E-mail : aaressstonecrusher@gmail.com
93187-06317 (M)
98164-69355 (M)

AAR ESS STONE CRUSHER

VPO Gondpur Bulla, Teh. Haroli, Distt. Una (H.P.)
Manufacturer of Sand, Stone, Bajri etc.

Date: - 27.03.2026

To,

The Member Secretary,
HP Pollution Control Board,
HIM PARIVESH, PHASE III, SHIMLA-171009
Himachal Pradesh

Sub: - Regarding **Submission of Draft EIA Report for Public Consultation** of mining of Sand, Stone and Bajri from Hill Slope, situated at Khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh by Sh. Yogesh Kumar Partner M/s AAR ESS Stone crusher.

Reference No.:- TOR Identification No. TO25B0108HP5581127N dated 04-12-25.

Respected Sir,

We are herewith submitting the Draft EIA Report with Annexures and Executive Summary (Hindi & English) in the prescribed format of Ministry of Environment Forests and Climate Change for your kind perusal and consideration to conduct of **Public Hearing**. This is a Hill Slope mining project, situated at Khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh. As per EIA Notification, dated 14th September 2006 and amendment made thereof, units fall under **Category 'B1'**. The draft EIA report has been prepared in accordance with standard TOR issued by SEAC, HP and using the **Environmental Baseline Monitoring** conducted during Winter season **(December 2025-February 2026)** within 10km radius of the project site.

Thus, we are hereby submitting draft EIA & EMP report along with Executive summary in Hindi & English (hard and soft copy) with requisite fee amounting Rs. ……. through Original Demand Draft Ref. No. …….. dated ……..

It is requested to take up the case for public consultation as required for the Grant of Environmental Clearance at the earliest.

Thank you
For M/s AAR ESS Stone crusher

Sh. Yogesh Kumar (Partner)
Authorized Signatory
Encl: - (As Above)

Draft EIA REPORT

of

Hill Slope Mining for Extraction of Sand, Stone and Bajri

Located at

Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171,

Mauza/Mohal Gondpur bulla, Tehsil

Haroli, Distt. Una, Himachal Pradesh

Project Area: - 03-53-76 Hectares

Production Capacity: - 120775 MTPA (Excluding Waste)

Proposed by

Sh. Yogesh Kumar partner M/s AAR ESS Stone crusher

Project Schedule: - 1(a)(i); Mining of Minerals
Category- B1'

ToR Identification No: - TO25B0108HP5581127N dated 04-12-25
Baseline monitoring Period: - Dec-2025 to Feb-2026

Monitoring done by:- Noida Testing Laboratories
NABET Certificate No: - TC-6814

SSWML

NABET

ENVIRONMENTAL CONSULTANT
SHIVALIK SOLID WASTE MANAGEMENT LIMITED

QCI/ NABET Certificate No: NABET/EIA/23-26/RA 0310
Valid up to Aug 17th, 2026
Address: SCO 20-21, 1st floor, Near Hotel Dolphin, Baltana, Zirakpur, (Punjab)140604

Table of Contents

TOR LETTER 9
COMPLIANCE FOR TERMS OF REFERENCE 17
1 INTRODUCTION 31
1.1 PURPOSE OF THE REPORT 31
1.2 IDENTIFICATION OF PROJECT 31
1.4 BRIEF DESCRIPTION OF THE PROJECT 32
1.5 SCOPE OF THE STUDY 34
1.6 STATUS OF LITIGATION 37
1.7 REGULATORY REQUIRMENT 37
2 PROJECT DESCRIPTION 39
2.1 GENERAL 39
2.2 TYPE OF PROJECT 40
2.3 NEED FOR THE PROJECT 40
2.4 LOCATION OF THE PROJECT 41
2.6 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION 44
2.7 TECHNOLOGY AND PROCESS DESCRIPTION 45
2.8 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY FOR THE RISK OF TECHNOLOGY FAILURE 45
2.9 GENERATION OF MINE WASTE AND ITS DISPOSAL 45
2.10 GEOLOGY 45
2.11 TECHNOLOGY AND PROCESS DESCRIPTION 48
2.12 PROJECT DISCRIPTION 49
2.13 PRODUCTION PARAMETERS 49
2.14 WORKING DEPTH (BELOW GROUND LEVEL) 51
2.15 QUANTITY OF WASTE TO BE GENERATED (LIQUID & SOLID) AND Its MANAGEMENT: - 51
2.16 RECLAMATION AND RESTORATION 51
2.17 EMPLOYMENT GENERATION/MANPOWER REQUIREMENT 52
2.18 TRANSPORTATION OF THE MINERALS 53
2.19 POWER, WATER SUPPLY AND OTHER ONSITE REQUIREMENTS 53
2.20 WASTE GENERATION (LIQUID & SOLID) DURING MININING PERIOD 57
2.21 MODE OF WORKING 58
2.22 PLANTATION 58
2.23 EMPLOYMENT GENERATION/MANPOWER REQUIREMENT 58

2.24 TRANSPORTATION OF THE MINERALS 59
2.25 POWER, WATER SUPPLY AND OTHER ONSITE REQUIREMENTS 59
2.26 IMPACT OF MINING ACTIVITY & ITS CONTROL MEASURES 60
3 DESCRIPTION OF ENVIRONMENT 63
3.1 INTRODUCTION 63
3.2 STUDY AREA AT GLANCE 63
3.3 STUDY PERIOD 63
3.4 COMPONENT OF THE STUDY 63
3.5 METHODOLOGY 64
3.6 ESTABLISHMENT OF BASE LINE FOR VALUED ENVIRONMENTAL COMPONENT AS IDENTIFIED IN THE SCOPE 65
3.7 PHYSIOGRAPHY, TOPOGRAPHY AND HYDROLOGY 65
3.8 METHODOLOGY ADOPTED FOR THEMATIC DATA EXTRACTION FROM THE SATELLITE IMAGERIES 68
3.9 LAND USE/LAND COVER STUDY 70
3.10 AIR ENVIRONMENT 79
3.11 AMBIENT NOISE 94
3.12 WATER ENVIRONMENT 96
3.13 BIOLOGICAL ENVIRONMENT 106
3.14 EXISTING FORESTS IN THE STUDY AREA 107
3.15 METHODOLOGY ADOPTED FOR THE BIOLOGICAL SURVEY 109
3.16 SOCIO-ECONOMIC PROFILE 117
4 ANTICIPATED IDENTIFICATION OF IMPACTS AND MITIGATION 131
4.1 INTRODUCTION 131
4.2 GENERAL IMPACTS 131
4.3 IMPACT ASSESSMENT METHODOLOGY 132
4.4 IMPACT ASSESSMENT METHODOLOGY 132
4.5 IMPCAT PREDICTION/EVALUATION AND ITS MITIGATION MEASURES 134
4.6 ASPECT, QUANTIFICATION OF IMPACT AND PROPOSED MITIGATION MEASURES 135
4.7 LAND ENVIRONMENT 135
4.8 WATER ENVIRONMENT 136
4.9 AIR ENVIRONMENT 137
4.10 NOISE ENVIRONMENT 151
4.11 Biological environment 153
4.12 CONCLUSION 157

4.13 SOLID & HAZARDOUS WASTE:- 157
4.14 TRAFFIC ANALYSIS 157
4.15 SOCIO-ECONOMIC ENVIRONMENT 158
4.16 CONCLUSION 158
5 ANALYSES OF ALTERNATIVES (TECHNOLOGY & SITE) 159
5.1 GENERAL 159
5.2 ALTERNATIVE FOR MINE LEASE 159
5.3 ADVERSE IMPACTS 159
5.4 MITIGATION MEASURES 159
6 ENVIRONMENTAL MONITORING PROGRAMME 160
7 ADDITIONAL STUDIES 162
7.6 SOCIO-ECONOMIC IMPACT OF THE PROJECT 164
8 PROJECT BENEFITS 166
9 ENVIRONMENTAL COSTS BENEFIT ANALYSIS 168
9.1 GENERAL 168
9.2 SOCIAL INFRASTRUCTURE 168
9.3 EMPLOYMENT POTENTIAL 168
9.4 TANGIBLE SOCIAL BENEFITS 168
9.5 DIRECT/INDIRECT BENEFITS 168
10 ENVIRONMENT MANAGEMENT PLANS 169
10.8 SOCIO-ECONOMIC ENVIRONMENT 172
10.9 OCCUPATIONAL HEALTH MANAGEMENT 173
10.10 ENVIRONMENTAL MONITORING PROGRAM 173
10.10.1 Methodology of environmental management 173
11 SUMMARY AND CONCLUSION 176
11.2 SALIENT FEATURES OF THE PROJECT 176
11.3 BASELINE MONITORING STATUS 177
12 DISCLOSURES OF CONSULTANTS 182

LIST OF TABLES

Table 1-1 SALIENT FEATURE OF THE PROJECT 33
Table 2-1DETAIL OF MINE LEASES WITHIN 500 METERS 39
Table 2-2 DETAILS OF MINING LEASE AREA 44
Table 2-3 STRATIGRAPHY OF THE AREA 46
Table 2-4 PERCENTAGE OF MINERAL IN MINE LEASE AREA 50
Table 2-5 YEAR WISE PRODUCTION OF MATERIAL (IN MT) 50
Table 2-6 EMPLOYMENT DETAILED 52
Table 2-7 YEAR WISE PRODUCTION PROGRAMME IN METRIC TONES 54
Table 2-8 WASTE GENERATION DURING FIVE YEARS IN TONES 57
Table 2-9 DESCRIPTION OF ACTIVATES AND ANTICIPATED IMPACTS 61
Table 3-1 DIFFERENT CATEGORIES OF LAND AVAILABLE IN DISTRICT UNA 72
Table 3-2 LAND USE COVER OF THE STUDY AREA 72
Table 3-3 SOIL SAMPLING LOCATION 76
Table 3-4 RANGE OF SOIL REACTION CLASS, MICRO AND MACRO NUTRIENTS 77
Table 3-5 RESULT OF SOIL REPORTS (POST-MONSOON FROM DEC.-2025 TO FEB. 2026) 78
Table 3-6 TABLE SHOWING CLIMATE AROUND THE APPLIED LEASE AREA 81
Table 3-7 LOCATION OF AMBIENT AIR SAMPLING STATIONS 86
Table 3-8 PROCEDURE FOR DETERMINING VARIOUS AIR QUALITY PARAMETERS 86
Table 3-9 AMBIENT AIR QUALITY RESULTS 88
Table 3-10 COMPARISON WITH AMBIENT AIR QUALITY STANDARDS (µG/M3) 92
Table 3-11 AMBIENT AIR MONITORING STATIONS 92
Table 3-12 AQI (IN µg/m3) OF SAMPLING LOCATIONS 93
Table 3-13 AMBIENT NOISE MONITORING LOCATION 94
Table 3-14 AMBIENT NOISE LEVEL OF STUDIED AREA 96
Table 3-15 AMBIENT NOISE QUALITY STANDARD (CPCB, 2009) 96
Table 3-16 GROUND WATER & SURFACE WATER MONITORING LOCATIONS 98
Table 3-17 GROUND WATER TEST RESULTS 100
Table 3-18 SURFACE WATER TEST RESULTS 102
Table 3-19 CPCB WATER QUALITY CRITERIA 103
Table 3-20 EXISTING TRAFFIC SCENARIO & LOS 104
Table 3-21 TRAFFIC INCREASE DUE TO PROJECT ACTIVITY 105
Table 3-22 MODIFIED TRAFFIC SCENARIO & LOSS 106
Table 3-23 Forest cover in Himachal Pradesh 107
Table 3-24 MODE OF DATA COLLECTION & PARAMETERS CONSIDERED DURING THE SURVEY 109
Table 3-25 DETAILS OF SAMPLING LOCATIONS FOR FLORAL STUDIES 112
Table 3-26 Distribution of Species 113
Table 3-27 FLORA IN THE STUDY AREA (CORE ZONE & BUFFER ZONE) 114
Table 3-28 LIST OF FAUNA IN THE CORE ZONE AND BUFFER ZONE 116
Table 3-29 DEMOGRAPHIC DETAIL OF THE STUDY AREA (10 KM RADIOUS), BASED ON CENSUS 2011, HP REGION 121
Table 3-30 DEMOGRAPHIC DETAILS OF THE STUDY AREA (10 KM RADIUS), BASED ON CENSUS 2011– PUNJAB REGION 123
Table 3-31 DEMOGRAPHIC PROFILE OF THE STUDY AREA H.P REGION AND PUNJAB REGION 124
Table 3-32 OCCUPATIONAL PROFILE OF THE STUDY AREA (10 KM RADIUS) BASED ON CENSUS 2011 DATA; HIMACHAL PRADESH REGION AND PUNJAB REGION 124
Table 3-33 INFRASTRUCTURE DETAIL IN FIVE SURROUNDING VILLAGES 128
Table 4-1 IMPACT IDENTIFICATION 133
Table 4-2 EMISSIONS RATES 142
Table 4-3 SUMMARY OF AREA/LINE AREA SOURCE MODELING 142
Table 4-4 PREDICTED MAXIMUM CUMULATIVE SHORT-TERM GROUND LEVEL CONCENTRATION 143
Table 4-5 SUMMARY OF RESULTS HOURLY AQI IS DEVIDED INTO SIX CATEGORIES 150

Table 4-6 AIR QUALITY INDEX OF 10 KM BUFFER AREA 150
Table 4-7 DAMAGE RISK CRITERIA FOR HEARING LOSS OSHA REGULATIONS 152
Table 4-8 AMBIENT NOISE LEVEL OF STUDIED AREA 153
Table 4-9 List of plant species suggested for Greenbelt development. 155
Table 6-1 MONITORING SCHEDULE AND PARAMETERS 161
Table 10-1 ESTIMATED EXPENDITURE ON ENVIRONMENTAL MEASURES 173
Table 11-1 DETAILS OF MINING PROCESS & LOCATION 176
Table 12-1 BRIEF DETAILS OF CONSULTANT 182

LIST OF FIFURES

Figure 1-1 LOCATION OF THE PROJECT 32
Figure 2-1 GOOGLE IMAGE SHOWING PILLAR CO-ORDINATE OF THE PROJECT SITE 41
Figure 2-2 SITE PHOTOGRAPH 42
Figure 2-3 MAP SHOWING 5 KM & 10 KM BUFFER FROM THE PROJECT SITE 43
Figure 2-4 EVACUATION ROUTE MAP 43
Figure 2-5 GELOGICAL MAP OF UNA DISTRICT 48
Figure 2-6 WORKING PLAN OF MINE LEASE AREA 51
Figure 2-7 GRAPH SHOWING THE YEAR WISE EXCAVATED OF THE MATERIAL TABLE 2-7 YEAR WISE PRODUCTION 54
Figure 2-8 FIVE YEARS OF WORKING PLAN OF MINE LEASE AREA 55
Figure 2-9 EVACUATION ROUTE MAP 59
Figure 3-1 ENVIRONMENTAL SENSITIVITY MAP DEPICTING THE PROJECT SITE WITHIN 5 KM AND 10 KM RADIUS 65
Figure 3-2 PHYSIOGRAPHY AND DRAINAGE MAP OF DISTRICT UNA 67
Figure 3-3 MAP SHOWING DRAINAGE NETWORK OF THE STUDY AREA 68
Figure 3-4 LAND USE PATTERN OF SORROUNDING VILLAGES IN UNA DISTRICT 70
Figure 3-5 GRAPH GRAPHICAL PRESENTATION OF LAND USE/LAND COVER CLASSIFICATION 73
Figure 3-6 LAND USE/LAND COVER MAP WITHIN 5 AND 10 KM PERIPHERY FROM THE PROJECT SITE 73
Figure 3-7 SATELITE MAP OF THE STUDY AREA WITHIN 10 KM 74
Figure 3-8 SOIL MONITORING LOCATIONS 76
Figure 3-9 AVERAGE MONTHLY TEMPRATURE OF DISTRICT UNA 82
Figure 3-10 AVERAGE MONTHLY RAINFALL OF THE DISTRICT UNA 83
Figure 3-11 WIND ROSE OF MONITORING SEASON IN STUDY AREA 84
Figure 3-12 AMBIENT AIR MONITORING LOCATIONS 85
Figure 3-13 GRAPHICAL REPRESENTATION OF AMBIENT AIR QUALITY FOR WINTER SEASON Dec 2025-Feb 2026 91
Figure 3-14 NOISE MONITORING LOCATIONS 95
Figure 3-15 HYDROGEOLOGICAL MAP OF UNA DISTRICT 97
Figure 3-16 GROUND WATER & SURFACE WATER MONITORING LOCATIONS Table 3-17 GROUND WATER TEST RESULTS 99
Figure 3-17 TRAFFIC STUDY LOCATION 104
Figure 3-18 GRAPHICAL REPRESENTATION OF VEHICLES 106
Figure 3-19 ENVIRONMENTAL SENSITIVITY MAP WITHIN 5 KM AND 10 KM RADIUS 111
Figure 3-20 SAMPLING LOCATIONS FOR FLORAL STUDIES 112
Figure 3-21 SHOWING LOCATION OF VILLAGES WITHIN 10 KM RADIUS OF BOUNDARY 120
Figure 3-22 MAP SHOWING THE LOCATION OF FIVE VILLAGES WITHIN THE IMPACT AREA 121
Figure 3-23 VISUAL REPRESENTATION OF OCCUPATIONAL STRUCTURE IN THE STUDY AREA (HIMACHAL PRADESH AND PUNJAB) 125
Figure 4-1 WIND-ROSE DIAGRAM (Oct to Dec 2025) 144
Figure 4-2 SPATIAL DISTRIBUTION OF PREDICTED GLCS OF PM10 DUE TO MINING ACTIVITY 145

Figure 4-3 SPATIAL DISTRIBUTION OF PREDICTED GLCS OF NOX DUE TO MINING.....146
Figure 4-4 SPATIAL DISTRIBUTION OF PREDICTED GLCS OF CO DUE TO MINING ACTIVITY.....147

ANNEXURES

ANNEXURE I:- TOR LETTER

ANNEXURE II:- COPY OF JOINT INSPECTION REPORT

ANNEXURE III :- LETTER OF INTENT

ANNEXURE IV:- LETTER OF INTENT ISSUED FOR THE MINING SITE AS PER DSR CERTIFICATE

ANNEXURE V:- NO MINING VIOLATION OR ILLEGAL MINING CERTIFICATE

ANNEXURE VI:- MINING PLAN AND APPROVED MINING PLAN LETTER

ANNEXURE VII:- DISTANCE CERTIFICATE (500 METER)

ANNEXURE VIII:- CERTIFICATE FROM DFO, FOREST DEPARTMENT REGARDING WILDLIFE SANCTUARY AREA, IF APPLICABLE.

