE)

## LOCATION

MOHAL & MAUZA GONDPUR BULLA UPPERLA,  
TEHSIL HAROLI, DISTRICT UNA,  
HIMACHAL PRADESH

## APPLICANT

SH. LAKHWINDER SINGH PANAG,  
M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III,  
VILLAGE AND POST OFFICE GONDPUR BULLA,  
TEHSIL HAROLI, DISTRICT UNA, HIMACHAL PRADESH

## PREPARED BY

ARUN DHIMAN

S/O SH. JAGAN NATH

VILLAGE & PO DHALOON (PANCHPULI)

TEHSIL NAGROTA BAGWAN, DISTRICT KANGRA

HIMACHAL PRADESH -176056

RQP NO. H.P./ RQP/25/2/2019

98165 79485



arundhiman77@yahoo.com



## PREPARED AND SUBMITTED UNDER

THE HIMACHAL PRADESH MINOR MINERALS (CONCESSION) AND MINERALS  
(PREVENTION OF ILLEGAL MINING, TRANSPORTATION AND STORAGE) RULES, 2015



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**SALIENT FEATURES OF THE AREA APPLIED FOR MINING  
LEASE FOR EXTRACTION OF SAND, STONE & BAJRI**

<b>Project</b>	<i>Mining Project (Lease Area)</i>	
<b>Name of Mineral</b>	<i>Sand, Stone and Pebbles(Boulder &amp; Bajri)</i>	
<b>Application No.</b>	<i>Online - IUID no. 52332743</i>	
<b>Letter of Intent</b>	<i>Udyog-Bhu(Khani-4)Laghu-524/2025-13030 dated 28.03.2025</i>	
<b>Applicant Address</b>	<i>Sh. Lakhwinder Singh Panag, Prop: M/s Lakhwinder Singh Stone Crusher &amp; Screening Plant Unit-III, Village and Post office Gondpur Bulla Phase-II, Tehsil Haroli, District Una, Himachal Pradesh</i>	
<b>Coordinates of Area</b>	<i>31°18'30.34"N 76°11'35.01"E (Uphill) 31°18'20.87"N 76°11'32.31"E (Downhill)</i>	
<b>Location of Mine</b>	<b>Village</b>	<i>Gondpur Bulla</i>
	<b>Mauza &amp; Mohal</b>	<i>Gondpur Bulla</i>
	<b>Khasra Nos.</b>	<i>1236</i>
	<b>Land Type</b>	<i>Private land</i>
	<b>Panchayat</b>	<i>Gondpur Bulla</i>
	<b>District</b>	<i>Una</i>
	<b>State</b>	<i>Himachal Pradesh</i>
<b>Name of Lease</b>	<i>Hill Slope</i>	
<b>Distances (In Kms)</b>	<i>Una</i>	<i>20.00 Kms.</i>
	<i>Haroli</i>	<i>30.00 Kms.</i>
	<i>Santokhgarh</i>	<i>19.00 Kms.</i>
	<i>Shimla</i>	<i>164.0 Kms.</i>
	<i>Hoshiarpur</i>	<i>50.0 Kms.</i>
<b>Total Applied Area</b>	<i>02-78-91 Hectares</i>	
<b>Total Movable area</b>	<i>02-78-91 Hectares</i>	
<b>Total Mineable Quantity</b>	<i>670050 MT (Including Silt/Clay)</i>	
<b>Average Yearly Production</b>	<i>469035MTPA (Excluding Mining Wastage)</i>	
<b>Elevations</b>	<b>Highest</b>	<i>500 meter</i>
	<b>Lowest</b>	<i>530 meter</i>
<b>Period of mining Lease Area</b>	<i>As per the Grant order</i>	
<b>Ultimate Pit Limit</b>	<i>500 meter</i>	
<b>Method of Mining</b>	<i>Manual</i>	
<b>No. of Working Days</b>	<i>270</i>	
<b>End-use of mineral</b>	<i>For manufacturing of Grit and M-Sand</i>	
<b>Manpower requirement</b>	<i>10-15 persons</i>	



भूमिकीय शाखा  
उद्योग विभाग शिमला  
Geological wing  
Deptt. of Industries  
Shimla

**APPROVED**

with conditions

शर्तों के साथ अनुमोदित

Vide letter No.

दिनांक

Dated.....

18/07/25

Volysg 1 Bhu (Khami-4) Laghu - 524/2025 = 4542

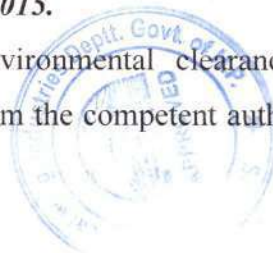
Geologist (Zone-II)  
Geological Wing  
Deptt. of Industries Shimla-1

**INTRODUCTION: -**

Sh. Lakhwinder Singh Panag, Proprietor of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III, HIG-824 Phase-II, Mohali, Punjab-160055 identified an area or the grant of mining lease measuring 02-78-91 hectares (Private Land, Hill Slope) comprising of Khasra Nos. 1236 situated in Mohal & Mauza Gondpur Bulla Upperla, Tehsil Haroli, District Una, Himachal Pradesh for extraction of stone, bajri and sand to be used in the already established stone crusher unit in the name and style of M/s Lakhwinder Singh Stone Crusher and Screening Plant Unit – III, Vill. & P.O. Gondpur Bulla., Tehsil Haroli, Distt. Una, Himachal Pradesh. The applicant prepared and submitted the case for the grant of a mining lease to the Department of Industries through the online portal vide IUID no. 52332743.

The case was referred to the Joint Inspection Committee to conduct the joint inspection of the area applied for the grant of mining lease and the committee recommended the whole of the area applied for the grant of mining lease measuring 02-78-91 hectares (Hill Slope) comprising of Khasra Nos. 1236 (Private Land) situated in Mohal & Mauza Gondpur Bulla Upperla, Tehsil Haroli, District Una, Himachal Pradesh in favour of the applicant. Based on the recommendations of the Joint Inspection Committee and as per the provisions of the Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015, the department vide letter No. Udyog-Bhu(Khani-4)Laghu-524/2025-13030 dated 28.03.2025 issued a Letter of Intent (LoI) for the grant of mining lease for the extraction/collection of stone, bajri and sand over an area measuring 02-78-91 hectares (Hill Slope) comprising of Khasra Nos. 1236 (Private Land) situated in Mohal & Mauza Gondpur Bulla Upperla, Tehsil Haroli, District Una, Himachal Pradesh to be used in the already established stone crusher unit in favour of Sh. Lakhwinder Singh, Prop:- M/s Lakhwinder Singh Stone Crusher and Screening Plant Unit – III Village & Post Office Gondpur Bulla., Tehsil Haroli, Distt. Una, Himachal Pradesh with the following conditions:-

1. The party shall get the area demarcated from the revenue authorities and shall erect permanent boundary pillars to the satisfaction of the Mining Officer so as to clearly depict the provisional applied area. A copy of the demarcation report shall also be submitted to the Mining Officer.
2. ***The party shall have to submit the approved Mining Plan under Rule 35 of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of illegal Mining Transportation and Storage) Rules, 2015.***
3. The party shall have to obtain environmental clearance under the provisions of the Environment Protection Act, 1986 from the competent authority and Forest Clearance in the case of Forest land.



4. The party shall submit a certificate from the revenue authority to the effect that Khasra Nos. 1236 situated in Mohal & Mauza Gondpur Bulla Upperla, Tehsil Haroli, District Una, Himachal Pradesh are free from all encumbrance and all the co-sharers of the above-said land have given their consents.
5. The party shall settle the dispute, if arises between him and land owners/co-sharer/right holders at his own level and shall indemnify the Govt. in this behalf.

In order to fulfil the requirement of condition No. 2 of the Letter of Intent, the applicant approached the undersigned having R.Q.P. No. H.P./R.Q.P/25/2/2019 for the preparation of the Mining Plan. The Mining Plan of the area has been prepared as per the format circulated (Form-M) by the State Geologist Himachal Pradesh and in accordance with the various provisions made in the Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2015.

The area applied for the mining lease is located in the form of a hill slope and is approachable through the 3.0-kilometre Kaccha road diverting RHS from CHC Gondpur Bulla. The applied mining lease area is comprised of accumulations of recent alluvial deposits derived from the erosion of older formations. At the request of the said lessee to prepare the Mining Plan, the mapping of the applied mining lease area was carried out encompassing Topographical, Lithological and other features. The Mining Plan includes the systematic and scientific exploitation of minor minerals from within the applied lease area encompassing a phased program for afforestation and point of public utility.

## **1. GENERAL**

### **1.1 Name and address of the applicant**

#### **1.1.a Name of the Applicant**

Sh. Lakhwinder Singh Panag,

Prop M/s Lakhwinder Singh Stone Crusher & Screening  
Plant Unit-III

#### **1.1.b Address of the Applicant**

Village and Post office Gondpur Bulla, Tehsil Haroli,  
District Una, Himachal Pradesh

#### **1.2 Status of the Applicant**

Individual

### **1.3 Mineral which the Applicant intends to mine**

The Applicant intends to mine Stone, Sand & Bajri from the applied mining lease area which are recent alluvial deposits. The minor minerals extracted from the applied area shall be used in the already established Stone Crusher unit in the name and style as “**M/s Lakhwinder Singh Stone Crusher and Screening Plant Unit - III**” for Manufacturing Grit and manufactured Sand (M-Sand).

#### **1.4 Period for which the mining lease is to be granted**

To be decided at the time of grant of mining lease as per the provisions of the Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015.

#### **1.5 Name and Address of H.P.R.Q.P. preparing the working Plan**

Arun Dhiman,  
S/o Sh. Jagan Nath  
R/o Village & P.O. Dhaloon (Panchpuli),  
Tehsil Nagrota Bagwan, Distt. Kangra,  
Himachal Pradesh-176056  
Contact No. 9816579485  
RQP No. H.P./R.Q.P./25/2/2019



**Surveyed By:**

Sh. C P Negi (Retired Surveyor)  
Geological Wing (Department of Industries)

#### **1.6 Name of Prospecting Agency**

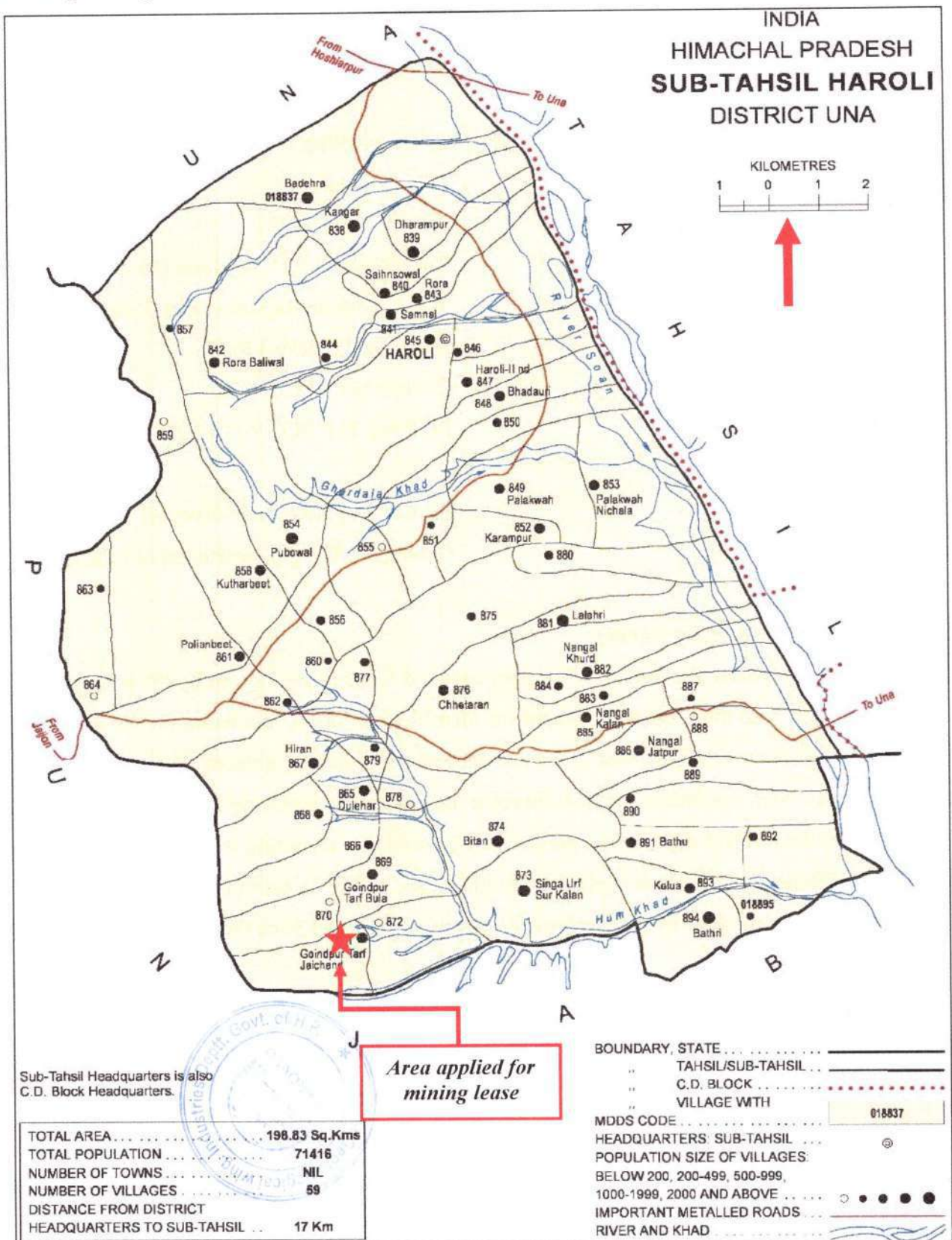
The area has been discovered by the applicant and further investigated by the R.Q.P. The site was visited along with the project proponent for identification of the site based on the demarcation conducted by the revenue department in the presence of the project proponent. The surface mapping of the area has been conducted by the surveyor using survey instruments and for carrying out prospecting of the mineral deposit, the preliminary information regarding the Geological set up and occurrence of minerals in the area applied for mining lease and in its surroundings has been gathered from the previous work done by the Geological Survey of India and State Government agencies from time to time.

## **2. LOCATION AND APPROACH TO THE AREA (PLATE -1)**

### **2.1 Location of the Area**

The area applied for the grant of mining lease is located near the village of Gondpur Bulla in the form of a Hill slope. The geographical location of the applied mining lease area is covered under Survey of India Toposheet No. H43E3. The index Location Map of the mine site falling in Tehsil Haroli is enclosed in the Figures shown below on page no. 4. The location of the mine area is marked in the toposheet shown and table showing boundary pillar coordinates shown on page no. 5. The high-

resolution satellite image and pictorial view of the mine site is shown in the Figures shown on page no. 6 respectively.



**Index map of Tehsil block showing the location of the mining lease area  
(Location Map enclosed as Plate No. – I)**

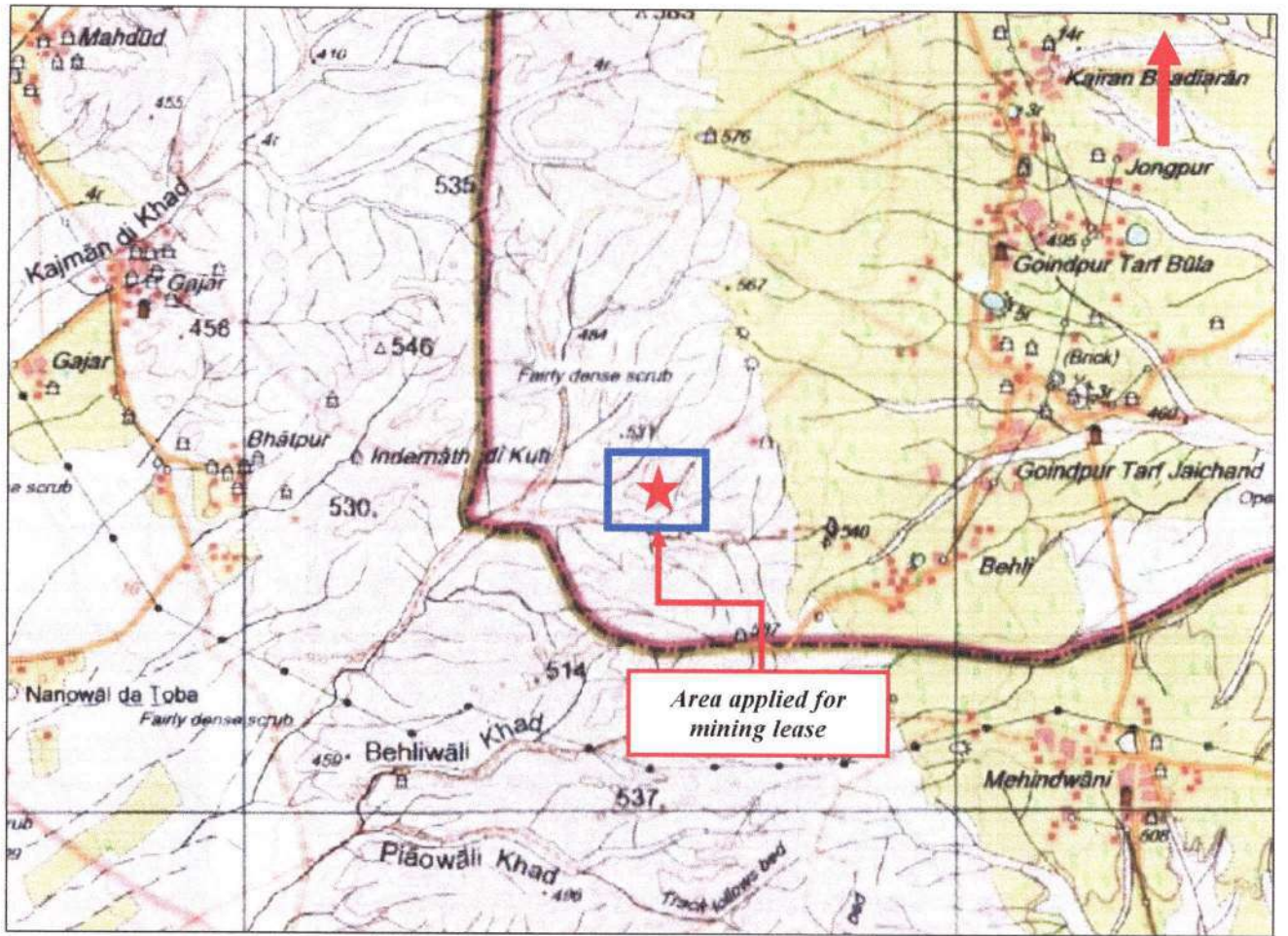


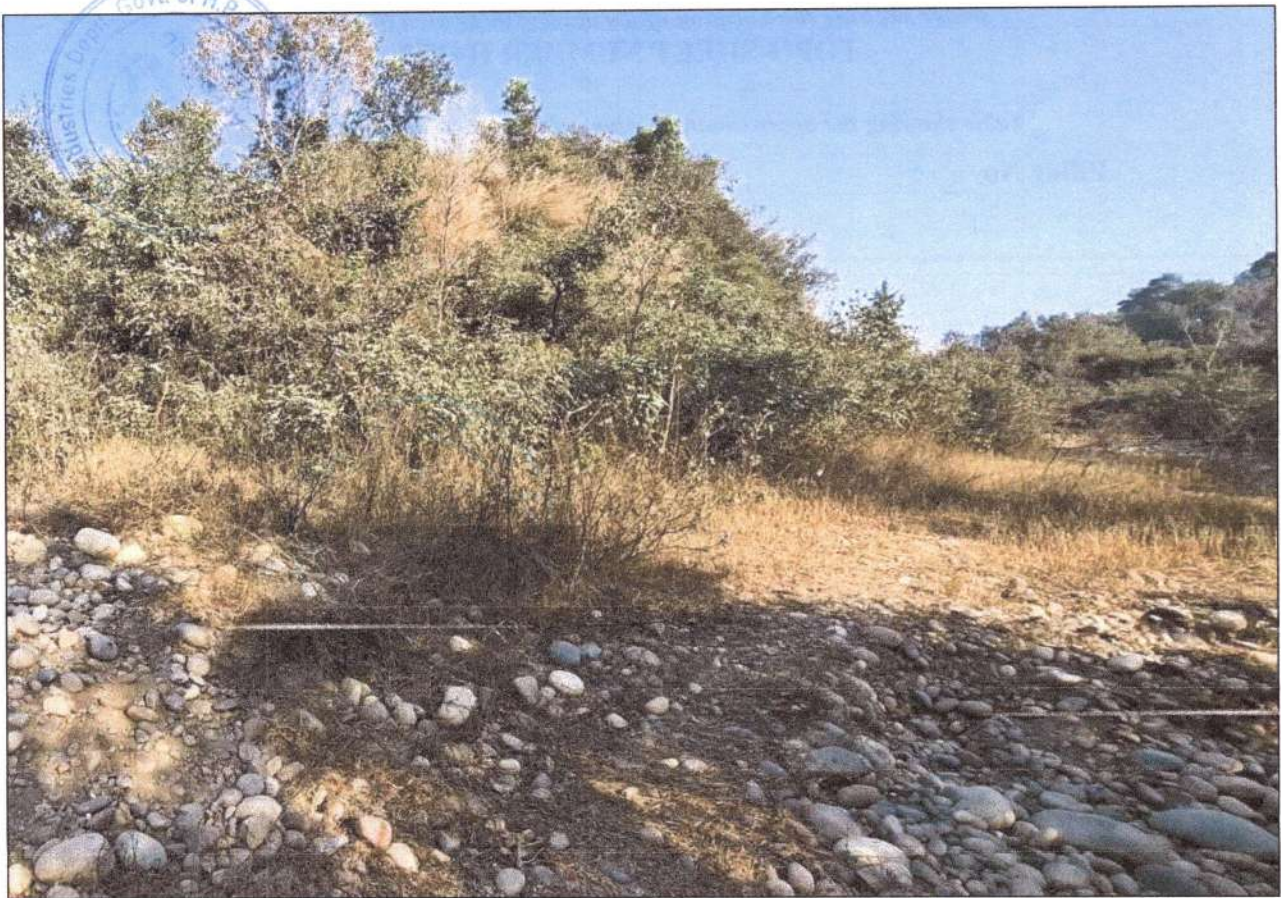
Image showing the Location of the applied mine area (Source SoI)  
**TOPO-SHEET NUMBER H43E3**

Table showing the approximate location of boundary pillar coordinates

Pillar No	Latitude	Longitude
P1	31°18'30.34"N	76°11'35.01"E
P2	31°18'26.76"N	76°11'29.66"E
P3	31°18'27.33"N	76°11'28.96"E
P4	31°18'22.58"N	76°11'26.50"E
P5	31°18'20.87"N	76°11'32.31"E



*Google Earth Image (2D) Showing Satellite view topography around the applied Lease area*



*Pictorial view of the mine lease area*

## 2.2 DETAIL OF THE AREA: -

### 2.2 (a) Revenue Details

Table showing revenue details of the applied mining lease area

Khasra Nos.	Owner	Kism	Mauza & Mohal	Area (In Hects.)	Name of the Panchayat
1236	Private land	Banjar Kadeem	Gondpur Bulla Upperla	02-78-91	Gondpur Bulla
<b>TOTAL</b>			<b>02-78-91 Hects. (27891Sq. m.)</b>		

### 2.2(b) Address Details

Village	Gondpur Bulla
Patwar Circle	Gondpur Bulla
Post Office	Gondpur Bulla
Tehsil	Haroli
District	Una

### 2.3 Nearest Departments

Sub- Divisional Officer (Civil)	Haroli
Divisional Forest Officer	Una
Sub-Division (JSV)	Tahliwal
Sub-Division (PWD)	Haroli
Forest Range Officer	Una
Mining Officer	Una

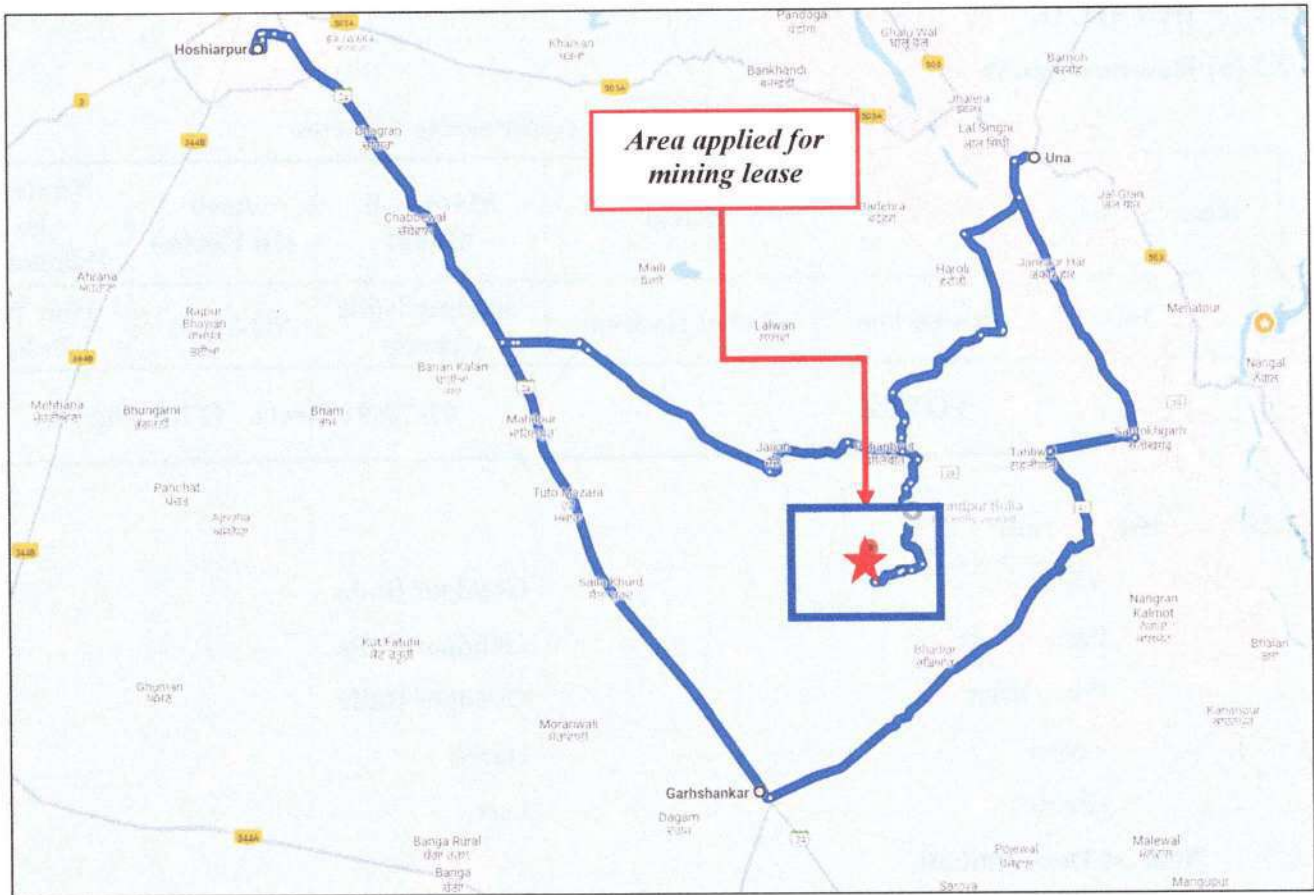


### 2.4 Distance from important places in Kilometers

Una	20.00 Kms.
Haroli	30.00 Kms.
Santokhgarh	19.00 Kms.
Shimla	164.0 Kms.
Hoshiarpur	50.0 Kms.

### 2.5 Approach of the Area: -

The proposed mining site is located in the form of Hill Slope near the village Gondpur Bulla. The area applied for the mining lease is located in the form of a hill slope and is approachable through the 3.0-kilometre Kaccha road diverting RHS from CHC Gondpur Bulla. The site is at a distance of approximately 30.00 kilometres from the nearest major town Haroli. The highest point of the applied mining lease area is 530 meters above MSL and the lowest point is 500 meters above MSL.



Google Map view showing the Approach to the Mining Lease area

### **3. PHYSIOGRAPHIC ASPECTS OF THE AREA**

#### **3.1 General**

Una is a district of Himachal Pradesh which lies in its southwestern part. On the 1st September 1972 the Himachal Pradesh Govt. reorganised the then Kangra district into three districts namely Una, Hamirpur and Kangra. Una district is well-developed in the industrial sector due to its close proximity to Punjab. Mehatpur, Gagret, Tahliwal & Amb are the main industrial centres of Una. On 11th January 1991, Una was provided with a railway line by laying a 14 Kms broad gauge track from Nangal (Punjab) to Una.

The configuration of the district is mostly hilly district and falls in the Himalayan foothill zone popularly known as the Siwalik foothills. There are many important hill ranges /Dhars in the district. Prominent among them are Sola Singhi Dhar or Jaswan Dhar, Chaumukhi Dhar, Dhionsar Dhar, Ramgarh Ki Dhar and Bangar Ki Dhar and all stretch on the eastern part of the district. These Dhars run in the district from northwest to south-east direction. The area adjoining the Punjab border is also hilly. The Eastern part of this district is relatively higher than that of the western part. The elevation of this district varies between 332 metres and 1,162 metres above the mean sea level. Soan river is the main river in the district which flows from the northwest to the southeast direction. Many tributaries

like Borewali khad, Barerakhad, Garmi khad, Panjoa khad, Ambwali khad, Badowali khad and Hum khad etc., join it in the district from the right and left sides. Soan River and its tributaries form a valley in the district known as Soan Valley which is flat and fertile. It is a seasonal river and becomes a tributary of the Satluj river outside the district. In the eastern part of the district, Lunghar khad is another khad that flows in the south-easterly direction and merges with the Satluj river. It also forms a narrow valley which is relatively flat and fertile.

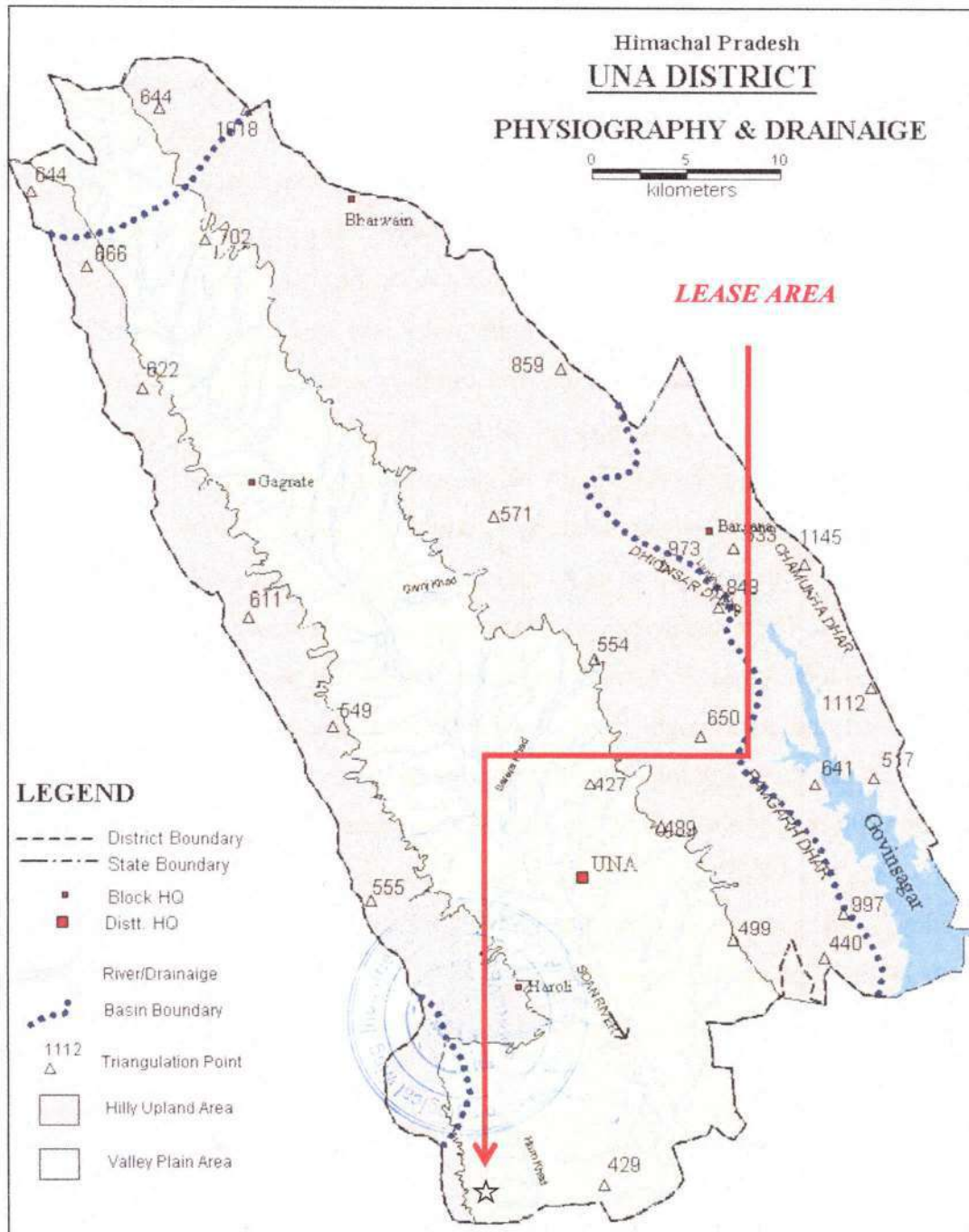


Image showing Physiography and drainage of the District

In general, the area is a part of the Siwalik range. The Siwalik Hills are located within the political boundaries of Pakistan, India, Nepal, and Bhutan, and range between 6 to 90 km in width.

They gradually become steeper and narrower in relief and width respectively, from northern Pakistan to Bhutan (over 2000 km in length). Ongoing erosion and tectonic activities have greatly affected the topography of the Siwaliks. Their present-day morphology comprises of hogback ridges, consequent, subsequent, obsequent, and resquent valleys of various orders, gullies, choes (seasonal streams), earth-pillars, rilled earth buttresses of conglomerate formations, semi-circular choe-divides, talus cones, colluvial cones, water gaps, and choe terraces. Associated badlands features include the lack of vegetation, steep slopes, high drainage density, and rapid erosion rates.

To the South of the Siwaliks are the Indo-Gangetic plains and in the north, they are bordered by the Lesser Himalayas. Intermittently located between the Siwaliks and the Lesser Himalayas (exclusively in India and Nepal) are duns, flat-bottomed longitudinal structural valleys with their own drainage systems. These essentially comprise several large Himalayan piedmont alluvial fans and terraces, which formed as a result of tectonic episodes in the flanking Siwaliks. The duns also consist of lacustrine, fluvial, aeolian and swamp-environment deposits, and range from Middle Pleistocene to Holocene in age. During their formative stage, most of the duns were slightly narrower and gradually expanded over time through the erosion of the adjacent Siwalik sediments (a continuing process). In Nepal, these duns were often naturally filled with alluvial sediments of lacustrine and fluvial deposits, thus burying palaeolithic sites that were later exposed through erosion. The monsoon rains temporarily supply seasonal streams (locally known as choes, khads, or nalas) located both within the Siwalik Hills and the adjacent dunes. These stream banks and their terraces yield sizeable numbers of lithic artefacts, owing to the shared location for both water and raw material. The district is bounded by the plains of Punjab in the West and Sola Singhi Dhar (Siwalik Range). The ranges trend in a general NW-SE direction and between there is a longitudinal valley of the Soan River. The altitude varies from 300 metres to over 1200 metres above MSL on Sola Singhi Dhar. The width of the Jaswan Dun Valley ranges from 7 Kms to 14 Kms and the town of Una, which is nearly in the middle of the Dun valley (Jaswan Valley) is on an elevation of 427 Mts above MSL. In general, most of the district lies between 600- 900 mts in elevation and the slope is less than 10°.

The Una District can be divided into the following three distinct zones as per elevation as:-

1. above 900 m.
2. 600-900 meters.
3. Less than 600 meters.

The district can be divided into three distinct zones as per slope.

- 20 m/Km
- 10-20 m/Km
- Less than 10 m/Km



### 3.2 Altitude, General Terrain Description, with map and Contours Encompassing the Mine area: -

The applied lease area is situated in the form of Hill Slope. The map of the mining lease area on a 1:2000 scale with a one-meter contour interval is Plate No III. The highest point of the mining lease area is 530 meters above MSL and the lowest point is 500 meters above MSL. The mining lease area is private land in the form of a hill slope and is scarce of any kind of vegetation except small bushes and plants.

### 3.3 Climate of the Area

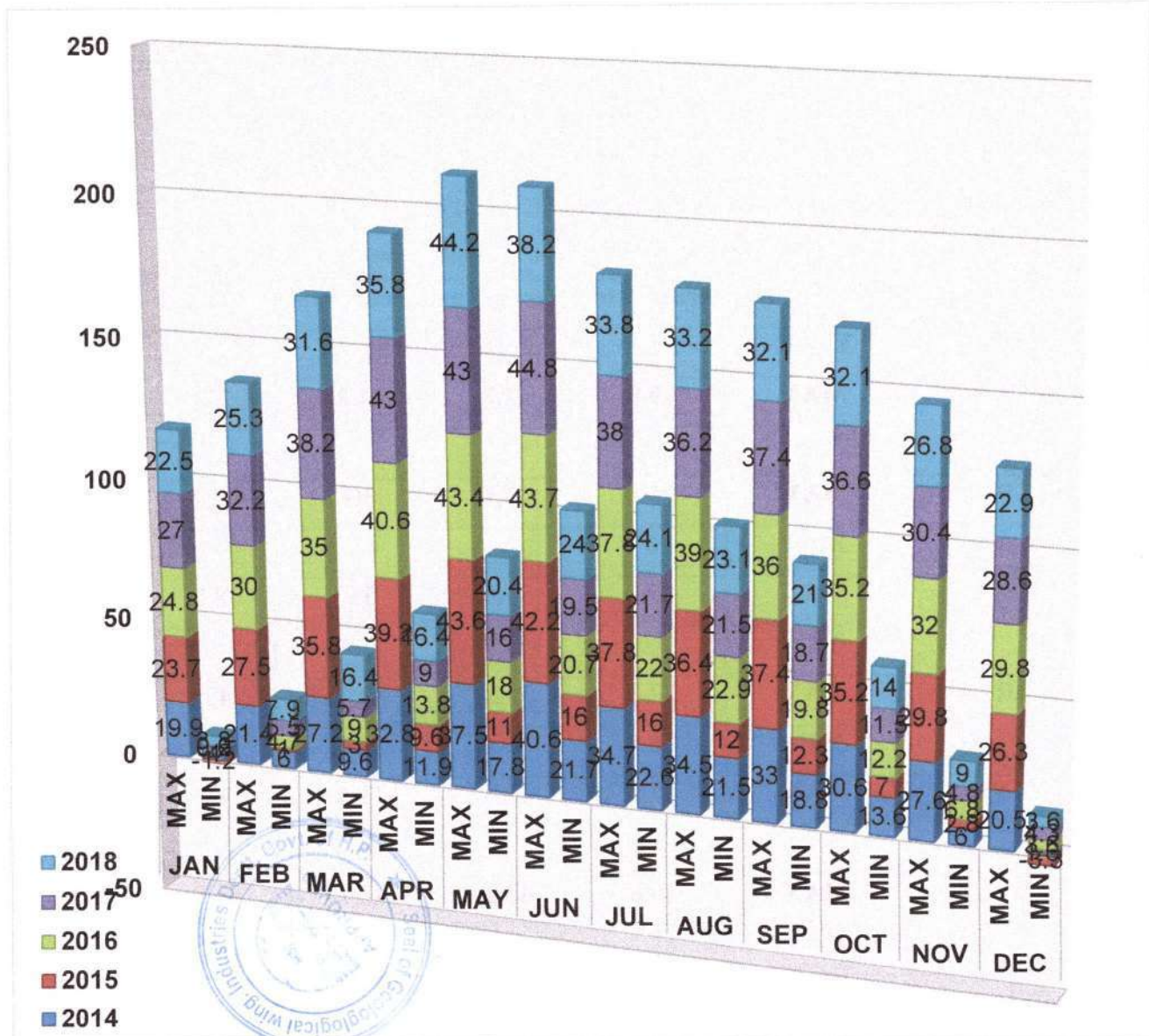
The climate of different parts of the district depends to some extent on the elevation. The terrain is hilly with an elevation below 300 metres in valleys and the western region and the elevation gently increases by a few hundred metres over the northeastern region of the district. The climate of the district is somewhat like that of the adjoining plains of Punjab, except for a milder hot season and higher rainfall. The cold season is quite bracing. The year may be divided into four seasons. The period from November to March is the winter season. The next three months, April to June, form the summer season. The following period lasting up to about the middle of September is the southwest monsoon season. The latter half of September and October form the post-monsoon or transition period. The average minimum and maximum temperatures are 3°C and 45°C

Table Showing Climate around the applied lease area

Maximum & Minimum Temperature of District Una (Meteorological Centre- Una )						
MONTH	YEAR	2014	2015	2016	2017	2018
JAN	MAX	19.9	23.7	24.8	27	22.5
	MIN	4	-1.2	0.2	0.6	3.8
FEB	MAX	21.4	27.5	30	32.2	25.3
	MIN	6	1	4.7	5.5	7.9
MAR	MAX	27.2	35.8	35	38.2	31.6
	MIN	9.6	3	9	5.7	16.4
APR	MAX	32.8	39.2	40.6	43	35.8
	MIN	11.9	9.6	13.8	9	16.4
MAY	MAX	37.5	43.6	43.4	43	44.2
	MIN	17.8	11	18	16	20.4
JUN	MAX	40.6	42.2	43.7	44.8	38.2
	MIN	21.7	16	20.7	19.5	24
JUL	MAX	34.7	37.8	37.8	38	33.8

	MIN	22.6	16	22	21.7	24.1
AUG	MAX	34.5	36.4	39	36.2	33.2
	MIN	21.5	12	22.9	21.5	23.1
SEP	MAX	33	37.4	36	37.4	32.1
	MIN	18.8	12.3	19.8	18.7	21
OCT	MAX	30.6	35.2	35.2	36.6	32.1
	MIN	13.6	7	12.2	11.5	14
NOV	MAX	27.6	29.8	32	30.4	26.8
	MIN	6	2.8	6.8	4.8	9
DEC	MAX	20.5	26.3	29.8	28.6	22.9
	MIN	1.6	-3.3	3.6	4.3	3.6

Source: Meteorological Department, Govt. of India



Graph showing the average monthly temperature of the district Una from the year 2014 to 2018

### 3.4 Rainfall of the Area

The Una district can be divided into three rainfall zones as

High	above 1400 mm
Medium	between 1400 and 1200 mm
Low	less than 1200 mm

The average annual rainfall in the district is 1209.0 mm. About 70 percent of the annual rainfall in the district is received during the short monsoon season July to September. July is the month with the heaviest rainfall. Rainfall amounting to about 14 percent of the normal is received during the cold season in association with passing western disturbances. The rainfall in the district generally increases from the southwest towards the northeast.

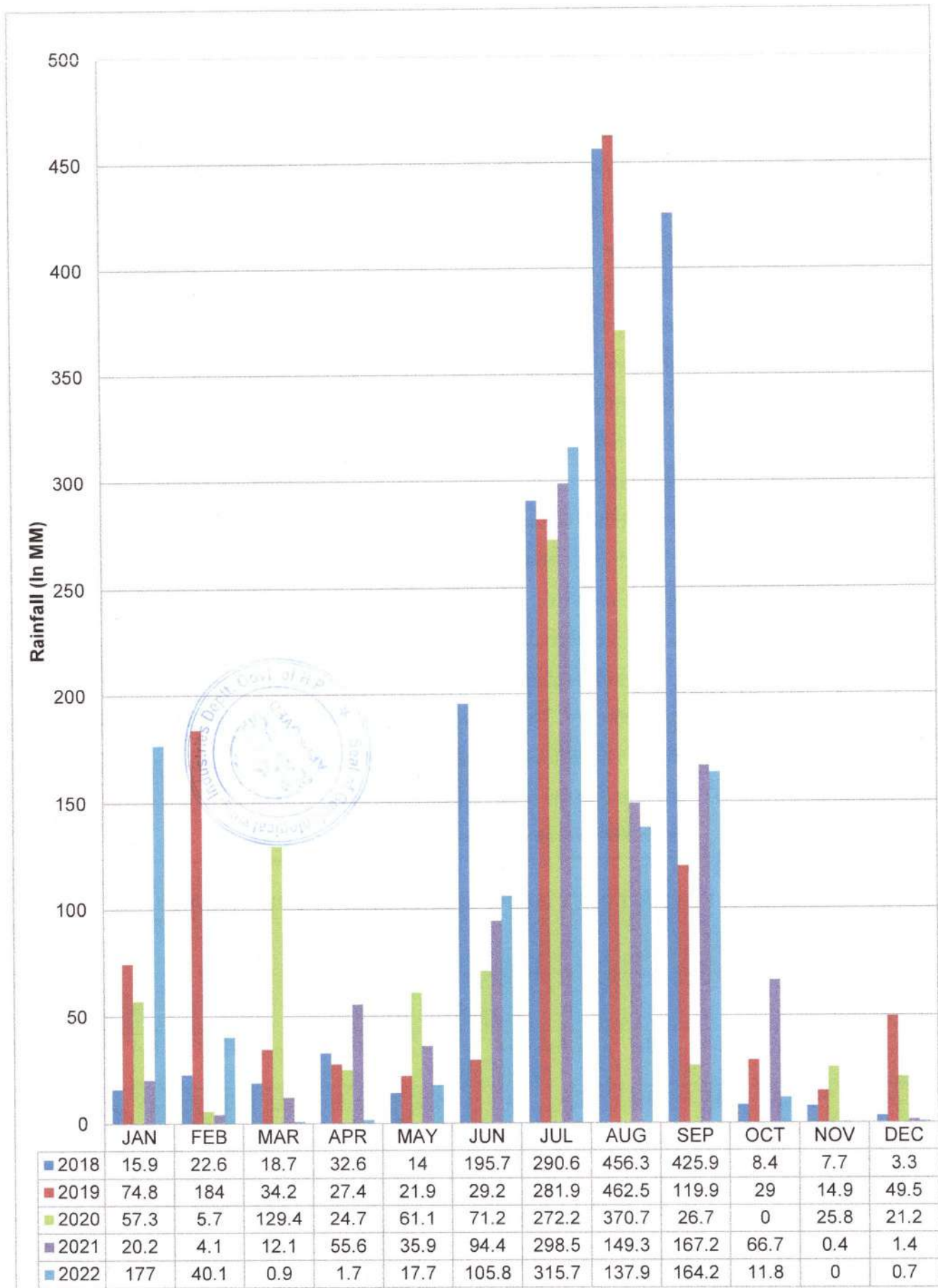
To have an idea about morphogenetic zone on the basis of rainfall it will not be ideal to classify it on the basis of the annual rainfall because most of the precipitation of the year is received in the rainy season hence the precipitation of the monsoon season is deciding precipitation for annual replenishment, bank erosion and other factors.

Rainfall varies significantly with the altitude of the area. The catchment area receives rainfall due to western disturbances that pass over the northwestern part of the country during the winter months. Rainfall in valleys is also received during the winter months. The rainy season generally starts in mid-July and extends up to mid-September. During winter the rains are scarce and extend in between 15<sup>th</sup> December to 15<sup>th</sup> February. The following table shows the quantum of rainfall adjoining to the applied mining lease area. The following table shows the quantum of rainfall during the last 5 years from 2018 and 2022 adjoining to the applied lease area as per IMD.

*Table Showing monthly rainfall data of the district*

Una DISTRICT RAINFALL IN MILLIMETERS (R/F)												
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	RAINFALL (IN mm)											
2018	15.9	22.6	18.7	32.6	14	195.7	290.6	456.3	425.9	8.4	7.7	3.3
2019	74.8	184	34.2	27.4	21.9	29.2	281.9	462.5	119.9	29	14.9	49.5
2020	57.3	5.7	129.4	24.7	61.1	71.2	272.2	370.7	26.7	0	25.8	21.2
2021	20.2	4.1	12.1	55.6	35.9	94.4	298.5	149.3	167.2	66.7	0.4	1.4
2022	177	40.1	0.9	1.7	17.7	105.8	315.7	137.9	164.2	11.8	0	0.7

Source: Meteorological Department, Govt. of India



Graph Average monthly rainfall data of the district Una from the year 2018 to 2022

### **3.5 Any Other Important Features**

Una district came into existence on 1 September 1972 and is situated in the southwestern part of the State of Himachal Pradesh. The district, with its headquarters at Una town, has a geographical area of 1542 sq. km and covers 2.8 % area of the State. It lies between North latitude 31°18'00" & 31°55'00" and East longitude 75°55'00" & 76°28'00" and is covered in a survey of India degree sheet No.53A & 44M. Towards the north, it is bounded by Kangra district, towards the north- & east by Hamirpur & Bilaspur districts and towards the south-west by the State of Punjab.

Agriculture is the major occupation of the people of the district with more than 70% population engaged in agriculture and allied sector. Major crops like maize, wheat, rice, sugarcane and pulses are grown apart from the vegetables in the district. The total cultivable area is 443 sq. km and the net area sown is 388 sq. km. The net area irrigated in the district is about 85 sq. km. Groundwater is the major source of water in the district for irrigation and domestic use. There are large numbers of water supply wells & tube wells, springs, kulhs (water channels) and lift irrigation schemes implemented exclusively for irrigation purposes. The irrigated command area under the Bhabaur Sahib Lift irrigation scheme, phase I and Phase II are 923 hectares and 2640 hectares respectively.

### **3.6. Description of the area in which the lease is situated**

The applied mining lease area is situated in the form of hill slope located near the village Gondpur Bulla. The Hillside is mainly comprised of boulders, Bajri (Cobbles, pebbles), Clay and Sand/Silt deposits of terrace alluvium. The study of the rocks in and around the applied mining lease area belongs to the Siwalik Group comprising of Boulders, Pebbles, Cobbles, Clay, Sand and Silt (Conglomeratic deposits). The proposed mining site is located in the form of a Hill Slope near the village Gondpur Bulla. The area applied for the mining lease is located in the form of a hill slope and is approachable through the 3.0-kilometre Kaccha road diverting RHS from CHC Gondpur Bulla. The site is at a distance of approximately 30.00 kilometres from the nearest major town Haroli.



## **PART- I**

### **DESCRIPTION OF GEOMORPHOLOGY AND MINE DEVELOPMENT**

#### **(1) DESCRIPTION OF THE AREA**

##### **1.1 General**

The applied mining lease area is situated in the form of the Hill Slope. The highest point of the mining lease area is 530 meters above MSL and the lowest point is 500 meters above MSL. The mining lease area is private land in the form of a hill slope which contains small bushes and plants as vegetation.

##### **1.2 Slope Angle**

The conglomerate deposit, where the mining lease is applied is slightly undulating with a 5-6 meter elevation difference from one end to the other. Also, the adjoining lands are almost of the same nature as the area under consideration is adjoining to the Punjab State.



*Image showing the Slope angle of the applied area*

##### **1.3 Type of Drainage in the area**

The adjoining area shows a dendritic type of drainage with the formulation of gullies. Only small gullies pass beside the mining lease area. These small gullies drain into local Nalla and further drain into Satluj River which is a perennial stream of the area.

#### **1.4 Susceptibility of Area to Landslide**

As the mining lease area is hill with a gentle slope and as the adjoining lands are almost flat with very little gradient, there is no scope of landslide in the vicinity of the applied mining lease area. The hill slope is mostly comprised of conglomerate beds with thin soil cover in the mining lease area. The slope at places is uniform and if the mining operations would be carried out in a systematic and scientific way, there are negligible chances of any landslide. Moreover, no adverse joint pattern is observed in the applied mining lease area which can lead to any further rock/slope failure.

#### **1.5 Springs in the Area**

No spring is noticed within the applied mining lease area.

#### **1.6 Any other Details**

The surface map of the mining lease area as well as the adjoining area of the mining lease showing all the surface features are attached as Plate – III.

### **(2). GEOLOGY**

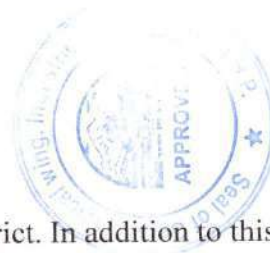
#### **2.1 Regional Geology of the Area**

##### **Siwalik Group**

The Siwalik Group mainly represents the rocks of the district. In addition to this at few places, the newer alluvium of the Quaternary age is also present.

The Siwalik deposits are one of the most comprehensively studied fluvial sequences in the world. They comprise mudstones, claystones, and coarsely bedded conglomerates laid down when the region was a vast basin during Middle Miocene, to Upper Pleistocene times. The sediments were deposited by rivers flowing southwards from the Greater Himalayas, resulting in extensive multi-ordered drainage systems. Following this deposition, the sediments were uplifted through intense tectonic regimes (commencing in Upper Miocene times), subsequently resulting in a unique topographical entity - the Siwalik Hills. The Siwaliks are divided stratigraphically into three major Subgroups - Lower, Middle, and Upper. These Subgroups are further divided into individual Formations that are all laterally and vertically exposed today in varying linear and random patterns.

Ongoing erosion and tectonic activity has greatly affected the topography of the Siwaliks. Their present-day morphology is comprised of hogback ridges, consequent, subsequent, obsequent, and resquent valleys of various orders, gullies, choes (seasonal streams), earth-pillars, rilled earth buttresses of conglomerate formations, semi-circular choe-divides, talus cones, colluvial cones, water-gaps, and choe terraces. Associated badlands features include the lack of vegetation, steep slopes, high drainage



density, and rapid erosion rates.

In the advent of Neogene, a depression was formed in front of the rising mountains (Proto-Himalaya). This depression becomes a repository of a thick sequence of molassic sediments of the Siwaliks. The Siwalik Group comprises conglomerates of friable micaceous Claystone, siltstone and claystone.

The conglomerates, in general, are poorly cemented but in places, they are very hard. These consist mainly of pebbles and cobbles of quartzite. The stray pebbles of granite, limestone, Claystone, breccia and lumps of claystone are also observed at places. Often the size of pebbles is large enough to be called as Boulders. The conglomerates not only occur as regular bands but also as lenticular bands, alternative to micaceous Claystone and clay beds. The sediments were brought down 2 to 25 million years ago by the numerous fast-flowing rivers issuing forth from the rapidly Rising Mountain mass of the Himalayas, in the north.

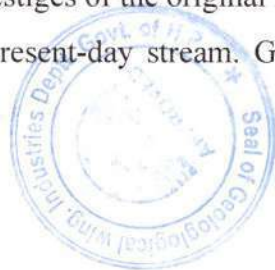
The Siwalik Group is divisible into three sub-groups respectively the Lower, Middle and Upper on the basis of the lithostratigraphy.

**Lower Siwaliks:** - The lower Siwalik consists essentially of a Claystone-clay alternation. In district Una, the lower sequence of the lower Siwalik consists of medium-grained sub-graywacke interbedded with thick red clay, but higher up in sequence, Claystone are coarser and clasts become more frequent while the clays are less developed. The uppermost horizon consists of a conglomerate with well-rounded clasts of grey quartzite possibly derived from the Shali. The total thickness is 1600 meters.

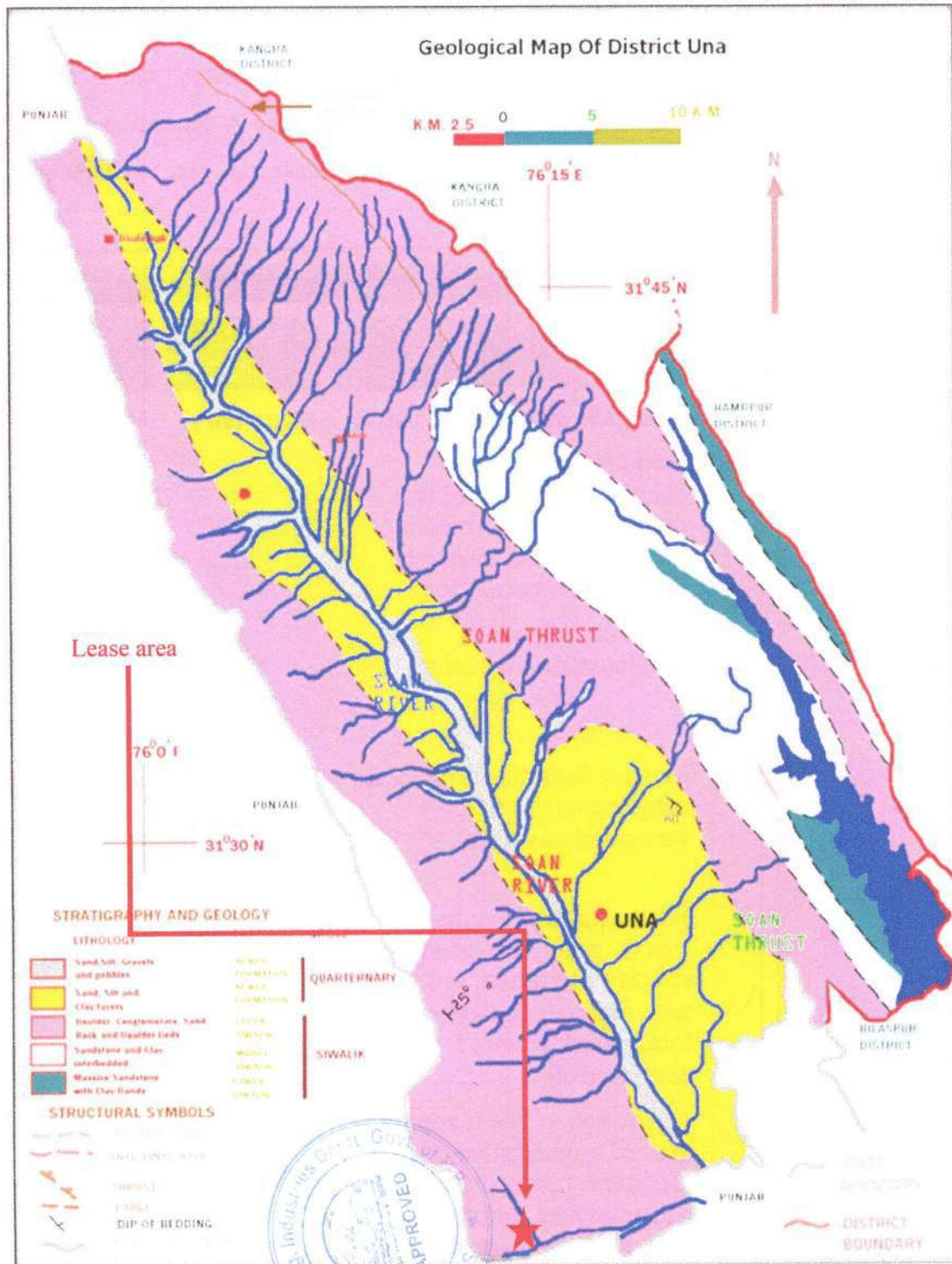
**Middle Siwaliks:** - The Middle Siwalik Subgroup comprises of a large thickness of coarse micaceous Claystone along with some interbeds of earthy clay and conglomerate. It normally succeeds the Lower Siwalik along a gradational contact. The Claystone is less sorted than that in the Lower Siwaliks. Clay beds are dull-coloured and silty. The general thickness is 1400 to 2000 meters.

**Upper Siwaliks** Upper Siwalik is mainly represented by Claystone interbedded with silt and conglomerate. The lower portion of the Upper Siwalik mainly consists of soft, massive, pebbly Claystone with intercalations of conglomerates. In the upper portion, the conglomerate intercalation is replaced by the clay intercalations. The general thickness in the district is 2300 meters.

River terraces are seen flanking the present-day streams but some terraces occupy the ridges. Perhaps they are the vestiges of the original regime of the Swan River. The gravel beds are the result of the action of the present-day stream. Gravel beds constitute an important source of quartzite fragments.



### GEOLOGICAL MAP OF UNA DISTRICT



#### Older Alluvium:

The Older Alluvium in Dun Valley is designated as Dun Gravels while in the plains as Varanasi (Ambala). It is a multicyclic sequence of brown to grey silt, clay with Kankar and reddish brown to grey micaceous Clay with pebbles.

**Newer Alluvium:**

Newer Alluvium has been subdivided into Fan Alluvium encompassing of brownish grey clay, Clay and gravel sequence, lies dis-conformably over Older Alluvium within a narrow zone immediately to the south of Siwalik hill and terrace alluvium exposed as depositional terraces of Beas and Swan River and comprising of a cyclic sequence of grey, micaceous, fine to coarse-grained Clay, silt and clays.

Lithostratigraphy of District Una					
Group	Lithology		Age	Approx. Thickness	
Newer Alluvium	Sand, silt, gravel and Pebbles		Quaternary	Variable	
Siwalik Group	Upper Siwalik	B	Neogene	2300 meter	
		A			
	Middle Siwalik	B		1400 to 2000 meter	
		A			
	Lower Siwalik	B			1600 meter
		A			

Alluvial fans, river terraces and gravel beds of recent age and the Claystone, clay stone and conglomerate belonging to the Siwalik Group are the main Formations in this District. The Siwalik comprises conglomerates, friable Claystone, siltstone, and clay stone. The conglomerate is loose consisting mainly of cobbles and pebbles of quartzite and stray pebbles of granite, limestone, Claystone and lumps of claystone are also present. The matrix when present consists of medium to coarse-grained Clay and places of calcareous cement which imparts a certain degree of hardness to the otherwise loose conglomerate beds. They vary in thickness from 15 cms. to 2.5 meters. They do not show clear stratification and occur as a thin bed. The Claystones are poorly stratified and consequently are soft and friable. They are pale grey to brownish in colour, moderately to well sorted and medium to coarse-grained in texture. Clay lumps and pellets are not within the Claystones.

Recent deposits constitute gravel beds, alluvial fans and river terraces. Alluvium occupies the vast stretch of the plain. They contain Clay, silt, and clay in varying proportions.

## **2.2 Geology of the Area**

The mining lease area forms a part of the hill slope and is covered with B Members of the Upper Siwalik Formation. The Hill is mainly comprised of a thick boulder bed of the B Member of the Upper Siwalik Formation comprising of boulders, cobbles, pebbles, river-borne Bajri, Clay and Sand/Silt deposits of terrace alluvium. The study of the rocks in and around the applied mining lease area belongs to the Siwalik Group comprising Boulders, Pebbles, Cobbles, Clay, Sand and Silt (Conglomeratic deposits).

## **2.3 Details of Prospecting Work Undertaken in the Mining Area**

Similar kinds of conglomeratic deposits are clearly visible along the road section as well as in the adjoining area of the applied mining area lease. Also, the mine has been fully developed during the last tenure of working and hence, there is no need to carry out the prospecting operations. In addition to this, the availability of the minor minerals in the Hill is quite evident on the exposures formed due to erosive action.

## **2.4 The Nature of Rocks and their Attitude.**

The mining lease area comprises predominantly of boulders, Bajri (Cobbles, pebbles), Clay and Sand/Silt deposits of terrace alluvium. The boulders are white, spotted white, greenish-white pink, purple and dark green in colour. Quartzite fragments are rounded, sub-rounded and discoidal in shape having smooth surfaces. The size of a minor mineral varies from silt to boulder.





*Image showing the type and nature of rocks of the applied area*

### **(3) RESERVES ESTIMATE**

#### **3.1 Estimates of the Geological Reserve of Each Mineral**

The Geological reserves have been estimated by the cross-sectional area method and 02 nos. of cross sections A-A' & B-B' were plotted at 80-meter intervals (Plate no. IV). The cross-sectional area of rock was measured separately to obtain the volume and it was multiplied by the strike influence of each section. The volume thus obtained was multiplied by the specific gravity to obtain the reserves in metric tonnes. The average specific gravity of rock has been considered as 2.25. As no exploration works by way of drilling have been carried out, it is implied from the field observations made above and below the road section that a similar kind of rock is available along the hill and is easily visible all along the surface as well. In view of the above, the 100% reserves are kept in the proved category. The details of the geological reserves of the rock are mentioned in the table below:

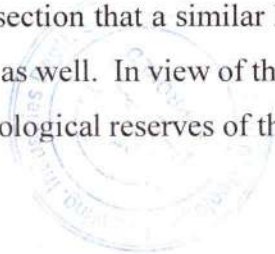
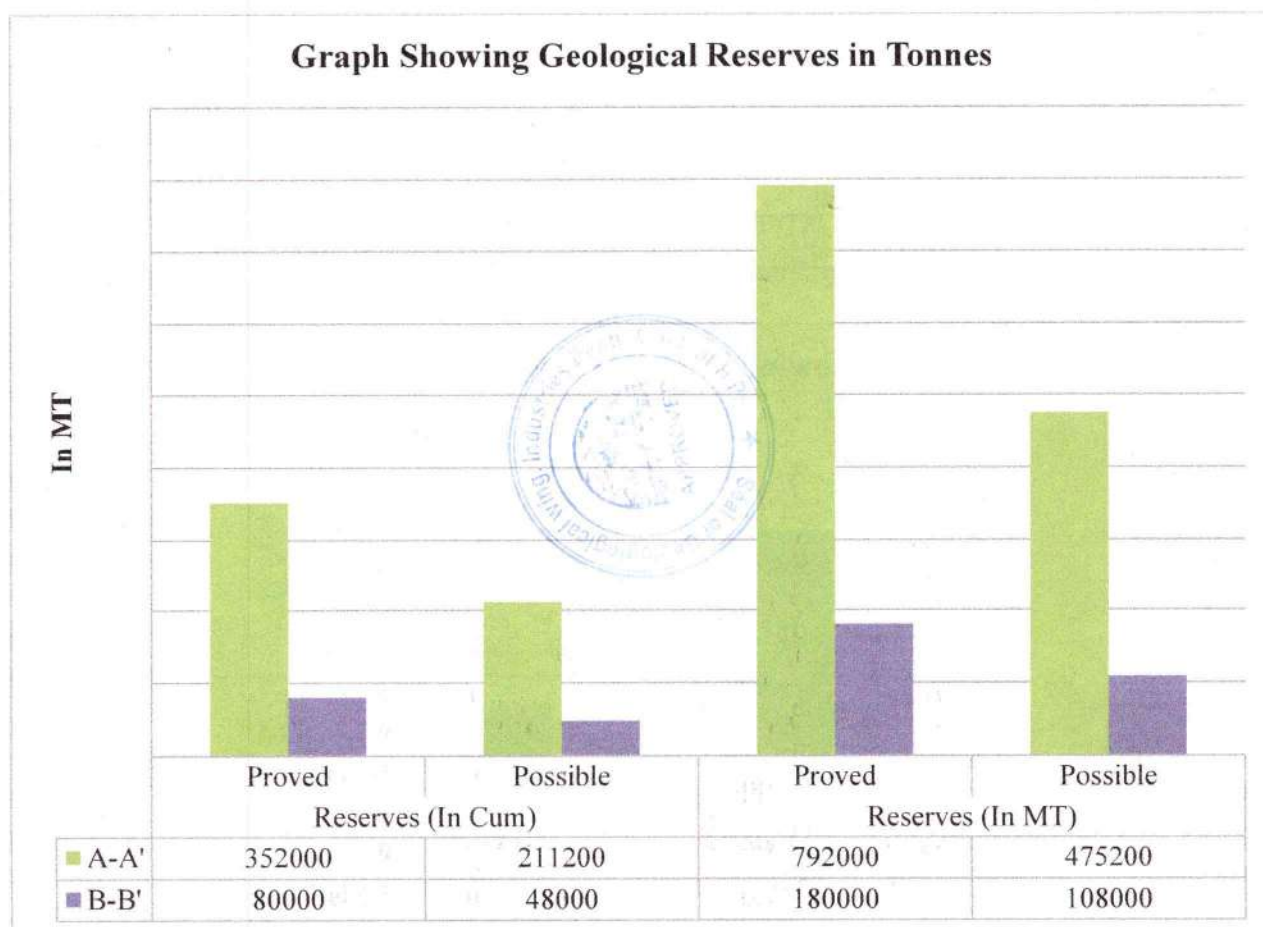


Table showing Geological reserves in metric tonnes

TABLE SHOWING GEOLOGICAL RESERVES						
SECTION LINE	CROSS-SECTIONAL AREA (IN SQM)	SECTION INTERVAL (IN Mtrs)	RESERVES OF THE ROCK IN CUM		RESERVES OF THE ROCK IN MT	
			PROVED	POSSIBLE	PROVED	POSSIBLE
A-A'	4400	80	352000	211200	792000	475200
B-B'	1000	80	80000	48000	180000	108000
<b>TOTAL</b>					<b>972000</b>	<b>583200</b>



Graph Showing Geological Reserves in Metric Tonnes

### 3.2 Constraining Considerations for Mining

Although no point of public utility exists near the applied mining lease area, however, in order to avoid any apprehension of damage to the surrounding land/area, a safety/buffer zone of 05 meters from the periphery of the mining lease boundary is kept as a safety zone. Also, to avoid the rolling down of the excavated material, check dams/retaining structures/crate walls all along the applied

mining lease boundary facing the road are proposed and will be constructed during the course of excavation so as to avoid any rolling down of debris on the road.

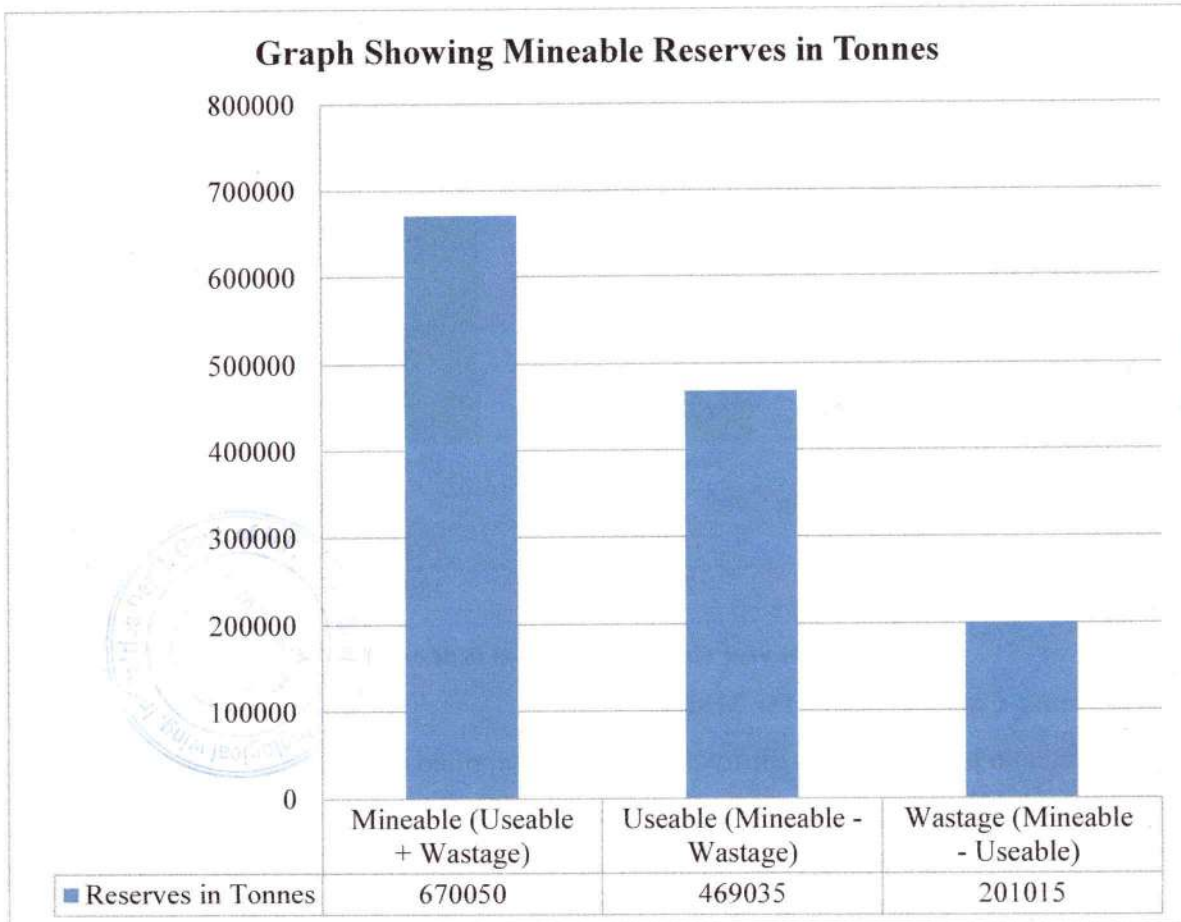
### 3.3 Estimated Mineable Deposits of the Mine Area:

All the geological reserves are not mineable. The mineable reserves have been estimated by the cross-sectional area method and 02 numbers of cross sections A-A' & B-B' were plotted at 80.00 meters intervals. To calculate mineable reserves, the volume of each bench was calculated and the volume so arrived was multiplied by the specific gravity. The specific gravity of the conglomerate has been taken as 2.25 for calculating the mineable reserves.

The details of the geological reserves of the rock are as mentioned in the table below:

Graph showing mineable reserves

Table Showing Estimated Mineable Reserves in Tonnes	
Reserves	Quantity (In MT)
Mineable (Useable + Wastage)	670050
Useable (70%)	469035
Wastage (30%)	201015

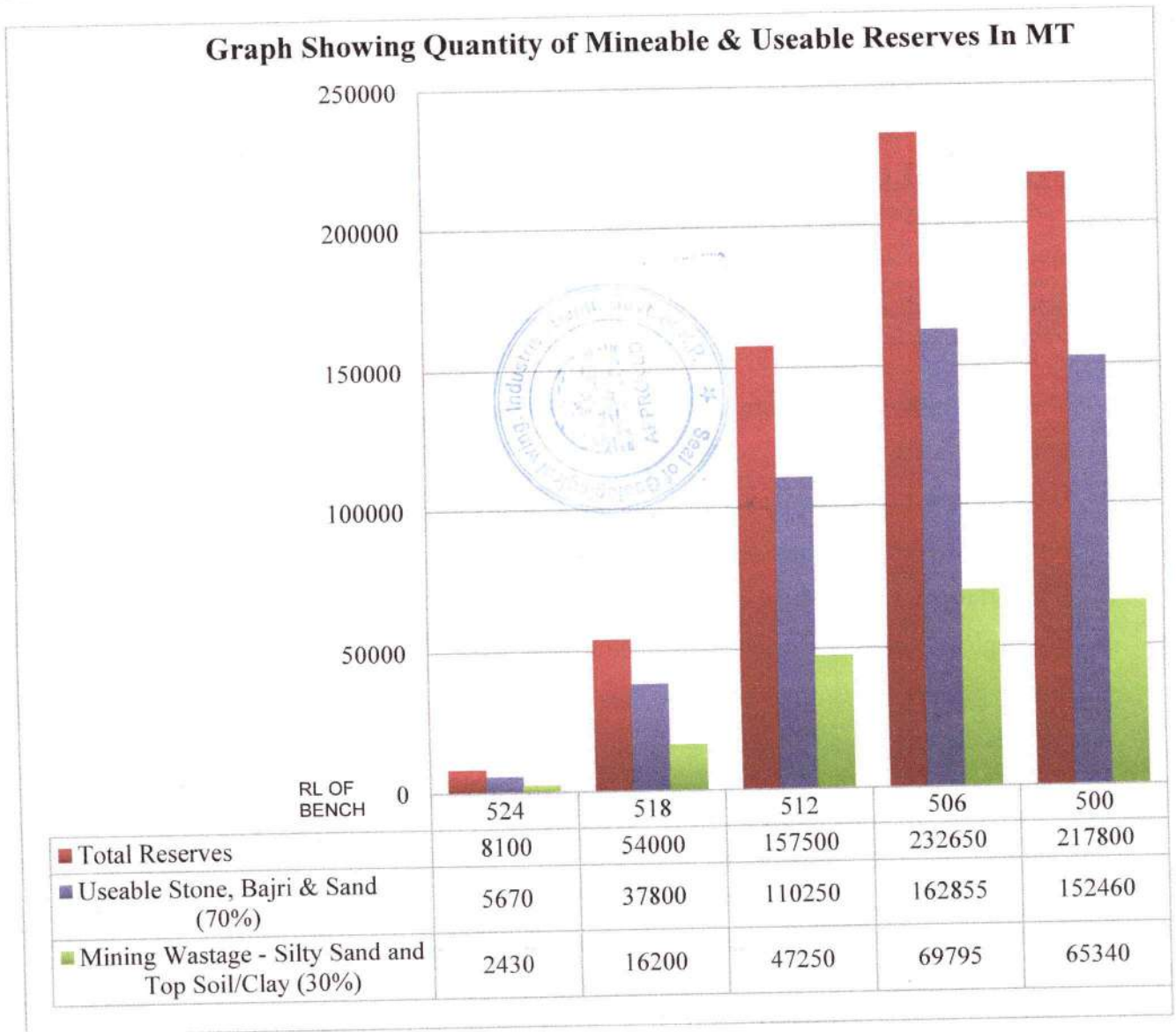


Graph Showing Mineable Reserves in Tonnes

Table showing the quantity of mineable reserves in MT

Bench	RI of Bench	Area	Specific Gravity	Average Height	Total Reserves	Useable Stone, Bajri & Sand (70%)	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
No.	In meters	In Sq.m		In meters	In MT	In MT	In MT
1	524	800	2.25	4.50	8100	5670	2430
2	518	4800	2.25	5.00	54000	37800	16200
3	512	14000	2.25	5.00	157500	110250	47250
4	506	18800	2.25	5.50	232650	162855	69795
5	500	17600	2.25	5.50	217800	152460	65340
<b>TOTAL</b>		<b>56000</b>			<b>670050</b>	<b>469035</b>	<b>201015</b>

Graph Showing Quantity of Mineable & Useable Reserves In MT



Graph Showing Quantity of Mineable & Useable Reserves

As per the dimension and shape of the mining lease area, the open cast mining operations by the formation of benches have been proposed. The plan showing the ultimate pit position by the end of 05 years is attached as Plate – V.

### **3.4 Conceptual Scheme of Mining and Life of Mine**

The mining operations shall be carried out in the mining lease area after leaving the 05 meters buffer/safety zone. The mineral excavation starts from RL 524 onwards by preparing 6X6 meters (Height X Width) benches. Five (05) numbers of benches are proposed to be developed while excavating the mineral from the mining lease area. As per the reserves calculated, the mine has available reserves under the proved category at the proposed scale of production which can easily cater for the need for the required mineral in the stone crusher unit for a term of the next Five (05) years. These may vary as the reserves under the probable category have not been taken into account as of now. Based on the present mineable reserves with the proposed scale of production, the mine has a remaining life of 05 years only.

### **(4) MINE DEVELOPMENT AND PLAN OF PROGRESSIVE MINING: -**

The mining operations would be carried out mechanically with the help of poclair/excavator. Also, manual help would be required to carry out the mining operations. The mining operations would be mechanical as well as semi-mechanical and manual as per the requirement however; no blasting shall take place.

The following conditions have been taken into consideration while planning the mine development and progressive mining works: -

1. Demarcation of the area as shown in the field by Revenue officials has been taken into consideration while preparing the contour cum Geological Plan.
2. 270 working days have been considered for the purpose of calculation.
3. The angle of repose has been kept at 45°.
4. In-situ parapet walls/retaining structures/gabions/ crate walls shall always be maintained towards the valley side of working benches so that no material rolls down.
5. The plan showing working sections during 05 years is attached as Plate No. VI.
6. For safety wire crate/ Gabion structure shall be constructed along the lower side of the applied mining lease area to stop any rolling down of debris/rocks (as shown in Plate No. VIII-XII).
7. The open cast mining method is proposed by the formation of 6X6 meters (Height X Width) benches from the level of 524 mR.L. in the mining lease area up to the level of 500 mR.L.

#### 4.1 Proposed Method of Development/Working of the Deposit

The applied mining lease is located on hilly terrain and suitable material for crushing is available in the whole of the mining lease area. Keeping in view the suitability of the mineral, the open-cast mining method is proposed by the formation of 6X6 meters (Height X Width) benches from the top level of the applied mining lease area.

This method of mining is adopted on the basis of the concept of changing hill slopes within the proposed limits of mining the ultimate pit limit and restoring the area by making benches and pitting in the hill slopes thereby least disturbance of the area due to mining. Working in the applied mining lease area shall mostly be done by way of mechanical and semi-mechanical and wherever required, by manual operations however; no drilling blasting operations shall take place.

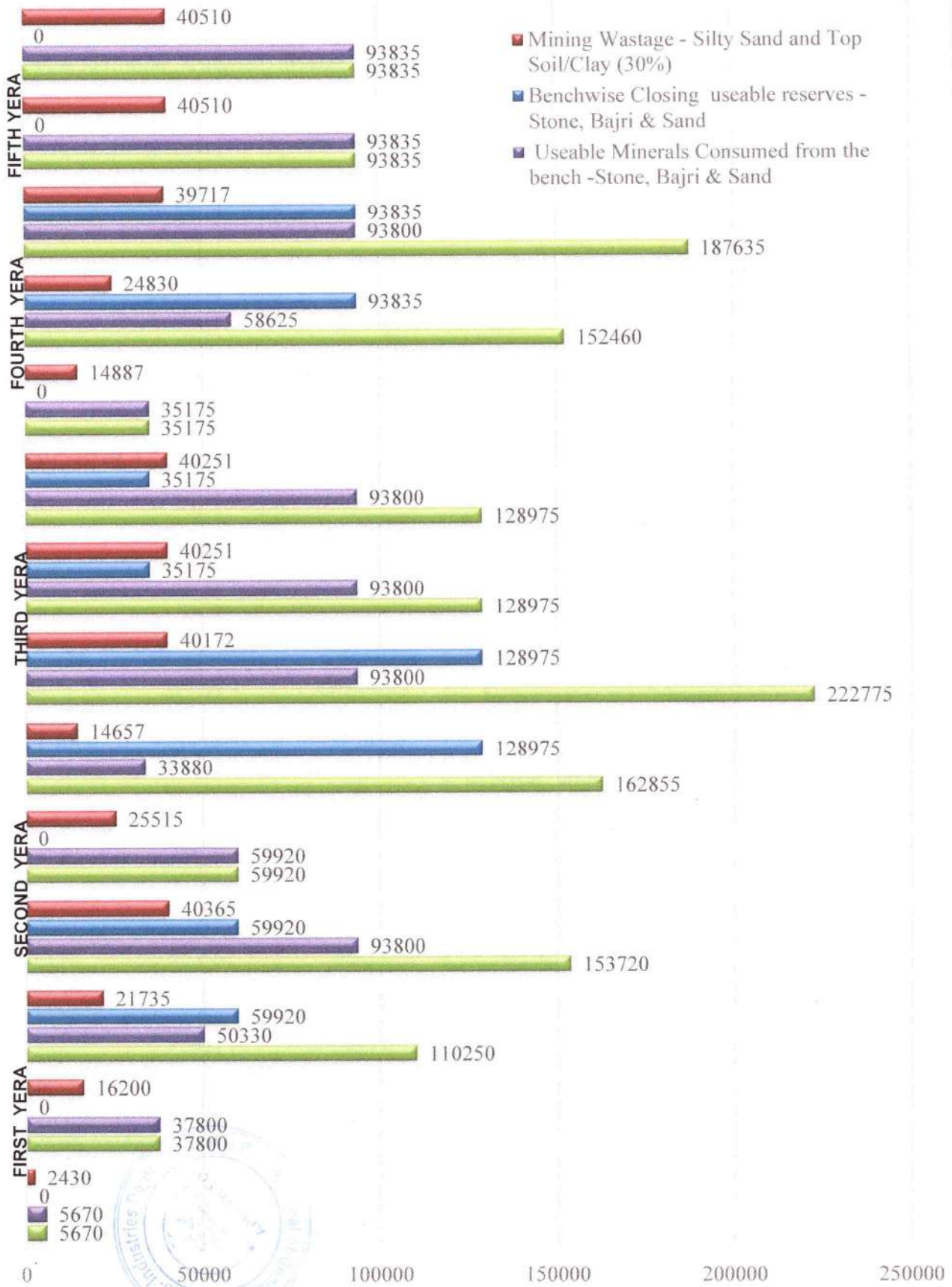
The slice plan of the applied mining lease area for five years of working is attached as Plate No. VII.

#### 4.2 DEVELOPMENT AND PRODUCTION PROGRAMME FOR THE FIRST FIVE YEARS Year-wise Production Programme: - (Refer Plate No. 8, 9, 10, 11, 12)

Details of the production of the stone from various benches from first to fifth year are given below:

Bench	Duration	RL of Bench	Benchwise Opening reserves of Useable Minerals- Stone, Bajri & Sand (70%)	Useable Minerals Consumed from the bench -Stone, Bajri & Sand	Benchwise Closing useable reserves - Stone, Bajri & Sand	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
No.	In Year	In meters	In MT	In MT	In MT	In MT
1, 2 & 3	First Year	524	5670	5670	0	2430
		518	37800	37800	0	16200
		512	110250	50330	59920	21735
		<b>Total</b>	<b>153720</b>	<b>93800</b>	<b>59920</b>	<b>40365</b>
3 & 4	Second Year	512	59920	59920	0	25515
		506	162855	33880	128975	14657
		<b>Total</b>	<b>222775</b>	<b>93800</b>	<b>128975</b>	<b>40172</b>
4	Third year	506	128975	93800	35175	40251
		<b>Total</b>	<b>128975</b>	<b>93800</b>	<b>35175</b>	<b>40251</b>
4 & 5	Fourth Year	506	35175	35175	0	14887
		500	152460	58625	93835	24820
		<b>Total</b>	<b>187635</b>	<b>93800</b>	<b>93835</b>	<b>39716</b>
5	Fifth Year	<b>500</b>	93835	93835	0	40510
		<b>Total</b>	<b>93835</b>	<b>93835</b>	<b>0</b>	<b>40510</b>

### 5 Year Proposed Mineral Production



Graph showing 5-Year Proposed Mineral Production

**4.3 YEAR-WISE PRODUCTION, OVERBURDEN, RUN OF MINE, SALEABLE MINERAL, MINERAL REJECTS/ MINE WASTE**

**4.3 (A) Developments and Production at the End of the 1st year (Plate No.-8)**

Annual production proposed to meet the requirement of the stone crusher unit would be around 93800 metric tonnes of mineral (Stone/Boulder & Bajri) for the 1st year. For this, a bench at 524, 518 and 512 m.R.L. shall be opened with total useable reserves of 153720 metric tonnes. The benches 524 and 518 m.R.L shall be fully exhausted and the bench at 512 m.R.L. shall be worked in part. Re-grassing and Plantation of bushes and local trees shall be done at the location marked as 'P-1" after spreading the soil cover. One number of check dams of 8 meters in length with 1.5 meters in height will be constructed at C-1 locations shown in Plate-8. The topsoil available on the surface shall be collected and stacked at the soil dump S-1 location and the waste material shall be dumped at the D.Y. location marked on Plate No. - 8.