ANNEXURE IX:- REVENUE RECORD (JAMABANDITATIMA) INK SIGNED

ANNEXURE X:- L SECTIONCROSS SECTION OF THE AREA

ANNEXURE XI:- NOC FROM GRAM PANCHAYAT

ANNEXURE XII:- LEASE OF LAND, IF APPLICABLE

ANNEXURE XIII:- FORMAT OF DSR REQUIREMENT ATTACHED AS ANNEXURE-A

ANNEXURE XIV:- WATER NOC

ANNEXURE XV:- BASELINE MONITORING

TOR LETTER

सत्यमेव जयते

File No: HPSEIAA/2025/1354
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,

YOGESH KUMAR
VPO Gondpur Bulla, Tehsil Haroli, District Una, H.P., UNA, HIMACHAL PRADESH, 176601
yogeshsharmamine@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 145 147 149 150 165 166 167 169 171, Mohal and Mauza Gondpur Bulla of Tehsil Haroli, District Una, Himachal Pradesh. submitted to Ministry vide proposal number SIA/HP/MIN/555156/2025 dated 18/10/2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0108HP5581127N
(ii) File No.	HPSEIAA/2025/1354
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Mining of Sand, Stone and Bajri from Khasra No 145 147 149 150 165 166 167 169 171, Mohal and Mauza Gondpur Bulla of Tehsil Haroli, District Una, Himachal Pradesh.
(viii) Name of Company/Organization	YOGESH KUMAR
(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/ 555156/2025, **TOR** HP SEIAA/2025/1354
b)	Processing fee	UTR reference no. HDFCN52025101331005169 on dated 13/10/2025

		having amount of Rs. 25,000/-
c)	Project type	Extraction of Sand, Stone and Bajri
d)	Project Location	Khasra number 145, 147, 149, 150, 165, 166, 167, 169 & 171 falling in Mauza/Mohal Gondpur Bulla, Tehsil Haroli, District Una, H.P.
e)	Jamabandi	Jamabandi for the year 2023-2024
f)	Land Status	Private land/Hill slope
g)	Capacity	1,20,775 MT/year
h)	Mining Area	03-53-76 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 27.05.2025, 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 AssessmentAuthority(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 AssessmentAuthority(SEIAA) Appraisal Committee hereby decided to grant Terms of Reference for instant proposal of M/s. YOGESH KUMAR 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.

Annexure 1

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 areashould 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 givenwith 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 rea 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 rea 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 Wildlifeand 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	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	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. 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. 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. 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. 5) Hard copy of the application along with the relevant document shall be ink signed & submitted in the office of SEIAA Secretariat. 6) The project proponent shall submit compliance report to the issue raised during public hearing. 7) The project proponent shall submit proposed EMP and including CER activities as its part. All

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, Bajari	Sand, Stone, Bajari	120775	Tons per Annum (TPA)	Road	NA

COMPLIANCE OF TOR

The below table gives the compliance of Terms of Reference issued vide ToR identification No. TO25B0108HP5581127N dated 04.12.2025 by the State Environment Impact Assessment Authority (SEIAA), Himachal Pradesh for proposed Hill Slope Mining project for extraction of Sand, Stone and Bajri situated at Khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169, 171, Mohal and Mauza Gondpur Bulla of Tehsil Haroli, District Una, Himachal Pradesh. by Yogesh Kumar Partner M/s AAR ESS 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 **Annexure- III.**
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 3.5376 ha., production 120775 MTPA (Excluding Waste) (Sand, Stone & Bajri), maximum of 52167 TPA 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.
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 **Chapter 7.**

	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 **Chapter-2.**
10	Land use of the study rea 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.	Within mining lease aera.
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 **Annexure-VIII.**

	above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	
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.	Not applicable; no forest land involved.
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.	Not applicable.
15	The vegetation in the RF/PF areas in the study area, with necessary details, should be given.	Complied; biological environment details in **Chapter 3.**
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.	Details provided in **Chapter 3.**
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	Not Applicable. Not applicable. No such ecological zones exist within 10 km. DFO certification attached as **Annexure-VIII.**

	areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	
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 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 **Chapter 3.**
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.	Not applicable.
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	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).	
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.	Not applicable. Project is on hill slope; no displacement involved.
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 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 **Chapter 3**. 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 **Chapter 3.**
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: 2.61 KLD (1.80 KLD for dust suppression, 0.81 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 **Annexure-XIV.**

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 **Chapter 4.**
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 **Chapters 2 & 4;** schematic diagram in approved mine plan **Annexure-VI.**
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 **Chapter 10.** Species list in **Chapter 4.**

	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.	
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.	Traffic study included in **Chapter-4.**
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	A Temporary rest shelter with water, first aid, and protective gear detailed in **Chapter 2.**

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 **Chapter 4;** financial provisions in **Chapter 10.**
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 **Chapter 7;** budget included in **Chapter 6.**
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 **Chapter 3.**
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 **Chapter 10.**

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.	Public Hearing proceedings have been 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 **Chapter 7** of the final EIA/EMP Report.
40	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.
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.	**Project cost**:- ₹10 lakhs. EMP implementation:- **Capital cost** ₹25.71 lakhs; **Recurring cost** ₹5.88 lakhs/year; ₹29.44 lakhs over five years
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Disaster Management Plan Provided in **Chapter 7.**
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.	Benefits of the Project Provided in **Chapter 8.**
44	**General points**	
a.	All documents to be properly referenced with index and continuous page numbering.	All documents have been duly referenced, indexed, and sequentially paginated
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.
c.	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 analysis/testing reports should be available during appraisal of the Project.	Monitoring conducted by Noida Testing Laboratory, accredited by NABL and MoEF&CC.

d.	Where the documents provided are in a language other than English, an English translation should be provided.	Translated copies are provided wherever required.
e.	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.
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.	EIA report prepared in accordance with the prescribed guidelines.
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.	No changes made to the original scope or project parameters.
h.	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 Environment, Forest and Climate Change, as may be applicable. I. The EIA report should also	Not applicable; this is a new project. Surface plan, contour details, drainage, and geological maps are enclosed.

	include. II. Surface plan of the area indicating contours of main topographic features, drainage and mining area. 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.	

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**
1.	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 **Chapter-4** of the EIA Report.
2.	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.
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.	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	Certificate from the Director (Industries) will be submitted during the Final EIA presentation.

	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.	
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.

****

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.

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.

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 3.5376 hectares. Its Terms of Reference (TOR) were approved through letter No. TO25B0108HP5581127N 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.

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. Yogesh Kumar Partner M/s AAR ESS Stone Crusher, located at Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh.

The Letter of Intent has been sanctioned in favour of Sh. Yogesh Kumar Partner M/s AAR ESS Stone Crusher. This letter was issued by the Department of Industries, Himachal Pradesh, under letter No. Udyog-Bhu(Khani-4) Laghu- 525/2025-2371 Dated 27.05.2025. Letter of Intent is attached as **Annexure III** & joint Inspection Report along with Tatima & Jamabandi attached as **Annexure II).**

The Mining Plan has been approved vide letter no. Udyog–Bhu (Khani-4) Laghu- 525/2025-5787 issued on dated 22.08.2025 is attached as **Annexure-VI.**



Figure 1-1 LOCATION OF THE PROJECT

1.3 PROJECT PROPONENT

M/s AAR ESS 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.

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

The key management personnel is:- **Sh. Yogesh Kumar, Partner M/s AAR ESS 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 at Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh. The mining lease area covers 3.5376 hectares of Hill Slope and has been sanctioned in Favor of Sh. Yogesh Kumar Partner M/s AAR ESS Stone Crusher., vide letter dated 27.05.2025. The project aims to extract 120775 MT/year (excluding Waste) of minerals, with an estimated project cost of Rs. 10 lakhs. The Mining Plan has been approved on 22.08.2025. There are no litigations or court cases pending against the project.

Table 1-1 SALIENT FEATURE OF THE PROJECT

Project Name	Hill slope mining project for the extraction of sand, stone, and bajri proposed by Sh. Yogesh Kumar Partner M/s AAR ESS Stone Crusher
Mining Lease Area	03.5376 Hectare
Location of mine	Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh.
Latitude	31° 19' 22.82" N to 31° 19' 18.62" N
Longitude	76° 12' 2.76" E to 76° 12' 9.12"E
Toposheet number	53A3, 53A4, 53A7, 53A8
Minerals of mine	Sand, Stone and Bajri
Proposed production of mine	120775 MTPA (Excluding Waste)
Method of mining	Semi mechanized
No of working days	270 days
Cost of the Project	10 lacs
Water demand	0.45 (Domestic) + 2.40 (Dust Suppression) =2.85
Sources of water	Bore well is the water source for drinking and dust suppression.
Manpower	10
Waste Generation	52167 TPA tons of mine waste in the form of Silty Sand and Topsoil and Clay will be mined.
Nearest railway station	Jaijon-Doaba Railway Station: about. 7.0 km in the WNW direction (Aerial Distance).
Nearest state highway/national highway	National Highway: -NH 503(Kiratpur Sahib-Anandpur Sahib-Nangal-Una) About 17.33 km in ENE direction. MDR: -39 at 3.43Km Towards N.
Nearest airport	Adampur Airport Jalandhar: approx. 43.23 km in WNW Direction (Aerial Distance).
Seismic zone	Una district lies in Seismic zone V & IV. Although site lies in Zone IV.

1.4.1 Nature of the project

The proposed project involves mining sand, stone, and bajri from a hill slope lease area, It is classified as a **B1 category** minor mineral activity due to cluster formation with another mining lease having 3.5 ha area thus totaling to more than 5 ha . under the EIA Notification, 2006 and its amendments. The mining lease area covers 3.5376 hectares and is located in Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh.

Mining will be carried out as per Mining plan 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 Yogesh Kumar Partner M/s AAR ESS 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 over exploitation 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 Dec.2025- 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 pre-requisite 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 are.

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 based on 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 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.
- Protection and maintenance of water resources and water quality, especially considering the ecological sensitivity of riverine systems.
- 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 Dec. 2025-Feb. 2026 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 hillslope/Riverbed 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/hillslope 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 Hill Slope mining (semi-mechanized) 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

****

2 PROJECT DESCRIPTION

2.1 GENERAL

The Hill Slope mining is for extraction of Sand, Stone & Bajri proposed by Sh. Yogesh Kumar Partner M/s AAR ESS Stone Crusher, located at Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh having lease area of 3.5376 ha. The lease has been sanctioned in favour of Sh. Yogesh Kumar, Partner M/s AAR ESS Stone Crusher vide letter no. Udyog-Bhu(Khani-4) Laghu- 525/2025-2371 Dated 27.05.2025. Copy of LOI is attached as **ANNEXURE- III.**

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 7.5021ha. As per MoEF, New Delhi Gazette dated 14th September 2006 and amended thereafter, the proposed mining project is categorized as **category 'B1'** project

Table 2-1DETAIL OF MINE LEASES WITHIN 500 METERS

Sr. No	Name of mine lease	Area in Hectare	Khasra No.	Status of Mining Lease
1	M/s Bhakra Stone Crusher VPO Gondpur Bulla, Tehsil Haroli, District UNA, H.P.	3.9645 hectare	128, 129, 130, 131, 132, 135, 125, 114, 127, 134, 139, 140, 141, 142, 115, 105, 106,107, 108, 109, 110, 116	Operational
Total Area = 3.9645 hectare				

The proposed mining activity will be carried out from Hill Slope. It has been proposed to collect 120775 MTPA Sand, Stone &. Bajri. Max. 52167 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-525/2025-5787 issued on dated 22.08.2025 attached as **ANNEXURE-V.**

The lease area is situated on the Hill Slope. The height elevation point of the mining lease area is 584 Meters above MSL and the lowest point is 566 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.

2.1 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.

2.2 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. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. 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 3.5376 hectares, it forms part of a cluster as defined under the MoEF & CC guidelines, with one other mining leases located within a 500-meter radius. The total cluster area of 7.5021 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.

2.3 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.

2.4 LOCATION OF THE PROJECT

The mining lease area is situated in Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh, covering a total area of 3.5376 hectares, as delineated in Topographical Sheets No. 53A3, 53A4, 53A7, 53A8. **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.

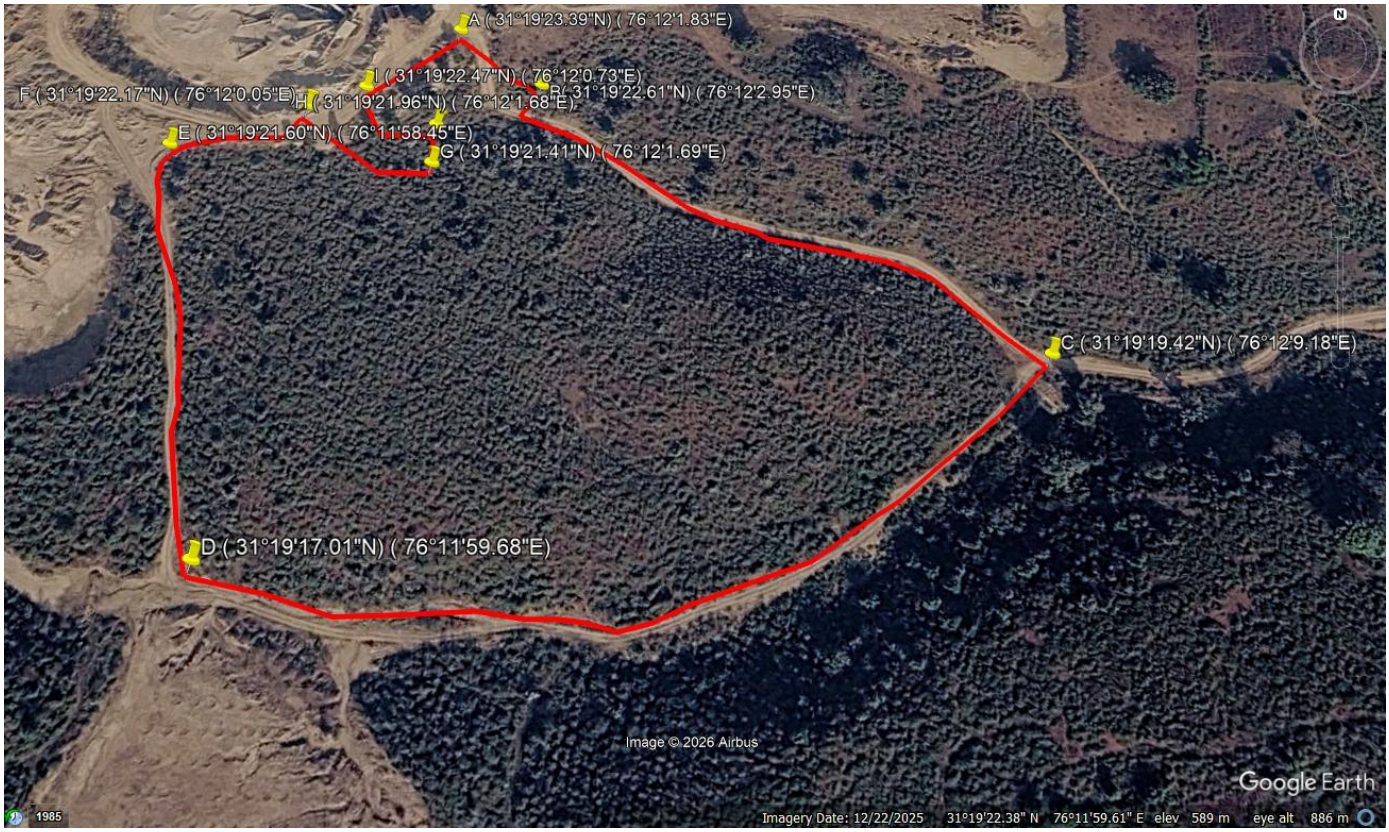


Figure 2-1 GOOGLE IMAGE SHOWING PILLAR CO-ORDINATE OF THE PROJECT SITE



Figure 2-2 SITE PHOTOGRAPH

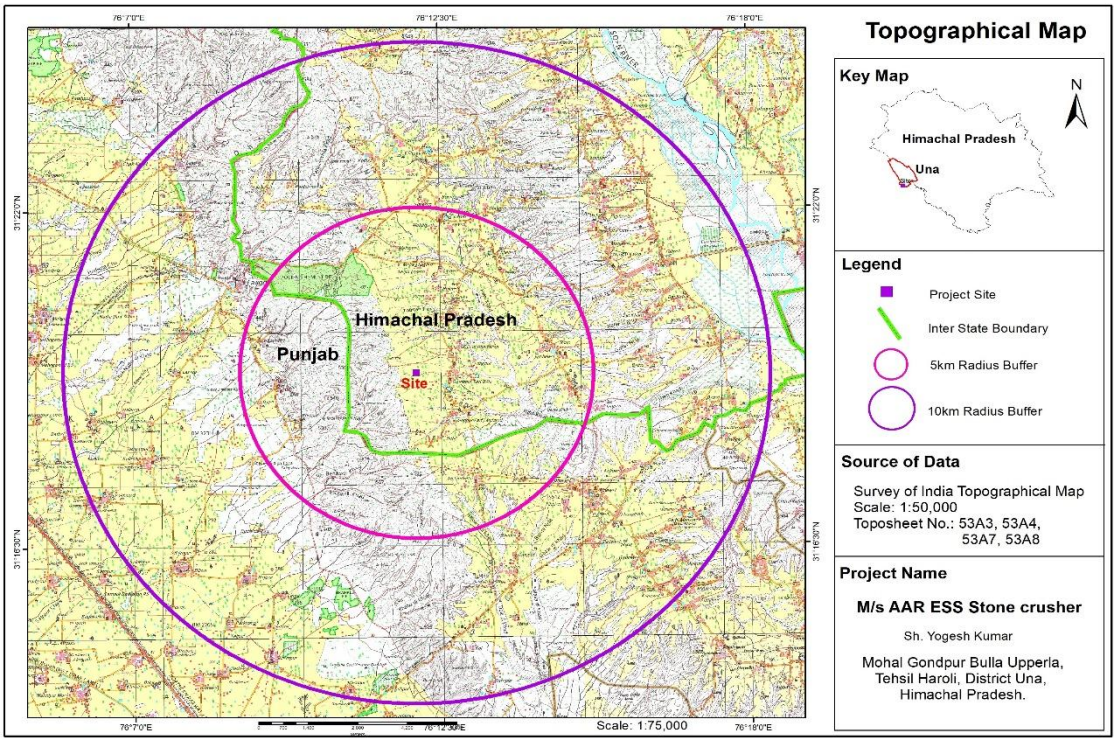


Figure 2-3 MAP SHOWING 5 KM & 10 KM BUFFER FROM THE PROJECT SITE

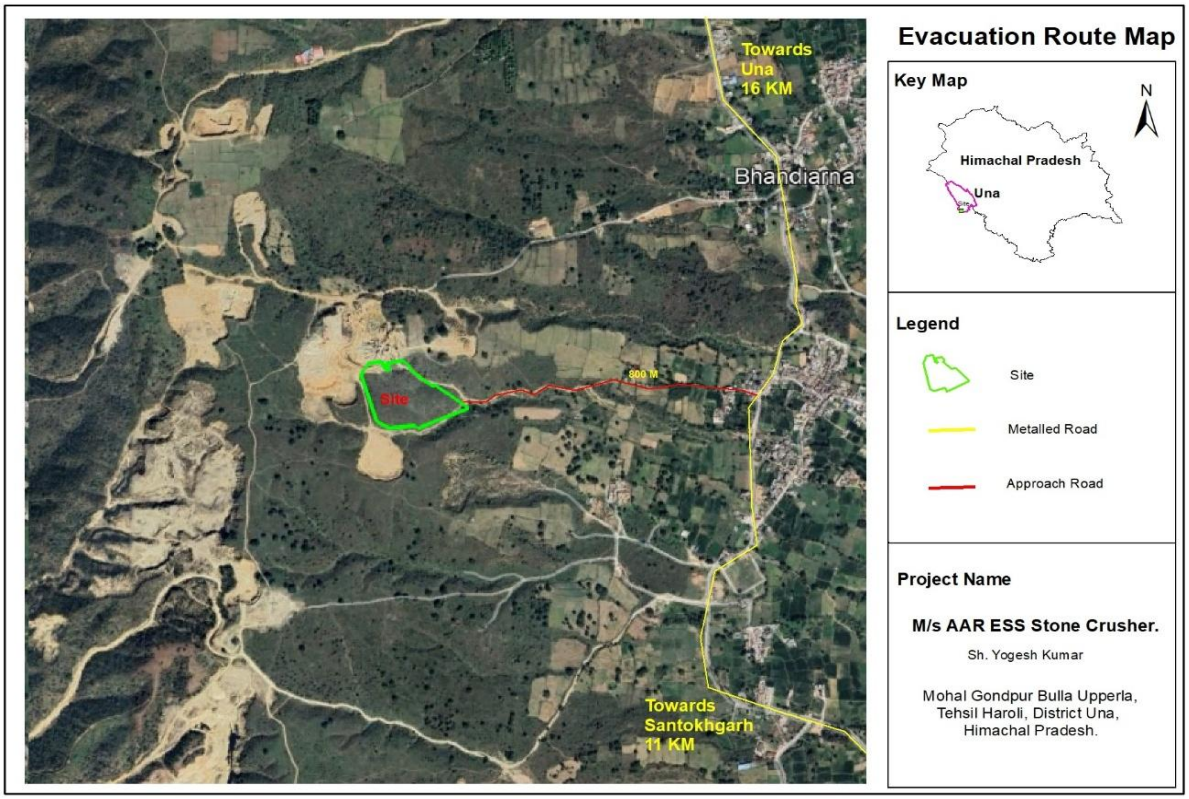


***Figure 2-4* EVACUATION ROUTE MAP**

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

Table 2-2 DETAILS OF MINING LEASE AREA

Sr. No	Khasra Number	Area in Hectare	Owner of Land	Kisam	Mauza /Mohal	Name of Panchayat
1.	145, 147, 149, 150, 165, 166, 167, 169 &171	3.5376 Hectares	Private Land	Gondpur Bulla	Gondpur Bulla	Gondpur Bulla