Table showing activity during the 1st year

Bench	Duration	Rl of Bench	Benchwise Opening reserves of Useable Minerals-Stone, Bajri & Sand (70%)	Useable Minerals Consumed from the bench -Stone, Bajri & Sand	Benchwise Closing useable reserves - Stone, Bajri & Sand	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
1, 2 & 3	First Year	524	5670	5670	0	2430
		518	37800	37800	0	16200
		512	110250	50330	59920	21735
		<b>Total</b>	<b>153720</b>	<b>93800</b>	<b>59920</b>	<b>40365</b>



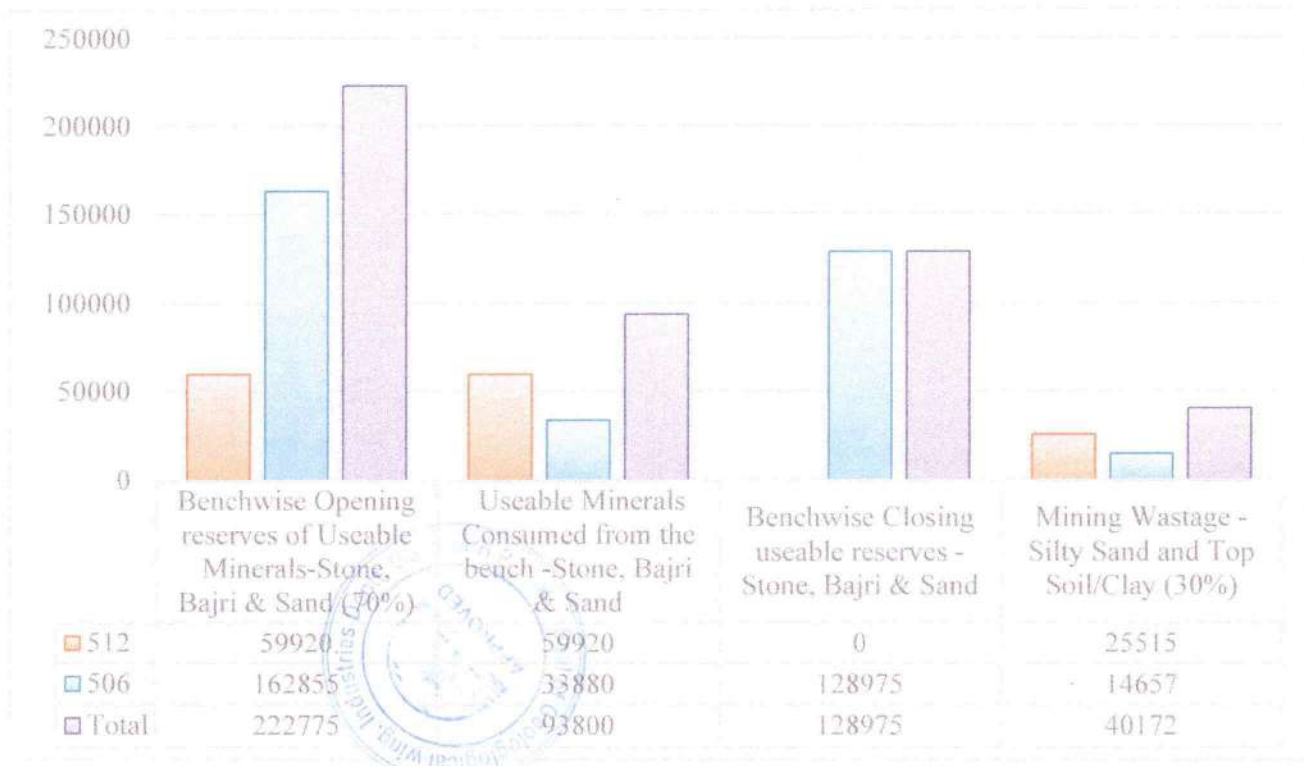
Graph Showing Reserves during 1st Year

**4.3 (B) Developments and Production at the End of the IInd year (Plate No.-9)**

During this year 93800 metric tonnes of mineral (Stone/Boulder & Bajri) production is proposed to meet the requirement of the stone crusher unit. To fulfil this requirement, the remaining material from the bench at 512 m.R.L. and a new bench at 506 m.R.L. shall be opened with total useable reserves of 222775 M.T. The bench at 512 m.R.L. shall be fully exhausted and the bench at 506 m.R.L. shall be partly worked and only 338800 M.T. shall be extracted. The remaining material of this bench shall be used in the next working year. The topsoil generated shall be dumped at the location marked on Plate No- 9 at soil dump S-2. Re-grassing and plantation of bushes and local trees will be done at location P-2 as shown on Plate No- 9. One check dam of 8.00 meters in length and 1.50 meters in height shall be raised at the C-2 location as marked on Plate No.- 9.

Table showing activity during the 2<sup>nd</sup> year

<b>Production Of Each Mineral in Second Year ( In MT)</b>						
<i>Bench</i>	<i>Duration</i>	<i>Rl of Bench</i>	<i>Benchwise Opening reserves of Useable Minerals-Stone, Bajri &amp; Sand (70%)</i>	<i>Useable Minerals Consumed from the bench -Stone, Bajri &amp; Sand</i>	<i>Benchwise Closing useable reserves - Stone, Bajri &amp; Sand</i>	<i>Mining Wastage - Silty Sand and Top Soil/Clay (30%)</i>
3 & 4	Second Year	512	59920	59920	0	25515
		506	162855	33880	128975	14657
		<b>Total</b>	<b>222775</b>	<b>93800</b>	<b>128975</b>	<b>40172</b>



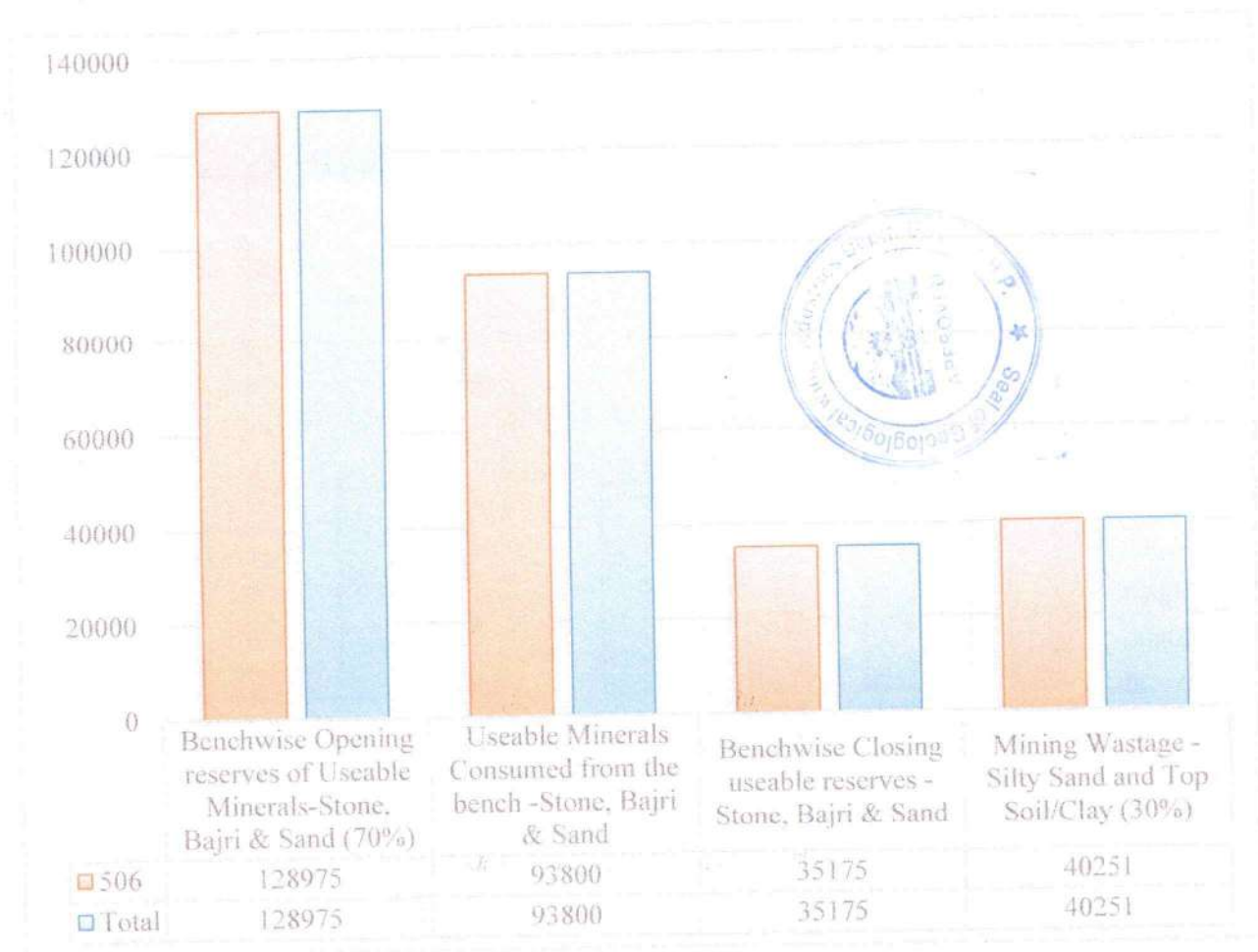
Graph Showing Reserves during 2<sup>nd</sup> Year

### 4.3 (C) Developments and Production at the End of the Third Year (Plate No.-10)

During this year, the material from 506 meters R.L. bench shall be extracted to meet the requirement of 93800 metric tonnes of mineral (Stone/Boulder & Bajri). These bench 506 m R.L. shall be partially exploited. The remaining material of this bench shall be used in the next working year. The topsoil generated shall be dumped at the location marked on Plate No.-10 at soil dump S-3. The previously dumped topsoil shall be lifted and spread over the exhausted benches. Re-grassing and Plantation shall be raised on this bench at the P-3 location. A check dam will be constructed with a length of 8.00 meters and 1.5 meters in height at the C-3 location.

Table showing activity during the 3rd year

Production Of Each Mineral in Third Year (In MT)						
Bench	Duration	Rl of Bench	Benchwise Opening reserves of Useable Minerals-Stone, Bajri & Sand (70%)	Useable Minerals Consumed from the bench - Stone, Bajri & Sand	Benchwise Closing useable reserves - Stone, Bajri & Sand	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
4	Third year	506	128975	93800	35175	40251
		<b>Total</b>	<b>128975</b>	<b>93800</b>	<b>35175</b>	<b>40251</b>



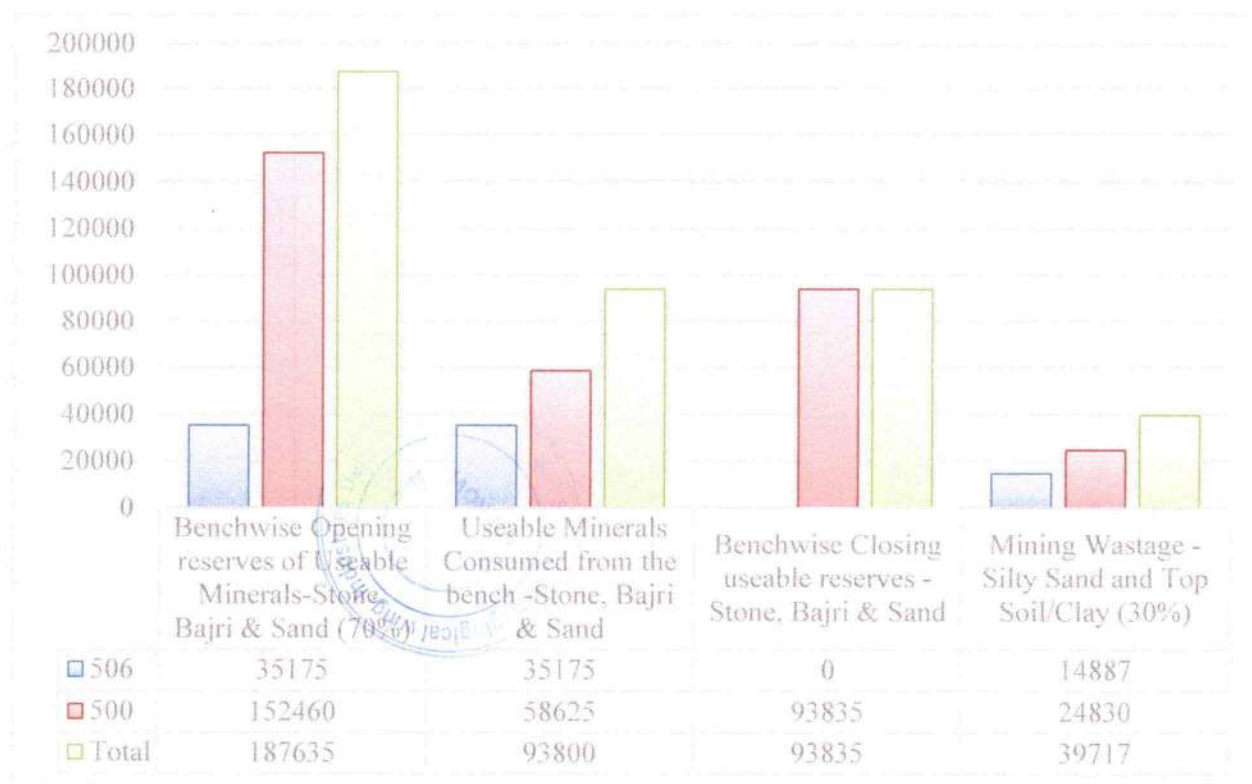
Graph Showing Reserves during 3<sup>rd</sup> Year

### 4.3 (D) Developments and Production at the End of the Fourth Year (Plate No.-11)

During this year 93800 metric tonnes of mineral (Stone/Boulder & Bajri) production is proposed to meet the requirement of the stone crusher unit. To fulfil this requirement, the remaining material from the bench at 506 m.R.L. and a new bench at 500 m.R.L. shall be opened with total useable reserves of 187635 M.T. The bench at 506 m.R.L. shall be fully exhausted and the bench at 500 m.R.L. shall be partly worked and only 58625 M.T. shall be extracted. The remaining material of this bench shall be used in the next working year. The topsoil generated shall be dumped at the location marked on Plate No-11 at soil dump S-4. Re-grassing and plantation of bushes and local trees will be done at location P-4 as shown on Plate No- 11. One check dam of 8.00 meters in length and 1.50 meters in height shall be raised at the C-4 location as marked on Plate No.- 11.

Table showing activity during the 4th year

Production Of Each Mineral in Fourth Year ( In MT)						
Bench	Duration	Rl of Bench	Benchwise Opening reserves of Useable Minerals-Stone, Bajri & Sand (70%)	Useable Minerals Consumed from the bench - Stone, Bajri & Sand	Benchwise Closing useable reserves - Stone, Bajri & Sand	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
4 & 5	Fourth Year	506	35175	35175	0	14887
		500	152460	58625	93835	24830
		<b>Total</b>	<b>187635</b>	<b>93800</b>	<b>93835</b>	<b>39717</b>



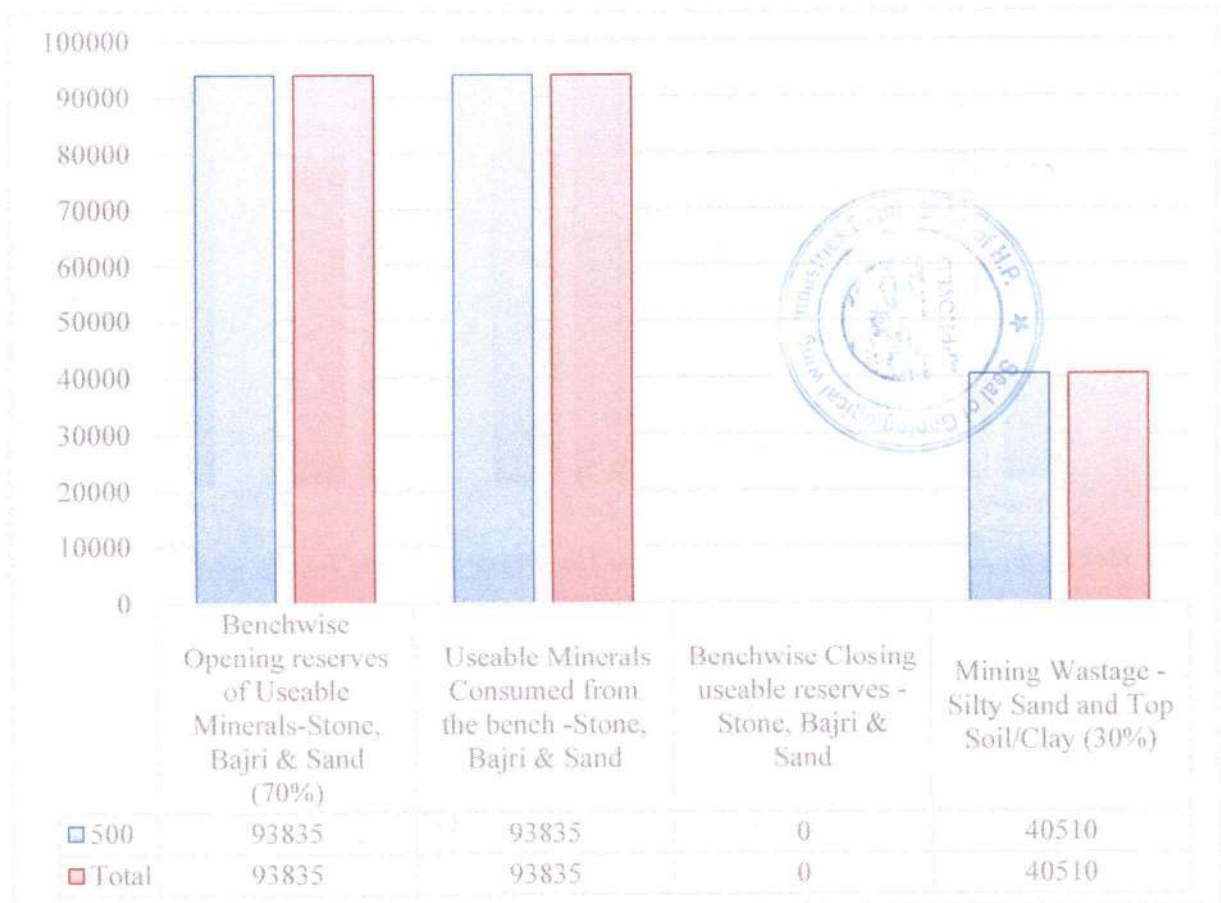
Graph Showing Reserves during 4<sup>th</sup> Year

**4.3(E) Developments and Production at the End of the Fifth Year (Plate No.-12)**

During this year, the whole remaining material to the tune of 93835 metric tonnes from the bench at 500 m.R.L. bench shall be extracted to meet the requirement of mineral(Stone/Boulder & Bajri). These bench 500 m R.L. shall be fully exploited. The topsoil generated shall be dumped at the location marked on Plate No.-12 at soil dump S-5. The previously dumped topsoil shall be lifted and spread over the exhausted benches. Re-grassing and Plantation shall be raised on this bench at the P-5 location. A check dam will be constructed with a length of 8.00 meters and 1.5 meters in height at the C-5 location.

Table showing activity during the 5th year

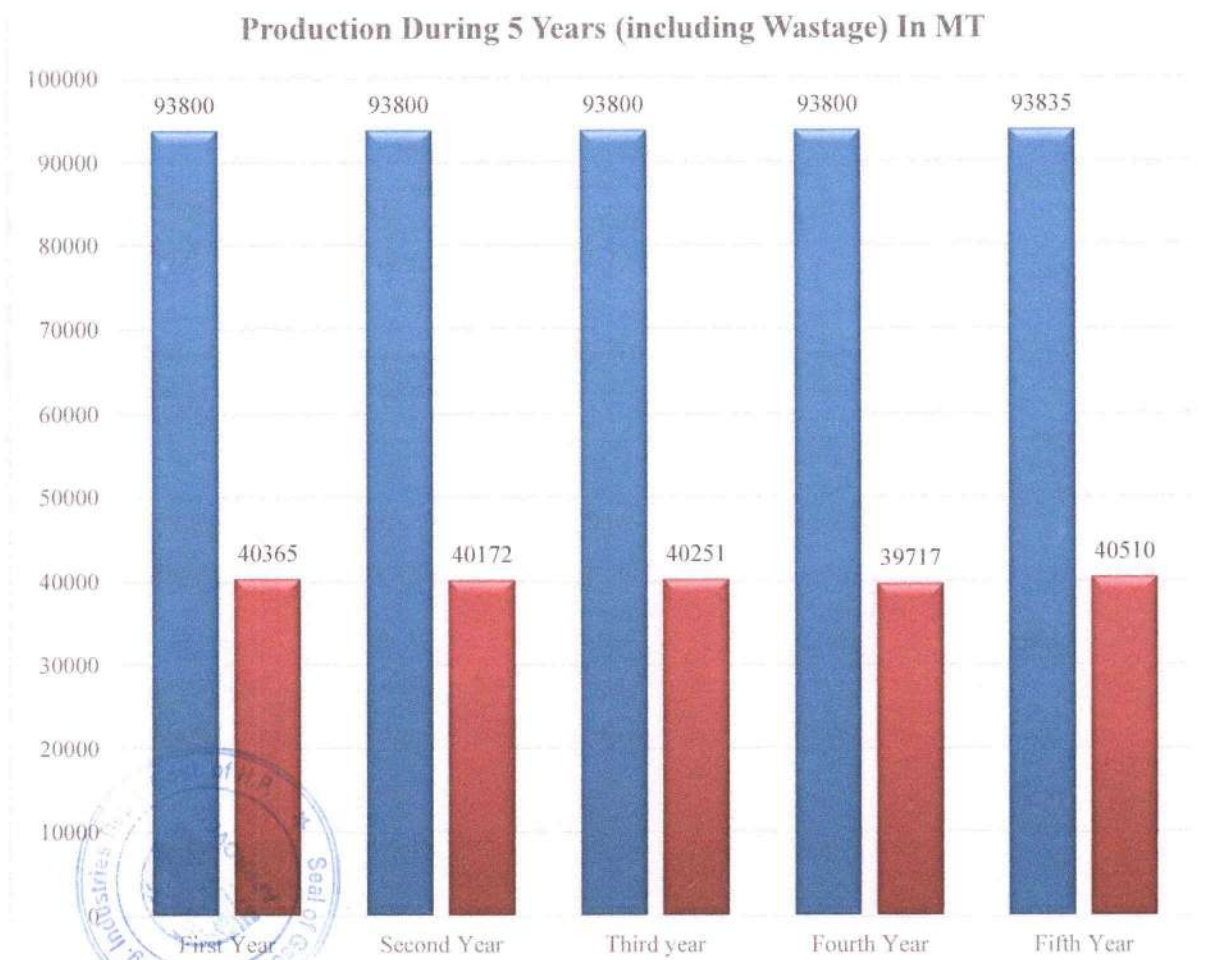
Production Of Each Mineral in Fifth Year ( In MT)						
Bench	Duration	Rl of Bench	Benchwise Opening reserves of Useable Minerals-Stone, Bajri & Sand (70%)	Useable Minerals Consumed from the bench - Stone, Bajri & Sand	Benchwise Closing useable reserves - Stone, Bajri & Sand	Mining Wastage - Silty Sand and Top Soil/Clay (30%)
5	Fifth Year	500	93835	93835	0	40510
		<b>Total</b>	<b>93835</b>	<b>93835</b>	<b>0</b>	<b>40510</b>



Graph Showing Reserves during the 5<sup>th</sup> Year

**4.4 Proposed Rate of Production of Minerals (including wastage) and the Expected Life of the Mine after its opening:**

Rate of Production when Mine is Fully Developed in Metric Tonnes					
YEAR	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR
Useable Mineral - Stone, Bajri & Sand (70%)	93800	93800	93800	93800	93835
Mine Waste Silty Sand and Top Soil/Clay (30%)	40365	40172	40251	39717	40510
<b>Total</b>	<b>134165</b>	<b>133972</b>	<b>134051</b>	<b>133517</b>	<b>134345</b>



**Graph Showing the Rate of Production of Mineral and Mine Waste (In Metric Tonnes) when the mine is fully developed**

**4.5 Balance Material Available in the Area after Five Years of Progressive Mining and Estimated Year of Mine Closure**

As per the reserves calculated in the mining lease area, approximately 670050 metric tonnes of proved material (including waste) is available and as per the proposed rate of production, this material shall be utilized in Five years. If the mining lease holder shall work as per the proposed production, the life of the mine would be Five (05) years.

#### **4.6 Salient Feature of Mode of Working**

The mining shall be done mechanically by using excavators/poclains/Back Hoe Loaders as well as manually by developing Six meters face height benches. No blasting shall be carried out without permission from the competent authorities.

#### **4.7 Extent of Mechanization**

The material shall be extracted with the help of a mechanical excavator like a backhoe loader or chain-mounted excavator as well as by manual labour. The mechanical mining shall be done only after obtaining the necessary permission from the competent authorities.

#### **4.8 Blasting**

As of now, no blasting is proposed for the excavation of minor minerals from the mining lease area.

#### **4.9 Mine Drainage**

The area is a hill slope and after mining there is a sufficient slope where the rainwater shall go down and hence no specific drainage design is required. There is no water or seepage/ spring within the applied lease area which is required to be channelized. Also, as per the data obtained from the IPH department groundwater level is about 100-120 feet below the surface level and hence there is no chance of the groundwater level being encountered or disturbed due to mining.

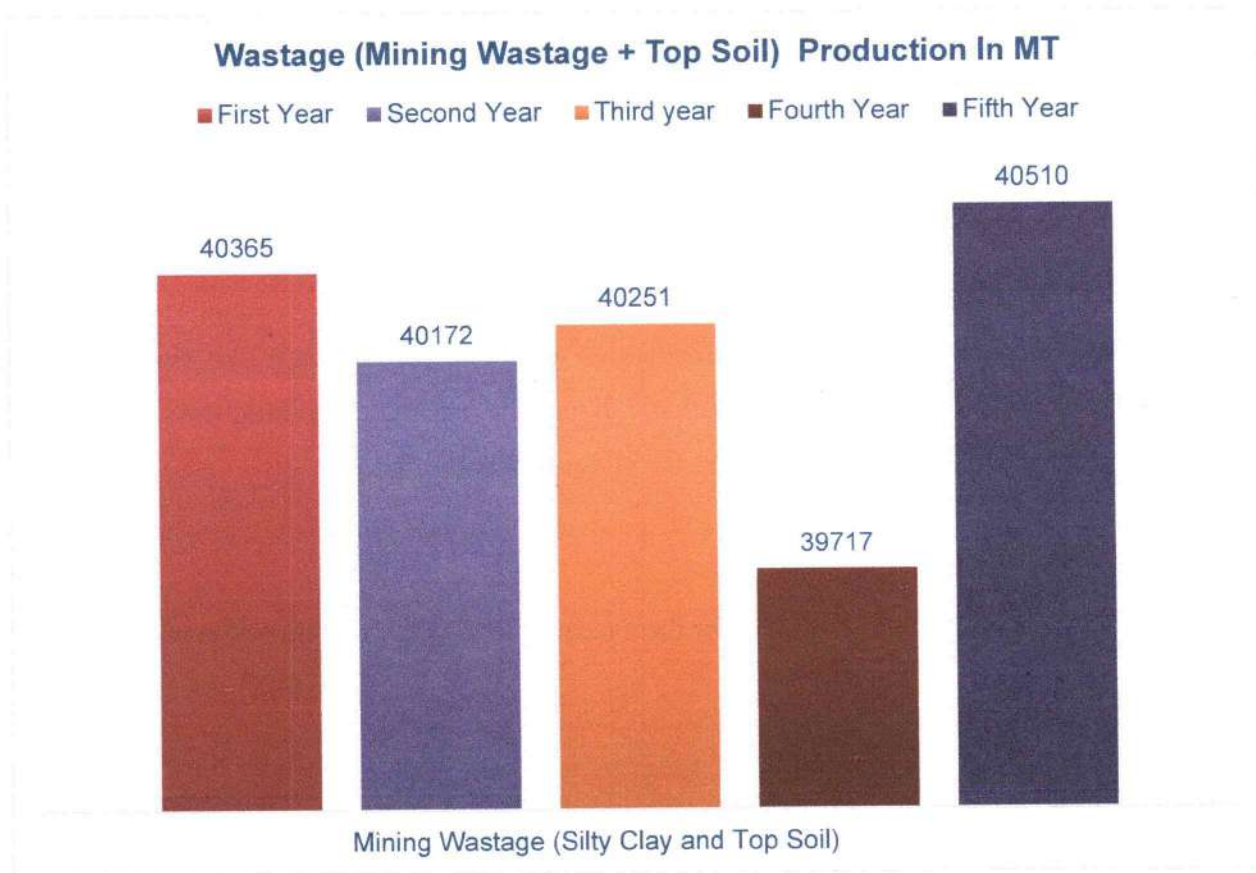
#### **4.10 Waste Management**

The open cast mining has been proposed in view of the hilly nature of the site. During the opening of benches, 40000 metric tonnes of silt mixed clay/soil and mining wastage shall be generated every year. The waste material shall be dumped at DY (Waste) within the applied mining lease area in the respective year-wise specific locations shown as plates No 8 to 12. The waste material/Topsoil shall be dumped in the dumps and shall be spread over the worked-out benches for raising plantation.

The year-wise silt mixed clay and topsoil generated is as under.

*Table Showing Year-wise Wastage generated in 5 years*

<b>Mine Waste During 05 Years of Production in Metric Tonnes</b>					
YEAR	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR
Mine Waste	40365	40172	40251	39717	40510



*Graph Showing year wise Top Soil generated during 5 years period in Metric Tonnes*

A part of this material could be marketable as filling material as per demand. However, the remaining material that is not marketable shall be dumped or spread over the benches for plantation or for the development of agriculture fields.

#### 4.11 End Use of Minerals

The extracted minor minerals shall be used in the already established Stone Crusher unit of the applicant in the name and style as “**M/s Lakhwinder Singh Stone Crusher and Screening Plant Unit-III**” for manufacturing of Grit and manufactured Sand (M-Sand).

#### 4.12 Details of Density of Road Transportation of Minerals

The area applied for grant of mining lease is Hill Slope and there is very no traffic from the mining lease area to the stone crusher site. As per the proposed production of average 93800 metric tonnes of useable material (excluding Silt and waste), shall be transported in a year by trucks. At this rate, only 340-350 metric tonnes of material shall be transported at an average per day (Total working days 270/year) for which an average 20-25 trucks with 15 M.T. capacity are required.

## **PART –II**

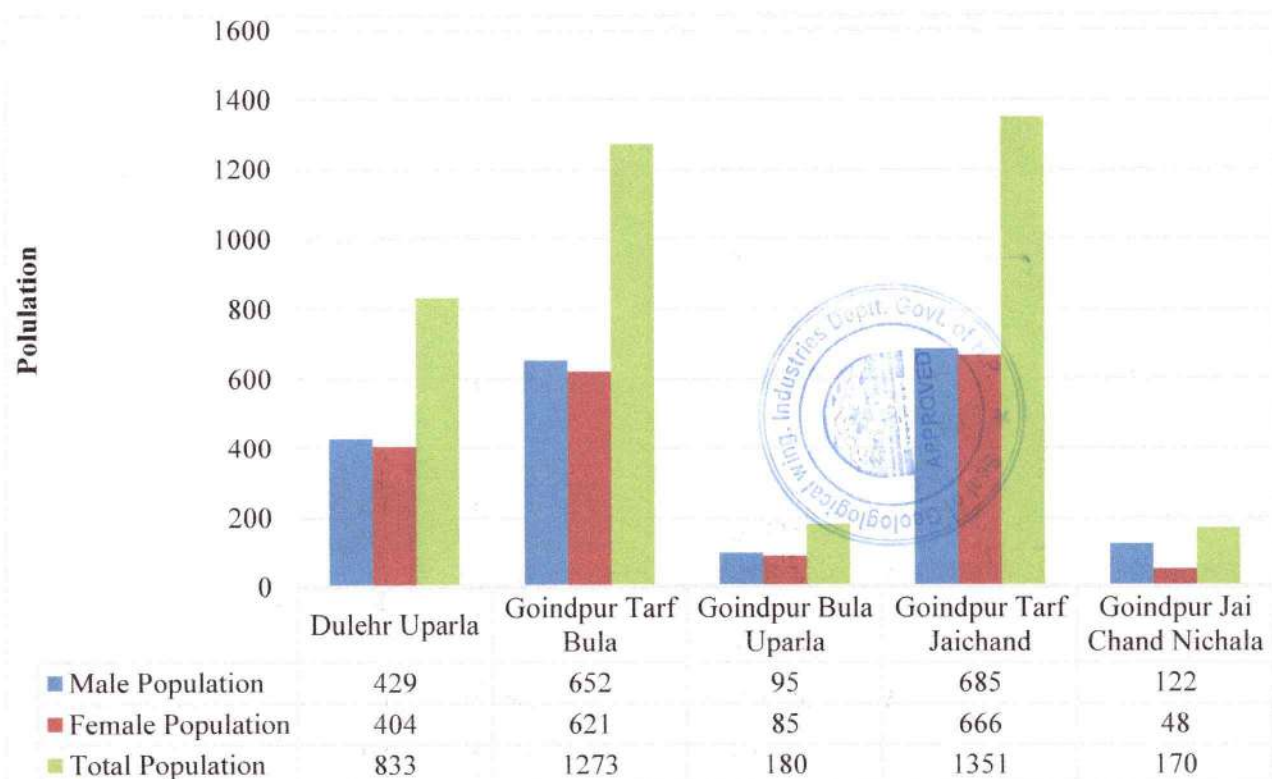
### **ENVIRONMENT MANAGEMENT PLAN**

#### **(1) BASE LINE DATA**

##### **1.1. Detail of Population Distribution**

*Table Showing Details of Population Distribution*

Sr. No.	Name of Villages	Male Population	Female Population	Total Population
1	Dulehr Uparla	429	404	833
2	Goindpur Tarf Bula	652	621	1273
3	Goindpur Bula Uparla	95	85	180
4	Goindpur Tarf Jaichand	685	666	1351
5	Goindpur Jai Chand Nichala	122	48	170



*Graph Showing Details of Population Distribution*

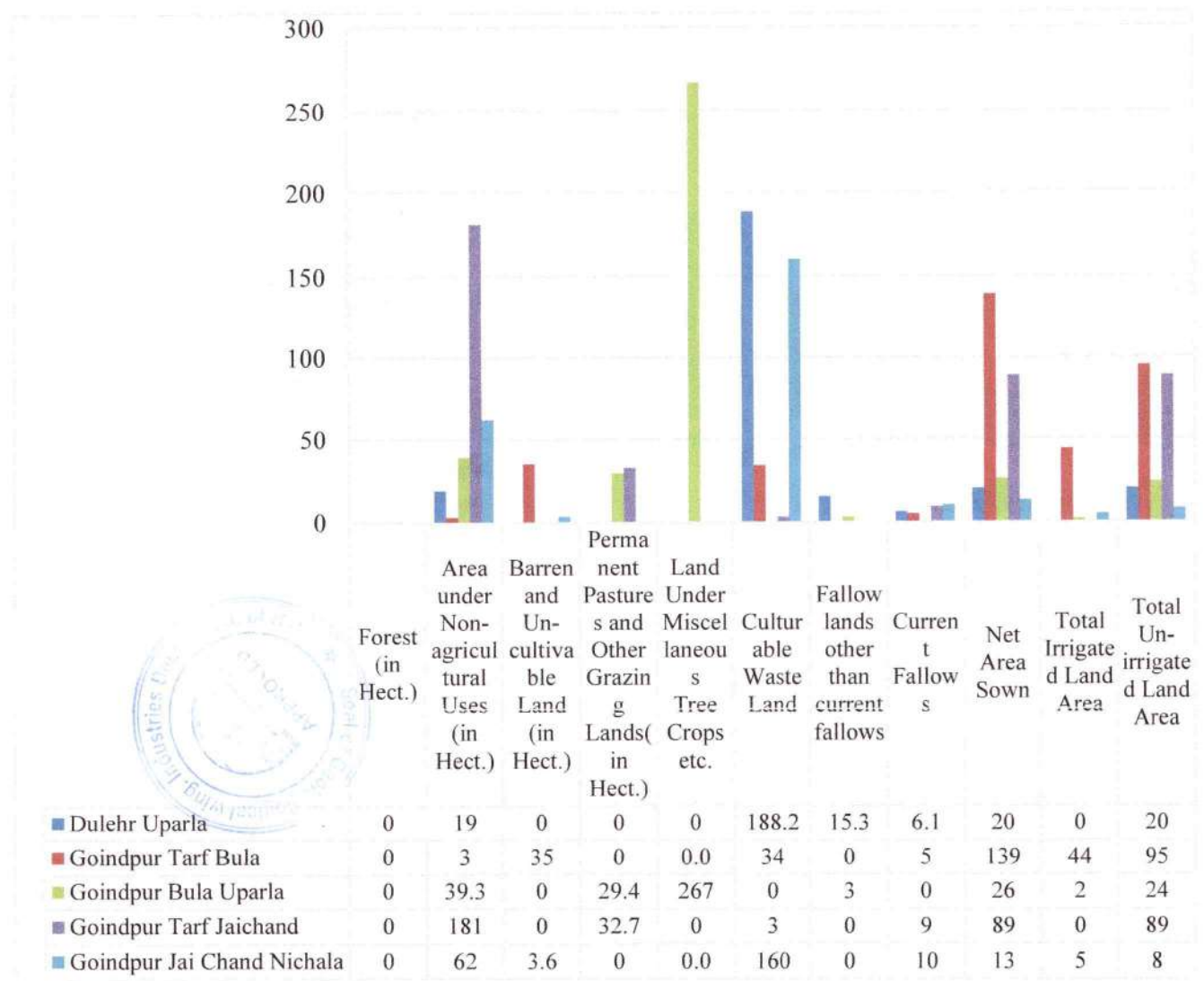
#### **1.2 SOCIO-ECONOMY OF THE VILLAGE:**

The general economy of the village is agriculture and animal husbandry based and people go to find job opportunities in far-flung industrial areas outside the state of Himachal as there is no industry in the nearby areas. Therefore, any job opportunity created by any entrepreneur may be of a small magnitude and shall add to the economy of the people. The people who are offered jobs in the mining shall be local employment at the door and such workers in the off hours, shall be able to look after their retinue agriculture and livestock.

**1.3 LAND USE DETAIL WITH 5 KMS.RADIUS: (ENCLOSED AS PLATE NO. – II)**

*Table Showing Details of the Land use Pattern of the Surrounding Villages*

<b>Table Showing Details of the Land use Pattern of the Surrounding Villages</b>												
Sr. No.	Name of Villages	Forest (in Hect.)	Area under Non-agricultural Uses (in Hect.)	Barren and Un-cultivable Land (in Hect.)	Permanent Pastures and Other Grazing Lands(in Hect.)	Land Under Miscellaneous Tree Crops etc.	Culturable Waste Land	Fallow lands other than current fallows	Current Fallows	Net Area Sown	Total Irrigated Land Area	Total Un-irrigated Land Area
1	Dulehr Uparla	0	19	0	0	0	188.2	15.3	6.1	20	0	20
2	Goindpur Tarf Bula	0	3	35	0	0.0	34	0	5	139	44	95
3	Goindpur Bula Uparla	0	39.3	0	29.4	267	0	3	0	26	2	24
4	Goindpur Tarf Jaichand	0	181	0	32.7	0	3	0	9	89	0	89
5	Goindpur Jai Chand Nichala	0	62	3.6	0	0.0	160	0	10	13	5	8

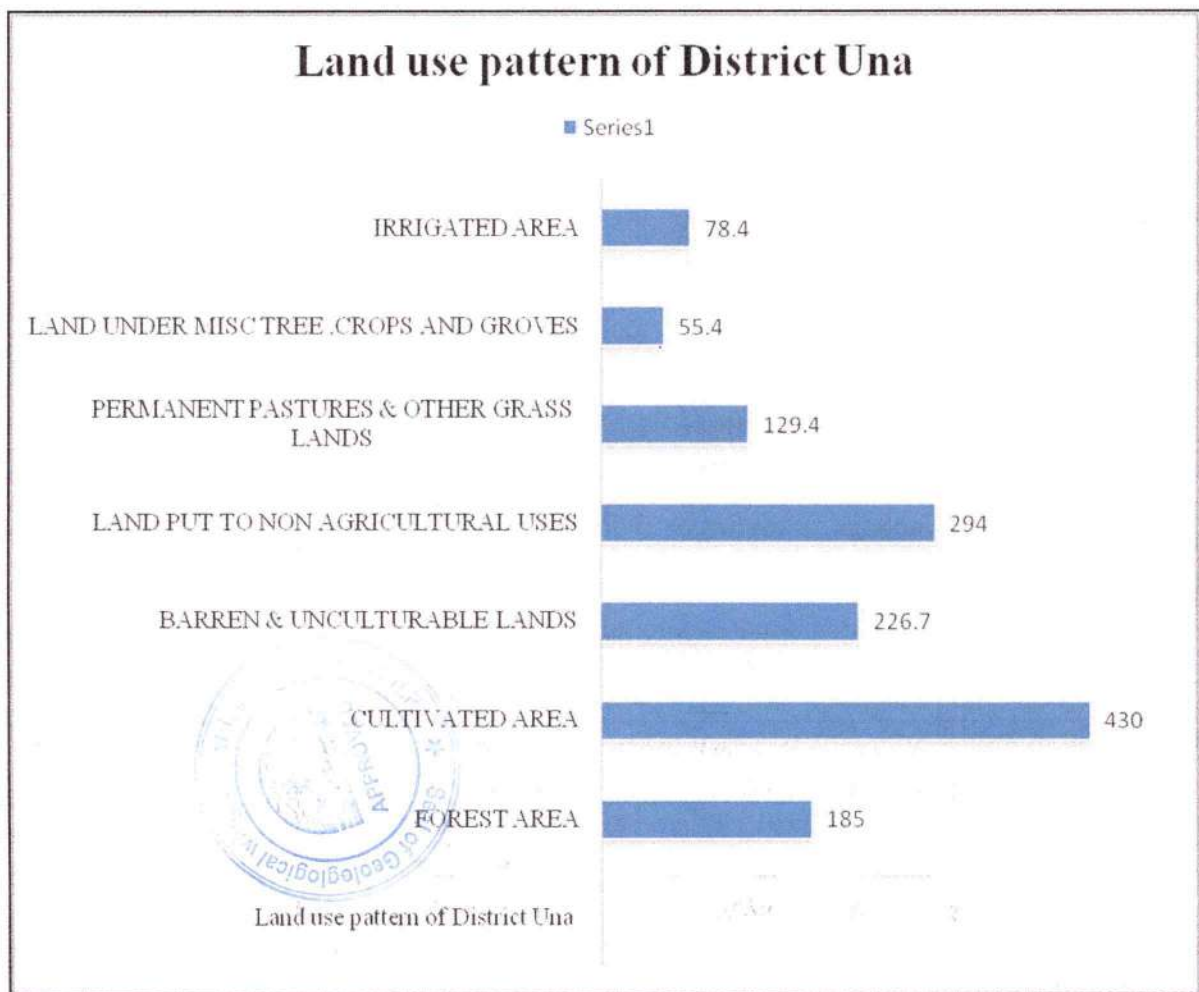


*Graph Showing General Land Use Pattern of Surrounding Villages*

The fact file of the district, classified the land available in district Una into 7 categories as shown below:

Table showing different categories of land available in district Una

GEOGRAPHICAL AREA		1549 m <sup>2</sup>
1	FOREST AREA	185 m <sup>2</sup>
2	CULTIVATED AREA	430 m <sup>2</sup>
3	BARREN & UNCULTURABLE LANDS	226.7 m <sup>2</sup>
4	LAND PUT TO NON-AGRICULTURAL USES	294 m <sup>2</sup>
5	PERMANENT PASTURES & OTHER GRASSLANDS	129.4 m <sup>2</sup>
6	LAND UNDER MISC TREE, CROPS AND GROVES	55.4 m <sup>2</sup>
7	IRRIGATED AREA	78.4 m <sup>2</sup>



Graph Showing General Land Use Pattern of Surrounding Villages

#### 1.4 AGRICULTURE

Agriculture is the main occupation of the people of the district. It provides direct employment to the major chunk of the working population. The Department of Agriculture continued its endeavours to bring more area under high-yielding varieties of major cereals. Keeping in view the requirement of disease-free and quality seeds, a seed mortification farm at Pekhubela was started in the district during the year 1974 since then seeds such as wheat, maize, pulses, soya bean, barley, toria and sunflower etc. have been supplied to the farmers. To maintain the quality of seeds, the H.P. Seeds certification agency has its agency functioning in the district since 1978-79. H.P. Agricultural University, Palampur is running one of its research centres in the district at Akhrot. The supply of fertilizers is arranged by the Area Manager of HIMFED, who in turn supplies fertilizers to the District Co-Op. Marketing and Consumers Federation Ltd. Una. The economy is mostly agrarian and the majority of the population depends on agriculture and activities allied to it for earning their lively hood. Most of the land is un-irrigated and depends upon the rainy season. Part of the lands are irrigated and the irrigation facilities are provided by lifting water from streams, shallow Dug wells and medium to deep tube wells in the valley area.