2.5 SIZE AND MAGNITUDE OF OPERATION

The proposed Hill slope mining project by Sh. Yogesh Kumar partner M/s AAR ESS Stone crusher is located Khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171, covering a total area of 3.5376 hectares of private hill slope land. The site falls within Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh. Due to the presence of one other lease within 500 meters, the project forms a cluster of 7.5021 hectares falling Category 'B1' project under EIA Notification, 2006. The project aims to extract 120775 MTPA of sand, stone, and bajri using manual as well as semi-mechanized methods, without drilling or blasting. Max. 52167 TPA of mine waste in the form of Silty sand and Topsoil, will also be collected.

2.6 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

S. No.	Activity	Estimated Time frame
4	Grant of Mining Lease by State Government	Month 6
5	Site Preparation and Mobilization	Month 6–7
6	Commencement of Mining Operations	Month 7 onwards

2.7 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.

2.8 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY FOR THE RISK OF TECHNOLOGY FAILURE

The adoption of new and untested technology in Hill Slope mining requires 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. These issues are addressed in Mining Plan approved by State Mining department.

2.9 GENERATION OF MINE WASTE AND ITS DISPOSAL

Max. 52167 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.

2.10 GEOLOGY

2.10.1 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 2-3 STRATIGRAPHY OF THE AREA

Lithostratigraphy of District Una

Group			Lithology	Age	Approx. Thickness
Newer Alluvium			Sand, silt, gravel and Pebbles	Quaternary	Variable
Siwalik Group	Upper Siwalik	B	Predominantly massive conglomerate with red and orange clay as matrix and minor sandstone and earthy buff and brown calystone	Neogene	2300 meter
		A	Sandstone, clay and conglomerate alternation		
	Middle Siwalik	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 Siwalik	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		

2.10.2 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 $31^0$17'52"-31^0 52'0" north longitudes and $75^0$58'0"-$76^0$28'25" east longitudes. Una district covers an area of 1,550 sq. km. Himalayan foothill zone bounded by plains of Punjab in the est 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 2-3.

Shivalik range experience heavy rainfall. The Swan River itself is 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 kilometers to 14 kilometers 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 2.5.

*Source- ***http://cgwb.gov.in/District_Profile/HP/Una.pdf***

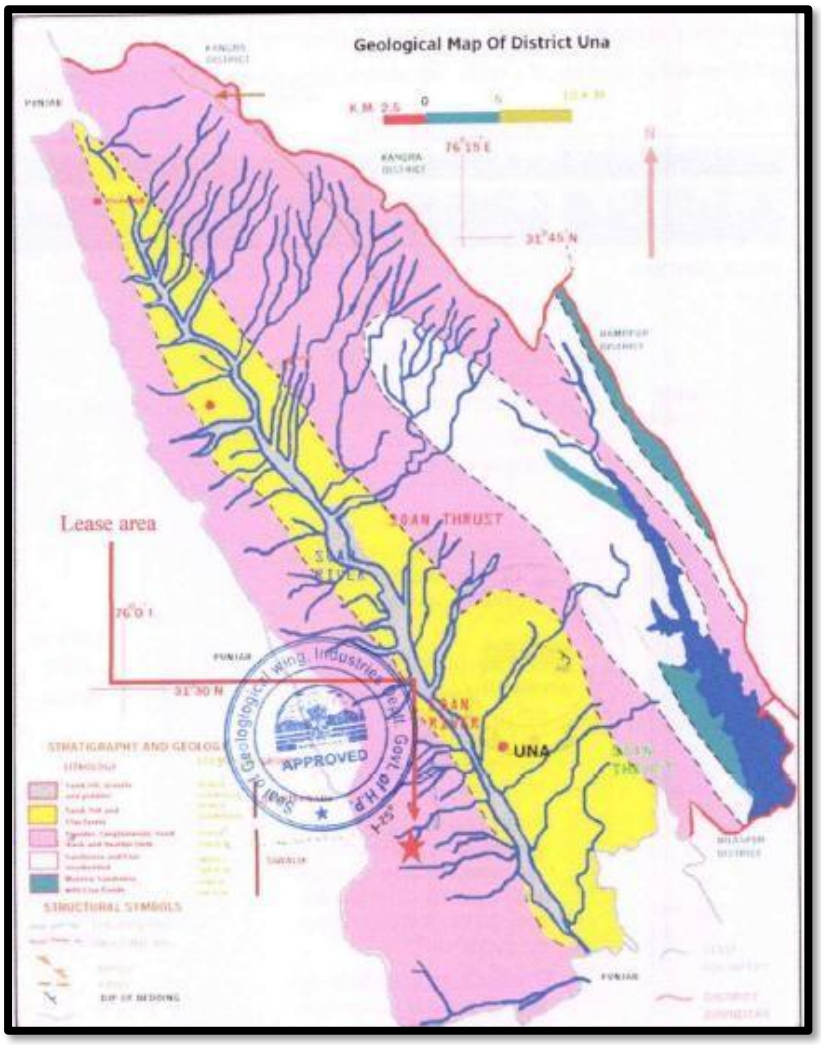


Figure 2-5 GELOGICAL MAP OF UNA DISTRICT

2.11 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 based on 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 lest 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 584 meters level.
- The bottom bench is proposed at 566 meters level.
- Total 4 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 3.5376 Hectare. It has been proposed to collect Maximum 120775 MTPA of Sand, Stone & Bajri and Max. 52167 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 8,62,650 MT (including waste) each year.

2.12 PROJECT DISCRIPTION

The mining lease has been proposed by Sh. Yogesh Kumar partner of M/s AAR ESS Stone crusher. The mining lease area is 3.5376 Hectare located Khasra 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh. It has been proposed to collect approximately 8,62,650 MTPA of sand, stone & bajri including mine waste. 52167 TPA of mine waste in the form of Silty sand & Topsoil will be generated. The baseline monitoring for months Dec. 2025-Feb. 2026 has been done.

2.13 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 2-4 PERCENTAGE OF MINERAL IN MINE LEASE AREA

Sr.No.	Minerals	Percentage in mine lease area(%)
1.	Useable	70%
2.	Wastage(Silty Sand and Top Soil/Clay	30%
Total		**100**

***Source: -** Approved Mine Plan

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

Table 2-5 YEAR WISE PRODUCTION OF MATERIAL (IN MT)

Year	Sand, Stone and Gravel/Bajri	Mine waste	Total
1st Year	120770	51489	**172259**
2nd Year	120770	52005	**172775**
3rd Year	120770	51441	**172211**
4th Year	120770	52167	**172937**
5th Year	120775	51693	**172468**
Total	**603855**	**258795**	**862650**

2.14 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.

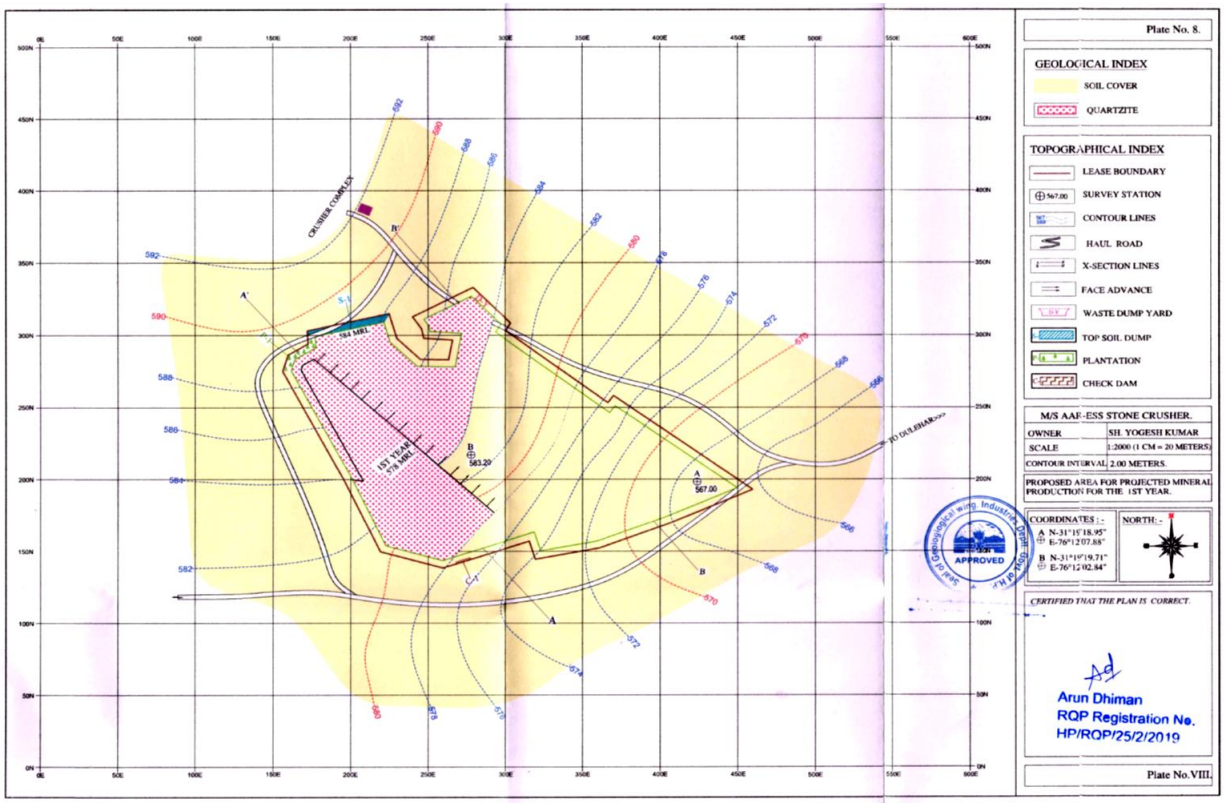


Figure 2-6 WORKING PLAN OF MINE LEASE AREA

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

No liquid effluent will be generated during this process. 52167 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. 2.5 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.

2.16 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.

2.16.1 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.

2.16.2 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.

2.17 EMPLOYMENT GENERATION/MANPOWER REQUIREMENT

- The mining activity in the lease area will thus give direct employment to about 18 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 2-6 EMPLOYMENT DETAILED

Sr.No.	Category	Number
1.	Administrative	1
2.	Supervisory	1

3.	Drivers	3
4.	Mining workers	5
Total		**10**

2.18 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 447 metric tons of sand, stone and bajri would be required to be moved daily.

During mine operation traffic intensity

Total Production	: 120775 MTPA (Excluding Waste)
No. of working days	: 270 Days
Per day capacity of mine	: 447tonnes/day
Trolley/Truck capacity	: 9 tonnes
No. of trip deployed	: 50 trips/day
Working hours per days	: 8 hours
No. of trucks deployed/h	: Approx. 6 tractor trolley

2.19 POWER, WATER SUPPLY AND OTHER ONSITE REQUIREMENTS

2.19.1 Conceptual Scheme of Mining

- The mining is proposed in between 566 m R.L & 584 m R.L.
- In total 04 number of benches are suggested at following levels:-

Number of Benches	584 meters level 578 meters level 572 meters level 566 meters level

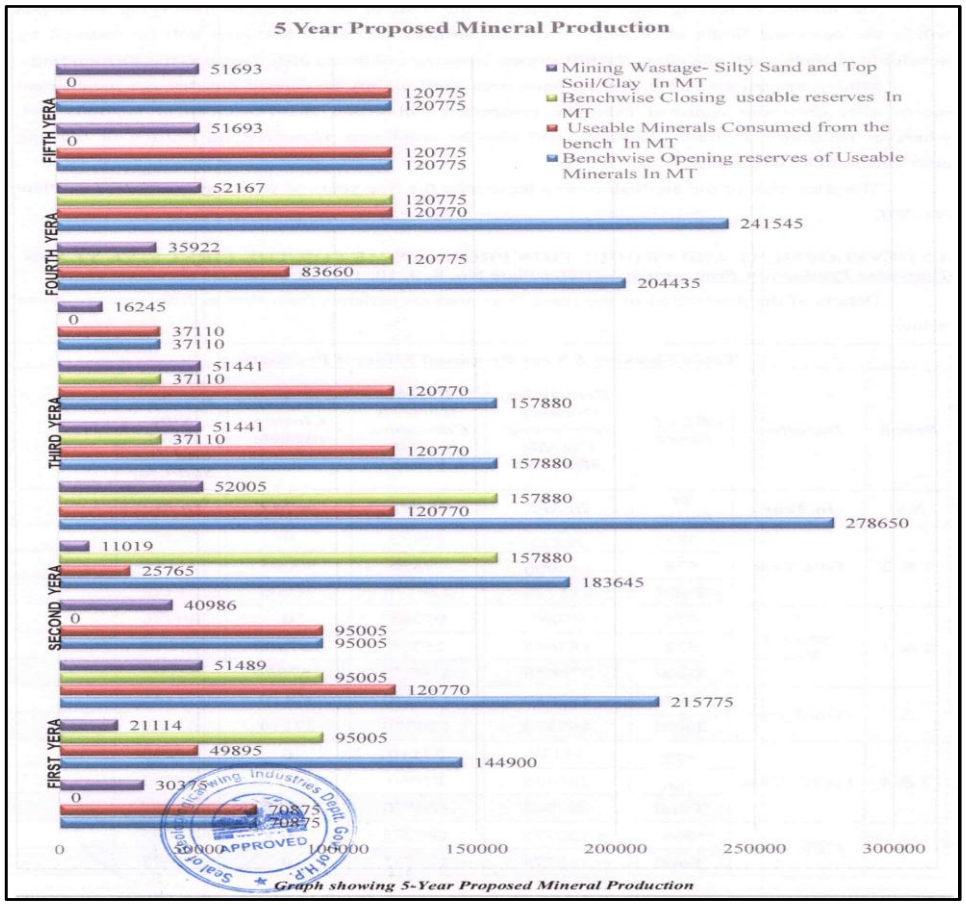
- The main commercially exploitable material is Sand, Stone & Bajri.
- 270 working days have been taken for the purpose of calculation.

- 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 2-7 YEAR WISE PRODUCTION PROGRAMME IN METRIC TONES

Year	1st	2nd	3rd	4th	5th	Total
Stone/Stone & Bajri	120770	120770	120770	120770	120775	**603855**
Mine Waste	51489	52005	51441	52167	51693	**258795**

***Source:** Approved Mine Plan



Graph showing 5-Year Proposed Mineral Production

(***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 Gravel/Bajri	Mine waste	
1st Year	120770	51489	**172259**
2nd Year	120770	52005	**172775**
3rd Year	120770	51441	**172211**
4th Year	120770	52167	**172937**
5th Year	120775	51693	**172468**
Total	**603855**	**258795**	**862650**

*(***Source:-** Approved Mine Plan)*

2.19.2 Mining Methodology

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

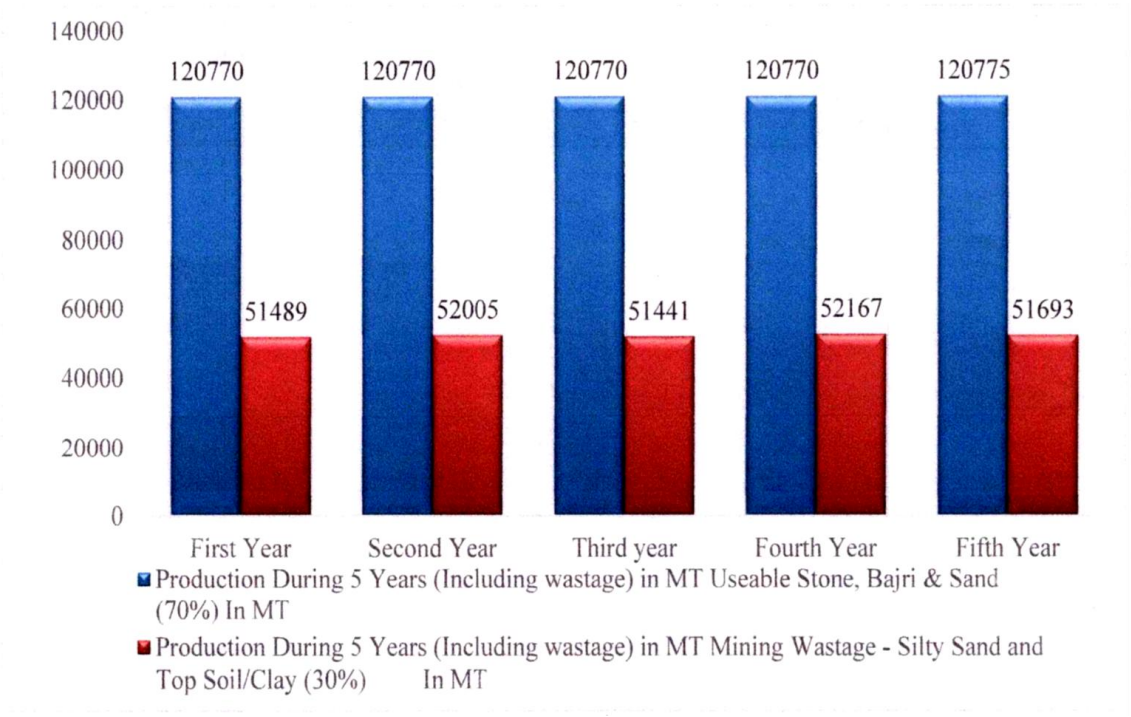


Figure 2-8 FIVE YEARS OF WORKING PLAN OF MINE LEASE AREA

2.19.3 Proposed Year Wise Production Detail: -

1st Year: - Annual production proposed to meet the requirement of stone crusher unit would be around 120770 MTPA Sand, Stone and Bajri and Sand for the 1st year. For this, benches in block at 584 -578. m R.L shall be opened with total useable reserve of 215775metric tons.

1st YEAR PRODUCTION

Production Of Each Mineral in the First Year (In MT)						
Bench	*Duration*	*Rl of Bench*	*Bench-wise Opening Reserves of Useable Minerals*	*Useable Minerals Consumed from the Bench*	*Bench Closing useable reserves*	*Mining Wastage - Silty Sand and topsoil/ Clay*
1 & 2	First Year	584	70875	70875	0	30375
		578	144900	49895	95005	21114
		Total	**215775**	**120770**	**95005**	**51489**

2nd Year: - During this year 120770 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 578 -572 m. R. L.-with total usable reserve of 278650 M.T. The remaining material of this bench shall be used in the next working year.

2nd YEAR PRODUCTION

Production Of Each Mineral in Second Year (In MT)						
Bench	*Duration*	*Rl of Bench*	*Bench wise Opening reserves of Useable Minerals*	*Useable Minerals Consumed from the Bench*	*Bench Closing useable reserves*	*Mining Wastage - Silty Sand and topsoil/Clay*
2 & 3	Second Year	578	95005	95005	0	40986
		572	183645	25765	157880	11019
		Total	**278650**	**120770**	**157880**	**52005**

3rd Year: During this year, the remailing material from 572 m. R.L. requirement of 157880 metric tonnes of Sand, Stone and Bajri. Total reserve of 120770 metric tonnes, the remaining material of this bench shall be used in the next working year.

3rd YEAR WISE PRODUCTION

Production Of Each Mineral in the Third Year (In MT)						
Bench	*Duration*	*Rl of Bench*	*Bench wise Opening reserves of Useable Minerals*	*Useable Minerals Consumed from the Bench*	*Bench Closing useable reserves*	*Mining Wastage - Silty Sand and topsoil/Clay*
3	Third year	572	157880	120770	37110	51441
		Total	**157880**	**120770**	**37110**	**51441**

4th Year: During this year 120770 metric tonnes of Sand, Stone & 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 572, 566 m.R.L. remaining material from bench would be exploited during the next working year.

4th YEAR WISE PRODUCTION

Production Of Each Mineral in the Fourth Year (In MT)						
Bench	*Duration*	*Rl of Bench*	*Bench-wise Opening reserves of Useable Minerals*	*Useable Minerals Consumed from the Bench*	*Bench Closing useable reserves*	*Mining Wastage - Silty Sand and topsoil/Clay*
3 & 4	Fourth Year	572	37110	37110	0	16245
		566	204435	83660	120775	35922
		Total	**241545**	**120770**	**120775**	**52167**

5th Year: During this year 120775 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 566 m R.L. shall be opened. All the material generated from these shall be used and shall be exhausted during this year.

5th YEAR WISE PRODUCTION

Production Of Each Mineral in Fifth Year (In MT)						
Bench	*Duration*	*Rl of Bench*	*Bench-wise Opening reserves of Useable Minerals*	*Useable Minerals Consumed from the Bench*	*Bench Closing useable reserves*	*Mining Wastage - Silty Sand and topsoil/Clay*
4	Fifth Year	**566**	120775	120775	0	51693
		Total	**120775**	**120775**	**0**	**51693**

(*Source:** Approved Mine Plan**)

2.20 WASTE GENERATION (LIQUID & SOLID) DURING MININING 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:

Table 2-8 WASTE GENERATION DURING FIVE YEARS IN TONES

Year	Mine waste
1st Year	51489
2nd Year	52005

3rd Year	51441
4th Year	52167
5th Year	51693
Total	**2,58,795**

2.21 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.

2.22 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 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 56000 Sq. m. and 40000 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.

The average year-wise proposed bench area for plantation is as under:-

Sr. No.	Year	Areas in sq. m.	No. of plants
1.	1st Year	8000	40
2.	2nd Year	8000	40
3.	3rd Year	8000	40
4.	4th Year	8000	40
5.	5th Year	8000	40
	Total	**40000**	**200**

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 a gradient of less than one degree hence, track for the movement of trucks and tractors trolly 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 447 metric tons of sand, stone and bajri would be transported daily. Though route map shown in **Fig 2. 9.**

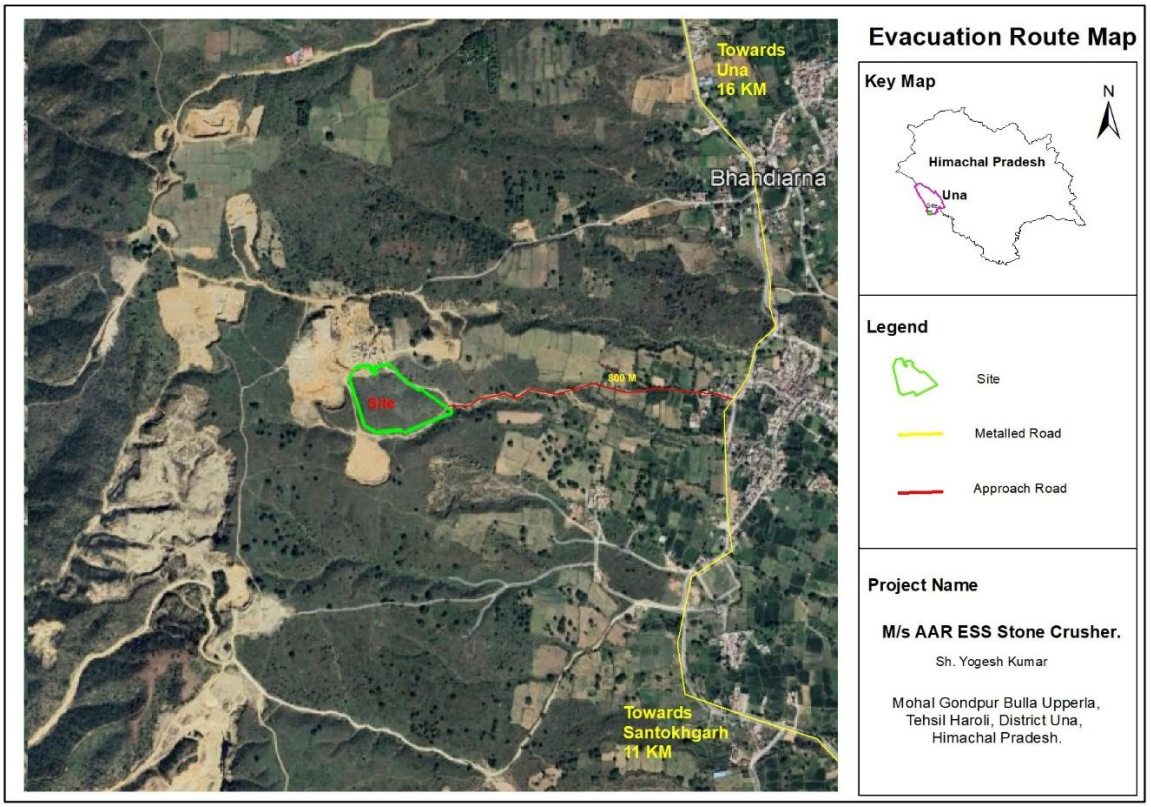
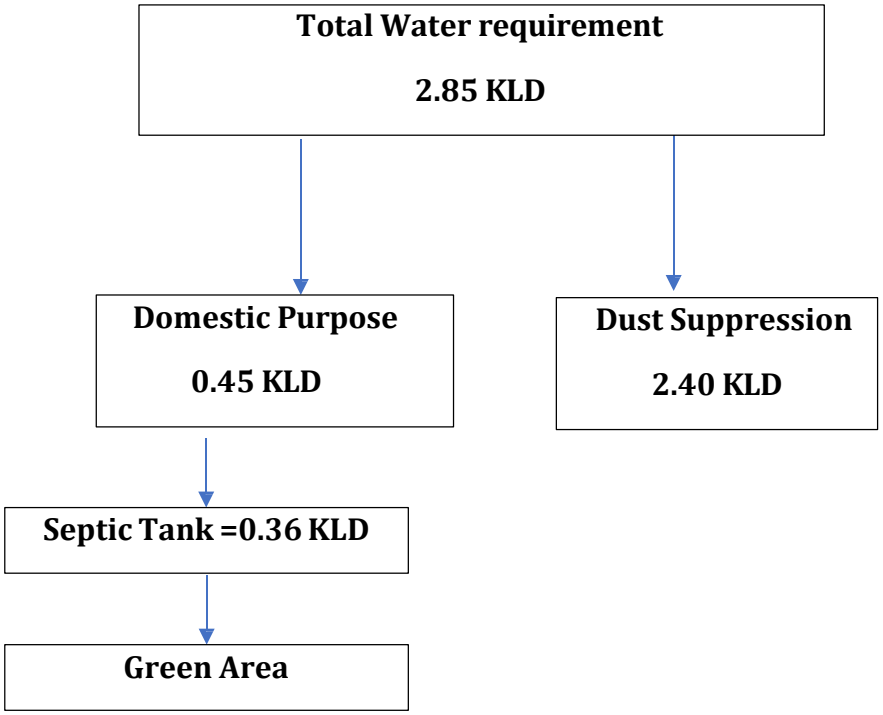


Figure 2-9 EVACUATION ROUTE MAP

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.

Table 2-9 DESCRIPTION OF ACTIVATES AND ANTICIPATED IMPACTS

Activities/issues of concern	Anticipated environmental impacts
Land alteration/regime modification. *> Mobilization of labor* *> Mining of Hill Slope extraction of (Sand/Stone & Bajri)* *> Acquired land area~ 3.5376 ha.* *Land use in conformation of Mine plan*	*> Undercutting and collapse of Hill Slope* *> Hill cutting and erosion.* *> Existing ecology and habitat*
Waste generation due to mining > Mine waste Silt Sand & Topsoil/Clay	*> Silty sand/Topsoil & clay increase the turbidity & total suspended solid*
Mining of mineral & transportation *> Machinery and equipment deployment* *> Haulage of mined out material to the Crusher site.* *> On-site storage and handling of material* *> Laying of utilities–roads, & water*	*> Pollution due to operation of equipment* *> Pollution due to fill up of extracted materials.* *> Silty sand/Topsoil/Clay management* *> Haulage of material and on-site vehicular movement* *> Waste generation due to on-site activity* *> Safety and health issues of workers*
Human settlements *> Temporary/permanent movement of population during operation phase* *> Transportation requirements of public/civic amenities* *> Waste generation due to mining Mine waste silty sand & Topsoil*	*> Alteration in settlement patterns* *> Alteration in traffic movement Socio-economic activities due to the proposed project* *> Silty sand & Topsoil increase the turbidity & total suspended solid.*
Waste generation due to mining Mine waste silt sand & topsoil	*> Silty Sand & Topsoil increase the turbidity & total suspended solid*

Health and safety	*> Health, safety, and welfare of workers during mining activity* *> Safety provision for existing and Activities* *> Probability and containment of natural hazards* *> Emergency/disaster response Management*

****

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 Winter 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 post-monsoon 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 (SO2), Nitrogen Dioxide (NO2).

- **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.

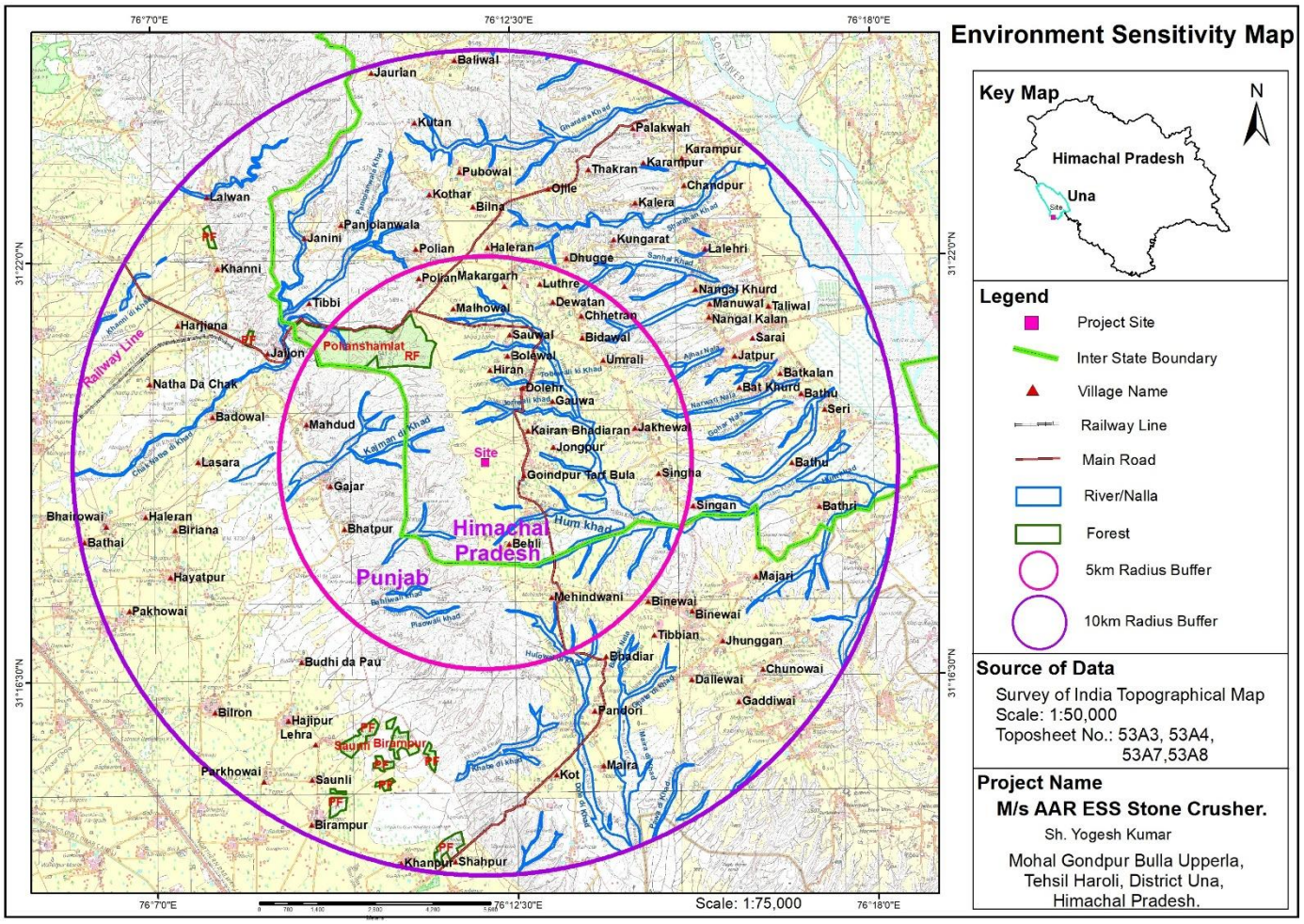


Figure 3-1 ENVIRONMENTAL SENSITIVITY MAP DEPICTING THE PROJECT SITE WITHIN 5 KM AND 10 KM RADIUS

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

Una, a district in southwestern Himachal Pradesh, was established on 1st September 1972 when the Himachal Pradesh government reorganized the former Kangra district into three separate districts: Una, Hamirpur, and Kangra. The district has developed a strong industrial sector due to its proximity to Punjab, with major industrial centers located in Mehatpur, Gagret, Tahliwal, and Amb. On 11th January 1991, Una was connected to the rail network through a 14 km broad-gauge track linking Nangal (Punjab) to Una. The district's terrain is predominantly hilly, forming part of the Himalayan foothills known as the Siwalik range. Several important hill ranges (Dhars) characterize the landscape, including Sola Singhi Dhar (Jaswan Dhar), Chaumukhi Dhar, Dhionsar Dhar, Ramgarh Ki Dhar, and Bangar Ki Dhar, all

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.

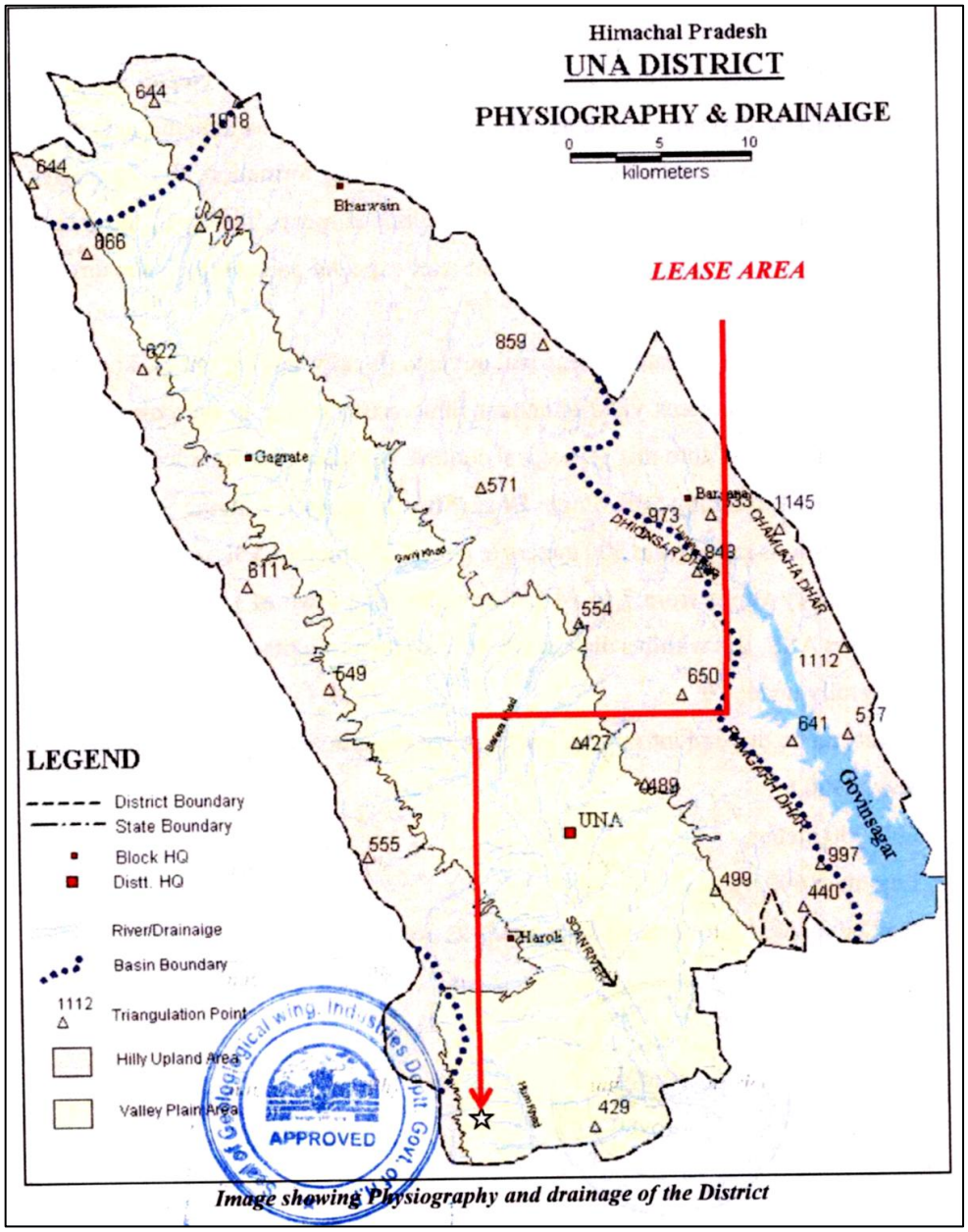
The Swan River, the district's primary watercourse, flows northwest to southeast, receiving numerous tributaries including Borewali Khad, Barera Khad, Garni Khad (right bank), and Panjoa Khad, Ambwali Khad, Badowali Khad, and Hum Khad (left bank). These waterways form the fertile Soan Valley before the 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 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 influences its agriculture, settlement patterns, and connectivity with Punjab.