The farmers grow more than two crops in a year so as to get maximum production from the land. The crop rotation followed in the district is:

- I. Maize- Toria-Wheat
- II. Maize-Potato-Potato
- III. Maize- Toria-Wheat-Baisakhi Moong
- IV Paddy Wheat
- V Maize-Wheat

Wheat and Maize are major crops of the district. These are followed by the gram, Paddy and other pulses. Besides these, Barley, Ragi, Mustered, Seasmum and Sugarcane are also grown in the district. Peas, Carrots, Cabbage, Ladyfinger, Tomato, Brinjal, Capsicum, Cauliflower, Cucumber, Pumpkin etc. Vegetables are also grown. About 95% of the total cultivable area in the district is rain-fed. Hence the production of the district mainly depends upon rain.

*Table showing various agriculture crops in District Una*

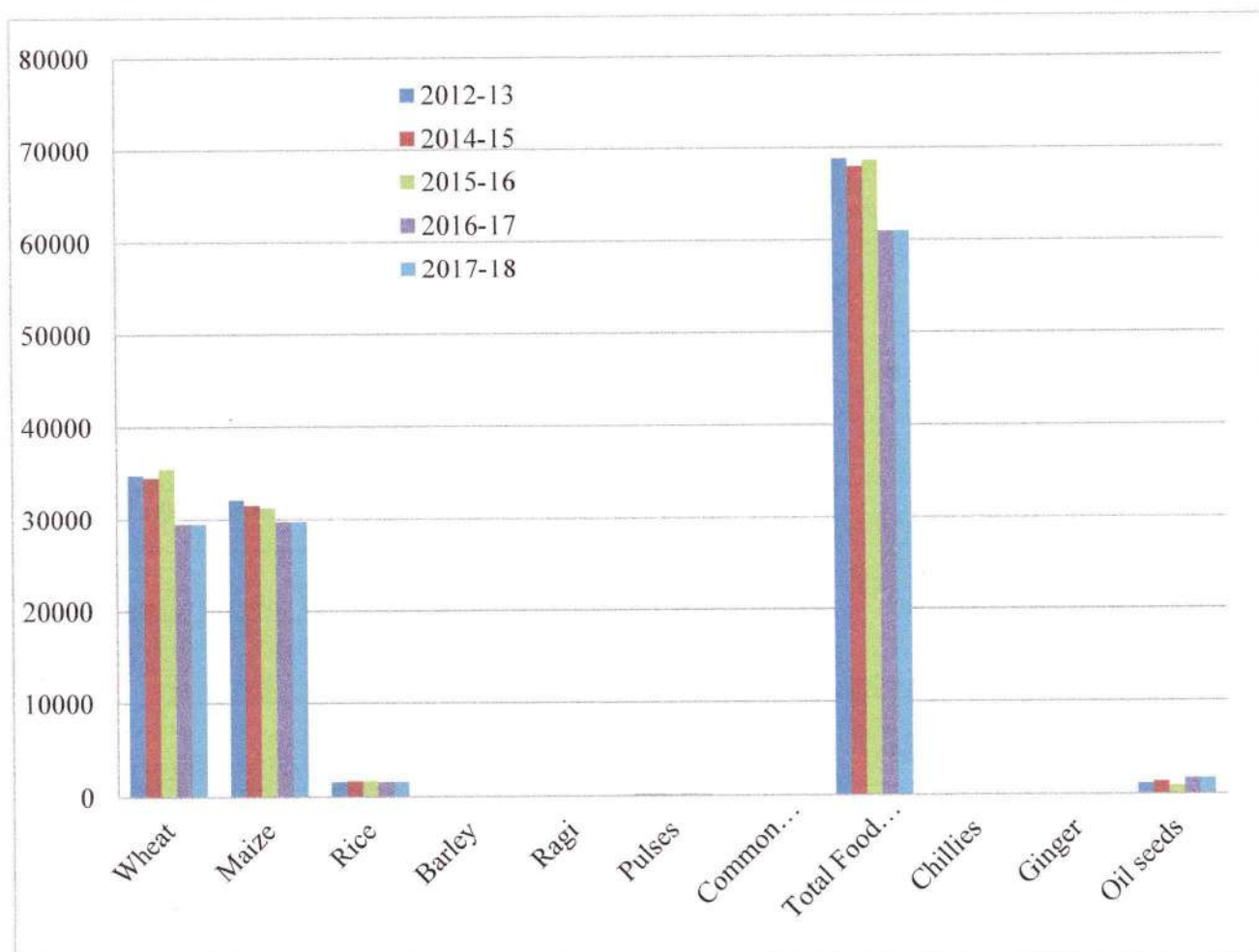
June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Maize			Wheat			Maize					
Maize			Toria			Wheat			Maize		
Maize			Potato			Wheat			Maize		
Maize			Potato			Potato			Maize		

Bhindi	Cauliflower	French bean/ Tomato/ brinjal/ Capsicum Cucubits
Sesame	Sarson/Raya/G.Sarson	
Ginger/Caucasia/Turmeric	Potato	Wheat Ginger
Paddy	Wheat	
Paddy	Barseem	
Paddy	Potato	
Kulthi Mash	B. Sarson/Raya/G. Sarson/Taramira(Eruca Sativa)	
Mash	Wheat	
Maize+ Mash	Wheat	
Arhar		

Table showing area under Different Crops in Hectares

Year	Wheat	Maize	Rice	Barley	Ragi	Pulses	Common millets	Total Foodgrains	Chillies	Ginger	Oil seeds
2012-13	34836	32157	1587	...	...	192	...	68772	8	1	1113
2014-15	34587	31548	1663	2	...	155	...	67955	8	2	1343
2015-16	35497	31279	1685	...	...	151	...	68612	2	2	888
2016-17	29476	29716	1600	...	...	172	...	60964	3	3	1706
2017-18	29476	29716	1600	...	...	172	...	60964	3	3	1706

Source: Directorate of Land Records, HP



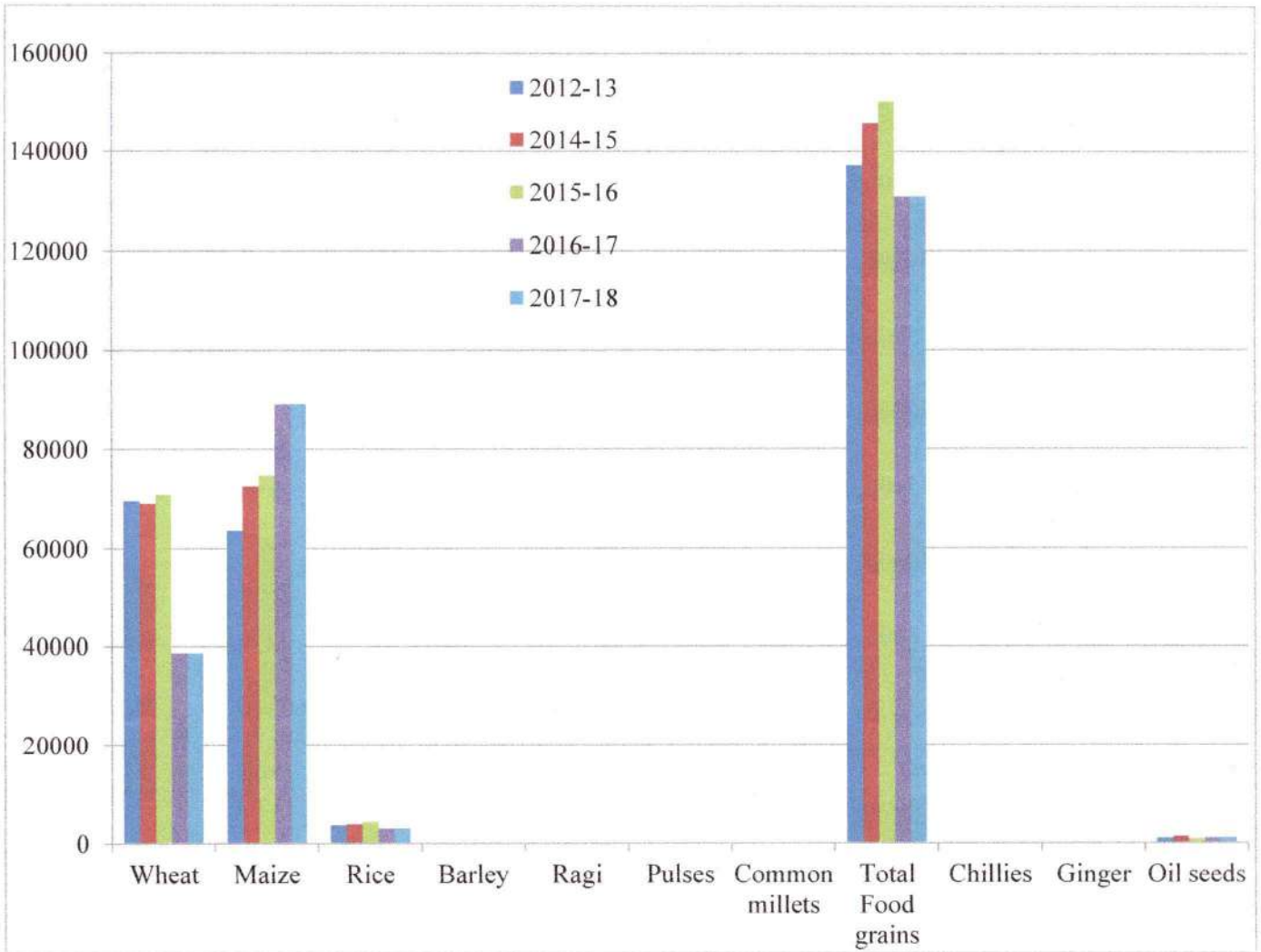
Graph Showing Area under Different Crops in Hectares

Table showing Production of Different Crops in MT

Table showing Production of Different Crops in MT at Una District

Year	Wheat	Maize	Rice	Barley	Ragi	Pulses	Common millets	Total Foodgrains	Chillies	Ginger	Oil seeds
2012-13	69667	63630	3720	...	...	122	...	137139	4	7	963
2014-15	69039	72673	3838	3	...	97	...	145650	4	14	1281
2015-16	70855	74789	4346	...	...	125	...	150115	1	14	870
2016-17	38603	89057	2985	...	...	147	...	130792	1	15	1039
2017-18	38603	89057	2985	...	...	148	...	130792	1	15	1039

Source: Directorate of Land Records, HP

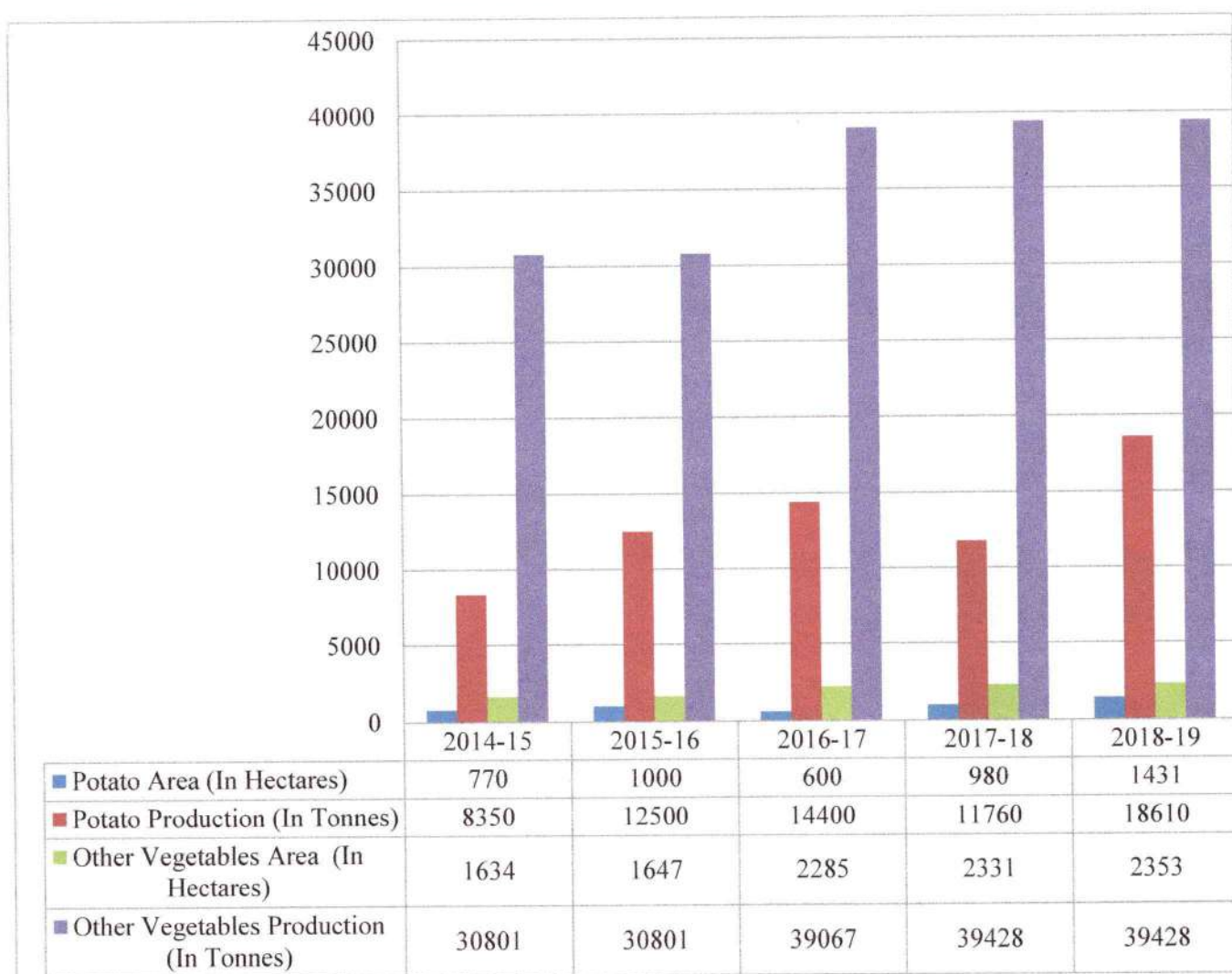


Graph Showing Production of Different Crops in MT

Table showing Area & Production of Vegetables in Tonnes

Area & Production of Vegetables (District - Una)				
Year	Potato		Other Vegetables	
	Area (In Hectares)	Production (In Tonnes)	Area (In Hectares)	Production (In Tonnes)
2014-15	770	8350	1634	30801
2015-16	1000	12500	1647	30801
2016-17	600	14400	2285	39067
2017-18	980	11760	2331	39428
2018-19	1431	18610	2353	39428

Source: Directorate of Land Records, HP

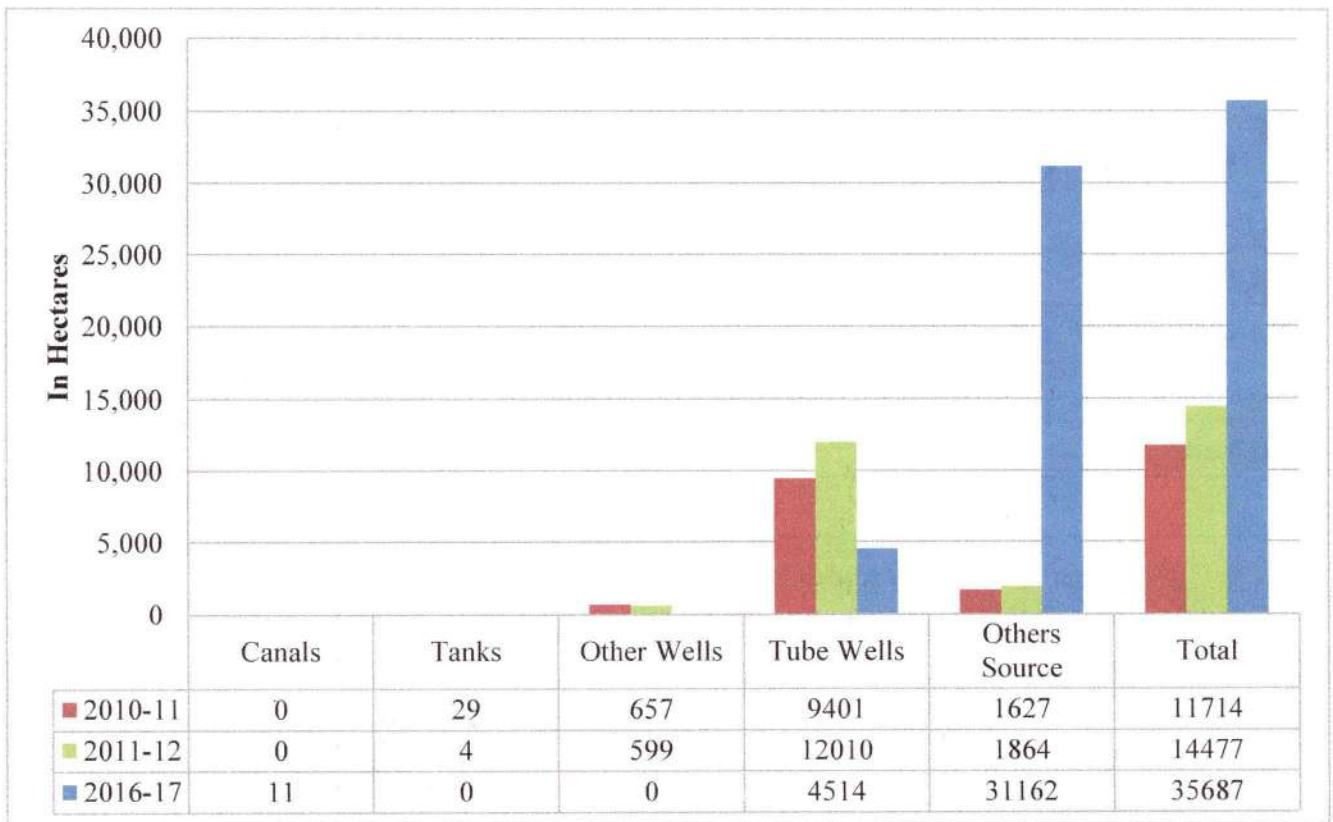


Graph showing the production of vegetables in District Una

Table showing Net Irrigated Area of Una District by source in Hectares

Year	Canals	Tanks	Other Wells	Tube Wells	Others Source	Total
2010-11	...	29	657	9401	1627	11714
2011-12	...	4	599	12010	1864	14477
2016-17	11	...	...	4514	31162	35687

Source: Directorate of Land Records, HP



Showing the Net Irrigated Area of the District Una from 2010 to 2017

### 1.5 HORTICULTURE

In the Una district, there is a vast scope in the field of development of horticulture activity and the department of horticulture is engaged to popularise horticulture in the district. During 1980-81, 1,335 hectares of land was under horticulture which rose to 3,468 hectares in 1988-89. 113,730 fruit plants of various varieties were distributed on subsidized rates to farmers in 1988-89. This number was much higher in comparison to 69,394 plants distributed in 1980-81. During the years 1985-86, the Horticulture Department recorded 766 tonnes of production in various fruit crops which went up to 2220 tonnes in 1988-89.

The main fruit crops which are grown in the district are citrus. Mango, guava and pear besides other subtropical fruits. The department provides technical guidance to the farmers at the block level. Pesticides and fertilizers are being supplied by the Agriculture Department through cooperative societies. In the district, there is only one Progeny-cum-demonstration orchard at Saloh which has an area of 34.29 hectares.

The following important fruits are grown in the district:

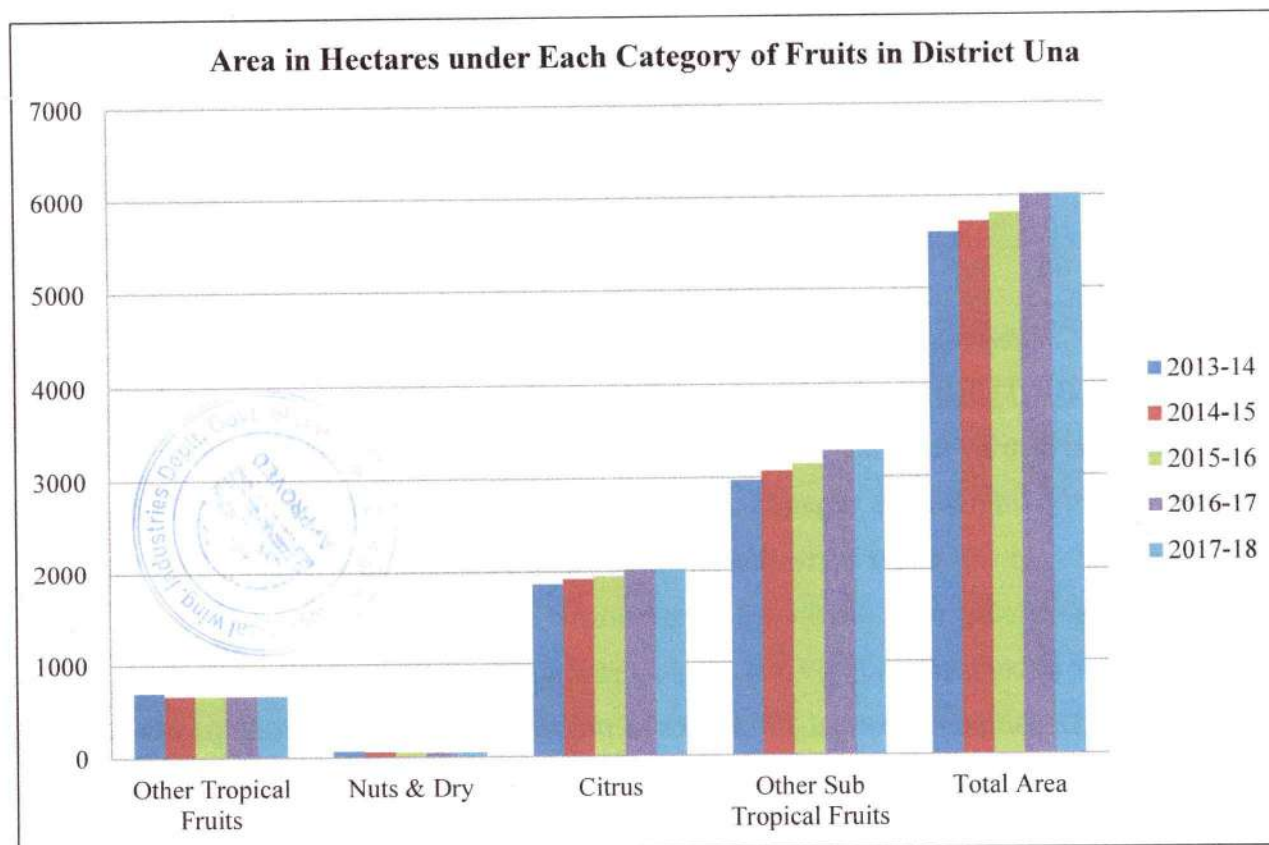
- |  |                  |
|--|------------------|
| I Plum   | II. Peach        |
| III. Apricot   | IV. Pear         |
| V Nuts and dry fruits  | VI Citrus fruits |
| VII. Sub Tropical fruits like Mango, Guava, Lichi, Papaya etc. |                  |



Table showing area under Each Category of Fruits in District Una

Table showing Area (In Hectares) under Each Category of Fruits in Una					
Year	Other Tropical Fruits	Nuts & Dry	Citrus	Other Sub Tropical Fruits	Total Area
2013-14	707	66	1860	2973	5606
2014-15	673	57	1921	3066	5717
2015-16	671	53	1950	3145	5819
2016-17	671	48	2020	3281	6020
2017-18	671	48	2020	3281	6020

Source: Directorate of Horticulture, HP



Graph Showing Area under Each Category of Fruits in District Una

## 1.6 ANIMAL HUSBANDRY

The economy of the district is predominantly agrarian but the role of Animal Husbandry is equally important as the farmers have to keep the cattle for the purpose of ploughing manure for maintaining the fertility of the fields and to meet the daily need for milk of their family. Livestock rearing forms the backbone of the agriculturists of this District. A major chunk of the population of the District depends wholly on Agriculture and animal husbandry.

The Department of Animal Husbandry is putting its best efforts into improving the potential of livestock and poultry in the district through treatment, management feeding and artificial

insemination, and distribution of improved breeds. To provide the farmers with veterinary facilities the department has established 13 veterinary hospitals, 27 veterinary dispensaries, 3 sub-centres, 4 veterinary check posts, one mobile dispensary and 2 sub-centres. Veterinary check posts to undertake vaccination of all the livestock entering the State against Rinderpest which is a highly fatal disease for cattle. To improve the existing breeds of cattle particularly buffaloes 31 veterinary institutions provide artificial insemination services. The scarcity of fodder in the District is the main hindrance to the farmers in rearing the animals. To solve this problem the farmer have been educated to utilize the edges of their fields for fodder to increase the production of fodder oats, maize, and barseem seeds have been distributed free of cost to the respective seasons.

The poultry farm at Ajouli, which prior to 1969 was managed by the Panchayat Samiti is under the control of the Department of Animal Husbandry. To make the poultry more popular at Ajouli-Farm, which is about 16 kilometres from the district, headquarters distributed 5,780 layers and 8.096 broilers to the farmers during the year 1989-90. This farm not only has trained 62 young farmers in poultry production, and management but has also provided regular vaccination against common diseases and spraying with insecticides to control ectoparasites in private poultry farms through the staff. Milk production in the State has increased manifolds in recent years. As per the livestock Census Himachal Pradesh during 1987, 1992 and 1997 given the

Following livestock in the district:

- |              |            |
|--------------|------------|
| I. Cow       | II. Ox     |
| III. Buffalo | IV. Sheep  |
| V. Goat      | VI. Ponies |

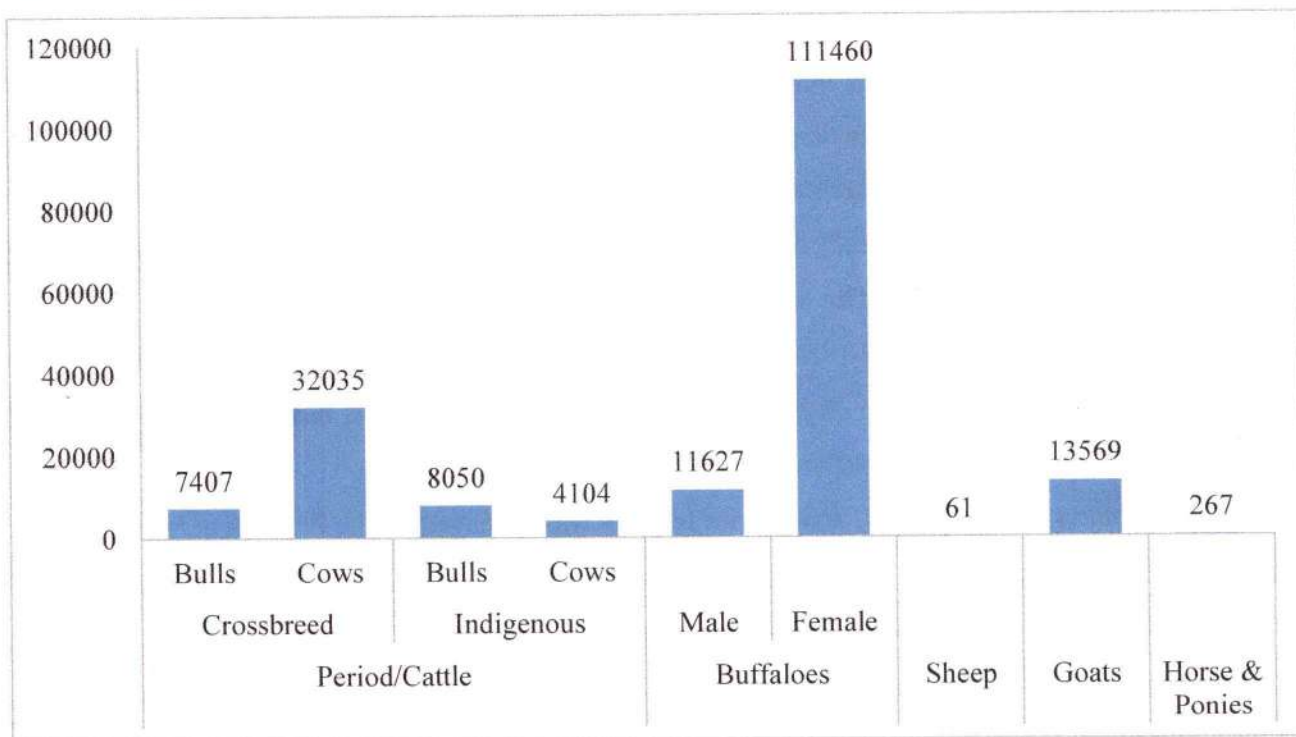
The following are important poultry birds:

- |         |                  |
|---------|------------------|
| I. Fowl | II. Ducks (Rare) |
|---------|------------------|

*Table showing Livestock census of District Una*

<b>Animal Husbandry Population in District Una</b>										
Year	Status	Period/Cattle				Buffaloes		Sheep	Goats	Horse & Ponies
		Crossbreed		Indigenous		Male	Female			
		Bulls	Cows	Bulls	Cows					
2012	At Una	7407	32035	8050	4104	11627	111460	61	13569	267

Source: Directorate of Animal Husbandry, HP

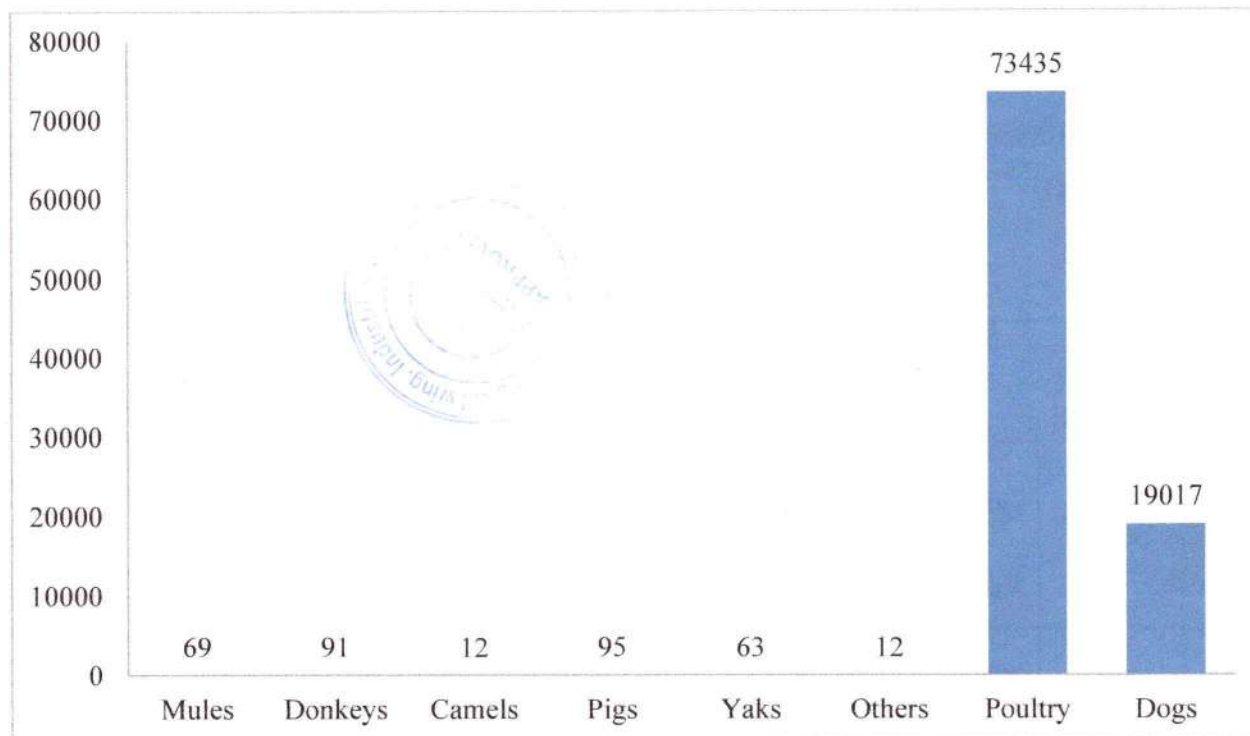


Graph Showing Livestock Census of the Una District

Table showing other Livestock census of District Una

Other Livestock							
Mules	Donkeys	Camels	Pigs	Yaks	Others	Poultry	Dogs
69	91	12	95	63	12	73435	19017

Source: Directorate of Animal Husbandry, HP



Graph Showing another Livestock census of the Una District

## 1.7 FISHERIES

Una is a foothill district with an arid zone and scanty rains. In natural fisheries resources, this district comprises a portion of the Gobind Sagar reservoir falling in the District. Lunkar Khad spread from Dumkhar to Bhakra from where considerable fish production is achieved.

There are about 130 seasonal and perennial ponds measuring about 65 hectares area in the district which have been brought under the fish culture through different schemes. To popularize the fish culture in the district, training has been imparted to fish farmers at, Seed Farm Deoli in Bilaspur district and at various places fish farmers training camps were organized by the Fish Farmers Development Agency.

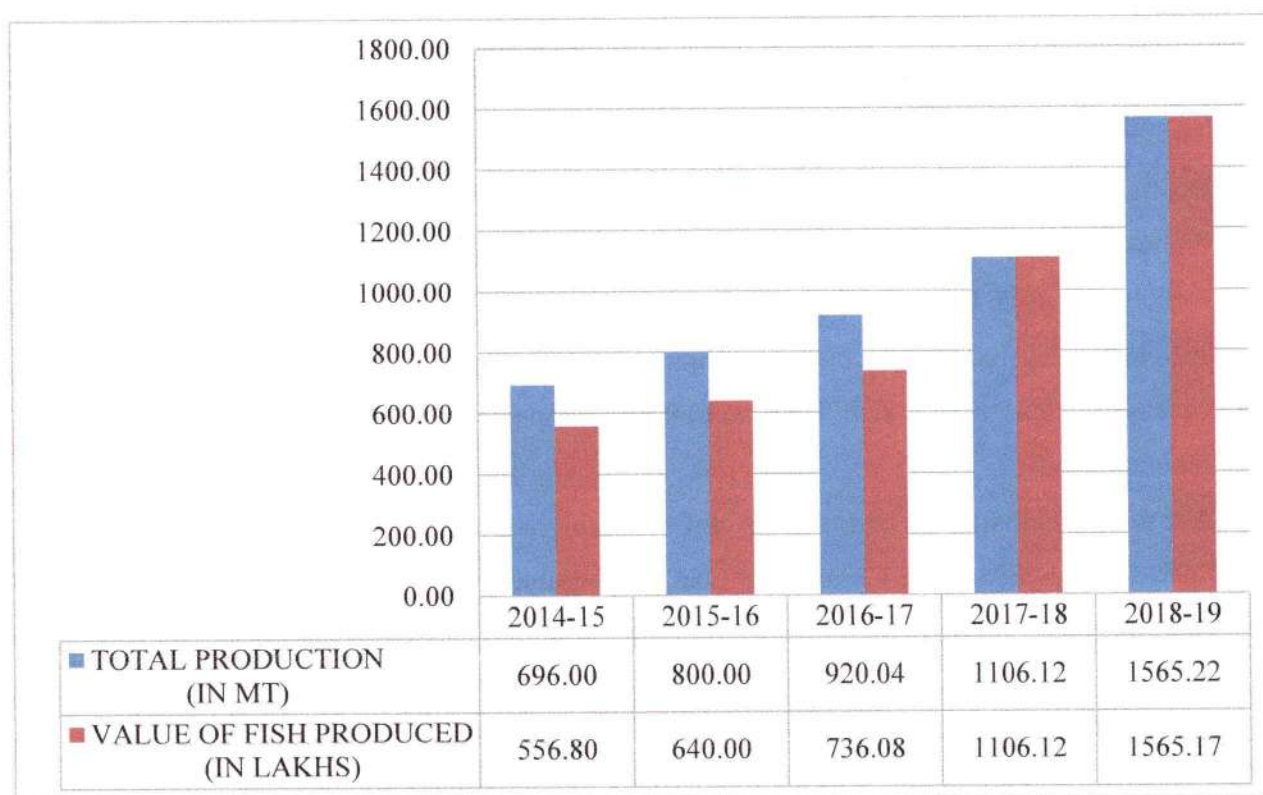
For the development of ponds/tanks, three programmes were launched by the Department i.e. (i) the Special Scheduled Caste Component plan programme (ii) the Low-Income Group Assistance Programme for other castes and (iii) the Fish Farmers Development Agency (FFDA) Programme.

A major chunk of the most productive area of Gobind Sagar reservoir-LathianiKhad spread from Dumkhar to Bhakra falls in this district from where considerable fish production is achieved. The fishery of Gobind Sagar is exploited by the members of Kutlehar. Lathiani and Mandli Co-operative societies.

*Table Showing Annual Production of Fisheries and Its Value of Catch in District Una*

<b>Table showing Annual Production of Fisheries at Una District</b>		
<b>YEAR WISE</b>	<b>TOTAL PRODUCTION (IN MT)</b>	<b>VALUE OF FISH PRODUCED (IN LAKHS)</b>
2014-15	696.00	556.80
2015-16	800.00	640.00
2016-17	920.04	736.08
2017-18	1106.12	1106.12
2018-19	1565.22	1565.17

*Source: Fisheries Department, HP*



Graph Showing Annual Production of Fisheries and Its Value of Catch in District Una

### 1.8 FLORA

The Tract of Una forest division is bounded on the north by Gular Dhar-Chintpurni ridge east by SolasingliDharHamirpur forest Division and Jagir forest and south and west by the state boundary of Punjab, total forest area of Una district is 52036 Hects. Out of which 28815 Hects fall under Una Forest Division and 23231 hectares under the KutleharJagir forest. In the Una district much of the plantation of Chil (khair and Eucalyptus have been raised successfully. For working in the government reserve forests 4 working circles namely the Una Chil Working Circle, the Una Coppice Working Circle, the Khairover Lapping Working Circle and the Protection Working Circle have been constituted. The following most prominent varieties of trees are found at different elevations.

Table showing the most prominent varieties of trees in the area

	Name of tree	Scientific name
1	Mango	(Magniferaindica)
2	Tali	(Dalbergiasisoo))
3	Pipal	(Ficusreligiosa)
4	Behul	(Grewiaoppstitifolia)
5	Chil	(Pinus Rose burghi)
6	Simbal	(Bomberemalabaricum)
7	Tuni	(Cedrelatoana)

8	Jamun	(Engeniajambolana
9	Bamboo	
10	Brah	
11	Tos	

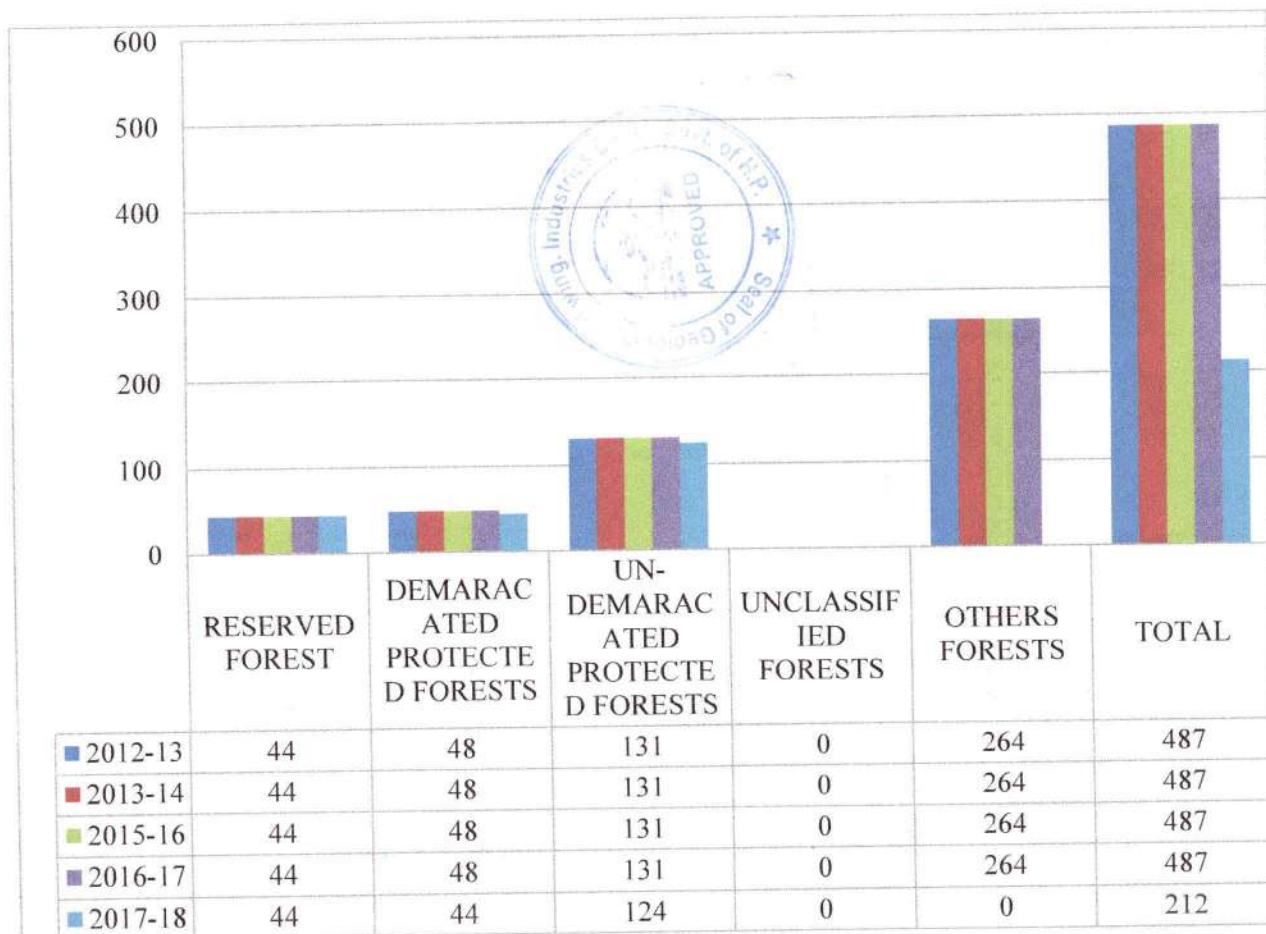
Broadleaf species

Ber and other bushes

Table Showing classification of forest area (in sq.km.) of district Una

<b>CLASSIFICATION OF FOREST AREA (IN SQ.KM.) OF UNA DISTRICT</b>						
YEAR	RESERVED FOREST	DEMARCATED PROTECTED FORESTS	UN-DEMARCATED PROTECTED FORESTS	UNCLASSIFIED FORESTS	OTHERS FORESTS	TOTAL
2012-13	44	48	131	...	264	487
2013-14	44	48	131	...	264	487
2015-16	44	48	131	...	264	487
2016-17	44	48	131	...	264	487
2017-18	44	44	124	...	...	212

Source: Forest Department, HP

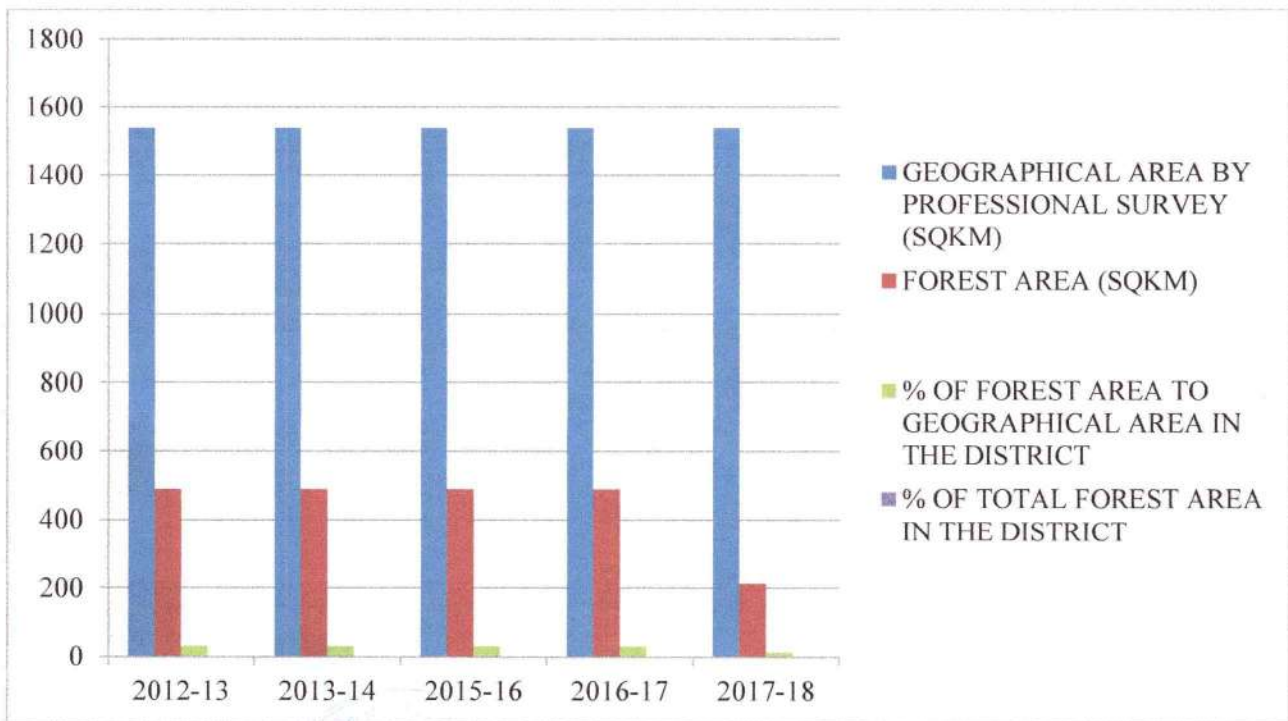


Graph showing the classification of forest area (in sq.km.) of district Una

Table showing forest area of District Una

<b>FOREST AREA OF UNA DISTRICT</b>				
<b>YEAR</b>	<b>GEOGRAPHICAL AREA BY PROFESSIONAL SURVEY (SQKM)</b>	<b>FOREST AREA (SQKM)</b>	<b>% OF FOREST AREA TO GEOGRAPHICAL AREA IN THE DISTRICT</b>	<b>% OF TOTAL FOREST AREA IN THE DISTRICT</b>
2012-13	1540	487	31.6	1.3
2013-14	1540	487	31.6	1.3
2015-16	1540	487	31.6	1.3
2016-17	1540	487	31.6	1.3
2017-18	1540	212	13.77	0.56

Source: Forest Department, HP



Graph showing forest area (in sq.km.) of district Una

**Fauna**

The wildlife in an area is directly related to characteristics of the habitat i.e. availability of food and water, nature and density of flora prevalent in the area along with other factors like slope, Climate, prevalent anthropogenic activities etc. Variation of altitude and slope in the study area has resulted in the proliferation of fauna which adopts the ruggedness and hard climatic conditions. Due to diverse flora, climate and altitude, the area possesses a well unique variety of Himalayan wildlife species. Due to wide variations in the altitude, a large variety of fauna is available in the forest of the district. The thick forest and climate of the district are the best for the survival of many animals and birds. The following common animals and birds are found in the Una district:

Table showing Fauna in Una district

Samber	(Cerveus unicolor)
Leopard	(Felisbengalensis)
Hare	(Lepus nigricoilies)
Fox	(Vaulepusbengalanesis)
Langoor	(Preshytes entellus)
Flying squirrel	(Hylopetusfimbriatus)
Bat	(Hippsideros armiger)
Monkey	(Macacamulatta)
Barking deer	(Munteicusmuntisk)
Pigeon	(Columbia livia)
Mor	(Payocrisslatus)
Crow	(Crovussplendes)
Parrot	(Prottaculakarneri)
House sparrow	(Parser domerticus)
Cranes	(Grurs species)
Woodpecker	(PicoidesMacer)

### 1.9 CLIMATE OF THE AREA

The Climate of the Una District can be classified into the following three categories.