3.7.3 Drainage

The area exhibits a dendritic drainage pattern, typical of regions with uniform lithology where streams branch irregularly like tree limbs. Small seasonal rivulets and drainage lines flow through and around the khasra land parcels, eventually joining larger streams in the vicinity.

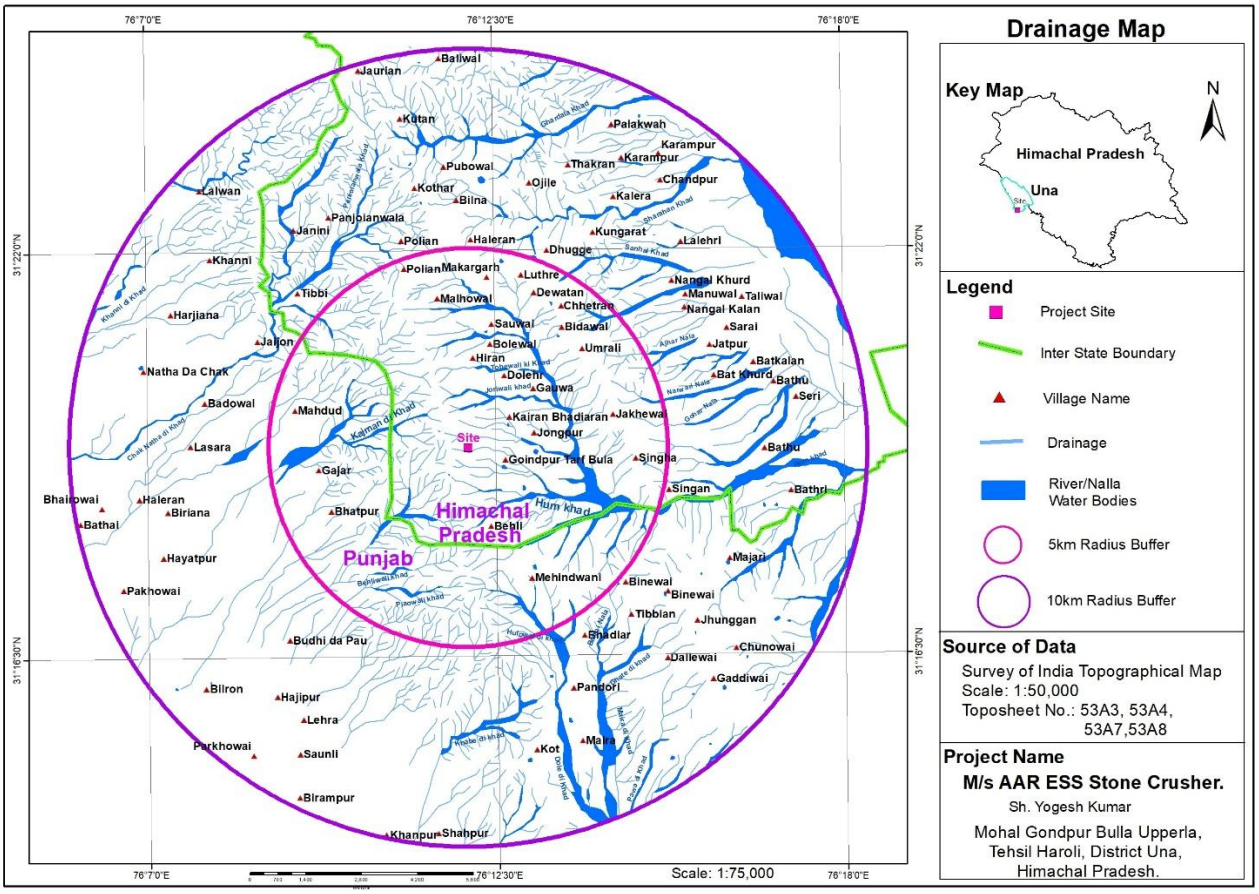


Figure 3-3 MAP SHOWING DRAINAGE NETWORK OF THE STUDY AREA

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.

3.8 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.

3.9 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**:-**

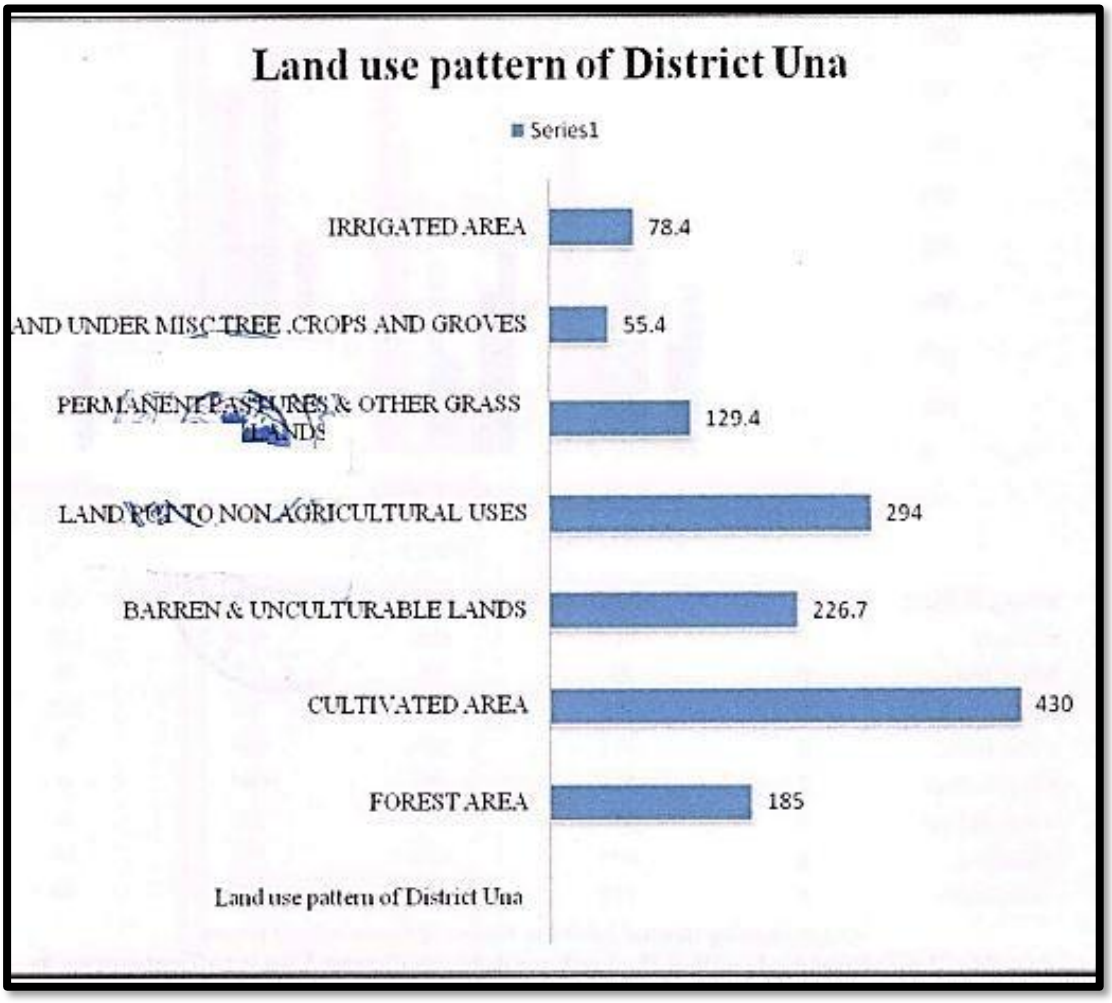


Figure 3-4 LAND USE PATTERN OF SORROUNDING VILLAGES IN UNA DISTRICT

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

***Source:** Approved Mine plan

Table 3-2 LAND USE COVER OF THE STUDY AREA

S.no	Class	Area in Ha.	Percentage
1	Builtup Area	2050	6.53
2	River/Water Bodies	1370	4.36
3	Agricultural Land	16555	52.70
4	Scrub Land	11014	35.06
5	Forest	426	1.36
Total		31415	100

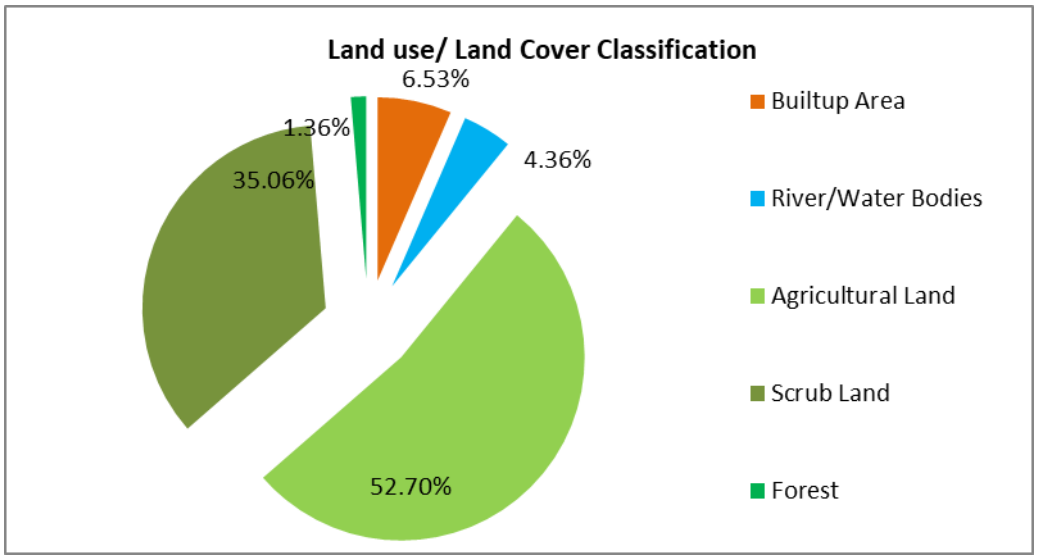


Figure 3-5 GRAPH GRAPHICAL PRESENTATION OF LAND USE/LAND COVER CLASSIFICATION

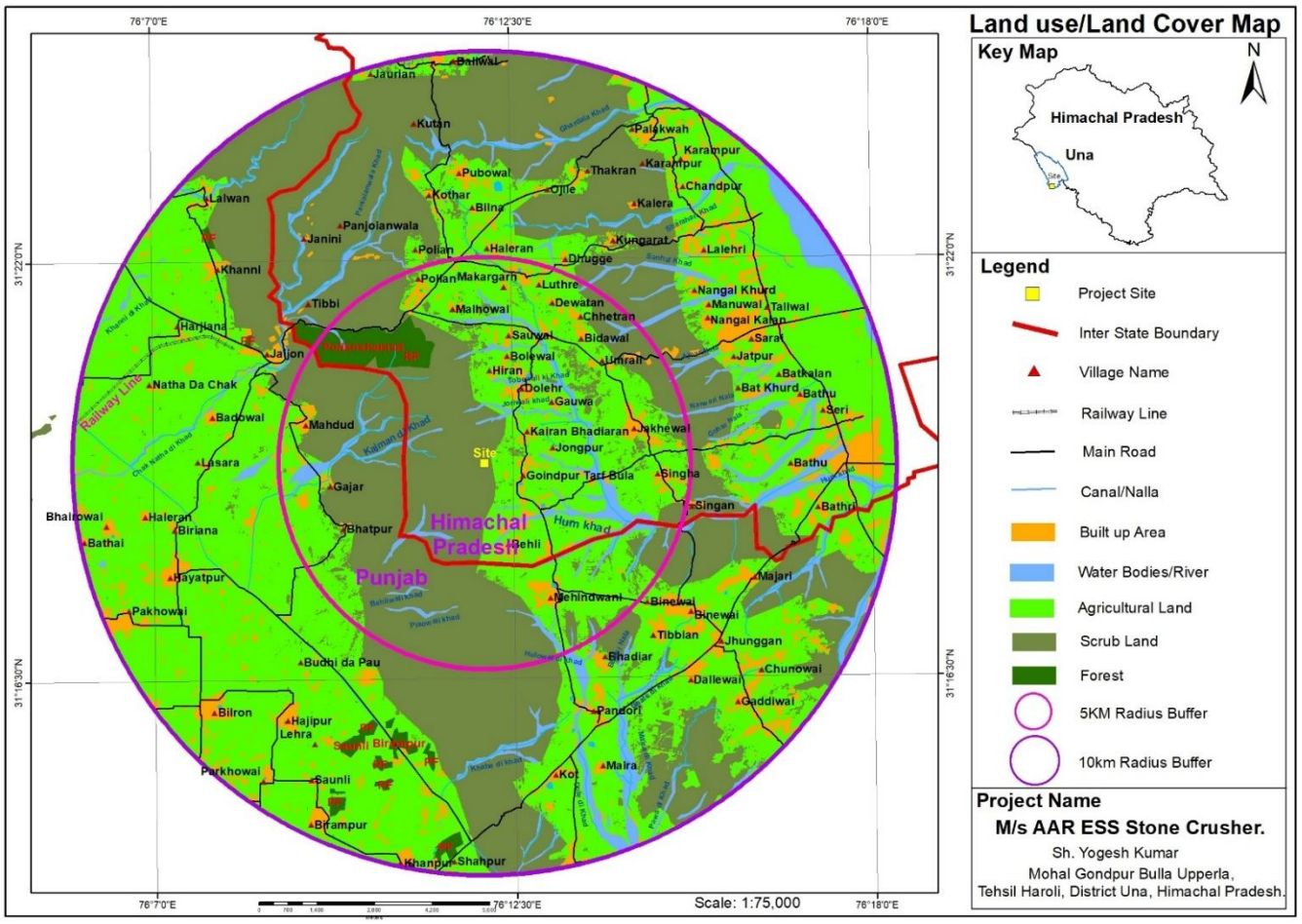


Figure 3-6 LAND USE/LAND COVER MAP WITHIN 5 AND 10 KM PERIPHERY FROM THE PROJECT SITE

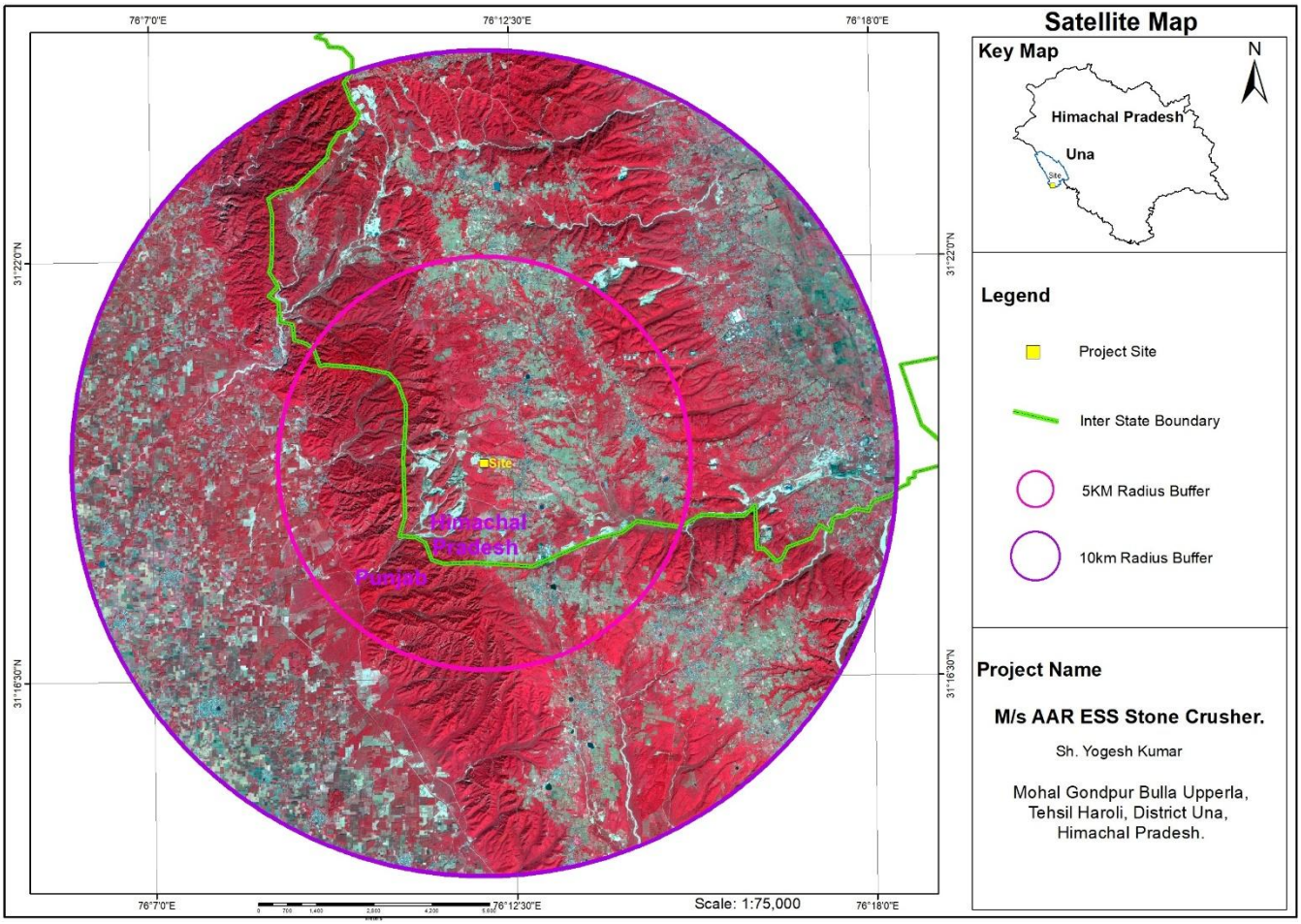


Figure 3-7 SATELITE MAP OF THE STUDY AREA WITHIN 10 KM

3.10 SOIL ENVIRONMENT

The soils 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.

3.9.1 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.

3.9.2 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.