1. Winter
2. Summer
3. Rainy

The general temperature, rainfall and humidity corresponding to each type are given below in Table and month-wise detail of temperature is shown in Graph

*Table showing Climate in Una district*

Climate of Una District, Himachal Pradesh				
Climate		Winter	Summer	Rainy
Period		Oct.-Mid March	Mid. March-June	July-September
Weather		Cool	Hot	Humid
Humidity		84%	55%	98%
Temperature	Max.	33.0 C	45.5 C	35.0 C
	Min	-3.5.0 C	8.0 C	14.0 C
Rainfall	Max.	82.0 mm	69.0 mm	175. 0 mm
	Min	1.0 mm	1.0 mm	1.0 mm

The terrain in general has a profound influence on the temperatures of a region. The temperature generally rises from the beginning of March till June, which is the hottest month of the year with mean minimum and maximum temperatures of 25.6°C to 44°C respectively. With the onset of monsoons by the end of June temperature begins to fall. The drop in day temperature is much more than the drop in night temperature. The night temperature falls rapidly after the withdrawal of monsoons by mid-September. The month of January is the cooler month with the mean maximum and minimum temperature being 24°C and 1.7°C respectively. Under the influences of western disturbance, the temperature falls appreciably during winters and it may go even below 0° C.

Humidity is generally low throughout the year. During the summer season, humidity is its lowest at 36 %. During monsoon months, it goes as high as 80-90%. The highest levels of humidity are observed in the month of August. The average humidity during synoptic hours is 53% and 62% respectively.

*Table showing the Climate in Una district*

<b>CLIMATE AROUND THE MINING LEASE AREA DISTRICT UNA, HIMACHAL PRADESH</b>			
<b>CLIMATE</b>	<b>WINTER</b>	<b>SUMMER</b>	<b>RAINY SEASON</b>
PERIOD	OCT.-MID MARCH	MID-MARCH -JUNE	JULY-SEPTEMBER
Weather	Cool	Hot	Humid

## **(2) ENVIRONMENT MANAGEMENT PLAN**

### **2.1 Impact on Air**

The magnitude of mining is not very high and is restricted to a limited area as such there is hardly any impact other than dust emission to a smaller extent which can be controlled by sprinkling water on the working face so that the dust be suppressed.

### **2.2 Impact on Water**

There is no water source such as well or spring near the applied mining lease area. The mining operations shall be carried out scientifically. Therefore, it shall have no adverse impact within the lease area after the mining operations; neither there is any kind of adverse impact within the lease area or below the lease which could be affected.

### **2.3 Impact on Noise Level**

The area is away from habitation and the noise shall be caused only by plying tractors/tippers/trucks to bring minerals to the stone crusher site, which shall be kept under control by proper lubrication and the working would only be done during the daytime to keep noise level below the permissible limit prescribed. No blasting operations are involved as the process is only to lift the

material manually/mechanically with the help of an excavator and to load in tractors/tippers/trucks hence, the noise level will not exceed the required level.

#### **2.4 Waste Disposal Arrangement, if Any**

During the excavation of stone, boulder, bajri and sand from the Hill slope, silt, clay and soil shall also be quarried being associated with minerals. The total waste material that will be generated in five years shall be separated from the useable mineral. The Top Soil shall be spread over the mined-out benches for growing plantation and re-grassing of the area. Further, the mining lease holder is also a road contractor and he shall use the wastage dumped in the form of Silt, Clay and Silty Sand to manufacture a Granular Sub Base (GSB) for road works.

#### **2.5 Socio-Economic benefits**

The mining shall provide employment to approx. 10-15 local people who are unskilled and are in need of an additional source of income when they are free from agriculture engagements and shall be helpful in raising additional sources of income.

#### **2.6 Transport of Mineral**

The mining site is located in the village Pollian Beet. The lease area is approachable through Pollian –Janani Road. Further, the road is well connected with the main highways towards Una and Nangal (Punjab) which is in sufficiently good condition to bear this additional traffic load.



## **PART-III**

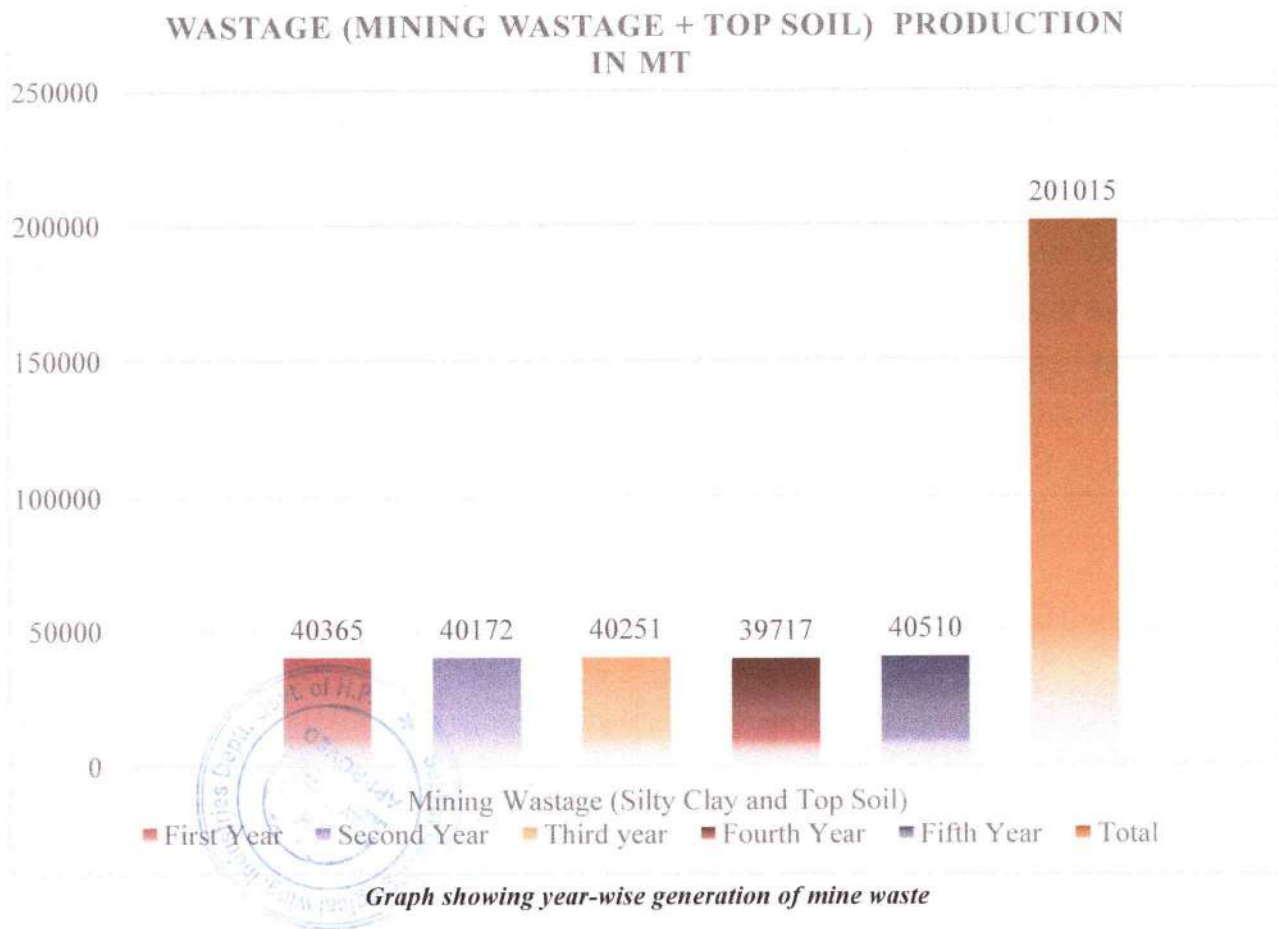
### **PROGRESSIVE MINE CLOSURE PLAN/ RECLAMATION PLAN**

#### **1.1 MINE WASTE DISPOSAL**

##### **A) YEAR WISE GENERATION OF MINE WASTE**

*Production of mine waste during five years*

Year	1st Year	2nd Year	3rd year	4th Year	5th year	TOTAL
Mine Wastage (Silt, Clay & Topsoil)	40365	40172	40251	39717	40510	<b>201015</b>



The waste material shall be used for the maintenance of the approach road of the applied mining lease and the stone crusher unit as well as the road from the stone crusher unit connecting the main road.

##### **B) COST OF MINE WASTE DISPOSAL:**

The material shall be brought to the dump site by trucks as well as manually and it shall add little addition to the mining cost of around Rs. 10/- per tonne of waste. The total waste production in 3 years is 201015 tonnes. The total cost of dumping shall be around Rs.2010150/- in 3 years.

## **1.2 TOPSOIL ARRANGEMENT:**

The topsoil will be spread over the benches developed after mining for growing plantations.

## **1.3 PREVENTIVE RETAINING STRUCTURES**

- a. Five no's of retaining structures/Gabion/Check Dam structures of 08 meters in length and 1.5 meters in height have been proposed to be raised in five years marked in the respective year-wise scheme in Plate No 8- 12.
- b. Each retaining structure/Gabion/Check Dam structure shall cost Rs. 60,000 and the total cost for construction of these in five years shall be Rs. 1,80,000.

## **1.4 PLANTATION WORK (RE-GRASSING OF MINING AREA)**

The afforestation programme is the most important programme to improve the environment and ecological balance of the area. Grasses and bushes that have fibrous roots are at the first instance grown which gives the binding property to the soil. After growing grasses and bushes, other tree species in consultation with the experts will be raised, based on the characteristics of soil, topography and climatic conditions.

The main post-mine land use for the Project will be grazing based on a self-sustaining vegetation community using appropriate pasture grasses and scattered plantings of native tree and shrub species.

The main features of the progressive rehabilitation process are:

1. Periodic stacking of topsoil/silt/clay on the excavated benches shall be done and further backfilled in excavated pits immediately after the completion of the Mining project.
2. Seeding with an appropriate seed mix (grass, shrub) and tree species plantation will be done before the commencement of the monsoon season to maximise the benefits of subsequent rainfall.
3. Application of appropriate fertiliser for Grass and plant establishment, if required.

The fast-growing plantation and re-grassing shall be done on the exhausted/excavated benches as well as in backfilled pits will be done in consultation of local peoples or Govt. Authorities like the forest department etc. The applied mining lease shall be fenced properly in the entire periphery of the safety zone (As per the details given in Plate No. 13). The total mined-out area of the benches shall be 56000 Sq.m. and about 40000 sqm of area shall be dedicated for plantation and re-grassing. The average year-wise proposed bench area for the plantation is as under: -

Sr. No	Year	Area in Sq. Mts.	No. of Plants
1	1 <sup>st</sup> Year	8000	40
2	2 <sup>nd</sup> year	8000	40
3	3 <sup>rd</sup> year	8000	40
4	4 <sup>th</sup> Year	8000	40
5	5 <sup>th</sup> Year	8000	40
	<b>Total</b>	<b>40000</b>	<b>200</b>

- a) The plantation/regressing and its maintenance cost will be borne by the applicant. Also, a green belt will be developed in consultation with the local panchayat and forest department along approach roads in order to minimize the pollution.
- b) Based on the characteristics of soil, topography and climatic conditions of the area, plantation of grasses/bushes and other tree species will be done by the applicant.
- c) Plantation before the onset of monsoon season will be done progressively until the final closure of the mine.
- d) Green Belt shall be properly designed in consultation with the forest department. Plantation shall be carried out as per the periodical plantation programme.
- e) Fast-growing and evergreen trees, trees with broadleaf resistant to specific pollutants and those that would maintain the regional ecological balance, soil and hydrological conditions shall be favoured.
- f) Green belt areas along the haul roads, dumping sites and abandoned mines after mining shall be developed.
- g) Besides this, only local labourers shall be engaged for watch and ward and plantation activity with proper maintenance.
- h) The plantation/regressing and its maintenance cost will be borne by the applicant. Also, a green belt will be developed in consultation with the local panchayat and forest department along approach roads in order to minimize pollution.
- i) The estimated survival rate proposed to be achieved shall be 80%

## (2) STRATEGY FOR PROTECTION OF POINT OF PUBLIC UTILITY ETC.:

There is no point of public utility or interest that needs to be protected while undertaking mining operations.

**(3) MANPOWER DEVELOPMENT:**

Around 10-15 unskilled people shall be employed to carry on the mining and associated activities and preference shall be given to employing 100% local people.

**(4) USE OF MINERAL:**

The extracted stone shall be used for the manufacturing of grit and manufactured Sand (M-Sand) and possibility shall also be explored to use the waste material in road construction works.

**(5) ANY OTHER RELEVANT INFORMATION:**

A lot of construction activity in the private & Government sector is going on. Grit is the basic requirement for construction material and there is the necessity of such activity to flourish so that the requirement of the material could be met locally.

In the applied mining lease area, the following safety measures will be adopted after anticipating the hazard risk:

- ✓ All the provisions of the Mines Act 1952, Metalliferous Mines Regulations, 1961, Mineral Conservation and Development Rules, and other laws applicable to mining will be strictly complied with.
- ✓ Personnel working in dusty areas will be provided with wear protective respiratory devices.
- ✓ Experienced drivers with valid documents will be permitted for the transportation of minerals
- ✓ Occupational health check-ups for all the employees/workers should be undertaken periodically (on an annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately if needed.
- ✓ All emergency nos, like hospitals, Police, and fire services will be provided at the site. All mining personnel should be aware of the nearest health centres and hospitals. First aid kits will be provided at the site.
- ✓ All persons in a supervisory capacity will be provided with proper communication facilities.
- ✓ Road signage shall be erected and maintained at appropriate stretches after assessment of the site.

\*\*\*\*\*



To

The Geologist (Zone II)  
(Geological wing) Department of Industries  
Bhrata Sadan , Vikasnagar  
Shimla-171009, Himachal Pradesh

**Subject:-Submission of Mining Plan of Area applied for Mining lease**

Respected Sir,

This bears reference to your letter no. Udyog-Bhu (Khani-4) Laghu-524-2653 dated 03.06.2025 regarding necessary amendments/corrections and submission of final Plan

After making necessary amendments/corrections in maps as well as in the mining plan as suggested and marked in the draft plan, I hereby submit the final four copies along with a draft copy of the Mining Plan of the area applied for the mining lease for the extraction of Stone, Bajri and Sand from over an area measuring 02-78-91 hectares (Hill Slope) comprising of Khasra Nos. 1236 (Private Land) situated in Mohal & Mauza Gondpur Bulla Upperla, Tehsil Haroli, District Una, Himachal Pradesh to be used in already established Stone Crusher unit in the name and style of "**M/s Lakhwinder Singh Stone Crusher and Screening Plant Unit – III**" for Manufacturing of Grit and Stone Dust in favour of Sh. Lakhwinder Singh Panag, Proprietor of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III, Village and Post office Gondpur Bulla Phase-II, Tehsil Haroli, District Una, Himachal Pradesh, under The Himachal Pradesh minor minerals (concession) and minerals (prevention of illegal mining, transportation and storage) for perusal and further necessary action at your end.



Yours faithfully

Arun Dhiman  
Vill. & P.O. Dhaloon, (Panchpuli)  
Tehsil Nagrota Bagwan Distt Kangra  
Himachal Pradesh PIN-176056

**Copy to:** Sh. Lakhwinder Singh Panag, Proprietor of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III, Village and Post office Gondpur Bulla Phase-II, Tehsil Haroli, District Una, Himachal Pradesh

**Encl:** Mining Plan (4 Nos.) and Draft Plan



## CERTIFICATE

Certified that the provisions of the Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2015 Metalliferous Mines Regulation 1961 and other guidelines issued from time to time in this regard have complied with the preparation of **Mining Plan** of minor mineral quarry comprising of Khasra nos. 1236 (Pvt. Land) measuring 02-78-91 Hectares(Hill Slope) falling in Mohal & Mauza Gondpur Bulla Upperla, Tehsil Haroli, District Una, Himachal Pradesh in favour of Sh. Lakhwinder Singh Panag, Proprietor of M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit-III, HIG-824 Phase-II, Mohali, Punjab-160055 to be used in already established stone crusher unit in the name and style as "**M/s Lakhwinder Singh Stone Crusher and Screening Plant Unit - III**" for Manufacturing Grit and manufactured Sand (M-Sand).

While preparing the mining plan including a progressive mine closure plan, all statutory rules, regulations, orders made by competent authorities of the State or Central Government or orders passed by Courts have been taken into consideration.

The information provided and the data furnished in this Mining Plan are correct to the best of my knowledge.

  
Arun Dhiman

S/o Sh Jagan Nath,  
Village & PO Dhaloon (Panchpuli),  
Tehsil Nagrota Bagwan, District  
Kangra Himachal Pradesh -176056

RQP No. H.P./RQP/25/2/2019

Mobile No. 98165 79485

Email Id [arundhiman77@yahoo.com](mailto:arundhiman77@yahoo.com)



## **DECLARATION**

*This is to declare that the Mining Plan includes the Progressive Mine Closure Plan of minor mineral quarry comprising of of Khasra nos. 1236 (Pvt. Land) measuring 02-78-91 Hectares(Hill Slope) falling in Mohal & Mauza Gondpur Bulla Upperla, Tehsil Haroli, District Una, Himachal Pradesh to be used in already established stone crusher unit in the name and style as “**M/s Lakhwinder Singh Stone Crusher and Screening Plant Unit - III**” for Manufacturing Grit and manufactured Sand (M-Sand), has been prepared with my consent and approval and that we/l shall abide by all commitments thereunder.*

*“The Mining Plan and Progressive Mine Closure Plan” complies with all statutory rules, regulations, orders made by competent authorities of State or Central Government or orders passed by courts have been taken into consideration and wherever specific permission is required, shall be obtained.*

*We undertake to implement all the measures proposed in this Mining Plan and Progressive Mine Closure Plan in a time-bound manner.*

*We have deposited a sum of Rs. ....with the competent authority of the State Government in the form of a Fixed Deposit Receipt as a financial assurance of the same. In case of default on my/our part, the approval of the Mining Plan may be withdrawn and the aforesaid sum assured may be forfeited.*



**Applicant**

*Sh. Lakhwinder Panag,*

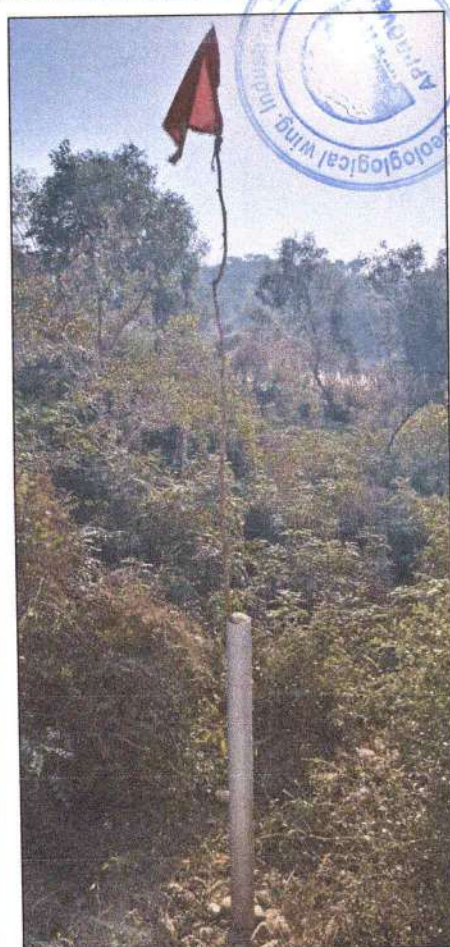
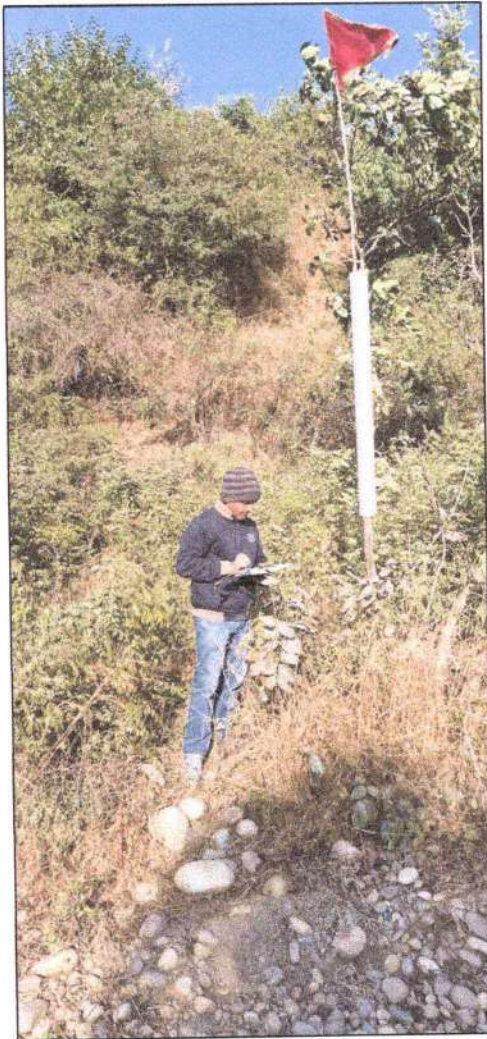
*Prop: M/s Lakhwinder Singh Stone  
Crusher & Screening Plant Unit-III,*

**Address**

*Village and Post office Gondpur  
Bulla, Tehsil Haroli, District Una,  
Himachal Pradesh*

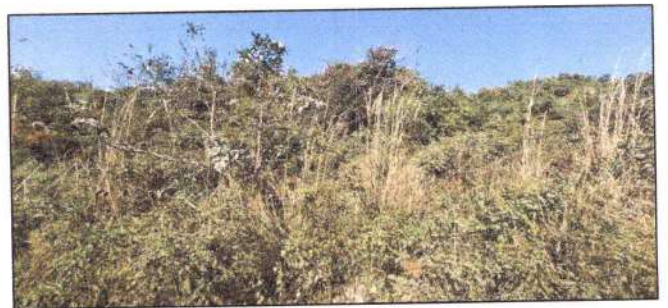
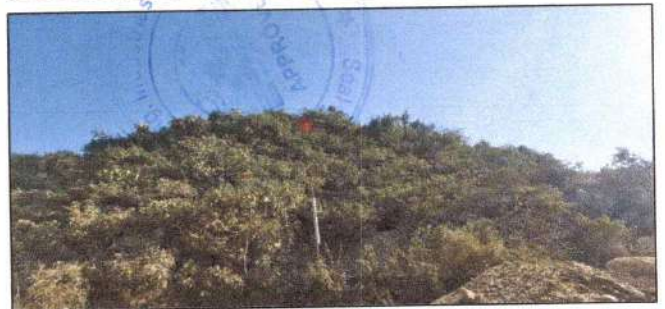
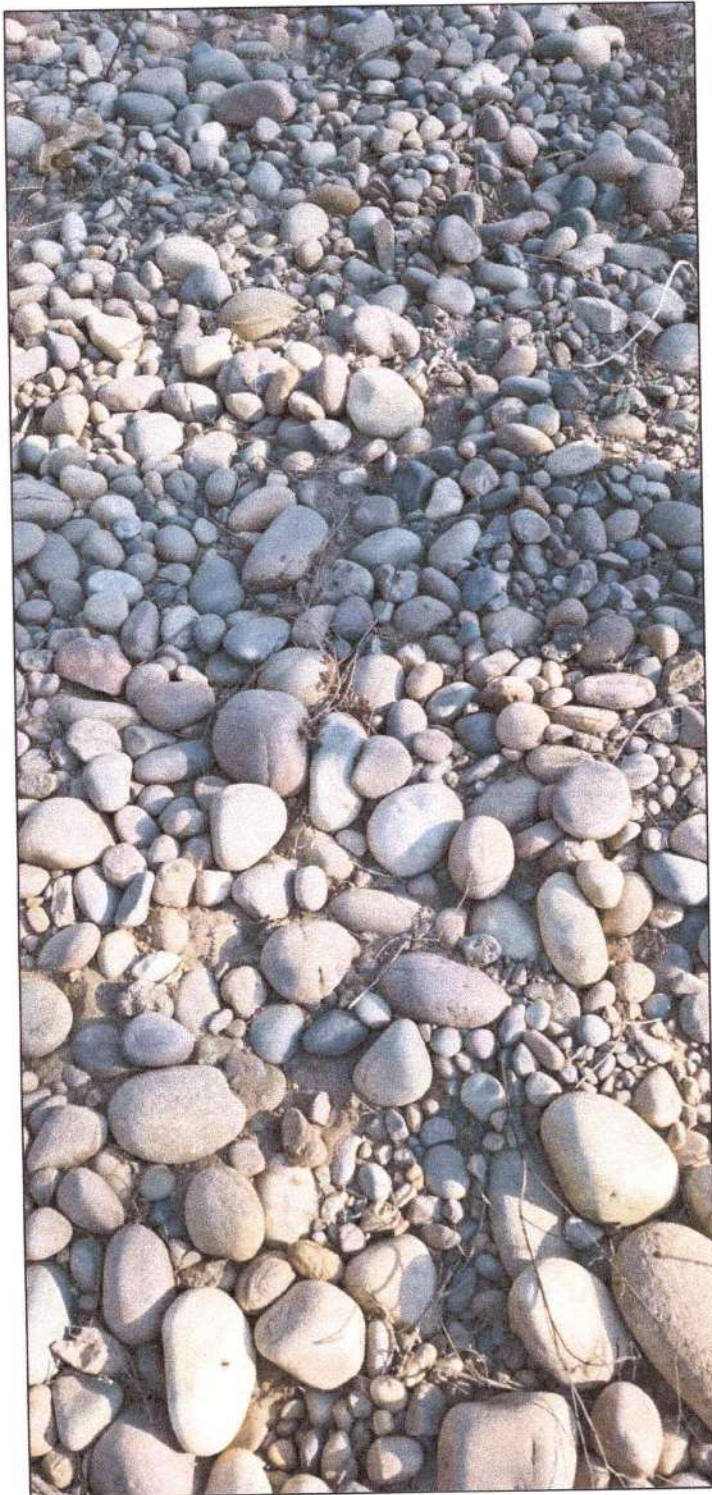
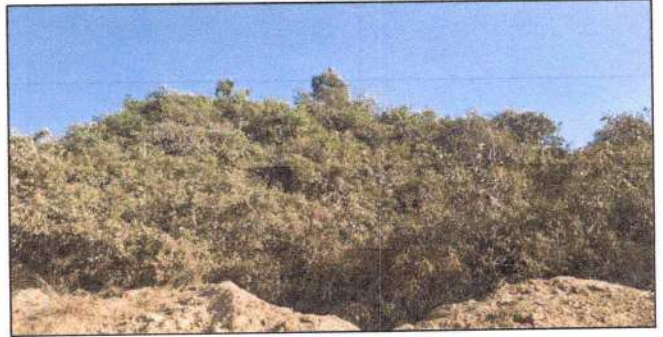
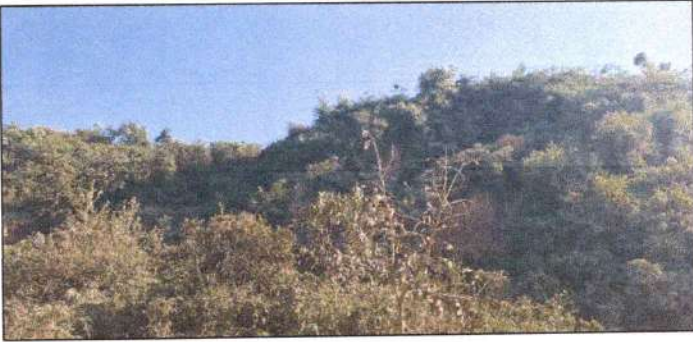


Photographs of the Applied lease Area





Photographs of the Applied lease Area









**INDEX**  
CONVENTIONAL SYMBOLS

Express highway with toll with bridge, with distance stone	
Roads metalled according to importance	
Roads double carriageway according to importance	
Unmetalled road Cart-track Path-track with pass Foot-path	
Streams with track in bed Underdrain Canal	
Dams masonry or rock-filling earthwork Weir	
River dry with water channel with island & rocks Tidal river	
Submerged rocks Shoal Slump Beach	
Wells hand unhand Tubewell Spring Tanka permanent dry	
Embankment road or rail track Under ground	
Stationery broad gauge double single with distance stone, do.	
Steamway, other gauges double single with distance stone, do.	
Viewed line or temporary line Cutting with tunnel	
Contours with sub-levels Rocky slopes Cliff	
Sand heathens (T.M. Chasmod-digamantani) (Dharmasthaling)	
Towns or Villages enclosed classified F.O.C.	
Hubs permanent temporary Tower Antennae	
Temples Chhatra Chaura Mosque Light Tower Graves	
Light-house Light-house Beacon lighted unlighted Anchorage	
Wells View on bank Grass Sord	
Open paddy other Garden Conifer Bamboo Other trees	
Areas cultivated, wooded Surveyed tree	
Boundary international	
State demarcated international	
State subdivision, tribal or block level	
Boundaries village surveyed unbordered	
Height triangulated station point trigonometric	
Bound-marks, geodetic, tertiary, control	
Post office Telegraph office, Central Post office	
Rail house or fire station Bangalore (Central House, Public station)	
Control point Forest, reserved, reserved	
Control point, administrative, locally or tribal	
Hospital Dispensary Veterinary Hospital (Dispensary)	
Sanctuary, National Park	
Sanctuary, National Park	
Sanctuary, National Park	

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III

OWNER SH. LAKHWINDER SINGH PANAG

DRAWING TITLE:  
LAND USE LAND COVER MAP  
TOPOSHEET NO. - H43E2  
(Source: SSI)

PREPARED AND CERTIFIED BY:

**Arun Dhiman**  
RQP Registration No. HP/RQP/25/2/2019  
PLATE NO. - II.  
Map to Scale

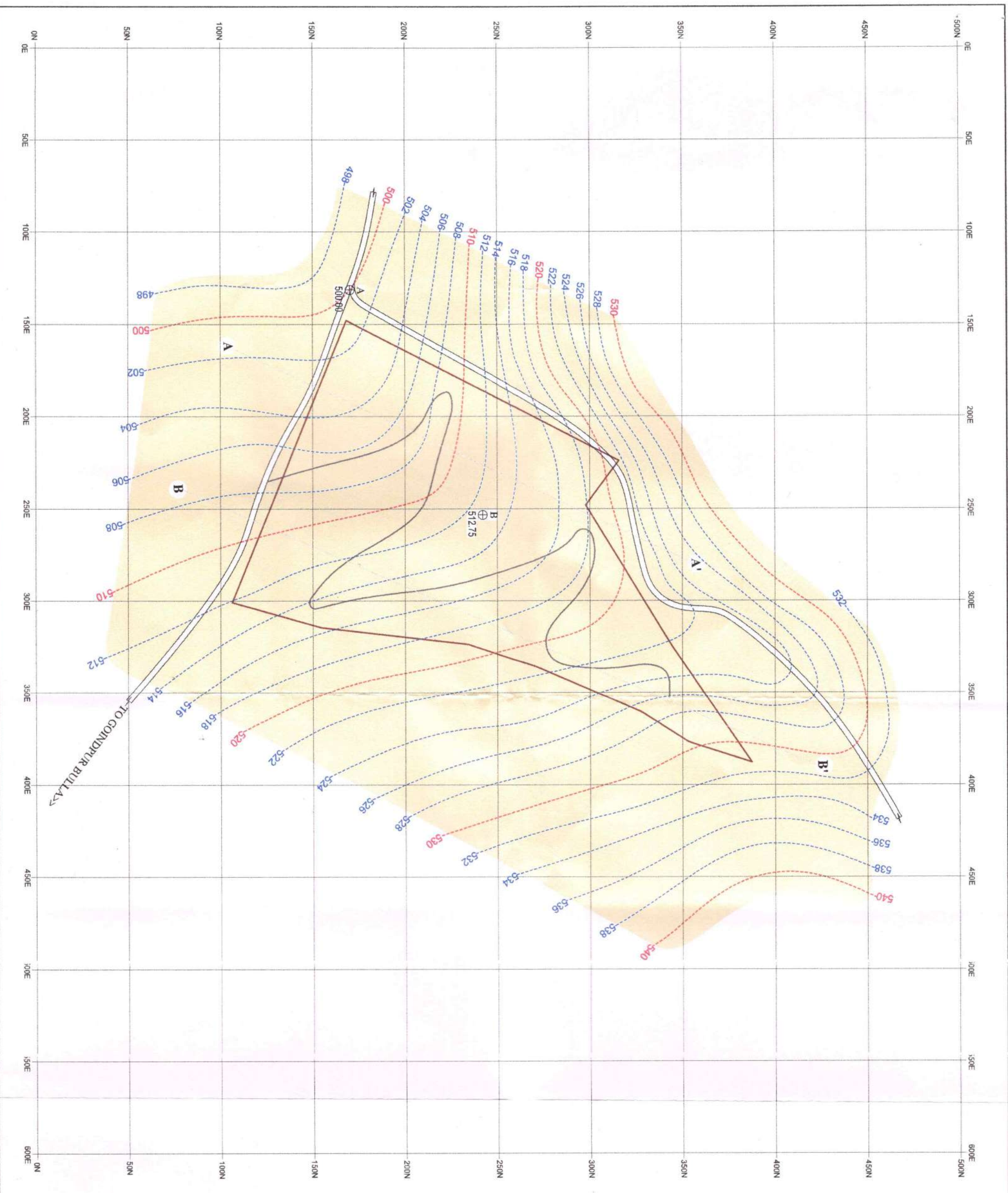








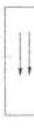


Plate No. 3.

**GEOLOGICAL INDEX**

-  SOIL COVER
-  QUARTZITE

**TOPOGRAPHICAL INDEX**

-  LEASE BOUNDARY
-  SURVEY STATION
-  CONTOUR LINES
-  APPROACH ROAD
-  PROPOSED HAUL ROAD
-  X-SECTION LINES
-  FACE ADVANCE

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III.

OWNER: SH. LAKHWINDER SINGH

SCALE: 1:2000 (1 CM = 20 METERS)

CONTOUR INTERVAL: 2.00 METERS.

MAP SHOWS THE SURFACE AND GEOLOGICAL FEATURE OF THE LEASE AREA.

COORDINATES :-

- A N-31°18'22.60"
- E-76°11'26.48"
- B N-31°18'25.22"
- E-76°11'29.99"

NORTH:-



CERTIFIED THAT THE PLAN IS CORRECT.

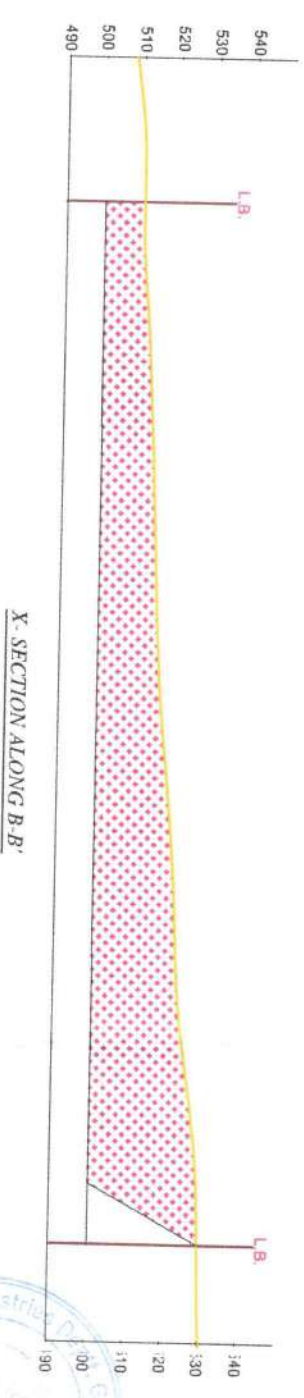
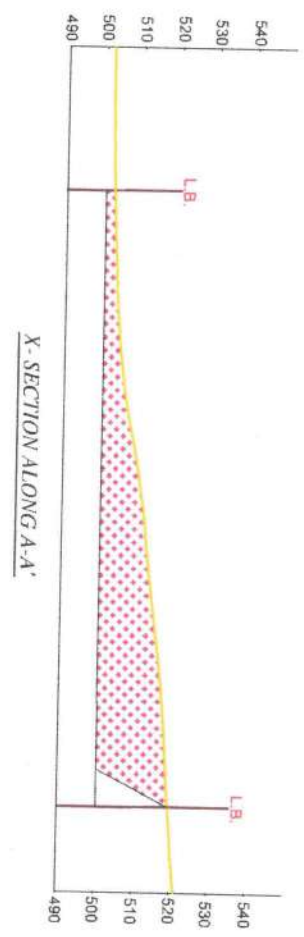


**Arun Dhiman**  
RQP Registration No.

HP/RQP/25/12/2019

Plate No. III.

Plat No. 4.



- GEOLOGICAL INDEX**
- SOIL COVER
  - QUARTZITE
  - LEASE BOUNDARY

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT III.  
OWNER SH. LAKHWINDER SINGH PANAG  
SCALE 1:2000 (1 CM = 20 METERS)  
GEOLOGICAL X-SECTIONAL ALONG A-A' & B-B' AREA OF THE LEASE.

CERTIFIED THAT THE PLAN IS CORRECT.  
*Arun Dhiman*  
Arun Dhiman  
ROP Registration No. HP/ROP/25/2/2019  
Plat No. IV.

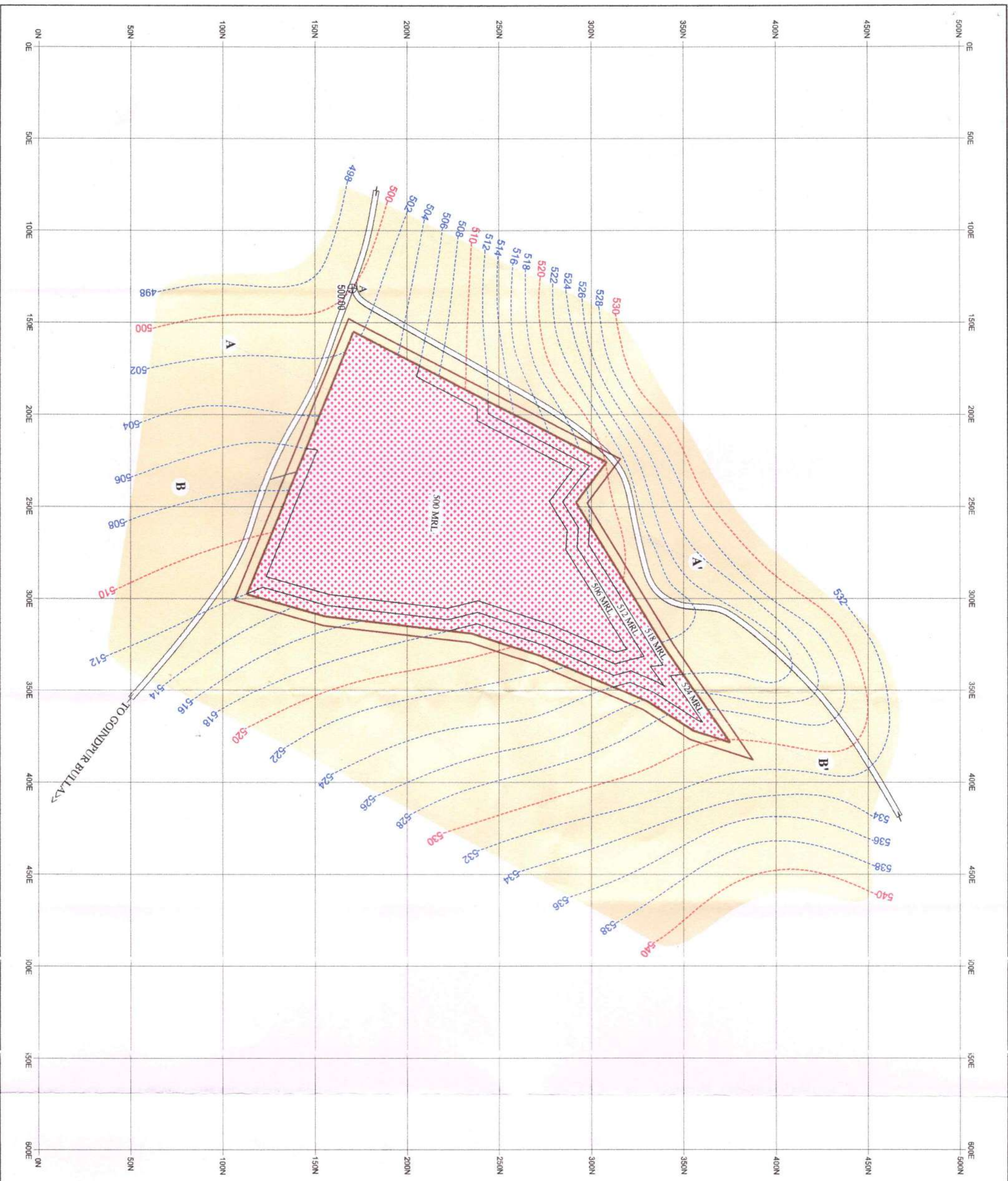


Plate No. 5.

**GEOLOGICAL INDEX**

- SOIL COVER
- QUARTZITE

**TOPOGRAPHICAL INDEX**

- LEASE BOUNDARY
- SURVEY STATION
- CONTOUR LINES
- APPROACH ROAD
- PROPOSED HAUL ROAD
- X-SECTION LINES
- FACE ADVANCE
- ULTIMATE PIT LIMIT

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III.  
 OWNER: SH. LAKHWINDER SINGH  
 SCALE: 1:2000 (1 CM = 20 METERS)  
 CONTOUR INTERVAL 2.00 METERS.  
 ULTIMATE PIT LIMIT.

COORDINATES :-  
 A N-31°18'22.60"  
 E-76°11'26.48"  
 B N-31°18'25.22"  
 E-76°11'29.99"



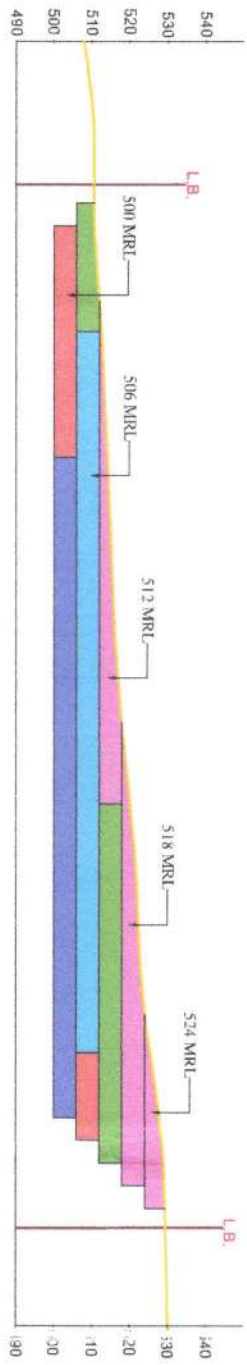
CERTIFIED THAT THE PLAN IS CORRECT.



**Arun Dhiman**  
 RQP Registration No.  
 AP/RQP/25/2/2019

Plate No. V.

Plate No. 6.



WORKING - SECTION ALONG X-X'



- WORKING AREA DURING 1ST YEAR
- WORKING AREA DURING 2ND YEAR
- WORKING AREA DURING 3RD YEAR
- WORKING AREA DURING 4TH YEAR
- WORKING AREA DURING 5TH YEAR

- GEOLOGICAL INDEX**
- SOIL COVER
  - QUARTZITE
  - LEASE BOUNDARY
  - BENCH HEIGHT

M/S LAKHWINDER SINGH STONE CRUSHER  
& SCREENING PLANT UNIT III.  
OWNER SH. LAKHWINDER SINGH PANAG  
SCALE 1:2000 (1 CM = 20 METERS)  
WORKING X-SECTIONAL AREA OF THE LEASE

CERTIFIED THAT THE PLAN IS CORRECT.





*Arun Dhiman*

**Arun Dhiman**  
ROP Registration No.

HP/ROP/25/12/2019

Plate No. VI.

**GEOLOGICAL INDEX**

-  SOIL COVER
-  QUARTZITE
-  LEASE BOUNDARY
-  SECTION LINE

M/S LAKH WINDER SINGH STONE CRUSHER  
& SCREENING PLANT UNIT I.T.

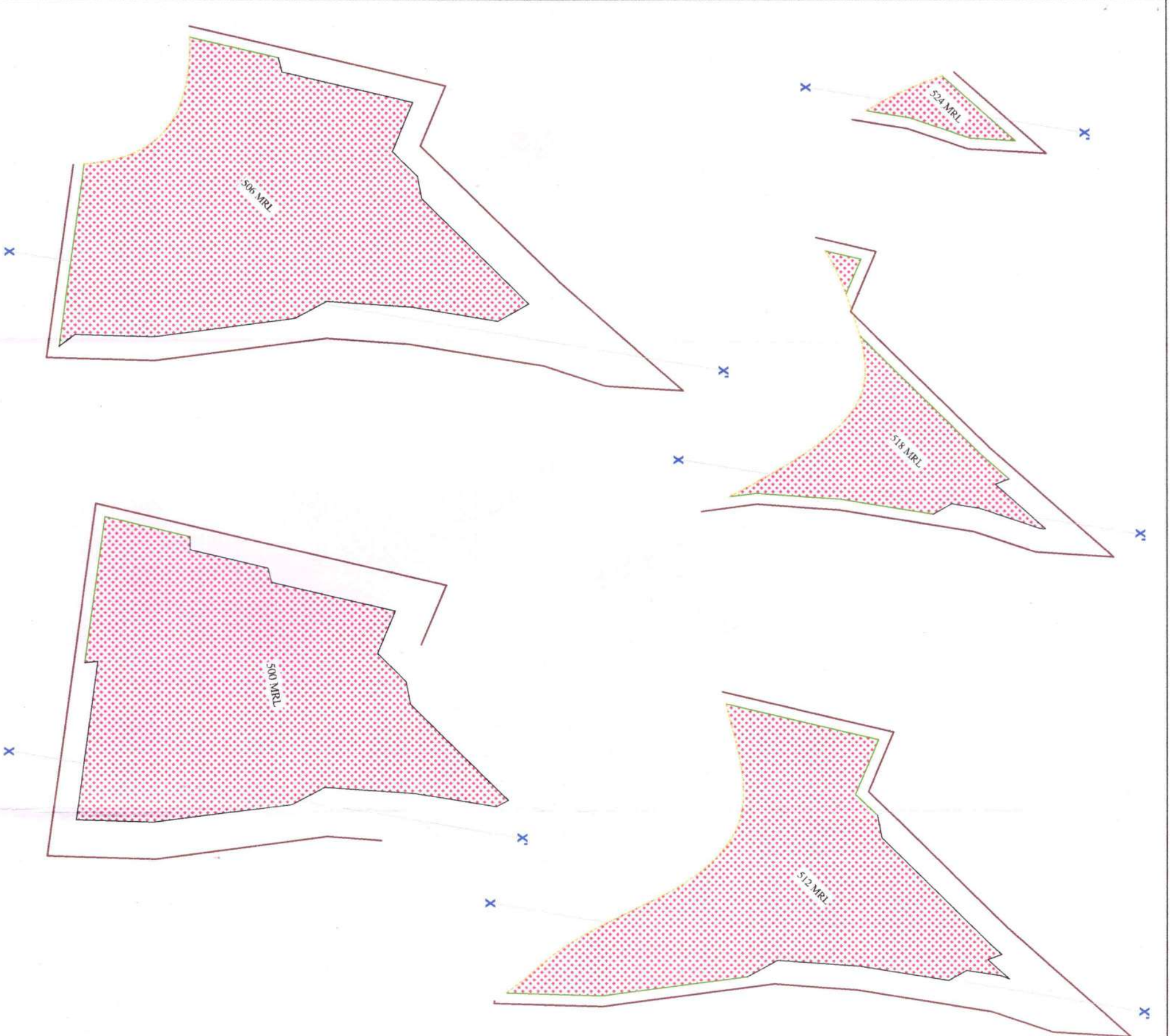
OWNER SH. LAKHWINDER SINGH PANAG

SCALE 1:2000 (1 CM = 20 METERS)



SLICE PLAT: 524 MRL TO 500 MRL.

CERTIFIED THAT THE PLAN IS CORRECT.




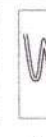
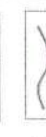





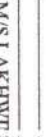
*Ad*  
**Arun Dhiman**  
RQP Registration No.  
HP/RQP/25/2/2019



**GEOLOGICAL INDEX**

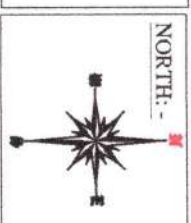
-  SOIL COVER
-  QUARTZITE

**TOPOGRAPHICAL INDEX**

-  LEASE BOUNDARY
-  SURVEY STATION
-  CONTOUR LINES
-  APPROACH ROAD
-  PROPOSED HAUL ROAD
-  X-SECTION LINES
-  FACE ADVANCE
-  WASTE DUMP YARD
-  TOP SOIL DUMP
-  PLANTATION
-  CHECK DAM

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III.  
 OWNER: SH. LAKHWINDER SINGH  
 SCALE: 1:2000 (1 CM = 20 METERS)  
 CONTOUR INTERVAL 2.00 METERS.  
 PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE 1ST YEAR.

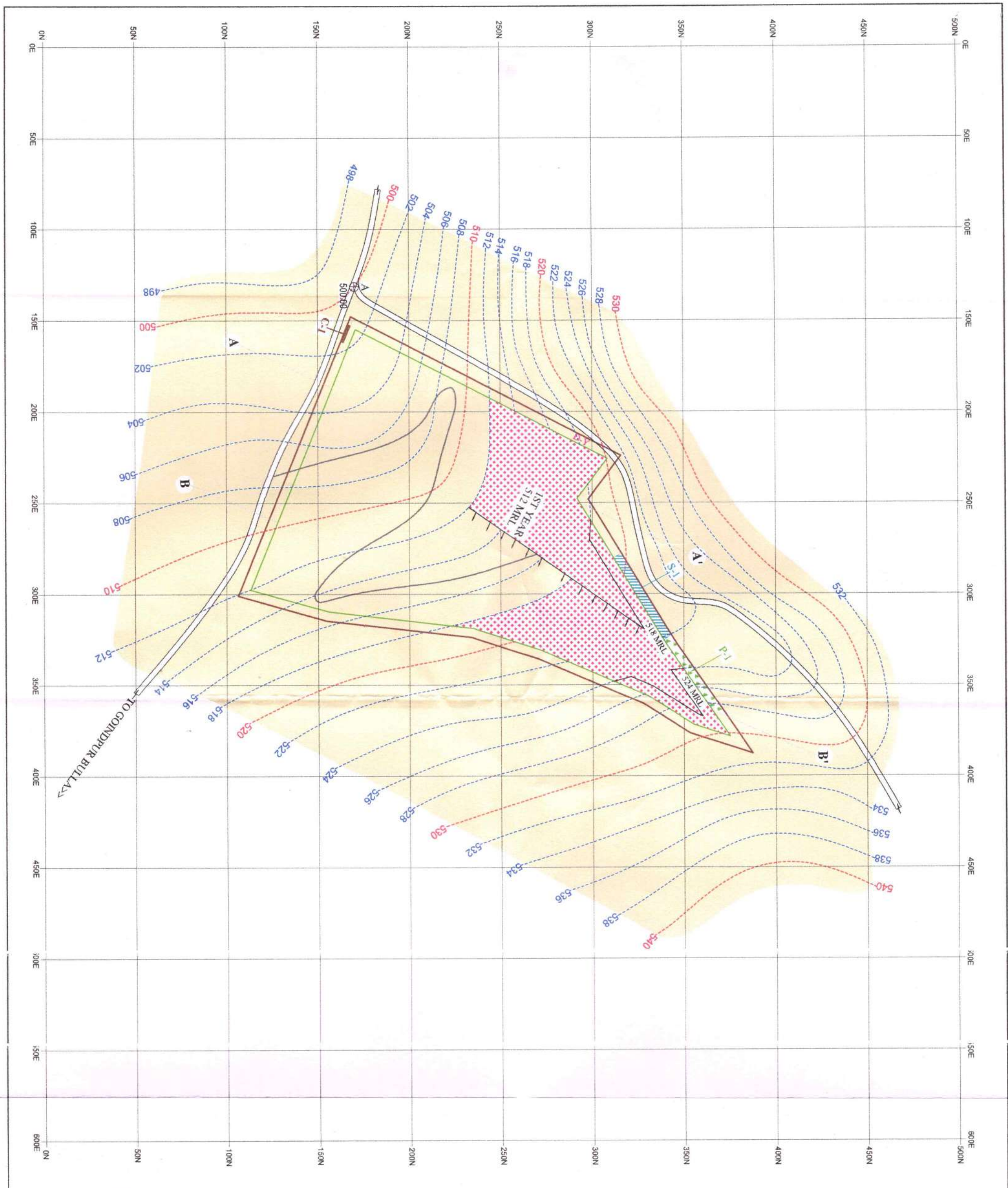
COORDINATES :-  
 A N-31°18'22.60"  
 E-76°11'26.48"  
 B N-31°18'25.22"  
 E-76°11'20.99"



CERTIFIED THAT THE PLAN IS CORRECT.



**Arun Dhiman**  
 ROP Registration No.  
 HP/ROP/25/12/2019



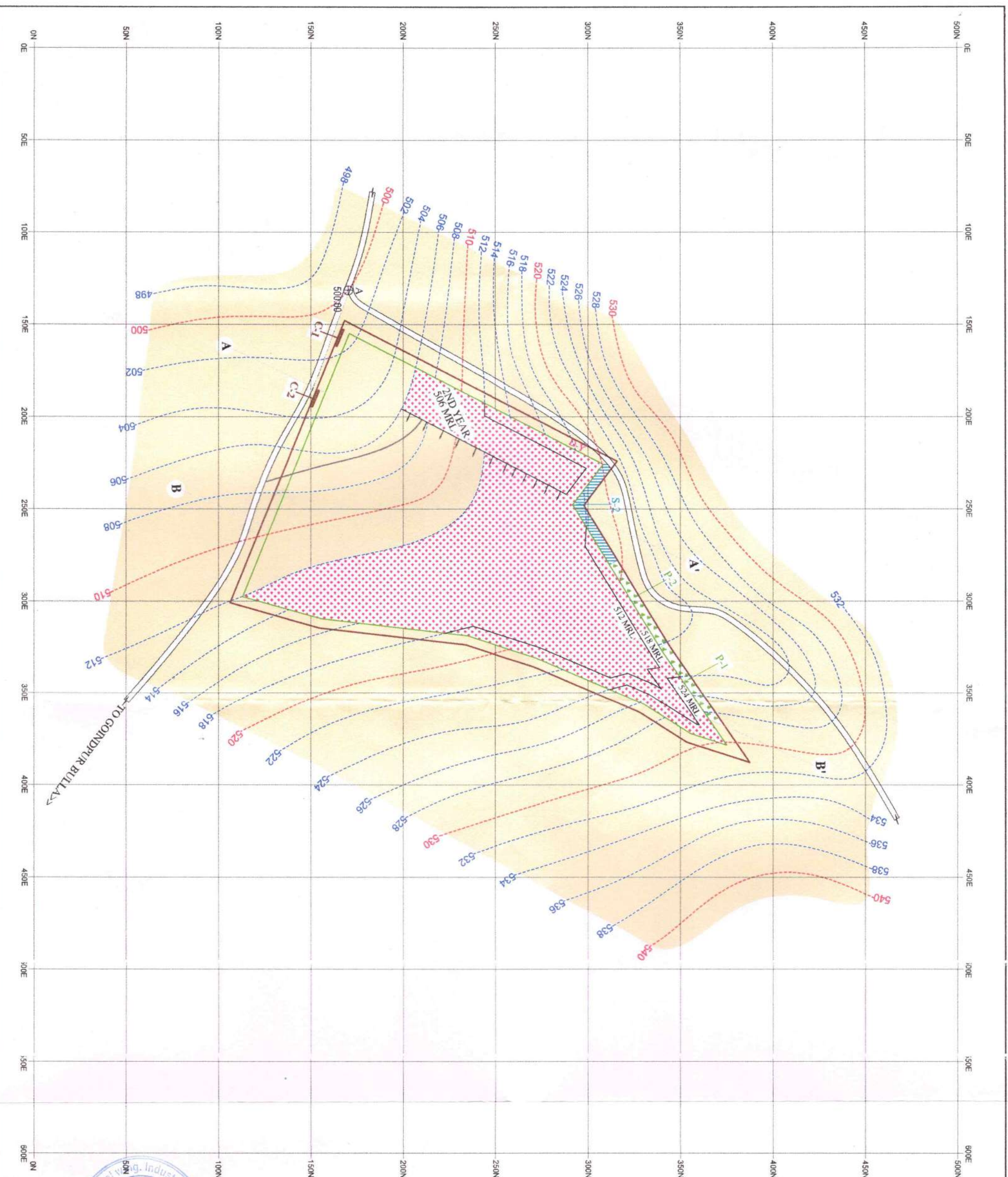













Plate No. 9.

**GEOLOGICAL INDEX**

-  SOIL COVER
-  QUARTZITE

**TOPOGRAPHICAL INDEX**

-  LEASE BOUNDARY
-  SURVEY STATION
-  CONTOUR LINES
-  APPROACH ROAD
-  PROPOSED HAUL ROAD
-  X-SECTION LINES
-  FACE ADVANCE
-  WASTE DUMP YARD
-  TOP SOIL DUMP
-  PLANTATION
-  CHECK DAM

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III.  
 OWNER: SH. LAKHWINDER SINGH  
 SCALE: 1:2000 (1 CM = 20 METERS)  
 CONTOUR INTERVAL: 2.00 METERS.  
 PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE 2ND YEAR.

COORDINATE'S :-  
 A N-31°18'22.60"  
 E-76°11'26.48"  
 B N-31°18'25.22"  
 E-76°11'29.99"



CERTIFIED THAT THE PLAN IS CORRECT.



*Adf*












**Arun Dhiman**  
 RQP Registration No.  
 HP/RQP/25/12/2019

Plate No. IX.

**GEOLOGICAL INDEX**

-  SOIL COVER
-  QUARTZITE


**TOPOGRAPHICAL INDEX**

-  LEASE BOUNDARY
-  SURVEY STATION
-  CONTOUR LINES
-  APPROACH ROAD
-  PROPOSED HAUL ROAD
-  X-SECTION LINES
-  FACE ADVANCE
-  WASTE DUMP YARD
-  TOP SOIL DUMP
-  PLANTATION
-  CHECK DAM

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III.  
 OWNER: SH. LAKHWINDER SINGH  
 SCALE: 1:2000 (1 CM = 20 METERS)  
 CONTOUR INTERVAL: 2.00 METERS.  
 PROPOSED AREA FOR PROTECTED MINERAL PRODUCTION FOR THE 3RD YEAR.

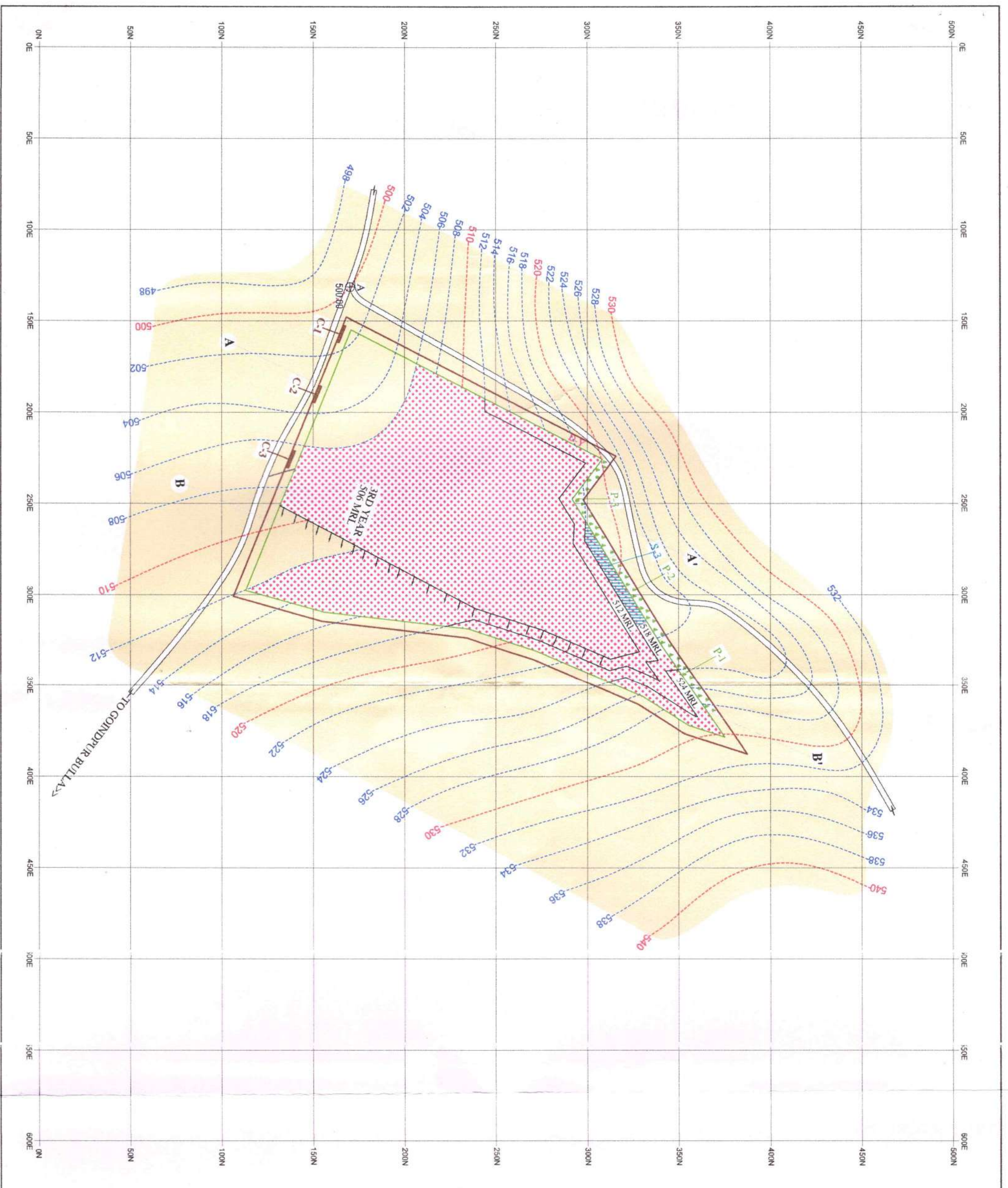
**COORDINATES:-**  
 A N-31°18'22.60"  
 E-76°11'26.48"  
 B N-31°18'25.22"  
 E-76°11'29.99"

**NORTH:-**



CERTIFIED THAT THE PLAN IS CORRECT.

  
**Arun Dhimman**  
 ROP Registration No.  
 HP/ROP/25/12/2019



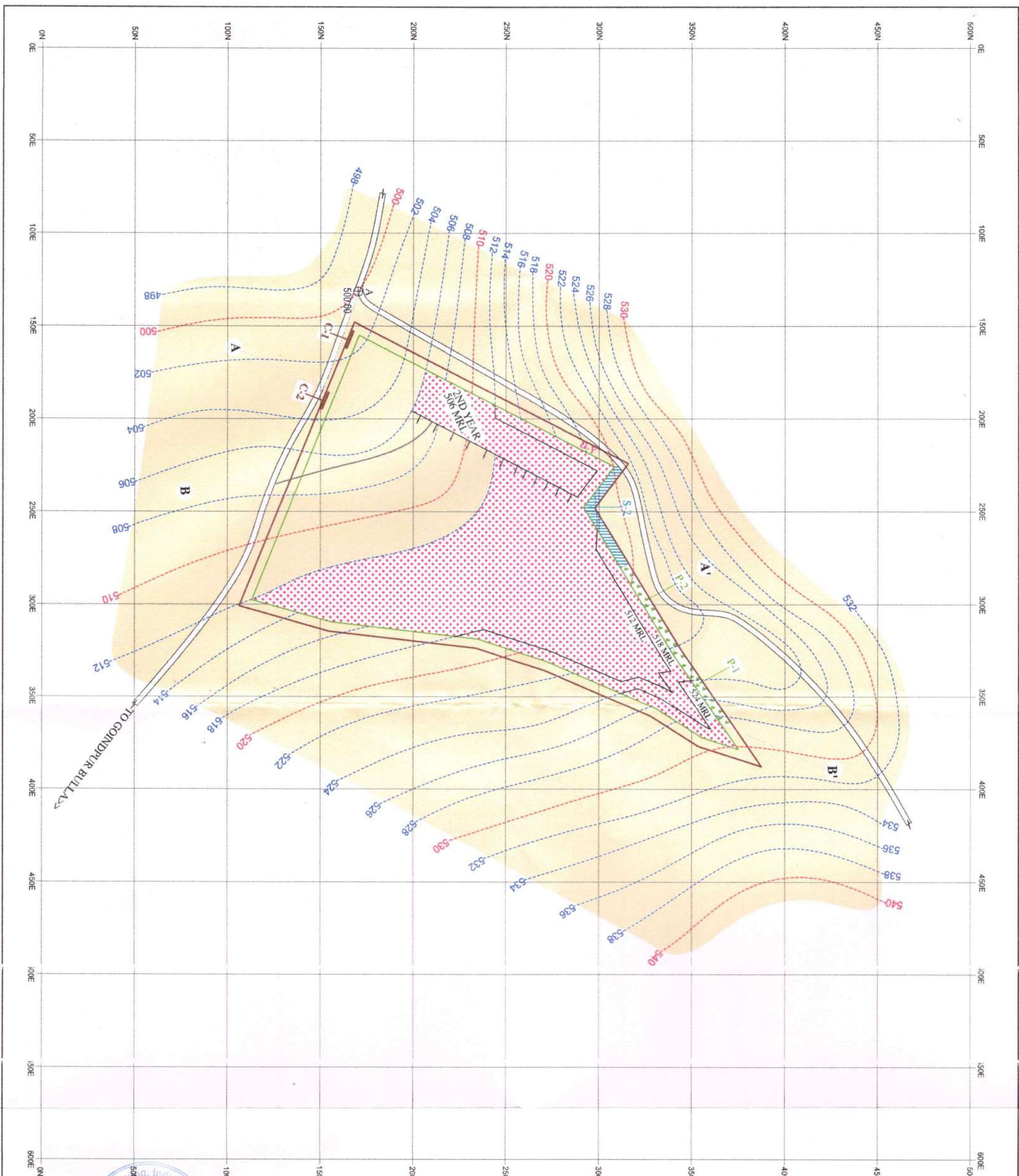













Plate No. 9.

**GEOLOGICAL INDEX**

-  SOIL COVER
-  QUARTZITE

**TOPOGRAPHICAL INDEX**

-  LEASE BOUNDARY
-  SURVEY STATION
-  CONTOUR LINES
-  APPROACH ROAD
-  PROPOSED HAUL ROAD
-  X-SECTION LINES
-  FACE ADVANCE
-  WASTE DUMP YARD
-  TOP SOIL DUMP
-  PLANTATION
-  CHECK DAM

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III.

OWNER: SH. LAKHWINDER SINGH

SCALE: 1:2000 (1 CM = 20 METERS)

CONTOUR INTERVAL: 2.00 METERS.

PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE 2ND YEAR.

COORDINATES :-

- A N-31°18'22.60"
- E-76°11'26.48"
- B N-31°18'25.22"
- E-76°11'29.99"



CERTIFIED THAT THE PLAN IS CORRECT.

*Adf*

**Arun Dhiman**  
**RQP Registration No.**  
**HP/RQP/25/2/2019**

Plate No. IX.



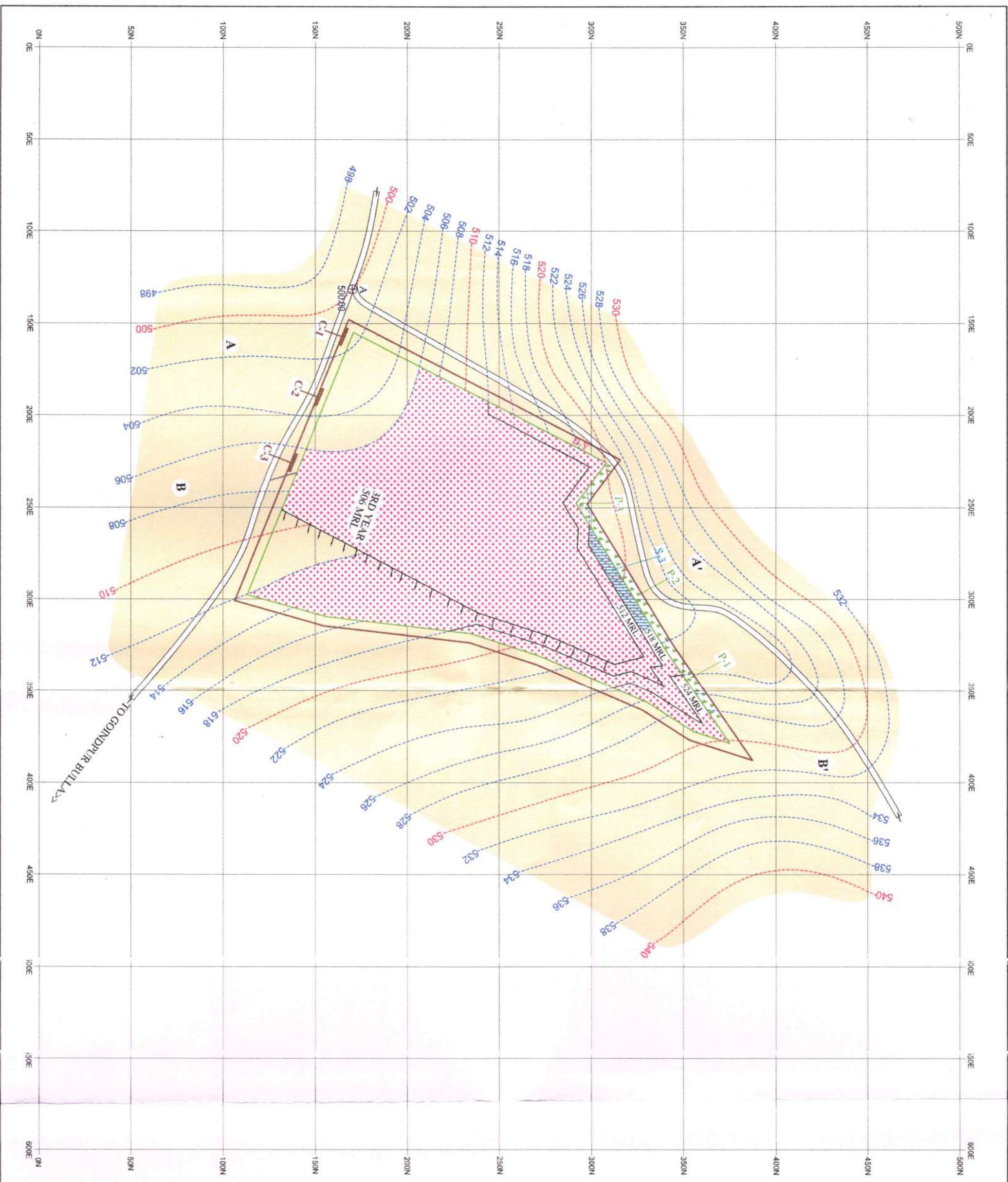


Plate No. 10.

**GEOLOGICAL INDEX**

	SOIL COVER
	QUARTZITE

**TOPOGRAPHICAL INDEX**

	LEASE BOUNDARY
	SURVEY STATION
	CONTOUR LINES
	APPROACH ROAD
	PROPOSED HAUL ROAD
	X-SECTION LINES
	FACE ADVANCE
	WASTE DUMP YARD
	TOP SOIL DUMP
	PLANTATION
	CHECK DAM

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III.  
 OWNER: SH. LAKHWINDER SINGH  
 SCALE: 1:2000 (1 CM = 20 METERS)  
 CONTOUR INTERVAL: 2.00 METERS.  
 PROPOSED AREA FOR PROTECTED MINERAL PRODUCTION FOR THE 3RD YEAR.

**COORDINATES :-**  
 A N-31°18'22.60"  
 E-76°11'26.48"  
 B N-31°18'25.22"  
 E-76°11'29.99"

**NORTH:**

CERTIFIED THAT THE PLAN IS CORRECT.

**Arun Dhiman**  
 RQP Registration No. HP/RQP/25/2/2019

Plate No. X.

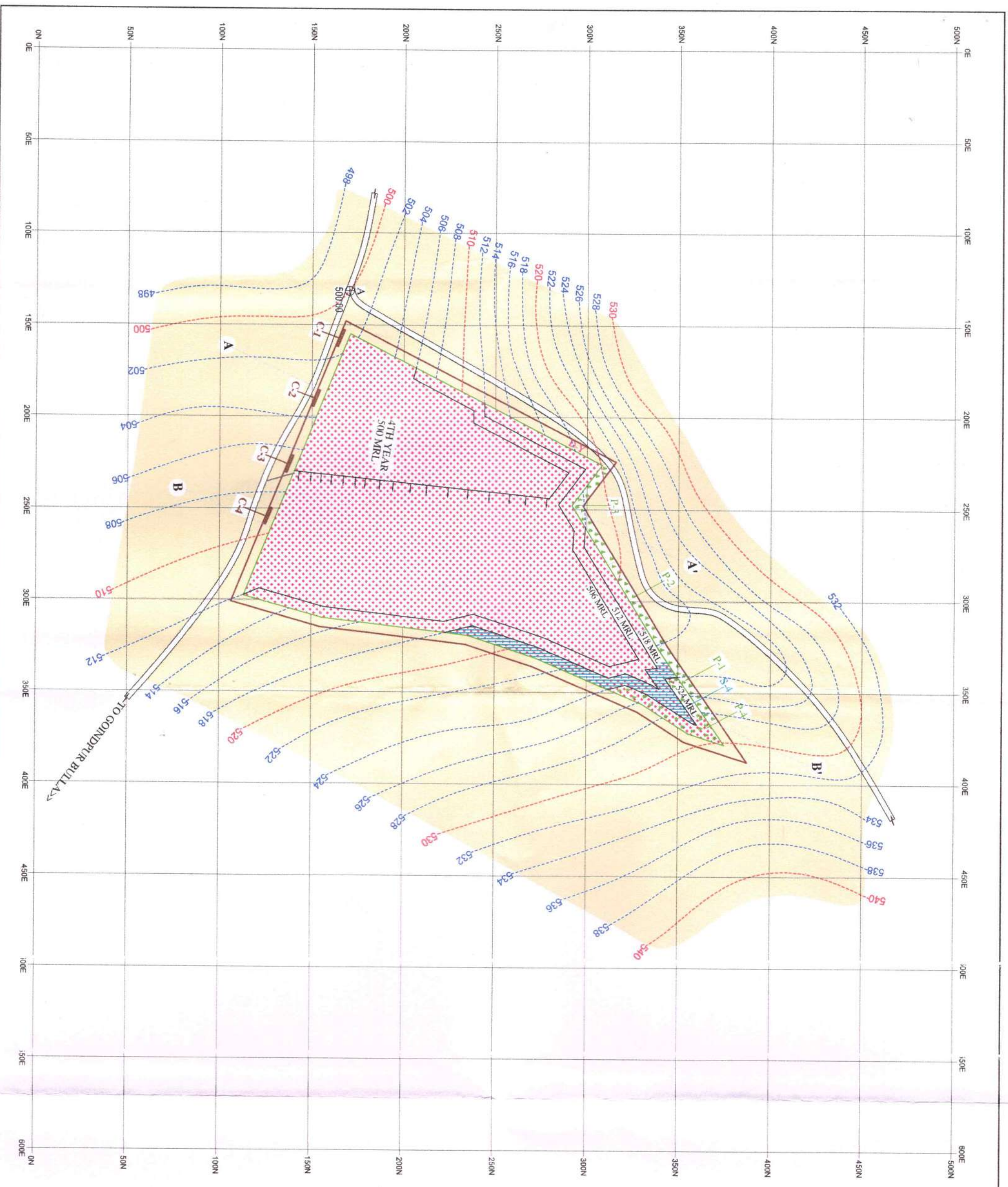


Plate No. 11.

**GEOLOGICAL INDEX**

	SOIL COVER
	QUARTZITE

**TOPOGRAPHICAL INDEX**

	LEASE BOUNDARY
	SURVEY STATION
	CONTOUR LINES
	APPROACH ROAD
	PROPOSED HAUL ROAD
	X-SECTION LINES
	FACE ADVANCE
	WASTE DUMP YARD
	TOP SOIL DUMP
	PLANTATION
	CHECK DAM

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III.  
 OWNER: SH. LAKHWINDER SINGH  
 SCALE: 1:2000 (1 CM = 20 METERS)  
 CONTOUR INTERVAL: 2.00 METERS.  
 PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE 4TH YEAR.

**COORDINATES :-**  
 A N-31°18'22.60"  
 E-76°11'26.48"  
 B N-31°18'25.22"  
 E-76°11'29.99"

**NORTH :-**

CERTIFIED THAT THE PLAN IS CORRECT.

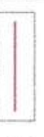


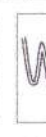






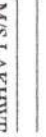
**Arun Dhiman**  
 RQP Registration No.  
 HP/RQP/25/2/2019

Plate No. XI.

**GEOLOGICAL INDEX**

-  SOIL COVER
-  QUARTZITE

**TOPOGRAPHICAL INDEX**

-  LEASE BOUNDARY
-  SURVEY STATION
-  CONTOUR LINES
-  APPROACH ROAD
-  PROPOSED HAUL ROAD
-  X-SECTION LINES
-  FACE ADVANCE
-  WASTE DUMP YARD
-  TOP SOIL DUMP
-  PLANTATION
-  CHECK DAM

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III.

OWNER: SH. LAKHWINDER SINGH

SCALE: 1:2000 (1 CM = 20 METERS)

CONTOUR INTERVAL: 2.00 METERS.

PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE 5TH YEAR.

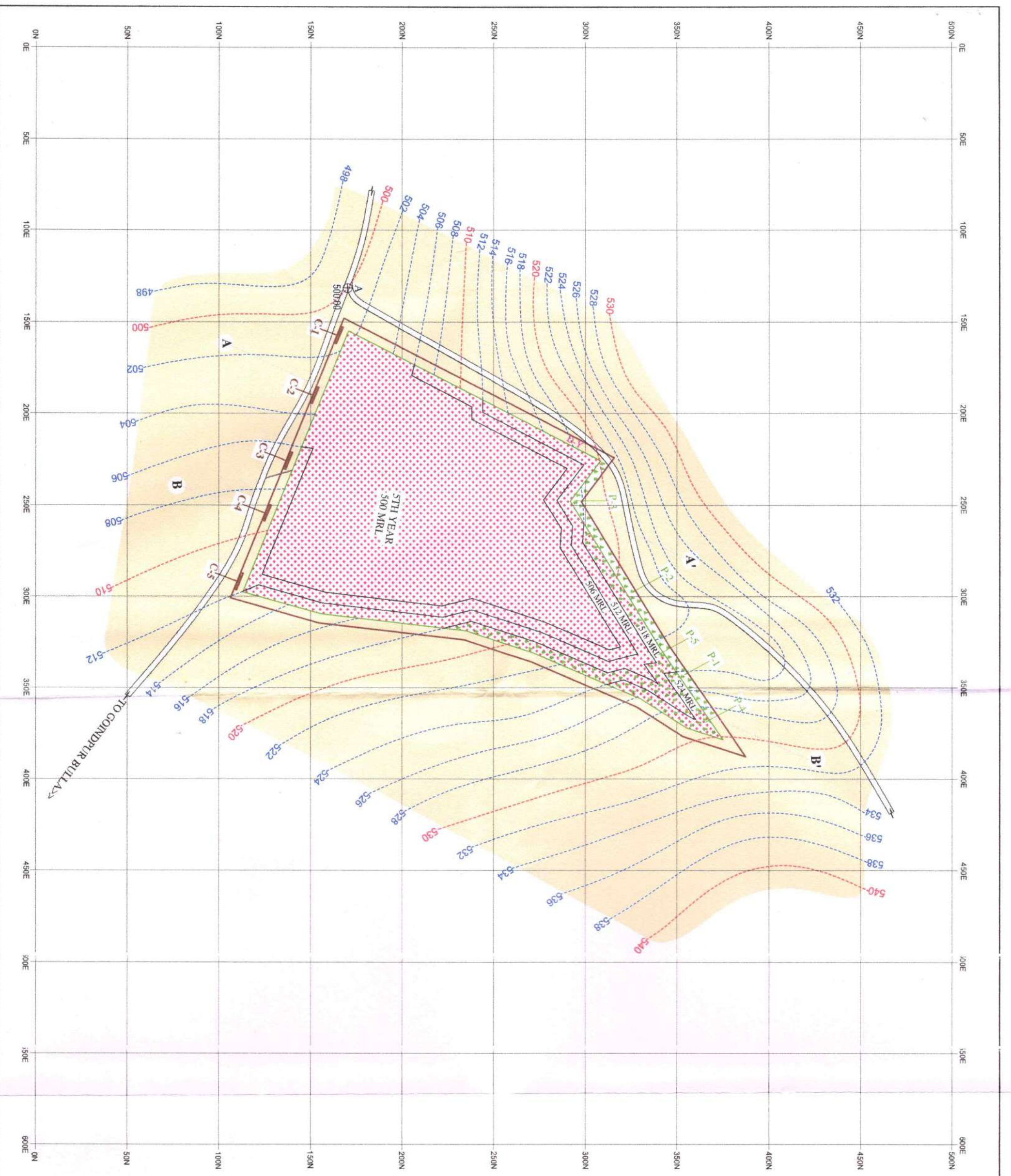
COORDINATES :-

- A N-31°18'22.60"
- ⊕ E-76°11'26.48"
- B N-31°18'25.22"
- ⊕ E-76°11'29.99"



CERTIFIED THAT THE PLAN IS CORRECT.


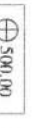









  
**Arun Dhimman**  
 RQP Registration No.  
 HP/RQP/25/2/2019



**GEOLOGICAL INDEX**

-  SOIL COVER
-  QUARTZITE

**TOPOGRAPHICAL INDEX**

-  LEASE BOUNDARY
-  SURVEY STATION
-  CONTOUR LINES
-  APPROACH ROAD
-  PROPOSED HAUL ROAD
-  X-SECTION LINES
-  FACE ADVANCE
-  WASTE DUMP YARD
-  ULTIMATE PTT LIMIT
-  PLANTATION
-  CHECK DAM

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT-III.  
 OWNER: SH. LAKHWINDER SINGH  
 SCALE: 1:2000 (1 CM = 20 METERS)  
 CONTOUR INTERVAL: 2.00 METERS.  
 POST RE-TEAMATION PLAN.

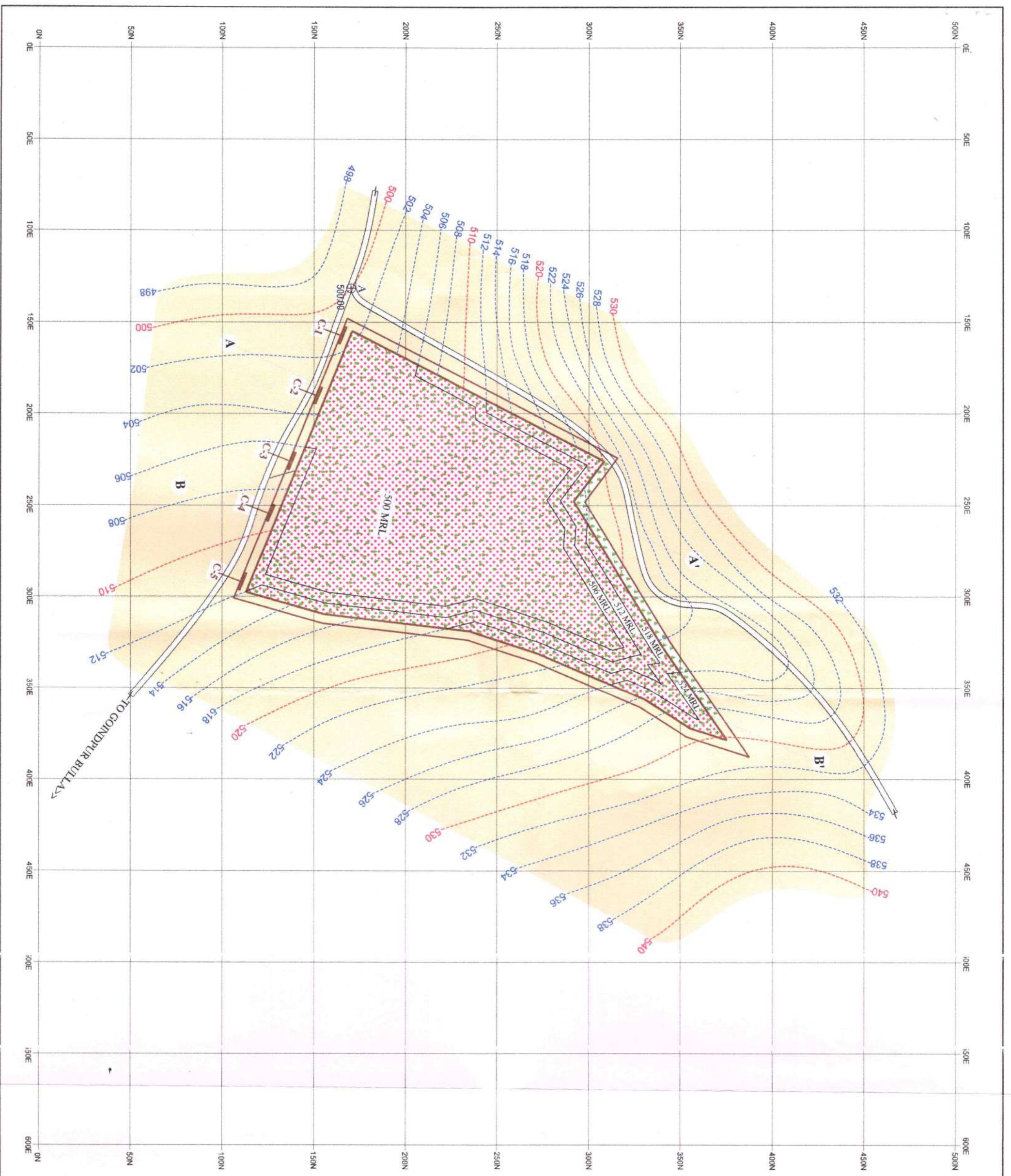
COORDINATES :-  
 A N-31°18'22.60"  
 E-76°11'26.48"  
 B N-31°18'25.22"  
 E-76°11'29.99"



CERTIFIED THAT THE PLAN IS CORRECT.