3.9.2.1 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.**

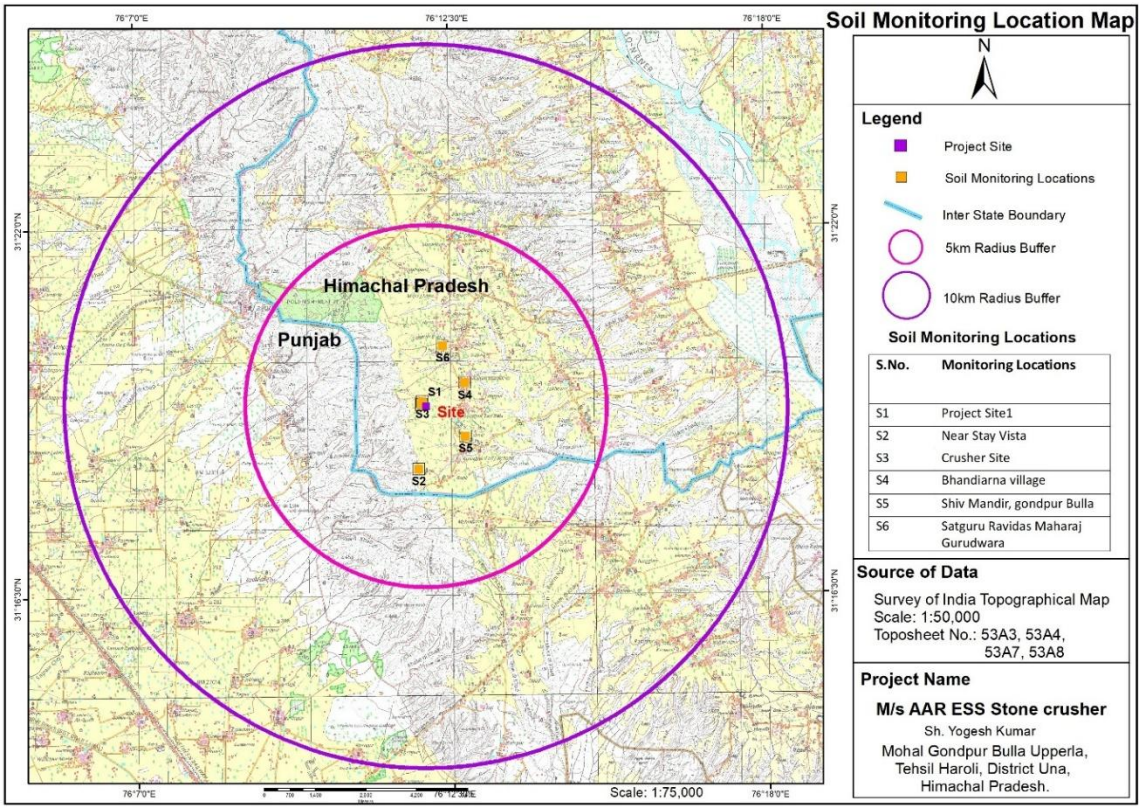


Figure 3-8 SOIL MONITORING LOCATIONS

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

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	Slight alkaline	Moderately alkaline	Strongly alkaline
	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
6	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	
7	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				
8	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						

3.11.3 Soil Quality Analysis

The six samples of soil have been collected from the depth of 5cm to 15cm and representative samples prepared by thorough mixing. The homogenized samples were analyzed for physico chemical

characteristics. The physical and chemical analysis results of the soil samples collected at site during winter season Dec. 2025-Feb. 2026 are presented in **Table 3-5.**

Table 3-5 RESULT OF SOIL REPORTS (POST-MONSOON FROM DEC.-2025 TO 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^3	1450	1130	1204	13340	1467	1226
18	Total Kjeldahl Nitrogen (TKN)	%	0.048	0.030	0.035	0.027	0.032	0.057

3.11.3 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 µmhos/cm to 436 µmhos/cm, indicating the soil is 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 soil is 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(SAR): The SAR values vary from 0.95 to 0.98, thereby indicating good to fare ratio.

3.10 AIR ENVIRONMENT

3.10.1 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 based on surface, demographic, and meteorological influence. The study of SO2, NO2, PM10 & PM2.5 are carried out 24 hourly twice a week at each station. The study was done in Winter season for a period of 3 months December-2025 to February-2026.

3.10.2 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

3.10.3 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.

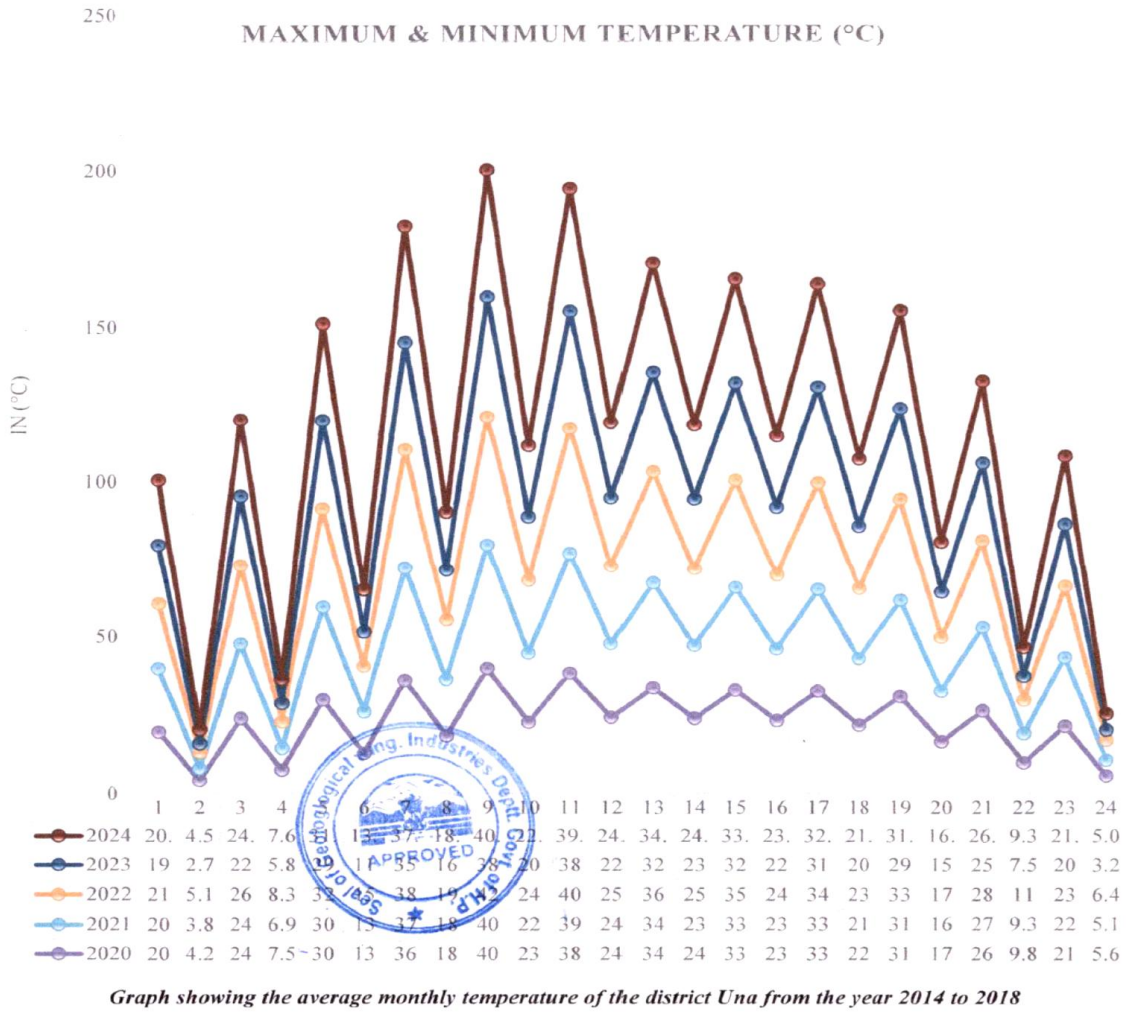


Figure 3-9 AVERAGE MONTHLY TEMPRATURE OF DISTRICT UNA

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	1.7	17.7	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

Geological Mining Industries Deptt. Govt. of APPROVED

Source *Mining plan*

Figure 3-10 AVERAGE MONTHLY RAINFALL OF THE DISTRICT UNA

3.10.4 Micro-Meteorological Data

Period	Temperature (°C)		Precipitation (mm)	Wind Speed (Km/hr.)	% 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

CLIMATE AROUND THE MINING LEASE AREA DISTRICT UNA, HIMACHAL PRADESH

CLIMATE	WINTER	SUMMER	RAINY SEASON
PERIOD	OCT.-MID MARCH	MID-MARCH -JUNE	JULY-SEPTEMBER
Weather	Cool	Hot	Humid

3.10.5 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 Dec. 2025 to Feb. 2026 for 24 hourly intervals to plot wind rose. Wind Pattern During the Study Period is given below: -

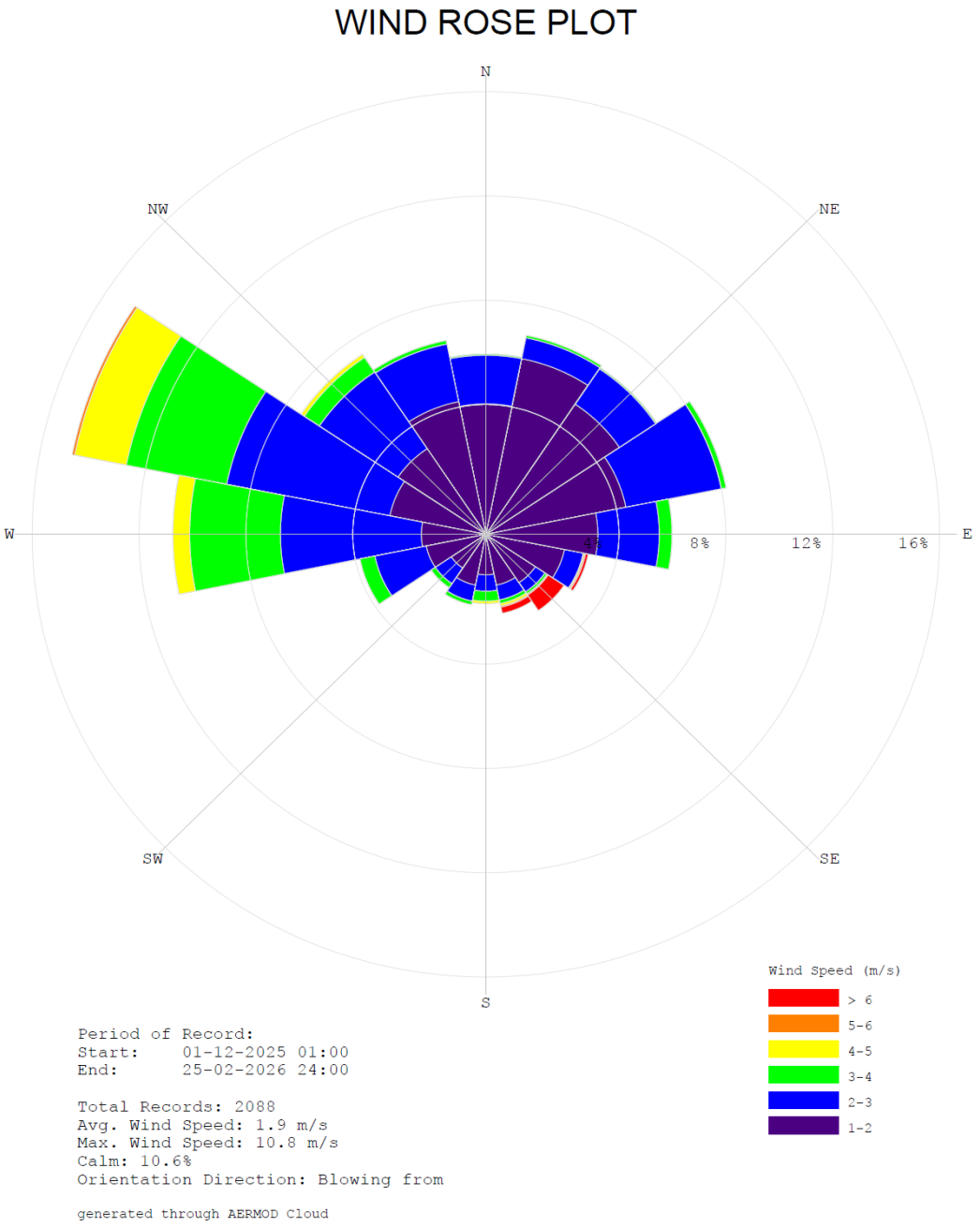


Figure 3-11 WIND ROSE OF MONITORING SEASON IN STUDY AREA

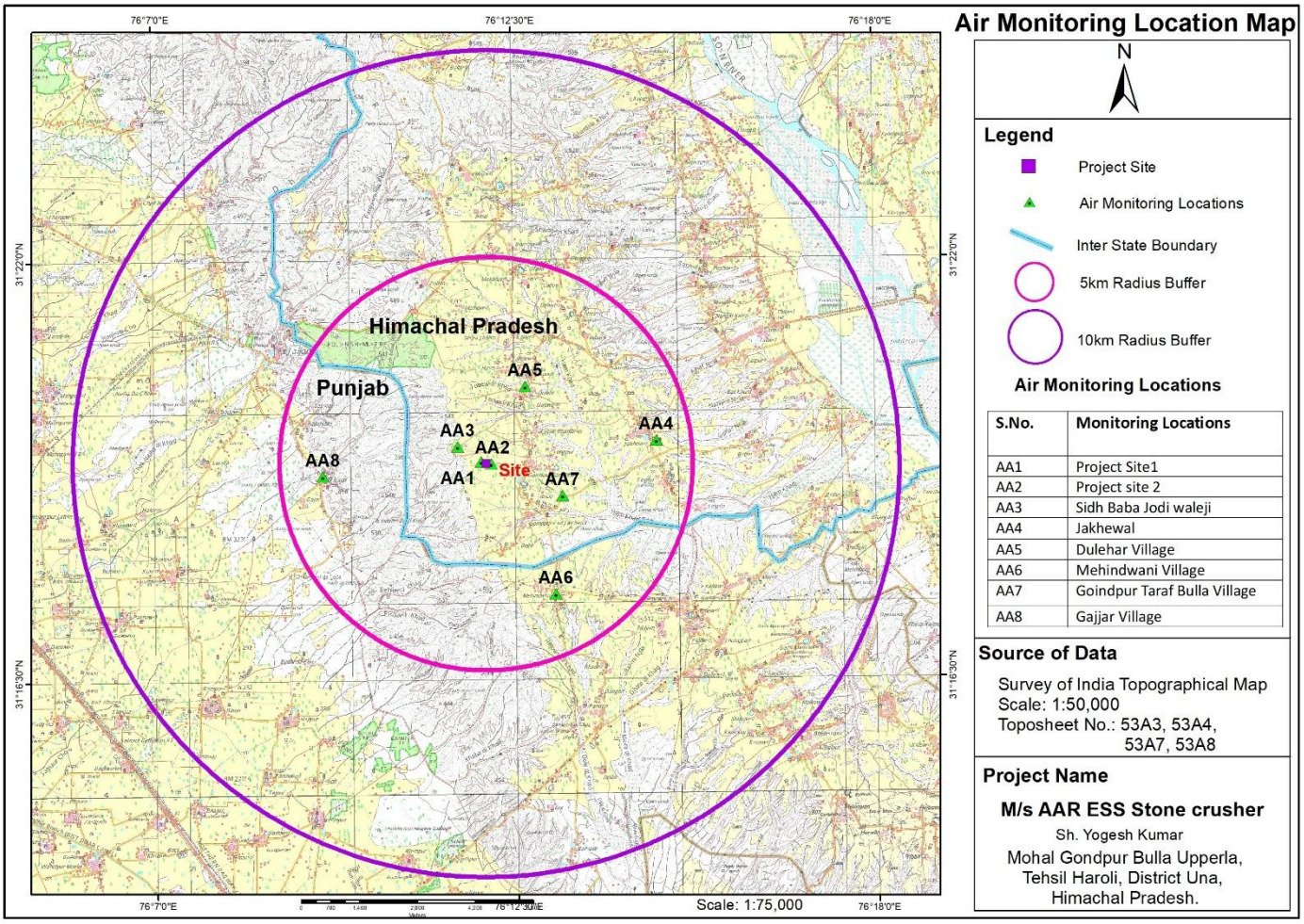


Figure 3-12 AMBIENT AIR MONITORING LOCATIONS

3.10.5 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 analyzed for each sample**: -**

-Particulate matter (PM10)
-Particulate matter (PM2.5)
-Sulphur dioxide (SO2)
-Nitrogen dioxide (NO2)
-Free Silica in PM_{10}
-Carbon mono-oxide (CO)
-NH_3 (Ammonia)
-O_3 (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

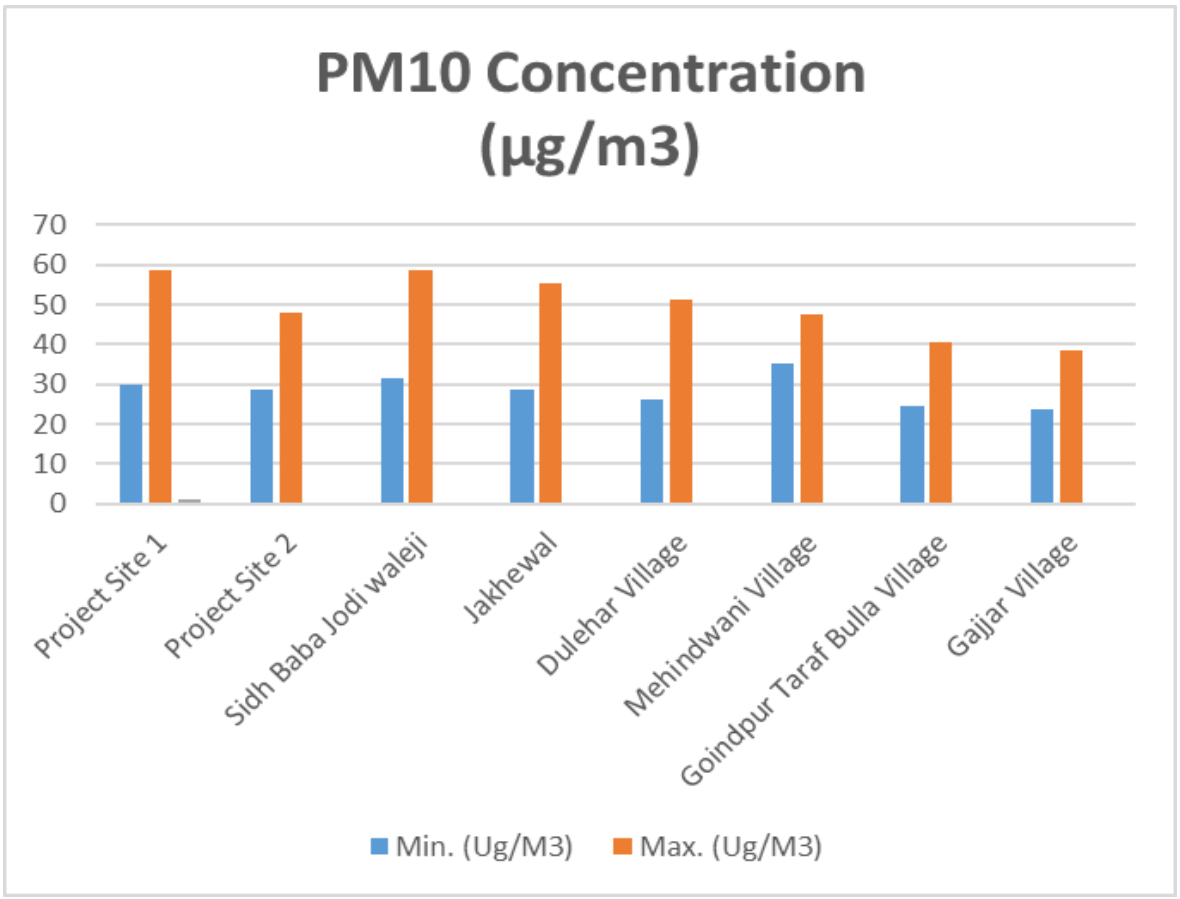
Sr. No.	Parameters	Testing Procedure	NAAQS 2009 Standard (µg/m3)
1	**PM_{10}**	Gravimetric method using "Repairable Dust Sampler" (RDS) IS: 5182 (P-23) 2004	100 (µg/m^3)

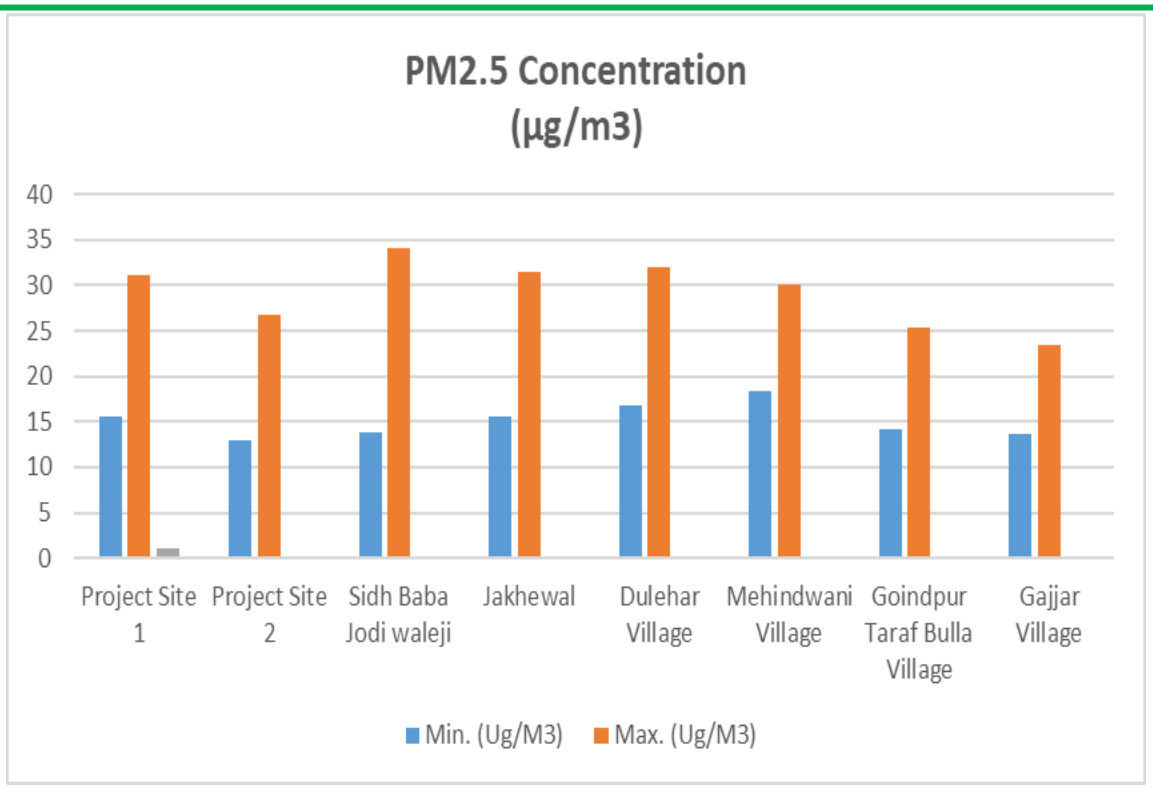
2	**$PM_{2.5}$**	Gravimetric method using fine particulate Sampler (FPS) IS: 5182 (P-23) 2004	60 (µg/m^3)
3	**NO_2**	Absorption in dilute Sodium Arsenic and then estimated calorimetrically with Sulphanilamide and N (I-Nepthayle) Ethylene diamine, Dihydrochloride and Hydrogen Peroxide IS: 5182 (P-6) 2006	80 (µg/m^3)
4	**SO_2**	Absorption in Sodium Tetra Cloro Mercurate followed by Colorimetric estimation using P-Rosaniline hydrochloride and Formaldehyde IS: 51182(p-2)2001	80 (µg/m^3)
5	**Free Silica in PM_{10}**	FTIR Method	……..
6	**Carbon mono-oxide**	Detection by handheld CO indicator with least count 0.1 ppm (125 µg/m3)	2 mg/m^3
7	**NH_3 (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(µg/m^3)
8	**O_3 (Ozone)**	NH_3 Indophenol Blue Method (Guidelines for measurement of ambient air pollutants by CPCB)	100 (µg/m^3)

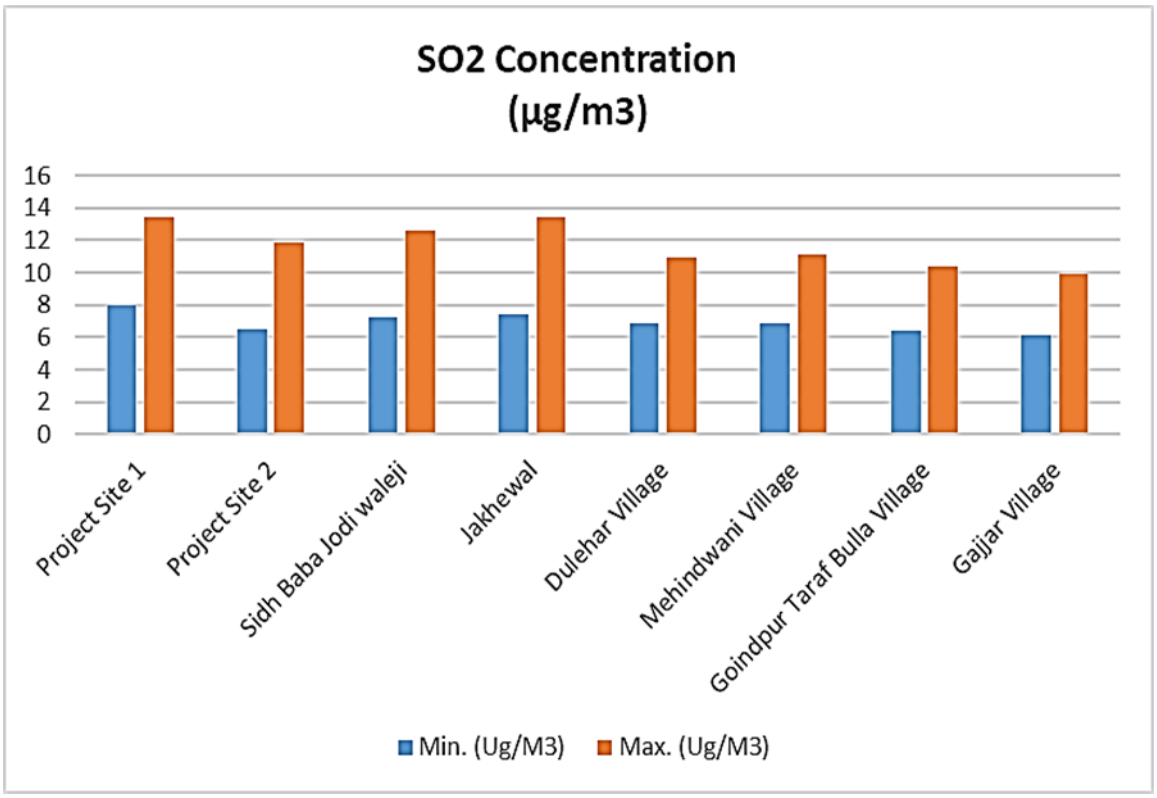
Table 3-9 AMBIENT AIR QUALITY RESULTS

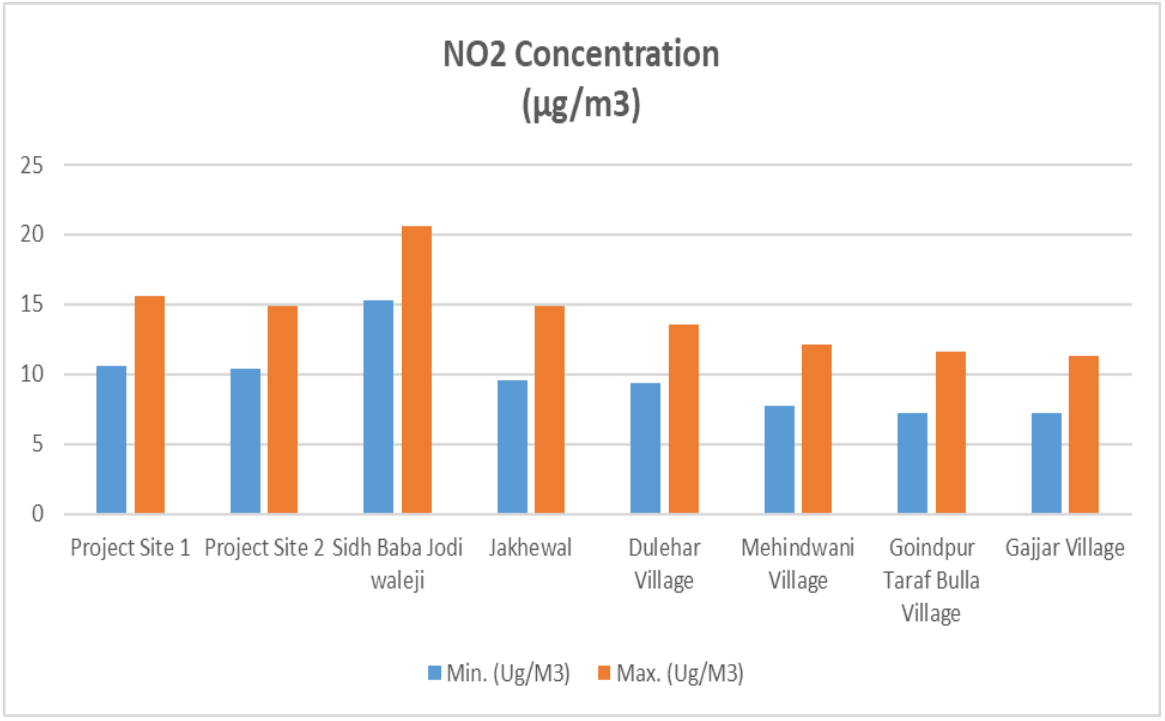
Air Quality Parameters	Location	Min. (Ug/M³)	Max. (Ug/M³)	Avg. (Ug/M³)	98% Percentile	NAAQS Limit
PM_{10} (µg/m³)	Project Site 1	29.93	**58.69**	41.95	57.28	**100 (µg/m³)**
	Project Site 2	28.69	47.89	39.77	47.87	
	Sidh Baba Jodi waleji	31.69	**58.69**	44.03	58.20	
	Jakhewal	28.68	55.42	42.76	55.22	
	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	
PM2.5 (µg/m3)	Project Site 1	15.56	31.11	22.30	30.36	**60 (µg/m3)**
	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	
SO_2(µg/m3)	Project Site 1	7.96	8.26	11.32	13.45	**80 (µg/m3)**
	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	
NO_2 (µg/m3)	Project Site 1	10.55	15.55	12.82	15.55	**80 (µg/m3)**
	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	7.73	12.14	10.06	12.02	

	Village					
	Goindpur Taraf Bulla Village	7.25	11.58	9.46	11.49	
	Gajjar Village	**7.17**	11.32	9.44	11.15	
CO	Project Site 1	0.13	0.48	0.31	0.48	**2mg/m3**
	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	




PM2.5 Concentration
(µg/m3)
40
35
30
25
20
15
10
5
0
Project Site 1
Project Site 2
Sidh Baba Jodi waleji
Jakhewal
Dulehar Village
Mehindwani Village
Goindpur Taraf Bulla Village
Gajjar Village
Min. (Ug/M3)
Max. (Ug/M3)


SO2 Concentration
(µg/m3)
16
14
12
10
8
6
4
2
0
Project Site 1
Project Site 2
Sidh Baba Jodi waleji
Jakhewal
Dulehar Village
Mehindwani Village
Goindpur Taraf Bulla Village
Gajjar Village
Min. (Ug/M3)
Max. (Ug/M3)



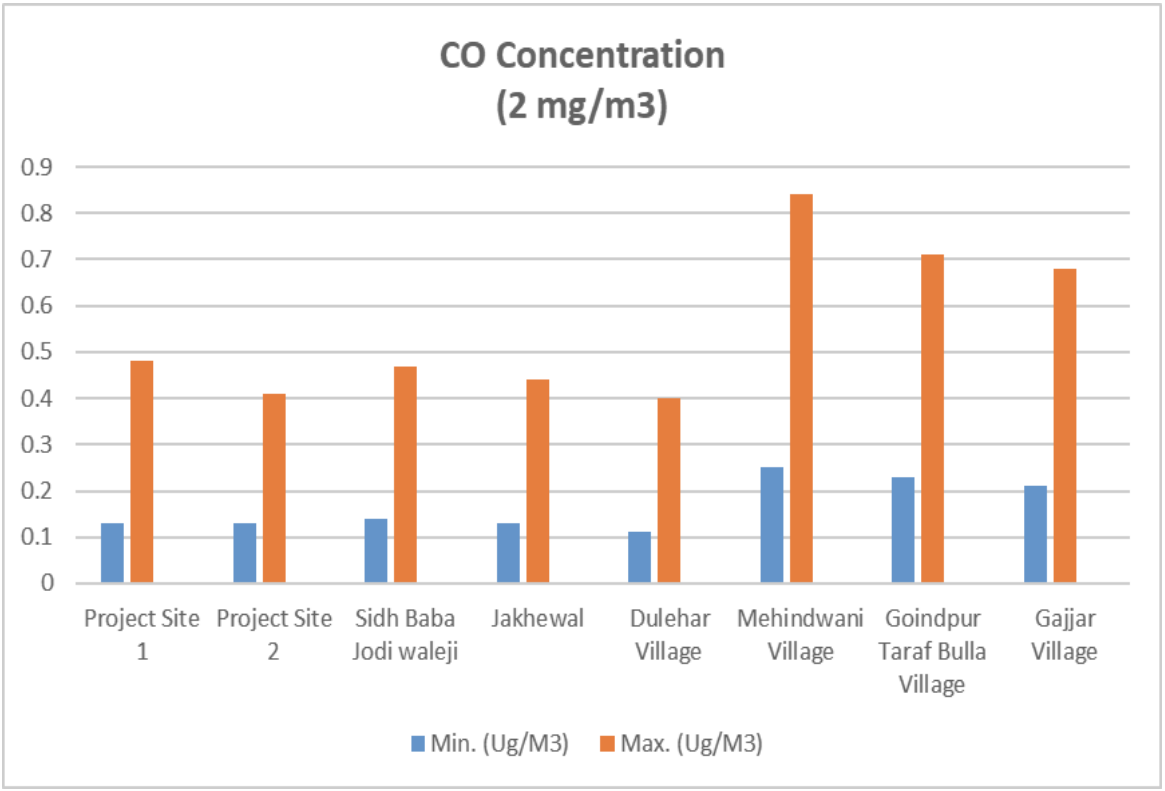


Figure 3-13 GRAPHICAL REPRESENTATION OF AMBIENT AIR QUALITY FOR WINTER SEASON Dec 2025-Feb 2026

The National Ambient Air Quality Standards as notified on dated 18th 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 (µG/M3)

Pollutants	Standard Laid Down by CPCB (18/11/2009)	Max. Value Monitored in Study Area
	Industrial, Residential, Rural and Other Area	
PM_{10} µg/m³	100 (24-hours)	58.69
$PM_{2.5}$ µg/m³	60 (24-hours)	34.05
SO_2 µg/m³	80 (24-hours)	13.45
NO_2 µg/m³	80 (24-hours)	20.65
CO mg/m³	2 (08- hours)	0.84
NH_3 µg/m³	400 (24-hours)	ND (DL 20)
O_3 µg/m³	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.

3.10.6 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_2	NO_2	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 µg/m3) OF SAMPLING LOCATIONS

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

***Source: -** *CPCB AQI Calculator*

3.10.7 Observations of Results

PM_{10} :- The maximum and minimum concentrations for PM_{10} were recorded as 58.69 µg/m^3 and 23.67 µg/m^3 respectively. The maximum concentration was recorded at Sidh Baba Jodi waleji and minimum concentration was recorded at Gajjar Village.

$PM_{2.5}$:-The maximum and minimum concentrations for $PM_{2.5}$ were recorded as 34.05µg/m^3 and 12.94µg/m^3 respectively. The maximum concentration was recorded at the Sidh Baba Jodi waleji, and minimum concentration was recorded at Project site 2.

SO_2:-The maximum and minimum SO_2 concentrations were recorded as 13.45 µg/m^3 and 6.14 µg/m^3 respectively. The maximum concentrations were recorded at Jakhewal and minimum concentration was recorded at Gajjar Village.

NO_x :- The maximum and minimum NO_2 concentrations were recorded as 20.65µg/m^3 and
7.17 µg/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/m3 and 0.11 2mg/m3. The maximum concentration was recorded at Mehndwani Village, and minimum concentration was recorded at Dulehar Village.

3.11 AMBIENT NOISE

As part of EIA study for the proposed project, Noise study was conducted by measuring 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.