**Arun Dhiman**  
 RQP Registration No.  
 HP/RQP/25/2/2019



No. Udyog-Bhu(Khani-4)Laghu-524/2025 -4555  
Government of Himachal Pradesh  
Department of Industries  
"Geological Wing"  
Dated, Shimla-171001, the

19-07-2025

To

✓ Sh. Lakhwinder Singh,  
Prop. M/s Lakhwinder Singh Stone Crusher,  
& Screening Plant Unit III,  
VPO Gondpur Bulla,  
Tehsil Haroli, Distt. Una, H.P.

Subject: Regarding distance certificate of 500 Mtrs.

Sir/Madam,

Enclosed please find here with the distance certificate issued by the Mining Officer, Una, regarding distance from the granted/sanctioned mining lease areas/auctioned area within 500 mtrs. from the periphery of the area applied for the mining lease for which Letter of Intent has been issued in favour Sh. Lakhwinder Singh, Prop. M/s Lakhwinder Singh Stone Crusher & Screening Plant Unit III, Village & P.O. Gondpur Bulla, Tehsil Haroli, Distt. Una, H.P. duly countersigned by the undersigned for taking further necessary action.

Yours faithfully,

Encl/As above.

Endst. No. Udyog-Bhu(Khani-4)Laghu-524/2025  
Copy to the Mining Officer, Una, with reference to letter No. Udyog(Bhu)-UNA-Lakhwinder SCU- 2144, dated 14.07.2025 for information.

Geologist-Zone-II,  
Himachal Pradesh,  
Dated

Geologist-Zone-II,  
Himachal Pradesh

**Format for Certificate from Mining/Industries Department w.r.t. Mining Lease Located within 500 meters from the periphery of the area applied for.**

**CERTIFICATE**

Certified that, as per the report submitted by concerned Patwari in this office, 01 (One) mining leases granted/applied with the department within 500 Mtr. from the periphery of the area applied for grant of mining lease by M/s Lakhwinder Singh Stone Crusher Unit-III VPO Gondpur Bulla, Tehsil Haroli District Una HP, over Kh. No. 1236 measuring 02-78-91 Hect.in Mouza/Muhal Gondpur Bulla, Tehsil Haroli Distt.Una, Himachal Pradesh.

**The status of mining lease is as under:**

Sr No.	Name of Mining Lease	Khasra No.	Area in Hectares	Mauza / Mohal	Purpose	Status of EC/Mining lease whether operating or not operating
1.	M/s Lakhwinder Singh Stone Crusher Unit-III VPO Gondpur Bulla, Tehsil Haroli District Una HP,	1228, 1691/1227, 1692/1227	04-80-63 Hect.	Gondpur Bulla	Stone Crusher	Operational

**Mining Officer,**  
Department of Industries,  
Himachal Pradesh,

C/s

**Geologist Zone II,**  
Department of Industries,  
Himachal Pradesh

**HP FOREST DEPARTMENT  
UNA FOREST DIVISION, UNA (HP)**

**To whom it may concern**

As requested by M/S Lakhwinder Singh (Stone Crusher & Screening Plant unit-3) Village Gondpur Bulla, Tehsil Haroli, Distt. Una (HP), the following information is hereby authenticated in respect of Khasra No. 1236 area measuring 02-78-91ha. falling in Mauza & Mohal Gondpur Bulla, Tehsil Haroli, District Una (HP) which is under private ownership:-

(a) There is no wild life sanctuary/National park/Biosphere Reserve within 10KM distance of the mining lease site. GPS location is 31°18'23"N 76°11'32"E and the aerial distance of proposed site is 18.30KM from Nangal Wildlife Sanctuary.

(b) List of flora and fauna fast growing species, Aquatic Animal species present in the area is enclosed.

Divisional Forest Officer,  
Una Forest Division Una (HP)

Endst. No. R.K./Mining/ 1973-74

Dated Una, the 17-6-2025

Copy is forwarded to:-

1. M/S Lakhwinder Singh (Stone Crusher & Screening Plant Unit-3) Village Gondpur Bulla, Tehsil Haroli, Distt. Una (HP) w.r.t. his application dated 10.04.2025.

2. R.F.O. Una for information & necessary action w.r.t. his office letter No. 418 dated 06.06.2025.

Divisional Forest Officer,  
Una Forest Division Una, (HP)



Local Name	English Name	Botanical Name
Aisan Sain	Indian laurel	<i>Terminalia tomentosa</i>
Ak	Apple of Sodom, rubber bush, swallow-wort	<i>Calotropis procera</i>
Akha	Heart leaf raspberry	<i>Rubus paniculatus</i>
Am	Mango	<i>Mangifera indica</i>
Amaltas, Kaniar, Alis	Golden shower tree	<i>Cassia fistula</i>
Amla	Chinese laurel, currant tree	<i>Antidesma acidum</i>
Amla	Indian gooseberry	<i>Emblica officinalis</i>
Anar-dana	Wild pomegranate	<i>Punica granatum</i>
Arjun	Arjuna myrobalan	<i>Terminalia arjuna</i>
Badhla	Indian willow	<i>Salix tetrasperma</i>
Badrol		<i>Persea gamblei</i>
Bahankahar, Gin, agnimanth	Premna	<i>Premna mucronata</i>
Bakkar bel	Black creeper	<i>Ichnocarpus frutescens</i> ✓
Ban	Beech-wood, goomar tree	<i>Gmelina arborea</i>
Ban Basuti	Blue-beard	<i>Caryopteris odorata</i> (syn. <i>C. bicolor</i> , <i>C. wallichiana</i> )
Ban Malti	Jasmine	<i>Jasminum multiflorum</i>
Bana	Five-leaved chaste tree	<i>Vitex negundo</i>
Bans Bainj, Sotha	Male bamboo	<i>Dendrocalamus strictus</i>
Bantaur		<i>Atylosia crassa</i>
Barasol Pan	Winged stalked Flemingia	<i>Flemingia semialta</i>
Barnahi, Billan	Elephant apple, wood apple, monkey fruit, curd fruit	<i>Limonia acidissima</i>
Barthua	Bridal couch tree, sage plant	<i>Hymenodictyon excelsum</i>
Basant	Yellow flax, golden-girl	<i>Reinwardtia indica</i>
Basuti	Malabar nut	<i>Adhatoda vasica</i>
Batindu		<i>Stephania elegans</i>
Behra	Belleric myrobalan	<i>Terminalia belerica</i>
Bel	Stone apple, holy fruit tree	<i>Aegle marmelos</i>
Ber	Jujube	<i>Zizyphus mauritiana</i>
Berna	Three-lived-caper	<i>Crataeva religiosa</i>
Bhabar, Bagar	Baib grass	<i>Eulaliopsis binata</i>

Local Name	English Name	Botanical Name
Bhadrun		<i>Gymnosporia royleana</i>
Bhakara		<i>Saurauja napaulensis</i>
Bhang	Hemp, marijuana	<i>Cannabis sativa</i>
Bharmela		<i>Euonymus pendulus</i>
Bhirang	Shrubby deeringia	<i>Deeringia celosiooides</i>
Biul, Dhaman		<i>Grewia oppositifolia</i>
Bohar, Barh	Bengal fig, Indian fig	<i>Ficus bengalensis</i>
Burkani	Wild-berry	<i>Maesa indica</i>
Cha buti	Billygoat-weed, Chick weed, Goatweed, Whiteweed	<i>Ageratum conyzoides</i>
Chakunda	Negro coffee, coffee senna	<i>Cassia occidentalis</i>
Chamar bel	Bush Grape, fox-grape, three-leaved wild vine, threeleaf cayratia	<i>Cayratia trifolia</i>
Chamar Saman	Velvety melon feather-foil	<i>Glochidion velutinum</i>
Chamorar		<i>Ehretia laevis</i>
Charaki	Charming clematis	<i>Clematis grata</i>
Chhittar Chhun	Drooping prickly pear	<i>Opuntia monacantha</i>
Chhota Mendhru	Cape-myrtle, African box-wood	<i>Myrsine africana</i>
Chil	Chir-pine	<i>Pinus roxburghii</i>
Chilla	Downy-leaved false kamela	<i>Casearia elliptica</i>
Chirandi	Dandal	<i>Xylosma longifolium</i>
Chopar chilla ✓		<i>Miliusa velutina</i>
Coibur, machrun		<i>Clematis nutans</i>
Dagur	Hairy fig, devil fig	<i>Ficus hispida</i>
Damani	Two-lobed cross berry	<i>Grewia laevigata</i>
Dargarhi	Himalayan mimosa	<i>Mimosa himalyana</i>
Dhakkari	Arni	<i>Clerodendrum phlomidis</i>
Dhao, Chhal	Axlewood	<i>Anogeissus latifolia</i>
Dhawin, Dhawi	Fire-flame bush	<i>Woodfordia floribunda</i>
Dholu		<i>Chrysopogan montana</i>
Dhurmalti	Jasmine	<i>Jasminum arborescens</i>
Drek, dek, beakin	Persian cedar, white lilac	<i>Melia azederach</i>
Dudh bel	Bread-flower	
Dudla	Willow leaved fig	<i>Vallisneria spiralis</i>
Dudli	Telegraph Plant or Semaphore	<i>Ficus nemoralis</i>
		<i>Desmodium motorium</i>

Local Name	English Name	Botanical Name
	Plant	
Dura, Dogla, fegra	Wild Himalayan fig	<i>Ficus palmata</i>
Dusen	Indian squirrel tail	<i>Colebrookia oppositifolia</i>
Faindal	Christmas vine, snow-creeper, bridal-wreath	<i>Porana paniculata</i>
Flah, Dhak	Flame of the Forest, Bastard Teak, Parrot Tree	<i>Butea monosperma</i>
Gaddi Kuri	Spinous kino tree	<i>Bridelia squamosa</i>
Gajal Bel	Cowhage, velvet bean	<i>Mucuna pruriens</i>
Gandla	Curry leaf tree	<i>Murraya koenigii</i>
Ghanira Ghandheela	Oleander	<i>Nerium odorum</i>
Ghas bel	Dodder	<i>Cuscuta reflexa</i>
Giddardak	Wild-grape	<i>Ampelocissus latifolia</i>
Ginani		<i>Premna barbata</i>
Girgithan	Mock buckthorn	<i>Sageretia parviflora</i>
Gullhan		<i>Halmintonia suaveolens</i>
Gulodan	Buckthorn	<i>Rhamnus trigraeter</i>
Handa Bhera	Slow-match tree	<i>Careya arborea</i>
Harar	Black myrobalan, gallnut tree	<i>Terminalia chebula</i>
Har singar		<i>Nyctanthes arbortristis</i>
Hyum Garna	Caperberry, Caperbush	<i>Capparis sepiaria</i>
Jagru	Tick-trefoil, tick clover or beggar lice	<i>Demodium velutinum</i>
Jaman	Black-plum	<i>Syzygium cumini</i>
Jaman Khumb	Indian sarsaparilla	<i>Cryptolepis buchanani</i>
Jamnota	Barbados nut, purging nut	<i>Jatropha curcas</i>
Japani toot, tutra	Paper mulberry	<i>Broussonetia papyrifera</i>
Jhol	Clematis gouriana, Indian traveller's joy	<i>Clematis gouriana</i>
Jindru	Himalayan randia	<i>Randia tetrasperma</i>
Jugter bhur bel		<i>Aspidopterys wallichii</i>
Jung kinch	Wild yam	<i>Dioscorea deltoides</i>
Kachnar Karal	Malabar ebony, mountain ebony	<i>Bauhinia malabarica</i>
Kachnar, Karal	Budhist bauhinia, Mountain Ebony, Orchid tree	<i>Bauhinia variegata</i>

Local Name	English Name	Botanical Name
		<i>Saccharum spontaneum</i>
Kahi	Asian fodder cane	<i>Pyrus pashia</i>
Kainth	Wild Himalayan pear	<i>Zizyphus oenopia</i>
Kakal Ber	Jackal jujube	<i>Pistacia integerrima</i>
Kakrain	Zebra-wood	<i>Rubus lasiocarpus</i>
Kala Akha	Rough fruit-berry	<i>Diospyros cordifolia</i>
Kala Dhao, harkinu	Mottled ebony	
Kalan	Kaim	<i>Mitragyna parvifolia</i>
Kali basuti	Patchouli	<i>Pogostemon plectranthoides</i>
Kamal	Monkey face tree	<i>Mallotus philippinensis</i>
Kandroi	Drooping fig	<i>Ficus Semicordata</i> (syn. <i>Ficus cunia</i> )
Kangu	Batoko's plum	<i>Flacourtia ramontchi</i>
Kante bans	Giant thorny bamboo	<i>Bambusa arundinacea</i>
Kao	Wild olive, iron tree, Indian oli	<i>Olea ferruginea</i>
Kapur mingar		<i>Strobilanthes auriculatus</i>
Karanda		<i>Ficus clavata</i>
Kararoi Tila pati		<i>Roylea cinerea</i>
Karmaru	black siris, fragrant albizia, Ceylon rosewood	<i>Albizzia odoratissima</i>
Karun	Himalayan mulberry	<i>Morus serrata</i>
Kasakuri		<i>Trema politora</i>
Kathamam		<i>Eugenia jambolana</i> Var <i>caryophyllifolia</i>
Kathi	Cassia indigo	<i>Indigofera besua</i> (syn. <i>Indigofera pulchella</i> , <i>Indigofera leptostachya</i> )
Kehmal ✓	Indian ash tree ✓	<i>Lannea coromandelica</i>
Kendu	Mountain persimmon	<i>Diospyros montana</i>
Keor	Bitter oleander	<i>Holarrhena antidysenterica</i>
Khair	Cutch tree	<i>Acacia catechu</i>
Khajoor	Date-sugar palm, Indian winepalm, sugar palm, wild dat palm	<i>Phoenix sylvestris</i>
Khalawa	Woolly dyeing rosebay	
Kikkar	Indian gum-arabic tree	<i>Wrightia tomentosa</i>
Kinnu	Persimmon tree	<i>Acacia Nilotica spp indica</i>
Kumbhi		<i>Diospyros chloroxylon</i>
Kuri, HarShingar	Coral Jasmine, Tree of Sorrow,	<i>Cordia vestita</i>
		<i>Nyctanthus arbor tristis</i>

Local Name	English Name	Botanical Name
	Queen of the night	
Lambh	Black spear grass	<i>Heteropogon contortus</i>
Lambi	Wire-grass, spear-grass	<i>Aristida depressa</i>
Lantana, Ukkal Buti	Spanish flag, lantana	<i>Lantana camara</i>
Lasura	Assyrian plum	<i>Cordia myxa</i>
Ligga	Daar	<i>Boehmeria rugulosa</i>
Lunji	Brown sorghum	<i>Sorghum nitidum</i>
Maggar (Cultivated)	Bamboo	<i>Dendrocalamus hamiltonii</i>
Mahua	Indian butter tree	<i>Madhuca indica</i>
Makora Gha	Indian geranium grass	<i>Cymbopogon martinii</i>
Malti	Jasmine	<i>Jasminum Grandi florum</i>
Maltiwan	Hiptage	<i>Hiptage madablota</i>
Mandhar	Florida hopbush	<i>Dodonaea viscosa</i>
Mara	Bishop wood, Java wood	<i>Bischoffia javanica</i>
Maror Phalli	East Indian Screw Tree, Nut Leaved Screw Tree	<i>Helicteres isora</i>
Masandaru		<i>Linoceira intermedia</i>
Mirgu	Thunberg kutzu vine	<i>Cassine glauca</i>
Mund Bel	Sneeze Wort, Cotton milk plant Green milkweed climber, Green wax flower, Sneezing silk	<i>Wattakaka volubilis</i>
Nargan	Orange jasmine	<i>Murraya paniculata</i>
Nim	Indian lilac	<i>Azadirachta indica</i>
Ohi	Chinese albizia, silk tree	<i>Albizzia chinensis</i>
Padal	Yellow snake tree	<i>Strereospermum suaveolens</i>
Padar	False nettle	<i>Boehmeria platyphylla</i>
Padari, pilkhan, pakur	White fig	<i>Ficus Virens</i> (syn. <i>Infectoria</i> )
Palakh	Rumpf's fig	<i>Ficus rumphii</i> /
Pansera	Tilki	<i>Wendlandia heynei</i>
Panwar	Foetid cassia, The Sickie Senna Wild Senna	<i>Cassia tora</i>
Parand	Honey-suckel mistle-toe	<i>Dendrophthoe falcate</i> (syn. <i>Loranthus longiflorus</i> )
Parara, Paliro	Corky coral tree, flame tree	<i>Erythrina glabrescens</i>
Paror	Laurel-leaved snail tree	<i>Cocculus laurifolius</i>
Phalai	Amritsar-gum, black sally,	<i>Acacia modesta</i>

Local Name	English Name	Botanical Name
	blackwood	<i>Grewia elastica</i>
Phalsa	Dhaman	<i>Ficus religiosa</i>
Pippal	Sacred fig	<i>Drypetes roxburghii</i> (syn. <i>Putranjiva roxburghii</i> )
Putajen	Child-life tree, Indian Amulet Plant, Spurious Wild Olive	<i>Holoptelea integrifolia</i>
Rajain, Pardesi	Indian elm, kanju	<i>Caesalpinia decapetala</i>
Ralan, Arlu	Mysore thorn, cat's claw	
Ram ban	Century plant	<i>Agave americana</i>
Rara	Emetic nut	<i>Xeromphis spinosa</i> (syn. <i>Randia dumetorum</i> )
Rattak	Crab's eye	<i>Abrus precatorius</i>
Reru, riur	White babool, Distiller's acacia	<i>Acacia leucophloea</i>
Rihan, meda-lakri	Indian laurel	<i>Litsea chinensis</i>
Ritha	Soap-nut tree	<i>Sapindus mukorossi</i>
Rudhar		<i>Ficus sarmentosa</i>
Rumbal	Cluster fig	<i>Ficus racemosa</i>
Sagwan	Teak	<i>Tectona grandis</i>
Sakar		<i>Ehretia aspera</i>
Sal	Yellow Balau	<i>Shorea robusta</i>
Salangan		<i>Millettia extensa</i>
Salod	Indian kudju	<i>Pueraria tuberosa</i>
Samma		<i>Engelhardtia spicata</i> var <i>colebrookia</i>
Sanan Suhanjua	Drum-stick tree	<i>Moringa oleifera</i>
Sandan, sanan		<i>Ougeinia oujeinensis</i>
Sankhiran	Black-Oil tree, Climbing-staff plant	<i>Celastrus panicultus</i>
Sarain	Jasmine	<i>Jusminum disparmum</i>
Sarpri		<i>Periploca calophylla</i>
Sason	Wild tea	<i>Osyris wightiana</i>
Satmnlia, Musli	Wild asparagus	<i>Asparagus racemosus</i>
Shisham, Tali	Bombay blackwood, Indian rosewood, sissoo	<i>Dalbergia sissoo</i>
Siah toot	Black fruited mulberry	<i>Morus laevigata</i>
Sia-toot	Japanese mulberry, Korean mulberry, Small-leaved mulberry tree	<i>Morus australis</i>
Simble	Silk cotton tree	<i>Bombax ceiba</i>

Local Name	English Name	Botanical Name
Siris, Sarin	Lebbek-tree, fry-tree, flea-tree	<i>Albizzia lebbek</i>
Sukhchain	Pongam	<i>Deriss Indica (syn. Pongmia pinnata)</i>
Tatpalanga	Broken bones plant, Indian calosanthes, Indian Trumpet,	<i>Oroxylum indicum</i>
Terni		<i>Tylophora hirsuta</i>
Thor, Choon	Royle's Spurge	<i>Euphorbia royleana</i>
Toot	White mulberry	<i>Morus alba</i>
Tor	Camel's foot climber, malu- creeper	<i>Bauhinia vahlii</i>
Tun	Indian cedar, Indian mahogany Indian toon	<i>Toona cilata</i>
Unga	Aramina Fibre, Congo Jute	<i>Urena lobata</i>

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Local Name	English Name	Scientific Name
<b>MAMMALS</b>		
Adjgar	The Viper	<i>Vipera Russellii</i>
Bagh	Leopard	<i>Panthera pardus</i>
Ban billi	Leopard cat	<i>Felis bangalensis</i>
Bejoo	The Honey Badger	<i>Mellivora expensis</i>
Chamgadar	The Bat	<i>Pteropus medina</i>
Chuchundar	The Gray Musk	<i>Suncus Caeruleu</i>
Lamab	The Common Ratsnake	<i>Bungarus mucosus</i>
Giddar	Jackal	<i>Canis aureus</i>
Gilehri	The Squirral	<i>Funanbulus pennanti</i>
Goh	The Land Monitor Lizard	<i>Varanus bengalensis</i>
Jangli billi	Jangle cat	<i>Felis chaus</i>
Kachuha	The common Land Tortoise	<i>Testudo flagans</i>
Kakkar	Barking deer	<i>Muntiacus- Muntjak(vaginlis)</i>
Khargosh	Hare	<i>Lepus nigricoilis</i>

Local Name	English Name	Scientific Name
Kirla (Girgil)	The Indian Chamaleon	<i>Chameleon calcartus</i>
Kirli	The Common House Lizard	<i>Hemidactylus gleadovii</i>
Lal Bandar	Rhesus monkey	<i>Macaca mulatta</i>
Langoor	Langoor common	<i>Preshytes entellus</i>
Lomari	Lomari	<i>Vulpie bengalensis Fox</i>
Nag	The King Cobra	<i>Naja hamoh</i>
Nilgai	Blue bull	<i>Boselaphus tragocamelus</i>
Para	Para	<i>Hog deer</i>
Phaniar	The Common Cobra	<i>Naja tripudians</i>
Sambhar	The Sambhar	<i>Cervus unicolor</i>
Saup	The Common Warm Snake	<i>Typhlops braminus</i>
Seh	Porcupine	<i>Hystrie indica</i>
Suar	Wild boar	<i>Sus sacrofa</i>
<b>BIRDS</b>		
Bagla	The grey Heron	<i>Ardea cinera</i>
Bagla	The little Egret	<i>Egretta garzotta</i>
Batair	The common quail	<i>Cotarnix cotarnix</i>
Bhojanga or Hojanga	The King Crow	<i>Dicrurus macrocucus</i>
Bulbul	The redvented bulbul	<i>Molpastar cafer</i>
Chhota Falta	The Indian Spotted Dove	<i>Stroptapelia shinensis</i>
Fakta	The Indian ring dove	<i>Stroptapelia decaocto</i>
Hudhud	The Hooper	<i>Upapa epops</i>
Jangli Murga	The Jungle fowl	<i>Galus gonnerathi</i>
Jangli Murgahi	The red jungle fowl	<i>Gallus galus</i>
Kabutar	The blue rock pigion	<i>Columberalivia</i>
Kaikil	The common king fisher	<i>Aleedo atthis</i>
Kala Titar	The black partridge	<i>Framcolinus francolinus</i>
Koel	The Koel	<i>Endynamis seolopaceus</i>
Maina	The Common myna	<i>Acrdothere tristris</i>
Mor	The common pea fowl	<i>Paro cristetus</i>
Murgabi	The Indian duck	<i>Anas poeciborhyncha</i>
Neel Kanth	The Blue Jay or Roller	<i>Coracia bengalensis</i>
Pahari Bulbul	The red whiskered bulbul	<i>Otocompsa jacosa</i>
Pahari Kowva	The Himalyan Jangle Crow	<i>Corbus bevaillonti</i>
Pahari Titar	The hill partridge	<i>Arborophila forgueola</i>
Safaid Bagla	The cattle Egret	<i>Bulbulcus ibis</i>
Selva kabutar	The eastern stock pigion	<i>Colamba oena</i>
Tatiri	The wattled lapuring	<i>Lobivanallus indicus</i>
Titar	The gray partridge	<i>F pondicrianus</i>

Local Name	English Name	Scientific Name
Tota	The large Indian Parakeet	<i>Psittacula eupatria</i>
<b>REPTILES</b>		
Azgar	Python	
Goh	Monitor Lizard	
Gunther	Pit viper	
Kala Nag	King Cobra	
Lamab	Rat Snake	
Nag	Cobra	
<b>FISH</b>		
Deola	Murrall	
Godh	Ecl	
Karad	Backwa	
Maha-sheer	----	

Ashmm -  
Bo-Kungret

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Range Officer  
Forest Range  
Una H.P.-174303


Number khasra 1236 of Gondpur Bulla

Write a description for your map

Legend  
AB 21/104  
Feature 1



Ashma  
Bo. Kungut

  
Range Officer  
Forest Range  
11th HP-17402

राजस्व विभाग, हिमाचल प्रदेश - नकल जमाबंदी

एस.सी.ए रसीद संख्या: 5239135725005306

जिला : ऊना  
तहसील/उप-तहसील: दुनैहड़ (उप-तहसील)  
कानूनगोवृत : दुनैहड़  
पटवार वृत : गोनदपुर जयचन्द  
हदबस्त न. : 529

नाम : a  
पिता/पति : b

सेवा शुल्क : ₹ 20.00  
नकल शुल्क : ₹ 1.00  
कुल शुल्क : ₹ 21.00

राजस्व गांव : गोनदपुर वृता उपरला

जमाबंदी वर्ष: 2023-2024

क्षेत्रफल ईकाई: है-आ-सै

1	2	3	4	5	6	7	8	9	
15 मिन	38 मिन	कुल भाग (900) अश्वनी	काश्त व कब्जा स्वयं		1236	02-78-91 बंजर कदीम	कब्जा व पड़ता बंजरह खेवट न. (1)	न.ई. 562 619 मलकियत 636 637	कि.ई. वरास्त तर्क हकूक वरास्त वरास्त
13	38	कुमार, सुनील कुमार भाग बराबर (225) भाग पुत्र व श्रीमति निर्मला देवी (75) भाग विधवा संसार चन्द उपनाम करतार चन्द पुत्र हरवंस नितिन शर्मा, नितीश शर्मा भाग बराबर (48) भाग पुत्र व श्रीमति नीतू शर्मा पुत्री व श्रीमति मीना कुमारी भाग बराबर (28) भाग विधवा रोशन लाल पुत्र लक्ष्मी धर सेठी लाल (90) भाग पुत्र व श्रीमति राम दुलारी (34) भाग विधवा लक्ष्मी धर पुत्र हरजलू शिव कुमार पुत्र प्रमेशवरी दास पुत्र हरजलू (100) भाग गौरव शर्मा पुत्र व श्रीमती दीपिका कुमारी, कुमारी सितिका शर्मा पुत्रियां व श्रीमती रानी देवी विधवा विजय कुमार पुत्र वावू भाग बराबर (100) भाग नीरज							

Patwar <sup>M</sup> Manjot Singh  
PC GONDPUR JALCHAND  
Tehsil. Dulehar  
Distt. Una (H.P.)

Sub

27/08/2025

CSC SHI. PA. LOK MITRA KENDRA, DULEHAR  
COMMON SERVICES CENTRE CSC, LMK : 554143640015  
MOB. 92788-53334

1	2	3	4	5	6	7	8	9
		कुम्हार, मवीन कुमार पुत्र व श्रीमती प्रगती शर्मा पुत्री व श्रीमती उर्मिला देवी विधवा तैलू राम पुत्र हाकूम शाग बराबर (200) भाग स्थानिय वासी						



Certified that this copy has been generated from the database of Revenue Department at Centra  
 Server- HP as accessed by the Lok Mitra Kendra Shilpa on 27-August-2025

To Verify; enter the Copy No above Bar Code at  
<https://himbhoomilnk.nic.in>  
 For Validity Refer : Notific. No:Rev-C(FY)10-1/2009 Dated 14-Feb-2011

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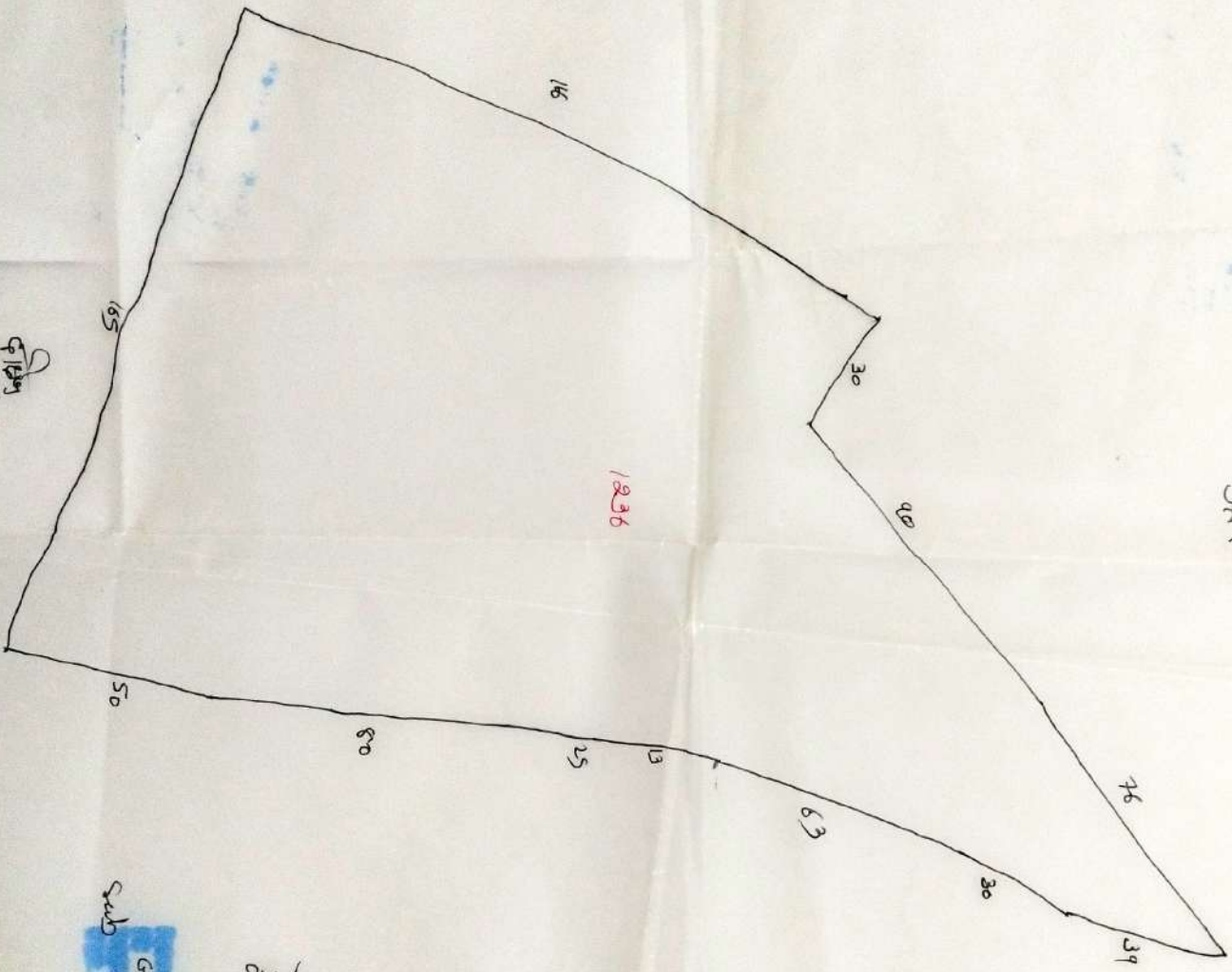
निकनेट : हिमाचल प्रदेश - शिमला

दिनांक: 27-Aug-2025

पृष्ठ संख्या: 2

नया अथवा बिलगा निशेकाद (शुद्ध) बलकोबल जादेसानी मादाल - गादेपुर - बुला - 34 रंग - उकदानीन डोकी -  
 जिला अला (दि. 5)

अर



पेनाल व दिसा  
 10 महर अर सहेकर

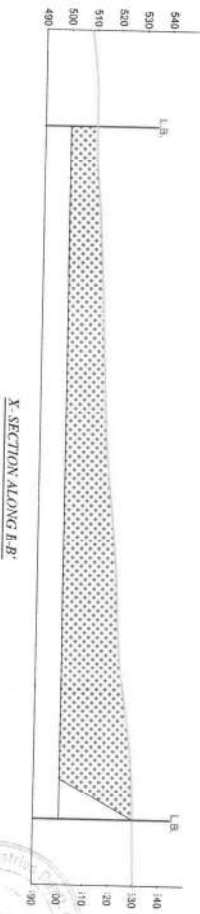
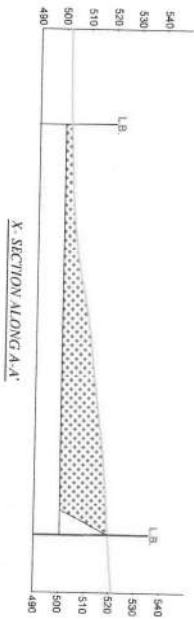
पु

श्या पदर रापु,  
 नया जिला नया

Sub  
 Gogdhan Raichand  
 Anilakar  
 05/03/2024

पडिया

Plate No. 4.



GEOLOGICAL INDEX	
	SOIL COVER
	QUARTZITE
	LEASE BOUNDARY

M/S LAKHWINDER SINGH STONE CRUSHER & SCREENING PLANT UNIT III  
OWNER: SRI LAKHWINDER SINGH PANAG  
SCALE: 1:2000 (1 CM = 20 METERS)  
GEOLOGICAL X-SECTIONAL ALONG A-A' & B-B' AREA OF THE LEASE.

CERTIFIED THAT THE PLAN IS CORRECT.  
**Arun Dhimman**  
ROP Registration No. **HP/RQP/25/2/2019**  
Plate No. IV.

ग्राम पंचायत गोंदपुर बुल्ला

विकास खण्ड हरोली ,तह 0 हरोली जिला ऊना (हि०प्र० )

प्रस्ताव न० 02

तिथि 21/06/2023


आज दिनांक 21/06/2023 ग्राम पंचायत /ग्राम सभा गोंदपुर बुल्ला की बैठक प्रधान /उपप्रधान /श्रीमान सतनाम सिंह जी की अध्यक्षता में पूर्ण कोरम सहित सम्पन्न हुई जिसमें निम्न लिखित प्रस्ताव पारित किया गया /

विषय : M/S LAKHWINDER SINGH STONE KARSHER द्वारा खसरा न० 1231,1236, 1693/1238, 1694/1238, 1695/1238, 1696/1238 महाल गोंदपुर बुल्ला उपरला में माईनिंग करने के सम्बन्ध में अनापति प्रमाण पत्र देने हेतु प्रस्ताव पेश :-

अध्यक्ष महोदय द्वारा उपस्थित ग्राम पंचायत सदस्यों के समक्ष प्रस्ताव रखा कि/M/S L..S STONE KARSHER खसरा न० 1231, 1236, 1693/1238, 1694/1238, 1695/1238, 1696/1238 में माईनिंग करने के सम्बन्ध में ग्राम पंचायत के पास अनापति प्रमाण पत्र लेने हेतु लखविंदर सिंह पुत्र जगमेल सिंह R/O HOUSE NO 1238 Sec - 90 मोहाली (पंजाब ) का प्रार्थना पत्र आया है |लखविंदर सिंह द्वारा लीज पर माईनिंग की जानी है /जिसके संबन्ध में उपस्थित ग्राम पंचायत सदस्य सुझाव देवे |

वाद विचार विमर्श सर्व -सम्मति बनी कि अनापति प्रमाण पत्र देने हेतु ग्राम पंचायत निम्नलिखित शर्तों के साथ अपनी स्वीकृति प्रदान करता है ?(1) माईनिंग सरकार के मापदंडों के अनुसार होनी चाहिए |(2) माईनिंग करने के लिए प्रदुषण विभाग से अनापति प्रमाण पत्र अनिवार्य है |(3) माईनिंग उद्योग में ग्राम पंचायत गोंदपुर बुल्ला के बेरोजगार युवकों को रोजगार में पहल दी जावेगी |(4)किसी प्रकार के प्रदुषण के लिए स्वयं उद्योग जिम्मेवार होगा |ग्राम पंचायत गोंदपुर बुल्ला को उपरोक्त KARSHER द्वारा माईनिंग करने के संबन्ध में कोई आपति नहीं है | यह प्रस्ताव ग्राम पंचायत की बैठक में दिया जा रहा है |जब भी ग्राम सभा बैठक होगी उपरोक्त प्रस्ताव को ग्राम सभा से अनुमोदित करवाने हेतु रखा जावेगा |प्रतिलिपि प्रस्ताव सम्बन्धित विभाग की सेवा में आगामी कार्यवाही हेतु प्रेषित है |पेश हुआ प्रस्ताव स्वीकार है |

प्रमाणित किया जाता है कि प्रतिलिपि प्रस्ताव कार्यवाही रजिस्टर अनुसार सही है |

  
Panchayat Secretary  
G.P. Gondpur Bulla  
Block Haroli, Distt. Una (H.P.)

प्रस्ताव नं० ०१

विषय: जल बँकन काद वारी नो पुर्वे पर विचार

होने पचावत अदरमे को पचावत

आवे हर पिदली काद वारी पदम शुवाक गिदले  
पुले नो गरी

पारु इमरुवाक

प्रस्ताव - ०२

विषय: 11/5 लखविल्ल पिद खोन प्रेशर द्वारा  
खसरां नो 1231, 1236, 1693/1238, 1694/1238,  
1695/1238, 1696/1238 मद्यक गोलुडले कुल्ल उपरला  
से मइनिग करने के खुमवधे नो हावापड प्रमल  
पम केन हेतु प्रस्ताव पया:





# कार्यवाही रजिस्टर (PROCEEDING BOOK)

( नियम 10 और 34 देखें )

74

ग्राम पंचायत ..... विकास खण्ड ..... जिला .....

तिथि, मास और वर्ष	उपस्थित सदस्यों का नाम	निष्पादित कार्य का विवरण	Signature of the Panches Present पंचों के हस्ताक्षर
		<p>को उपरोक्त KRASHMER द्वारा मासिक कर के संबंध में कोई आपत्ति नहीं है पट्ट प्रस्ताव ग्राम पंचायत में बैठक में किया जा रहा है और ग्राम सभा बैठक होगी उपरोक्त प्रस्ताव को ग्राम सभा से अनुमोदित करवाने हेतु रखा जावेगा पहिली प्रस्ताव शतमंथन विभाग की सेवा के आगामी कार्याधी हेतु प्रेषित है।</p>	<p><i>(Signature)</i></p>

पारस इकरत मठ



Pardhan  
Gram Panchayat Gondpur Bulla  
Block Dev. Haroli, Distt. Una (H.P.)



हिमाचल प्रदेश HIMACHAL PRADESH

No. 122/MC/NTD

Dt. 2-05-2023



**Affidavit**

We, Ashwani Kumar, Sunil Kumar Sons/o & Smt. Nirmla Devi Wd/o Sansar Chand Alias Kartar Chand S/o Sh. Harbans AND Smt. Meena Kumari Wd/o late Sh. Roshan Lal S/o late Laxmidhar self and GPA holder of Nitin Sharma, Nitish Sharma, Sons/o & Neetu Sharma D/o late Sh. Roshan Lal S/o late Laxmidhar bearing Vasika No.33 dated:- 02/03/2023 registered by Sub. Registrar Haroli, Distt. Una, H.P., AND Seti Lal S/o & Smt. Ram Dulari Wd/o late Laxmidhar S/o late Harjalu AND Shiv Kumar S/o late Sh. Parmeshwari Dass S/o late Sh. Harjalu AND Gaurav Sharma S/o & Smt. Deepika, Km. Reetika Sharma Dtrs/o & Smt. Rani Devi Wd/o Sh. Vijay Kumar S/o Sh. Babu AND Neeraj Kumar, Naveen Kumar Sons/o & Smt. Pargati Sharma D/o & Smt. Urmila Devi Wd/o late Sh. Telu Ram S/o late Sh. Hakam all R/o Village & PO Gondpur Bulla, Sub. Tehsil. Dulehar Distt. Una H.P., do hereby solemnly affirm declare as under:-

1. That we are the owners of the land measuring 02-78-91 Hectors comprised in khewat No. 13 Min, Khatoni No. 38 Min Khasra No. 1236, as entered in naka Jamabandi for the year 2018-2019 situated in Mohal Gondpur Bulla, Sub-Tehsil Dulehar, Distt. Una H.P.
2. That we have given consent in favour of Sh. Lakhwinder Singh S/o Sh. Jagmail Singh R/o House No. 1238, Sec. 90, Mohali Punjab, Sole Prop. M/s Lakhwinder Singh (Stone Crusher & Screening Plant) Unit -3, VPO Gondpur Bulla Sub-Tehsil Dulehar, Distt. Una H.P. to extract Material (Sand Stone & Bazari) from my above stated land for a period of 20 Years and mining lease could be granted by the department of industry on this land.

*Pargati Sharma*  
*Smt.*

*R.T. 1*  
*meenujmani*

*Shiv Kumar*  
*Gaurav Sharma*

*Neetu*

*Ritika*


*शतलोक कौर*  
*नाम*

*Rajgopal*  
**RAJ GOPAL**  
Lamberdar  
VPO Dulehar, Sub Teh. Dulehar  
Distt. Una (H.P.)  
Executive Magistrate  
Dulehar, Distt. Una (H.P.)



3. That we Shell charge a sum of Rs. 1,37,500/- (One Lakh Thirty Seven Thousand rupees only) per years from Sh. Lakhwinder Singh S/o Sh. Jagmail Singh R/o House No. 1238, Sec. 90, Mohali Punjab on account of malkana for the above said land.
4. That the expiries of 20 years we shell settle fresh malkana which shell be agreeable to first party.
5. That in the event of withdrawing from consent before 20 years we shall be responsible for the damage for suffered by Sh. Lakhwinder Singh S/o Sh. Jagmail Singh R/o House No. 1238, Sec. 90, Mohali Punjab.
6. That the above said statement is true and correct to the best of our knowledge and belief.

Dated :29-04-2023

DEPONENTS

*Rajgopal*  
  
**RAJ GOPAL**  
 Lamberdar  
 VPO Dulehar, Sub Teh. Dulehar  
 Distt. Una (H.P.)

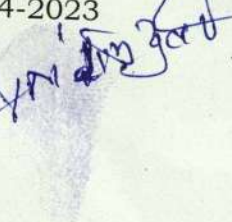
*Ritika Baman*  
 21/04/2023  
*Neelaj*  
 Naur  
*Poojati Sharma*  
 31/04/2023

*J. Singh*  
  
 R.T. 1. Anand  
 Meenakumari  
*Bot R*  
*Shiv Kumar*  
*Jagan Singh*  


Verification:-



We further do hereby solemnly affirm and declare that the contents of this affidavit are true and correct best of our Knowledge and belief and nothing has been concealed from therein.

Dated :29-04-2023

*Rajgopal*  
  
**RAJ GOPAL**  
 Lamberdar  
 VPO Dulehar, Sub Teh. Dulehar  
 Distt. Una (H.P.)

*Ritika Baman*  
 21/04/2023  
*Neelaj*  
 Naur  
*Poojati Sharma*  
 31/04/2023

DEPONENTS

*J. Singh*  
  
 R.T. 1. Anand  
 Meenakumari  
*Bot R*  
*Shiv Kumar*  
*Jagan Singh*  


## Basis for appraisal of EC (River Bed/hill slope/terrace deposit mining Projects),

Sl. No.	pp Details	Location with Khasra No.	River/ Stream location	Coordinates (Lat -Long)			Area of Mining lease (ha)	Period of Mining lease (Initial)		Period of Mining lease	
								From	To	Form	To
1	2	3	4	5			6	7	8	9	10
	Mining of Sand Stone and Bajri from Mauza/Mohal Gondpur bulla Tehsil Haroli, District Una H.P.	Khasra 1236	Hill Slope	<b>Point</b>	Latitude	Longitude	Area 2.7891 Hectare	This is a fresh case. The grant order is yet to be provided by the Department of Industries after the EC is granted.	NA	NA	
				a	31° 18' 30.34" N	76° 11' 35.01" E					
				b	31° 18' 20.87" N	76° 11' 32.31" E					

## Details of River or Stream: -

Sr. No.	Name of the River or Stream	Total Length in the District (in Km)	Place of origin	Altitude at Origin
(1)	-----	-----	-----	-----



No. IPH-SE-P&I-II-EEGWA/2017-18: 2260-61

Government of Himachal Pradesh  
I & PH Department

Dated : Shimla the 14-11-17

To,

Sr. Hydrogeologist.  
Ground Water Organization  
I&PH Department, Una (H.P.).

**Subject:- Application for Certificate of Registration of bore well and use of Ground Water.**

Enclosed please find herewith 1 No. application on prescribed proforma a/w all other supporting documents for verification of facts at site and necessary recommendations for Certificate of Registration in respect of the applicant.

**M/S Lakhwinder Singh (Stone Crusher), VPO. Kungrat, Tehsil Haroli, Distt. Una (HP).**

Application has been submitted by the applicant on Form-4A for Certificate of Registration for 1 no. bore well already existed for extraction of water for **Industrial purpose**. The bore well situated in **Khatta No. 162min, Khatauni No. 253min, Khasra No. 2180, in/mohalla VPO Kungrat, Tehsil Haroli, Distt. Una (HP)**.

It is therefore requested that the facts in respect of above application may be verified at site along with water requirement per day. Thereafter, the detailed comments with regard to the section - 8 of the H.P. Ground Water Act with special reference to the points mentioned in T/o letter no. IPH-P&I-II-E.E. (M)-GWA/2009/10- 361 dated 1st May 2010 (copy already stands supplied to you) in respect of grant of permit may also be sent to this unit on prescribed proforma a/w all other supporting documents at the earliest so that further action could be taken by the Authority.

DA: 1 No. application  
on prescribed proforma a/w  
all other supporting documents.

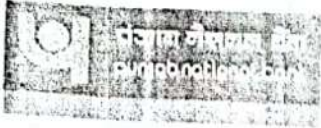
Member-Secretary, HPGWA-cum-  
Superintending Engineer,  
P&I-II Unit, I&PH Department,  
Jal Bhawan, Kasumpti, Shimla-9.

Copy to M/S Lakhwinder Singh (Stone Crusher), VPO. Kungrat, Tehsil Haroli, Distt. Una (HP) for information please.

Member-Secretary, HPGWA-cum-  
Superintending Engineer,  
P&I-II Unit, I&PH Department,  
Jal Bhawan, Kasumpti, Shimla-9.

**"SAVE WATER SAVE LIFE"**

o/c o/c



ਫਗਵਾੜਾ ਰੋਡ, ਮਾਹਿਲਪੁਰ (ਹੋਸ਼ਿਅਰਪੁਰ) ਪੰਜਾਬ (3431)  
Phagwara Road, MAHILPUR (Hoshiarpur) Pb. - 146105

केवल तीन माह के लिए वैध  
VALID FOR THREE MONTHS ONLY  
3 1 0 3 2 0  
D D M M Y Y Y Y

THE MEMBER SECRETARY HIMACHAL PRADESH GROUND WATER AUTHORITY

मांगे जाने पर ON DEMAND PAY

\*\* Ten thousand only\*\*

या उनके आदेश पर OR ORDER

रुपये RUPEES

प्राप्त मूल्य के बदले अदा करें  
FOR VALUE RECEIVED

₹

\*\*10,000.00\*\*

UMB 029335

Branch Serial No  
0001/2017

Draft is signed singly as it is for amount upto Rs. 50,000/-  
(NOT OVER Rs.10000/-)

ਪੰਜਾਬ ਨੈਸ਼ਨਲ ਬੈਂਕ  
punjab national bank

D No. 4530  
RCC SHIMLA FINACLE

प्राधिकृत हस्ताक्षरकर्ता जी.पी.एस.  
AUTHORISED SIGNATORY WITH GBPA No.

प्राधिकृत हस्ताक्षरकर्ता जी.पी.एस.  
AUTHORISED SIGNATORY WITH GBPA No.

⑈029335⑈.000024000⑈

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SP UNA HD <174303>

EE766944092IN

Counter No:2,OP-Code:012

To:THE MEMBER SEC,HP

shimla hp. PIN:171009

From:M/S L SINGH, UNA HP174303

Ut:50grams.

Ant:4L.00,20/05/2017,12:14

Taxes:Rs.6.00<<Track on www.indiapost.gov.in>>



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+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

## TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011225-01	02/03/2026

Issued To: M/s AAR ESS Stone Crusher

Location: Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### Sampling & Analysis Data

Sample Drawn By	N.T.L. Representative	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Project Site 1	Protocol Used	CPCB Guidelines
Sampling Plan & Procedure	SOP-AAQ/08	Sampling Instrument Used	Respirable Dust Sampler (PM <sub>10</sub> ), Fine Particulate (PM <sub>2.5</sub> ) Sampler

S. No.	Monitoring Date	PM10	PM2.5	SO <sub>2</sub>	NO <sub>2</sub>	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	01.12.2025	44.53	23.16	7.19	12.88	0.26
2	04.12.2025	42.54	22.55	7.92	11.93	0.29
3	08.12.2025	44.84	24.21	7.81	11.63	0.34
4	11.12.2025	29.93	15.56	7.49	10.55	0.13
5	15.12.2025	43.76	21.88	7.28	12.77	0.30
6	18.12.2025	49.09	26.02	7.07	13.72	0.42
7	22.12.2025	41.49	21.16	7.12	14.75	0.19
8	25.12.2025	37.65	19.95	8.12	11.86	0.22
9	01.01.2026	34.81	19.49	7.79	12.88	0.26
10	02.01.2026	34.72	20.14	7.68	11.72	0.30
11	08.01.2026	46.84	23.89	7.11	14.75	0.32
12	09.01.2026	34.77	18.08	7.85	11.95	0.30
13	15.01.2026	33.86	18.96	7.68	12.80	0.25
14	16.01.2026	35.39	19.11	7.54	12.65	0.30
15	22.01.2026	46.87	25.31	8.08	10.66	0.40
16	23.01.2026	34.86	19.52	6.09	11.95	0.26
17	02.02.2026	55.63	29.48	7.94	12.88	0.48
18	03.02.2026	34.8	18.79	8.26	12.99	0.26
19	10.02.2026	48.23	25.08	7.19	10.55	0.33
20	11.02.2026	52.45	27.80	7.31	14.75	0.39
21	17.02.2026	30.76	16.30	7.53	10.83	0.23
22	18.02.2026	53.69	29.05	7.75	15.55	0.39
23	24.02.2026	36.60	18.67	8.03	15.15	0.27
24	25.02.2026	58.69	31.11	6.13	15.55	0.48
Min		29.93	15.56	6.09	10.55	0.13
Max		58.69	31.11	8.26	15.55	0.48
Avg.		41.95	22.30	7.50	12.82	0.31
P 98		57.28	30.36	8.20	15.55	0.48
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m <sup>3</sup>	60 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>	2 mg/m <sup>3</sup>

CHECKED BY

AUTHORIZED SIGNATORY



Laboratory : GT-20, Sector-117, Gautam Budh Nagar - 201 301 (H.P.)

Branch Office :

HARIDWAR | DEHRADUN | PUNE

E-mail : noida.laboratory@gmail.com | Website : www.noidalabs.com



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## TEST CERTIFICATE

<b>Test Report of</b> Ambient Air Quality Analysis	<b>Report Code</b> AAQ-011225-02	<b>Date of Issue</b> 02/03/2026
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Issued To: M/s AAR ESS Stone Crusher

Location: Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### Sampling & Analysis Data

Sample Drawn By	N.T.L. Representative	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Project Site 2	Protocol Used	CPCB Guidelines
Sampling Plan & Procedure	SOP-AAQ/08	Sampling Instrument Used	Respirable Dust Sampler (PM <sub>10</sub> ), Fine Particulate (PM <sub>2.5</sub> ) Sampler

S. No.	Monitoring Date	PM10	PM2.5	SO <sub>2</sub>	NO <sub>2</sub>	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	01.12.2025	43.29	24.24	6.56	11.58	0.25
2	04.12.2025	41.3	23.95	6.53	10.63	0.28
3	08.12.2025	43.6	24.85	8.25	10.33	0.33
4	11.12.2025	28.69	12.94	6.53	10.33	0.13
5	15.12.2025	42.52	22.96	7.85	11.47	0.29
6	18.12.2025	47.85	24.88	6.54	12.42	0.41
7	22.12.2025	40.25	21.33	10.85	13.45	0.18
8	25.12.2025	36.41	21.12	11.58	10.36	0.21
9	01.01.2026	33.57	18.80	7.65	11.58	0.25
10	02.01.2026	33.48	18.08	6.85	10.42	0.28
11	08.01.2026	45.6	24.64	10.68	13.45	0.31
12	09.01.2026	33.53	17.44	7.45	10.65	0.29
13	15.01.2026	32.62	17.61	9.56	11.50	0.24
14	16.01.2026	34.15	18.10	6.96	11.35	0.29
15	22.01.2026	45.63	24.64	10.96	10.89	0.39
16	23.01.2026	33.62	17.15	7.45	10.65	0.25
17	02.02.2026	34.15	17.76	11.78	11.58	0.29
18	03.02.2026	33.56	17.79	6.85	11.69	0.25
19	10.02.2026	46.99	24.31	7.42	11.36	0.32
20	11.02.2026	42.55	23.83	11.52	13.45	0.31
21	17.02.2026	40.25	21.33	10.85	13.45	0.18
22	18.02.2026	47.42	25.14	10.52	14.25	0.34
23	24.02.2026	47.89	26.68	11.85	14.85	0.41
24	25.02.2026	45.63	24.64	10.96	10.89	0.39
<b>Min</b>		<b>28.69</b>	<b>12.94</b>	<b>6.53</b>	<b>10.33</b>	<b>0.13</b>
<b>Max</b>		<b>47.89</b>	<b>26.68</b>	<b>11.85</b>	<b>14.85</b>	<b>0.41</b>
<b>Avg.</b>		<b>39.77</b>	<b>21.43</b>	<b>8.92</b>	<b>11.77</b>	<b>0.29</b>
<b>P 98</b>		<b>47.87</b>	<b>25.97</b>	<b>11.82</b>	<b>14.57</b>	<b>0.41</b>
<b>NAAQS, For 24 hourly monitoring (except CO for Eight hour)</b>		<b>100 µg/m<sup>3</sup></b>	<b>60 µg/m<sup>3</sup></b>	<b>80 µg/m<sup>3</sup></b>	<b>80 µg/m<sup>3</sup></b>	<b>2 mg/m<sup>3</sup></b>

CHECKED BY

AUTHORIZED SIGNATORY



Laboratory : GT-20, Sector-117, Gautam Budh Nagar - 201 301 (U.P.)

Branch Office :

HARIDWAR | DEHRADUN | PUNE

E-mail : noida.laboratory@gmail.com | Website : www.noidalabs.com



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## TEST CERTIFICATE

<b>Test Report of</b> Ambient Air Quality Analysis	<b>Report Code</b> AAQ-011225-03	<b>Date of Issue</b> 02/03/2026
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Issued To: M/s AAR ESS Stone Crusher

Location: Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### Sampling & Analysis Data

Sample Drawn By	N.T.L. Representative	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Sidh Baba Jodi Waleji	Protocol Used	CPCB Guidelines
Sampling Plan & Procedure	SOP-AAQ/08	Sampling Instrument Used	Respirable Dust Sampler (PM <sub>10</sub> ), Fine Particulate (PM <sub>2.5</sub> ) Sampler

S. No.	Monitoring Date	PM10	PM2.5	SO <sub>2</sub>	NO <sub>2</sub>	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	01.12.2025	44.29	23.01	10.86	18.36	0.26
2	04.12.2025	43.3	21.46	10.96	17.85	0.29
3	08.12.2025	44.6	23.33	10.78	16.57	0.33
4	11.12.2025	31.69	13.89	10.63	15.25	0.14
5	15.12.2025	43.52	22.21	11.96	18.42	0.3
6	18.12.2025	51.85	29.77	11.47	19.63	0.44
7	22.12.2025	45.25	21.86	10.85	15.25	0.2
8	25.12.2025	37.41	21.7	12.36	19.68	0.22
9	01.01.2026	35.57	20.63	10.87	16.53	0.27
10	02.01.2026	39.48	20.53	10.98	16.74	0.34
11	08.01.2026	47.6	26.05	12.54	18.62	0.32
12	09.01.2026	34.53	13.89	10.63	16.28	0.29
13	15.01.2026	35.62	19.95	10.98	16.25	0.27
14	16.01.2026	36.15	18.08	7.25	17.89	0.3
15	22.01.2026	50.63	27.72	12.36	16.35	0.44
16	23.01.2026	35.62	19.59	11.65	15.25	0.26
17	02.02.2026	38.15	21.36	9.42	18.65	0.33
18	03.02.2026	58.69	34.04	10.96	15.96	0.44
19	10.02.2026	52.99	29.88	11.14	16.28	0.36
20	11.02.2026	55.35	28.26	11.24	15.25	0.41
21	17.02.2026	42.36	34.05	11.45	20.65	0.47
22	18.02.2026	54.36	30.93	12.42	18.47	0.39
23	24.02.2026	40.12	31.26	12.45	16.65	0.44
24	25.02.2026	57.63	32.27	12.52	18.65	0.45
Min		31.69	13.89	7.25	15.25	0.14
Max		58.69	34.05	12.54	20.65	0.47
Avg.		44.03	24.41	11.20	17.31	0.33
P 98		58.20	34.05	12.53	20.20	0.46
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m <sup>3</sup>	60 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>	2 mg/m <sup>3</sup>

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Branch Office :

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## TEST CERTIFICATE

<b>Test Report of</b> Ambient Air Quality Analysis	<b>Report Code</b> AAQ-011225-04	<b>Date of Issue</b> 02/03/2026
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Issued To: M/s AAR ESS Stone Crusher

Location: Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### Sampling & Analysis Data

Sample Drawn By	N.T.L. Representative	:	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Jakhewal	:	Protocol Used	CPCB Guidelines
Sampling Plan & Procedure	SOP-AAQ/08	:	Sampling Instrument Used	Respirable Dust Sampler (PM <sub>10</sub> ), Fine Particulate (PM <sub>2.5</sub> ) Sampler

S. No.	Monitoring Date	PM10	PM2.5	SO <sub>2</sub>	NO <sub>2</sub>	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	01.12.2025	48.29	25.09	7.40	11.58	0.28
2	04.12.2025	43.3	21.46	8.96	13.63	0.29
3	08.12.2025	47.6	24.90	8.25	11.33	0.36
4	11.12.2025	28.68	15.50	7.40	9.58	0.13
5	15.12.2025	48.52	24.76	8.36	10.47	0.33
6	18.12.2025	48.85	28.05	10.52	10.63	0.42
7	22.12.2025	45.25	21.86	10.85	13.45	0.20
8	25.12.2025	38.41	22.28	12.36	10.56	0.22
9	01.01.2026	39.57	22.95	11.36	10.58	0.30
10	02.01.2026	38.48	20.01	10.25	10.42	0.33
11	08.01.2026	49.6	27.14	12.54	14.45	0.34
12	09.01.2026	38.53	15.50	11.63	10.65	0.33
13	15.01.2026	33.62	18.83	11.48	11.85	0.25
14	16.01.2026	36.15	18.08	10.52	14.35	0.30
15	22.01.2026	51.63	28.27	12.36	10.67	0.44
16	23.01.2026	35.62	19.59	10.63	13.65	0.26
17	02.02.2026	41.15	23.04	13.42	9.58	0.35
18	03.02.2026	41.56	24.10	10.89	11.52	0.31
19	10.02.2026	54.99	31.01	11.58	10.58	0.37
20	11.02.2026	49.55	25.30	13.24	11.45	0.37
21	17.02.2026	33.52	18.10	11.69	10.63	0.25
22	18.02.2026	55.42	31.54	13.45	14.85	0.44
23	24.02.2026	40.36	20.99	13.45	14.85	0.29
24	25.02.2026	37.69	21.11	12.52	9.58	0.29
<b>Min</b>		<b>28.68</b>	<b>15.5</b>	<b>7.4</b>	<b>9.58</b>	<b>0.13</b>
<b>Max</b>		<b>55.42</b>	<b>31.54</b>	<b>13.45</b>	<b>14.85</b>	<b>0.44</b>
<b>Avg.</b>		<b>42.76</b>	<b>22.89</b>	<b>11.05</b>	<b>11.70</b>	<b>0.31</b>
<b>P 98</b>		<b>55.22</b>	<b>31.30</b>	<b>13.45</b>	<b>14.85</b>	<b>0.44</b>
<b>NAAQS, For 24 hourly monitoring (except CO for Eight hour)</b>		<b>100 µg/m<sup>3</sup></b>	<b>60 µg/m<sup>3</sup></b>	<b>80 µg/m<sup>3</sup></b>	<b>80 µg/m<sup>3</sup></b>	<b>2 mg/m<sup>3</sup></b>

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Laboratory : GT-20, Sector-117, Gautam Budh Nagar - 201 301 (U.P.)

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## TEST CERTIFICATE

<b>Test Report of</b>	<b>Report Code</b>	<b>Date of Issue</b>
<b>Ambient Air Quality Analysis</b>	<b>AAQ-021225-05</b>	<b>02/03/2026</b>

**Issued To:** M/s AAR ESS Stone Crusher

**Location:** Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### Sampling & Analysis Data

<b>Sample Drawn By</b>	N.T.L. Representative	: <b>Monitoring Period</b>	Dec 2025 - Feb 2026
<b>Sampling Location</b>	Dulehar Villahe	: <b>Protocol Used</b>	CPCB Guidelines
<b>Sampling Plan &amp; Procedure</b>	SOP-AAQ/08	: <b>Sampling Instrument Used</b>	Respirable Dust Sampler (PM <sub>10</sub> ), Fine Particulate (PM <sub>2.5</sub> ) Sampler

S. No.	Monitoring Date	PM10	PM2.5	SO <sub>2</sub>	NO <sub>2</sub>	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	02.12.2025	42.43	22.04	10.63	11.36	0.11
2	03.12.2025	43.22	21.42	10.44	11.63	0.24
3	09.12.2025	49.45	25.87	9.86	9.36	0.32
4	10.12.2025	51.22	28.68	7.65	11.68	0.18
5	16.12.2025	40.32	20.57	10.11	11.58	0.23
6	17.12.2025	26.32	16.84	6.85	9.36	0.11
7	24.12.2025	46.32	22.37	10.52	12.69	0.16
8	26.12.2025	49.28	28.58	9.56	11.47	0.24
9	04.01.2026	47.25	27.41	8.45	12.47	0.30
10	06.01.2026	39.15	20.36	8.96	12.44	0.28
11	11.01.2026	43.43	23.76	7.41	12.65	0.25
12	13.01.2026	49.33	27.13	10.47	11.96	0.37
13	18.01.2026	42.27	23.67	9.69	12.55	0.27
14	20.01.2026	48.05	24.03	10.25	12.48	0.35
15	25.01.2026	45.95	25.16	6.85	12.96	0.35
16	27.01.2026	43.15	23.73	10.42	11.56	0.27
17	01.02.2026	47.38	26.53	9.45	12.74	0.36
18	04.02.2026	45.04	26.12	10.52	12.85	0.29
19	08.02.2026	44.33	25.00	10.15	12.58	0.25
20	09.02.2026	48.69	29.94	8.69	12.56	0.38
21	15.02.2026	47.56	29.91	10.54	11.58	0.39
22	16.02.2026	48.78	29.12	10.89	13.54	0.36
23	22.02.2026	50.99	30.67	9.48	13.56	0.38
24	23.02.2026	51.25	32.01	10.89	13.58	0.40
<b>Min</b>		<b>26.32</b>	<b>16.84</b>	<b>6.85</b>	<b>9.36</b>	<b>0.11</b>
<b>Max</b>		<b>51.25</b>	<b>32.01</b>	<b>10.89</b>	<b>13.58</b>	<b>0.4</b>
<b>Avg.</b>		<b>45.47</b>	<b>25.46</b>	<b>9.53</b>	<b>12.13</b>	<b>0.29</b>
<b>P 98</b>		<b>51.24</b>	<b>31.39</b>	<b>10.89</b>	<b>13.57</b>	<b>0.40</b>
<b>NAAQS, For 24 hourly monitoring (except CO for Eight hour)</b>		<b>100 µg/m<sup>3</sup></b>	<b>60 µg/m<sup>3</sup></b>	<b>80 µg/m<sup>3</sup></b>	<b>80 µg/m<sup>3</sup></b>	<b>2 mg/m<sup>3</sup></b>

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**Laboratory :** GT-20, Sector-117, Gautam Budh Nagar - 201 301 (U.P.)

**Branch Office :**

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## TEST CERTIFICATE

<b>Test Report of</b>	<b>Report Code</b>	<b>Date of Issue</b>
<b>Ambient Air Quality Analysis</b>	<b>AAQ-021225-06</b>	<b>02/03/2026</b>

**Issued To:** M/s AAR ESS Stone Crusher

**Location:** Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### Sampling & Analysis Data

<b>Sample Drawn By</b>	NTL Representative	:	<b>Monitoring Period</b>	Dec 2025 - Feb 2026
<b>Sampling Location</b>	Mehindwani Village	:	<b>Protocol Used</b>	CPCB Guidelines
<b>Sampling Plan &amp; Procedure</b>	SOP-AAQ/08	:	<b>Sampling Instrument Used</b>	Respirable Dust Sampler (PM <sub>10</sub> ), Fine Particulate (PM <sub>2.5</sub> ) Sampler

S. No.	Monitoring Date	PM10	PM2.5	SO <sub>2</sub>	NO <sub>2</sub>	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	02.12.2025	39.42	22.08	7.36	9.36	0.47
2	03.12.2025	35.43	20.55	6.83	7.73	0.52
3	09.12.2025	42.06	23.97	8.36	10.65	0.65
4	10.12.2025	37.56	21.03	7.46	9.14	0.44
5	16.12.2025	44.72	24.15	8.27	10.46	0.42
6	17.12.2025	42.43	22.06	9.46	11.15	0.49
7	24.12.2025	39.35	20.86	9.67	11.81	0.38
8	26.12.2025	41.83	24.26	10.42	11.07	0.31
9	04.01.2026	46.48	30.03	8.36	9.25	0.56
10	06.01.2026	42.28	22.83	7.59	8.09	0.62
11	11.01.2026	36.52	21.18	9.26	10.81	0.43
12	13.01.2026	44.67	23.23	9.87	11.48	0.25
13	18.01.2026	41.82	22.16	10.65	9.72	0.51
14	20.01.2026	47.75	25.31	8.36	10.56	0.36
15	25.01.2026	35.78	18.32	9.45	9.28	0.75
16	27.01.2026	42.37	21.61	8.47	10.17	0.84
17	01.02.2026	46.74	24.30	8.28	9.08	0.78
18	04.02.2026	38.43	20.37	11.09	12.14	0.45
19	08.02.2026	43.67	25.58	9.62	9.22	0.68
20	09.02.2026	45.63	28.55	8.48	9.65	0.74
21	15.02.2026	37.75	20.39	9.76	10.83	0.46
22	16.02.2026	41.35	23.98	8.65	9.19	0.52
23	22.02.2026	38.67	20.88	9.52	11.88	0.42
24	23.02.2026	41.85	23.76	7.24	8.71	0.61
<b>Min</b>		<b>35.43</b>	<b>18.32</b>	<b>6.83</b>	<b>7.73</b>	<b>0.25</b>
<b>Max</b>		<b>47.75</b>	<b>30.03</b>	<b>11.09</b>	<b>12.14</b>	<b>0.84</b>
<b>Avg.</b>		<b>41.44</b>	<b>22.98</b>	<b>8.85</b>	<b>10.06</b>	<b>0.53</b>
<b>P 98</b>		<b>47.29</b>	<b>29.35</b>	<b>10.89</b>	<b>12.02</b>	<b>0.81</b>
<b>NAAQS, For 24 hourly monitoring (except CO for Eight hour)</b>		<b>100 µg/m<sup>3</sup></b>	<b>60 µg/m<sup>3</sup></b>	<b>80 µg/m<sup>3</sup></b>	<b>80 µg/m<sup>3</sup></b>	<b>2 mg/m<sup>3</sup></b>

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**Laboratory :** GT-20, Sector-117, Gautam Budh Nagar - 201 301 (U.P.)

**Branch Office :**

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## TEST CERTIFICATE

<b>Test Report of</b> Ambient Air Quality Analysis	<b>Report Code</b> AAQ-021225-07	<b>Date of Issue</b> 02/03/2026
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Issued To: M/s AAR ESS Stone Crusher

Location: Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### Sampling & Analysis Data

Sample Drawn By	NTL Representative	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Goindpur Taraf Bulla	Protocol Used	CPCB Guidelines
Sampling Plan & Procedure	SOP-AAQ/08	Sampling Instrument Used	Respirable Dust Sampler (PM <sub>10</sub> ), Fine Particulate (PM <sub>2.5</sub> ) Sampler

S. No.	Monitoring Date	PM10	PM2.5	SO <sub>2</sub>	NO <sub>2</sub>	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	02.12.2025	27.28	15.28	6.59	7.27	0.39
2	03.12.2025	24.46	14.24	6.73	7.69	0.41
3	09.12.2025	30.35	17.30	6.41	7.25	0.46
4	10.12.2025	26.56	14.87	7.18	8.58	0.52
5	16.12.2025	29.86	16.12	8.55	9.15	0.45
6	17.12.2025	34.69	18.04	8.56	9.63	0.58
7	24.12.2025	33.85	17.94	7.89	8.08	0.24
8	26.12.2025	28.76	16.68	8.71	9.45	0.48
9	04.01.2026	36.35	20.36	9.65	10.09	0.52
10	06.01.2026	25.12	15.56	7.46	9.57	0.44
11	11.01.2026	28.58	16.58	9.54	10.48	0.23
12	13.01.2026	31.83	16.55	8.95	9.89	0.28
13	18.01.2026	40.48	25.32	9.76	10.04	0.44
14	20.01.2026	34.28	23.17	10.16	11.58	0.57
15	25.01.2026	36.52	19.72	7.36	8.24	0.68
16	27.01.2026	31.65	16.14	8.95	9.61	0.49
17	01.02.2026	33.64	17.49	7.67	8.56	0.42
18	04.02.2026	38.67	22.50	8.85	9.74	0.54
19	08.02.2026	34.95	20.87	8.42	9.93	0.46
20	09.02.2026	27.55	17.43	10.34	11.38	0.38
21	15.02.2026	29.52	15.94	7.78	9.75	0.49
22	16.02.2026	32.42	18.80	9.36	10.09	0.43
23	22.02.2026	35.36	19.09	8.75	11.33	0.71
24	23.02.2026	37.69	19.60	7.82	9.75	0.65
Min		24.46	14.24	6.41	7.25	0.23
Max		40.48	25.32	10.34	11.58	0.71
Avg.		32.10	18.15	8.39	9.46	0.47
P 98		39.65	24.33	10.26	11.49	0.70
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m <sup>3</sup>	60 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>	2 mg/m <sup>3</sup>

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## TEST CERTIFICATE

<b>Test Report of</b>	<b>Report Code</b>	<b>Date of Issue</b>
<b>Ambient Air Quality Analysis</b>	<b>AAQ-021225-08</b>	<b>02/03/2026</b>

**Issued To:** M/s AAR ESS Stone Crusher

**Location:** Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### Sampling & Analysis Data

<b>Sample Drawn By</b>	NTL Representative	<b>Monitoring Period</b>	Dec 2025 - Feb 2026
<b>Sampling Location</b>	Gajjar Village	<b>Protocol Used</b>	CPCB Guidelines
<b>Sampling Plan &amp; Procedure</b>	SOP-AAQ/08	<b>Sampling Instrument Used</b>	Respirable Dust Sampler (PM <sub>10</sub> ), Fine Particulate (PM <sub>2.5</sub> ) Sampler

S. No.	Monitoring Date	PM10	PM2.5	SO <sub>2</sub>	NO <sub>2</sub>	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	02.12.2025	25.51	14.29	6.46	7.17	0.44
2	03.12.2025	23.67	13.73	6.57	7.73	0.41
3	09.12.2025	32.15	18.33	6.14	7.76	0.52
4	10.12.2025	25.42	14.24	7.92	8.82	0.37
5	16.12.2025	29.64	16.01	7.76	8.86	0.58
6	17.12.2025	30.58	15.90	8.73	9.55	0.48
7	24.12.2025	38.56	23.35	8.52	9.87	0.56
8	26.12.2025	36.48	22.16	9.52	10.96	0.46
9	04.01.2026	30.41	21.03	8.45	9.57	0.58
10	06.01.2026	34.45	22.60	9.35	10.06	0.21
11	11.01.2026	25.63	14.87	6.82	7.89	0.43
12	13.01.2026	29.53	15.36	7.87	8.52	0.48
13	18.01.2026	26.12	13.84	8.69	9.36	0.51
14	20.01.2026	33.25	17.62	8.25	9.51	0.59
15	25.01.2026	29.15	15.74	9.32	10.68	0.68
16	27.01.2026	31.47	16.05	8.78	9.34	0.46
17	01.02.2026	24.67	13.65	8.05	9.77	0.34
18	04.02.2026	29.24	15.50	8.52	9.65	0.49
19	08.02.2026	37.67	20.34	8.65	9.76	0.55
20	09.02.2026	30.62	17.15	9.88	11.32	0.45
21	15.02.2026	36.67	19.80	9.69	10.58	0.66
22	16.02.2026	33.48	19.42	9.08	10.84	0.48
23	22.02.2026	37.85	20.44	8.67	9.51	0.53
24	23.02.2026	28.68	14.91	8.78	9.46	0.44
<b>Min</b>		<b>23.67</b>	<b>13.65</b>	<b>6.14</b>	<b>7.17</b>	<b>0.21</b>
<b>Max</b>		<b>38.56</b>	<b>23.35</b>	<b>9.88</b>	<b>11.32</b>	<b>0.68</b>
<b>Avg.</b>		<b>30.87</b>	<b>17.35</b>	<b>8.35</b>	<b>9.44</b>	<b>0.49</b>
<b>P 98</b>		<b>38.23</b>	<b>23.01</b>	<b>9.79</b>	<b>11.15</b>	<b>0.67</b>
<b>NAAQS, For 24 hourly monitoring (except CO for Eight hour)</b>		<b>100 µg/m<sup>3</sup></b>	<b>60 µg/m<sup>3</sup></b>	<b>80 µg/m<sup>3</sup></b>	<b>80 µg/m<sup>3</sup></b>	<b>2 mg/m<sup>3</sup></b>

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## TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	AN-011225-02	02/03/2026

Issued To: M/s AAR ESS Stone Crusher

Location: Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L.)  
 Sample description : Ambient Noise  
 Sampling Time : 24 hrs  
 Sampling Instrument Used : Digital Noise Meter  
 Weather Condition : Normal  
 Analysis Duration : Dec 2025– Feb 2026

S. No.	Locations	Date of Monitoring	Results		Units
			Day	Night	
1.	Project Site-1	05.12.2025	57.6	43.2	dB(A)
2.	Project Site-2	10.12.2025	55.4	41.8	dB(A)
3.	Sidh Baba Jodi Wale Ji	15.12.2025	45.2	38.4	dB(A)
4.	Crusher Site	04.01.2026	62.5	45.6	dB(A)
5.	Gaushala Dulehar	18.01.2026	51.0	45.4	dB(A)
6.	Dispensary & Healthcare Centre, Gondpur Bulla	27.01.2026	45.4	34.8	dB(A)
7.	Bhandiarna Village	10.02.2026	50.6	35.5	dB(A)
8.	Dulehar to Gondpur Bulla Road	15.02.2026	54.2	43.6	dB(A)
<b>Requirement (as per CPCB Guidelines Limits in dB (A) Leq</b>					
Category of Area/ Zone		Day Time	Night Time		
Industrial Area		75	70		
Residential Area		55	45		
Commercial Area		65	55		
Silence Zone		50	40		

### Notes: -

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## TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Water	W-170226-03	02/03/2026

Issued To: M/s AAR ESS Stone Crusher

Location: Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri  
from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli,  
District Una, (H.P.)

### SAMPLING & ANALYSIS DATA

Sample Received on : 16/02/2026  
Sample Drawn By : NTL Representative  
Sample Quantity : 3.0 Lt.  
Analysis Duration : 17/02/2026 to 23/02/2026  
Sample Description : Ground Water

S. No.	Parameter	Unit	GW1 Bhakhra Stone Crusher near Project Site	GW2 Bhandi arna	GW3 Govt. Sr. Sec. School Gondpur Bulla	GW4 Gaushala Dulehar	GW5 Lakhwin der Stone Crusher	GW 6 Gondpur Village	Limit (as per IS:10500)- 2012/REV:2023	
									Desirable	Permissible
1	Colour	Hazen	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	15
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	-
4	Turbidity	NTU	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1	5
5	pH	-	7.54	7.36	7.45	7.19	7.63	7.25	6.5-8.5	No Relaxation
6	Total Hardness (as CaCO3)	mg/l	175	152	168	146	152	160	200	600
7	Iron (as Fe)	mg/l	0.07	0.05	0.06	0.09	0.08	0.07	1.0	No Relaxation
8	Chlorides (as Cl)	mg/l	12.5	16.8	14.6	15.4	18.5	16.4	250	1000
9	Fluoride (as F)	mg/l	0.26	0.36	0.41	0.28	0.34	0.25	1	1.5
10	Conductivity	µmhos/cm	540.0	580.0	521.0	456.0	580.0	589.0	-	-
11	TDS	mg/l	346.0	372.0	334.0	292.0	372.0	378.0	500	2000
12	Calcium(as Ca <sup>2+</sup> )	mg/l	64.4	65.8	64.0	66.1	62.0	66.5	75	200
13	Magnesium (as Mg <sup>2+</sup> )	mg/l	10.5	8.90	6.75	10.2	8.50	9.21	30	100
14	Copper (as Cu)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	1.5
15	Manganese(as Mn)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.3
16	Sulphate (as SO <sub>4</sub> )	mg/l	26.0	25.4	28.0	25.0	24.2	26.6	200	400
17	Nitrate(as NO <sub>3</sub> )	mg/l	3.12	2.98	3.15	3.76	3.12	3.58	45	No Relaxation
18	Mercury (as Hg)	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	No Relaxation

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19	Cadmium (as Cd)	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	No Relaxation
20	Selenium ( as Se )	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	No Relaxation
21	Arsenic (as As)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	No Relaxation
22	Cyanide (as CN )	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	No Relaxation
23	Lead (as Pb)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	No Relaxation
24	Zinc (as Zn)	mg/l	0.108	0.120	0.116	0.124	0.105	0.08	5	15
25	Anionic Detergent (as MBAS)	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.2	1
26	Chromium (as Cr6+)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	No Relaxation
27	Mineral oil	mg/l	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5	No Relaxation
28	Alkalinity as CaCO <sub>3</sub>	mg/l	146.0	162.0	145.0	166.0	178.0	154.0	200	600
29	Aluminium (as Al)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.2
30	Boron (as B)	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.5	2.4
31	Total Coliform	MPN /100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent/100ml	
32	<i>E. coli</i>	<i>E.coli</i> /100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent/100ml	

**BDL- Below Detection Limit**

**Notes: -**

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## TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Surface Water	SW-170226-07	02/03/2026

Issued To: M/s AAR ESS Stone Crusher

Location: Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### SAMPLING & ANALYSIS DATA

Sample Received on	: 16/02/2026
Sample Drawn By	: NTL Representative
Sample Quantity	: 3.0 Lt.
Analysis Duration	: 17/02/2026 to 23/02/2026
Sample Description	: Surface Water

S. No	Parameter	Test Method	Units	Shiv Mandir Pond	Gondpur Village
1.	pH (at 25°C)	IS:3025(Part-11)	---	7.46	7.58
2.	Temperature	IS:3025(Part-9)	°C	21.0	20.0
3.	Turbidity	IS:3025(Part-10)	NTU	1.8	2.5
4.	Electric Conductivity @25°C	IS:3025(Part-14)	µS/cm	320	338
5.	Sulphate (SO <sub>4</sub> )	IS:3025(Part-24)	mg/l	18.0	21.0
6.	Nitrate (NO <sub>3</sub> )	IS:3025(Part-34)	mg/l	1.56	1.98
7.	Total Hardness (as CaCO <sub>3</sub> )	IS:3025(Part-21)	mg/l	138.0	146.0
8.	Chloride (as Cl)	IS:3025(Part-32)	mg/l	27.5	24.4
9.	Fluoride (as F)	APHA 4500F	mg/l	0.28	0.20
10.	COD (as O <sub>2</sub> )	APHA-5220 B	mg/l	34.0	42.0
11.	Iron (as Fe)	IS:3025(Part-53)	mg/l	0.16	0.18
12.	Dissolve Oxygen	IS-3025(Part-38)	mg/l	3.5	3.8
13.	Total Dissolved Solid	IS:3025(Part-16)	mg/l	205	217
14.	BOD (3 days at 27°C)	IS:3025 (P-44)	mg/l	5.6	5.9
15.	Calcium (as Ca)	IS:3025(Part-40)	mg/l	65.4	67.8
16.	Magnesium (as Mg)	IS:3025(Part-46)	mg/l	9.80	7.60
17.	Arsenic (as As)	IS:3025(Part-37)	mg/l	BDL (<0.01)	BDL (<0.01)
18.	Lead (as Pb)	IS:3025(Part-47)	mg/l	BDL (<0.01)	BDL (<0.01)
19.	Copper (as Cu)	IS:3025(Part-42)	mg/l	BDL (<0.05)	BDL (<0.05)
20.	Zinc (as Zn)	IS:3025(Part-49)	mg/l	BDL (<0.01)	BDL (<0.01)
21.	Manganese (as Mn)	IS:3025(Part-59)	mg/l	BDL (<0.10)	BDL (<0.10)
22.	Total Chromium (as Cr)	IS:3025(Part-52)	mg/l	BDL (<0.05)	BDL (<0.05)
23.	Sodium (as Na)	IS:3025(Part-45)	mg/l	18.5	16.8

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## TEST CERTIFICATE

24.	Potassium (as K)	IS:3025(Part-45)	mg/l	1.32	1.27
25.	Total Alkalinity (as CaCO <sub>3</sub> )	IS:3025(Part-23)	mg/l	145	152
26.	Phosphate (as P)	IS:3025(Part-31)	mg/l	0.21	0.23
27.	Nitrite (as NO <sub>2</sub> )	IS:3025(Part-34)	mg/l	0.16	0.18
28.	Total Suspended Solid	IS:3025(Part-17)	mg/l	7.4	7.8
29.	Faecal Coliform	IS-1622	MPN/100 ml	1.1 × 10 <sup>3</sup>	1.6 × 10 <sup>3</sup>
30.	Total Coliform	IS-1622	MPN/100 ml	2.4 × 10 <sup>3</sup>	2.5 × 10 <sup>3</sup>

BDL- Below Detection Limit

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## TEST CERTIFICATE

<b>Test Report of</b>	<b>Report Code</b>	<b>Date of Issue</b>
<b>Soil Quality</b>	<b>SQ-170226-05</b>	<b>02/03/2026</b>

**Issued To:** M/s AAR ESS Stone Crusher

**Location:** Proposed Project of Hill Slope Mining for Extraction of Sand, Stone and Bajri from a hill slope at Mauza Mohal Gondpur Bulla, Tehsil Haroli, District Una, (H.P.)

### Sampling & Analysis Data

Sample Received On : 16/02/2026  
 Sample Description : Soil Sample  
 Sample Quantity : 2.0 Kg  
 Sample Drawn By : NTL Representative  
 Analysis Duration : 17/02/2026 to 23/02/2026

Sr. No.	Parameters	Units	Results	Results	Results	Results	Results	Results
1	pH	-	7.87	7.54	7.38	7.76	7.52	7.89
2	Conductivity	µmhos/cm	387.0	362.0	415.0	398.00	436.0	340.0
3	Sodium (as Na)	mg/kg	260.0	258.0	260.0	251.76	292.0	264.0
4	Water holding capacity	%	28.22	25.04	27.08	26.43	30.02	27.02
5	Potassium (as K)	mg/kg	92.12	80.22	74.22	78.75	88.08	82.06
6	Sand	%	62.00	50.00	53.00	52.00	53.00	55.00
7	Clay	%	26.00	28.00	22.00	27.00	28.00	26.00
8	Silt	%	12.00	22.00	25.00	21.00	19.00	19.00
9	Calcium (as Ca)	mg/kg	872.0	946.0	962.02	954.36	838.0	970.0
10	Magnesium (as Mg)	mg/kg	351.0	362.0	454.06	495.97	370.0	442.0
11	SAR	-	0.96	0.98	0.95	0.98	0.96	0.96
12	CEC	meq/100gm	2.94	2.50	2.66	2.26	2.70	2.36
13	Phosphorus (as P)	mg/kg	11.20	12.68	10.10	12.34	12.88	10.02
14	Organic carbon	%	0.48	0.55	0.40	0.48	0.56	0.55
15	Porosity	%	42.04	44.12	46.12	42.91	44.02	42.02
16	Permeability	cm/hr	1.64	1.52	1.47	1.82	1.61	1.55
17	Bulk Density	g/cc	1450	1130	1204	13340	1467	1226
18	Total Kjeldahl Nitrogen (TKN)	%	0.048	0.030	0.035	0.027	0.032	0.057

#### Notes: -

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# M/s LAKHWINDER SINGH

(STONE CRUSHER & SCREENING PLANT UNIT-3)

Site : Village Gondpur Bulla, Teh. Haroli, Distt. Una (H.P.)

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## Environmental Policy

I, Lakhwinder Singh Prop. Lakhwinder Stone Crusher, Hill Slope mine (minerals e.g., Sand, Stone and Bajri) located at Mauza/Mauza Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh. I have extensive marketing.

I reaffirm my commitment to contributing towards a clean and sustainable environment and continually enhancing our environmental performance as an integral part of our business philosophy and values.

Towards this commitment, I shall:-

Integrate sound environmental management practices in all our activities.

Conduct our operations in an environmentally responsible manner to comply with applicable legal and other requirements related to its environmental aspects and strive to go beyond.

Progressively adopt cleaner and energy efficient technologies.

Minimize waste generation and promote recovery, recycle, and reuse.

Increase greenery in and around our working areas and mines.

Strive for continual improvement in our environmental performance by setting challenging targets, measuring progress, taking corrective action, and communicating environmental information to all concerned.

Enhance environmental awareness amongst employees working for and on behalf of us and the general populace around working areas and mines.

Encourage our business associates to adopt similar approach for environmental protection.

**Sh. Lakhwinder**  
**Prop. M/s Lakhwinder Stone Crusher**