3.11.1 Noise level monitoring data

Noise level readings were recorded in 8 locations spread over, in the 1-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

Station Code	Station Name	Distance (Km)	Direction	Latitude & Longitude	Zone
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

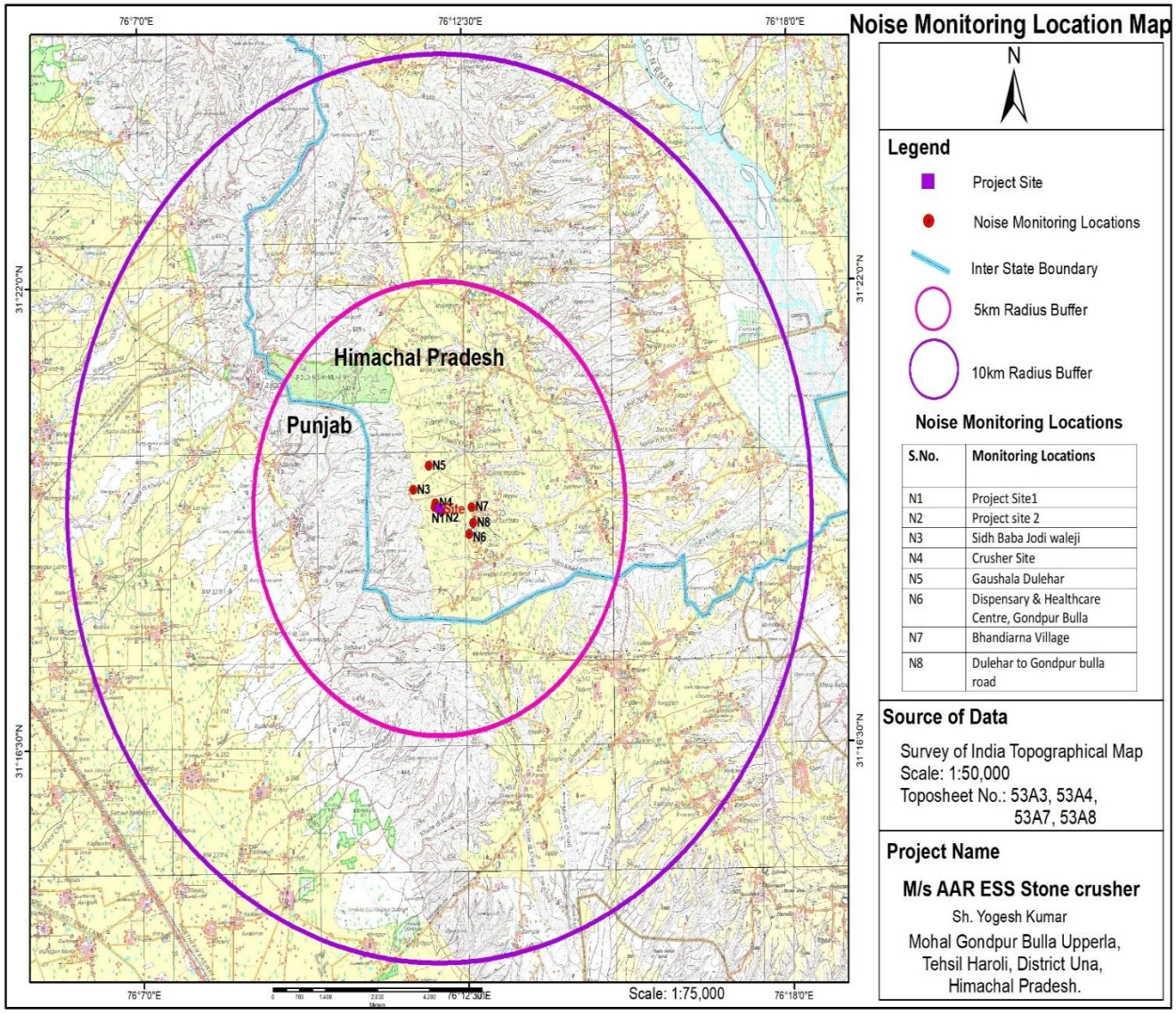


Figure 3-14 **NOISE** ***MONITORING LOCATIONS***

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 Centre, Gondpur Bulla	45.4	34.8	
7.	Bhandiarna Village	50.6	35.5	
8.	Dulehar to Gondpur bulla road	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

3.11.2 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.

3.12 WATER ENVIRONMENT

3.12.1 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.

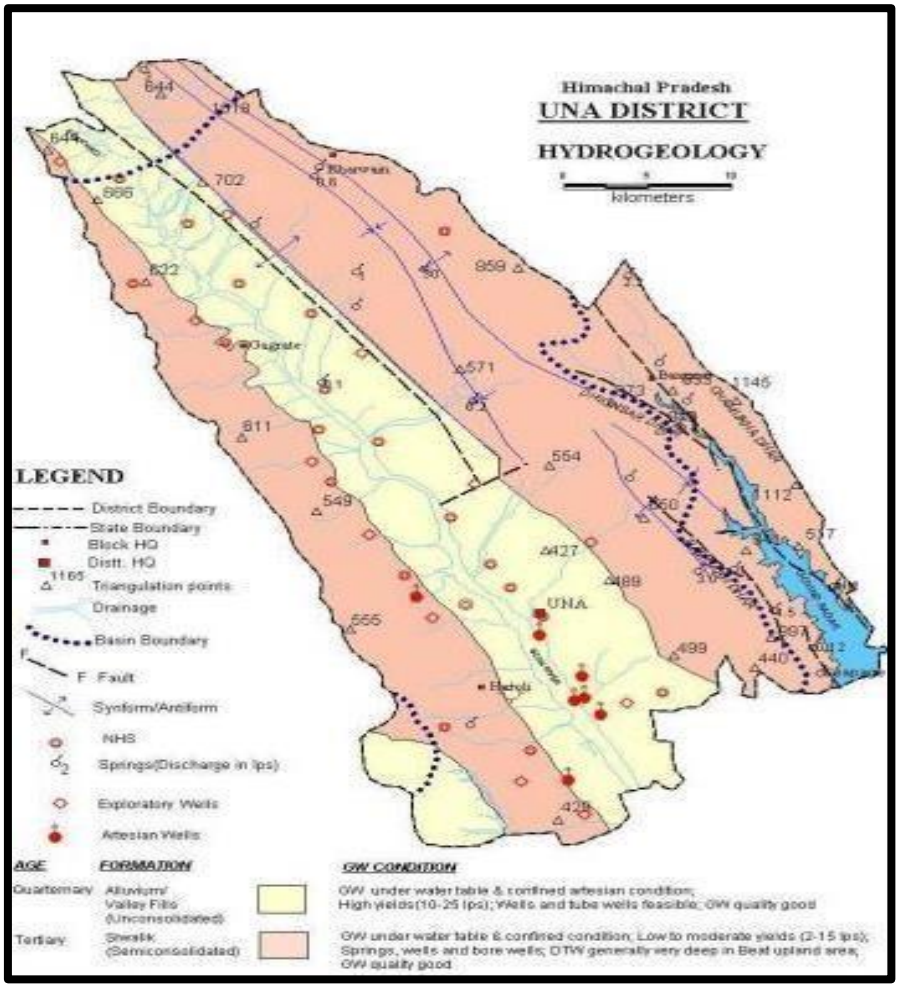


Figure 3-15 HYDROGEOLOGICAL MAP OF UNA DISTRICT

LC: Least Concern, NA: Not Assessed, DD: Data deficient, NT: Near Threatened
Source*: Field Studies by SSWML and Secondary data*

****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 analyzed 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

Six sampling stations covering ground and two surface waters 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

Station Code	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
GW6	Gondpur village	1.57	SSE	31°18'37.84"N 76°12'42.51"E
Station Code	**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

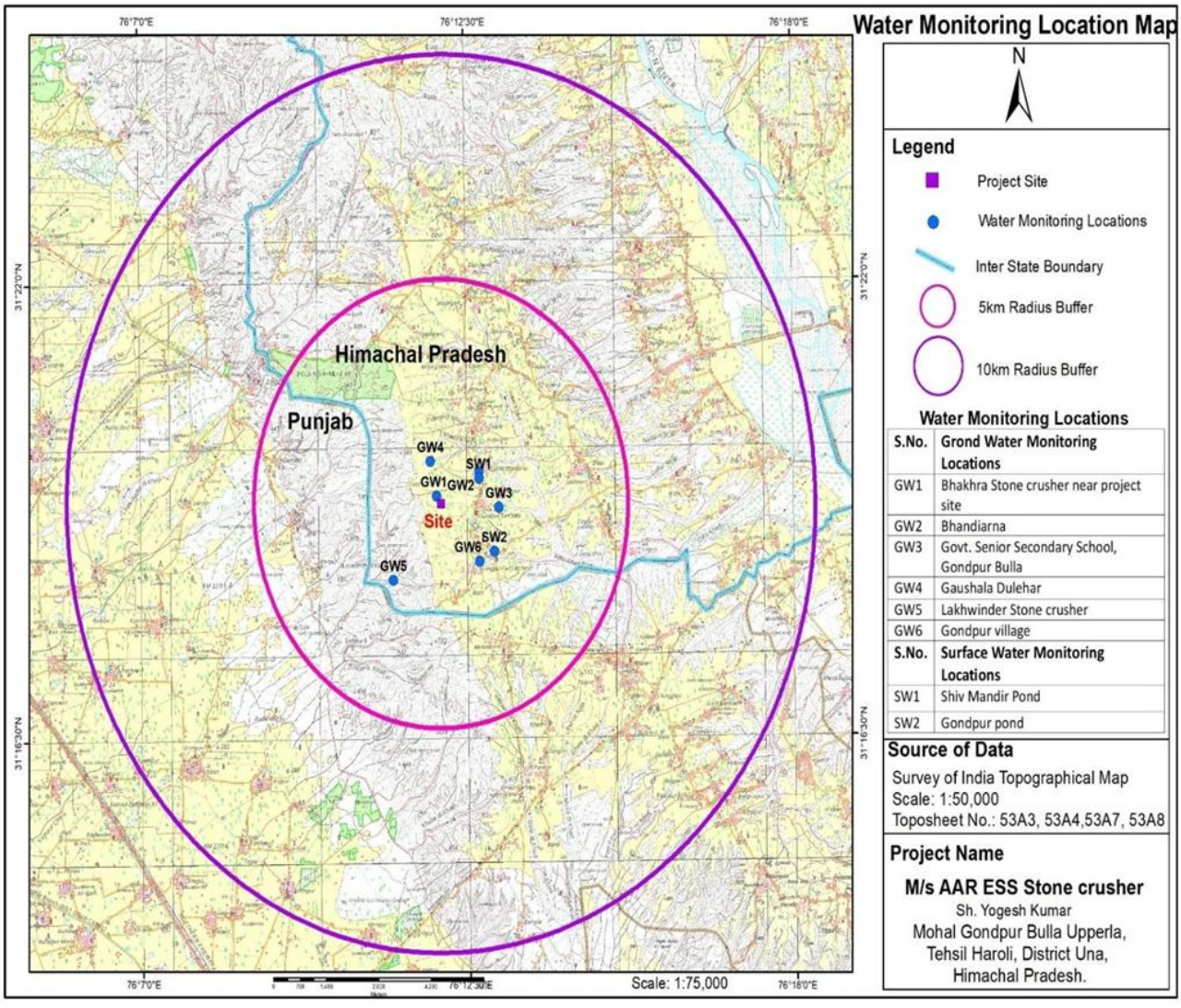


Figure 3-16 GROUND WATER & SURFACE WATER MONITORING LOCATIONS Table 3-17 GROUND WATER TEST RESULTS

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. Gondpur Bulla	GW4 Gaushal a Dulehar	GW5 Lakhwinde r Stone Crusher	GW 6 Gondpu r Village	Limit (as per IS:10500)-2012/REV:2023	
									Desirabl e	Permissibl e
1	Colour	Hazen	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	15
2	Odour	-	Agreeable	Agreeabl e	Agreeable	Agreeabl e	Agreeable	Agreeabl e	Agreeabl e	-
3	Taste	-	Agreeable	Agreeabl e	Agreeable	Agreeabl e	Agreeable	Agreeabl e	Agreeabl e	-
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/c m	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 Ca2+)	mg/l	64.4	65.8	64.0	66.1	62.0	66.5	75	200
13	Magnesium (as Mg2+)	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 SO4)	mg/l	26.0	25.4	28.0	25.0	24.2	26.6	200	400

17	Nitrate(as NO3)	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
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 CaCO3	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	*E. coli*	E.coli /100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent/100ml	

3.12.2 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 25^0C)	IS:3025(Part-11)	---	7.46	7.58
2.	Temperature	IS:3025(Part-9)	^{0}C	21.0	20.0
3.	Turbidity	IS:3025(Part-10)	NTU	1.8	2.5
4.	Electric Conductivity @25^0C	IS:3025(Part-14)	µS/cm	320	338
5.	Sulphate (SO_4)	IS:3025(Part-24)	mg/l	18.0	21.0
6.	Nitrate (NO_3)	IS:3025(Part-34)	mg/l	1.56	1.98
7.	Total Hardness (as CaCO3)	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_2)	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 27^0C)	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
25.	Total Alkalinity (as $CaCO_3$)	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_2)	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	1.1×10^3	1.6×10^3
30.	Total Coliform	IS-1622	MPN/100 ml	2.4×10^3	2.5×10^3

3.12.3 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/I, enclosed as **ANNEXURE-XV.** 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 (Pond) 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-XV.

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/I 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/I 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/I or more
Propagation of Wildlife and fisheries	D	PH between 6.5 and 8.5. Dissolved Oxygen 4 mg/I or more Free Ammonia (as N)1.2 mg/I 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 about 3.43Km towards N and NH-503 about 17.33 km in ENE direction. The Monitoring was performed during study period. The results of measurements are given in **Table 3-20**.

3.12.4 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.

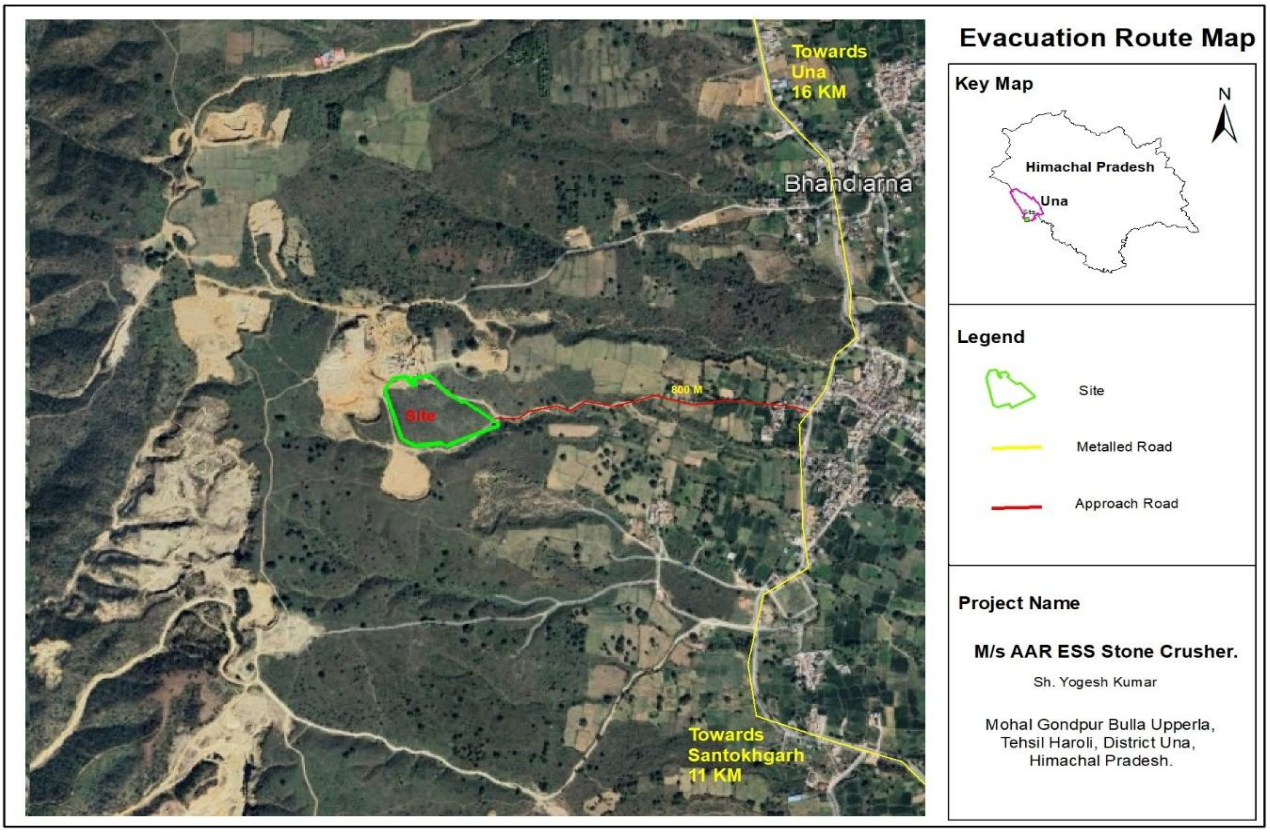


Figure 3-17 TRAFFIC STUDY LOCATION

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

****Reference:-** *ENVIS Technical Report, IISc, Bangalore.*

During mine operation traffic intensity

Total Production : 120775 MTPA
No. of working days : 270 Days
Per day capacity of mine : 447 tonnes/day
Trolley/Truck capacity : 9 tonnes
No. of trip deployed : 50 trips/day.
Working hours per days : 8 hours
No. of trucks/Tractor trolly deployed/h: Approx. 6 trucks/tractor Trolly

***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
Total		**15**	**…..**	**29.95**	**3.74**

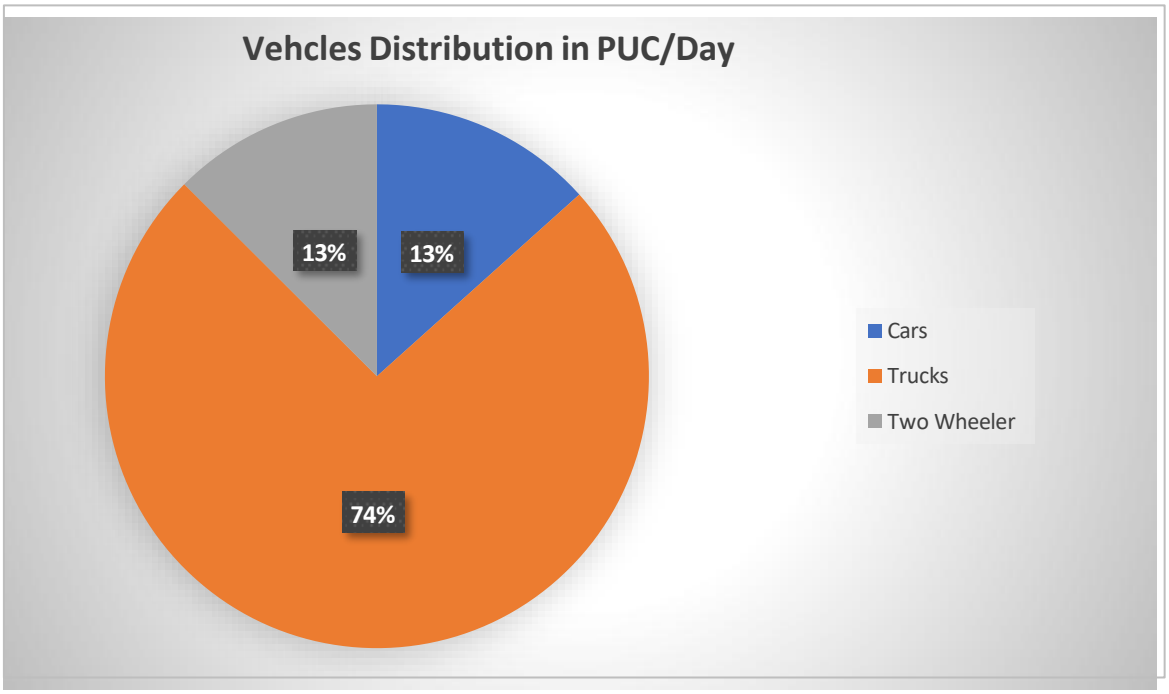


Figure 3-18 GRAPHICAL REPRESENTATION OF VEHICLES

Table 3-22 MODIFIED TRAFFIC SCENARIO & LOSS

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

3.12.5 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 roads concerned 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.

3.13 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.

3.14 EXISTING FORESTS IN THE STUDY AREA

3.14.1 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

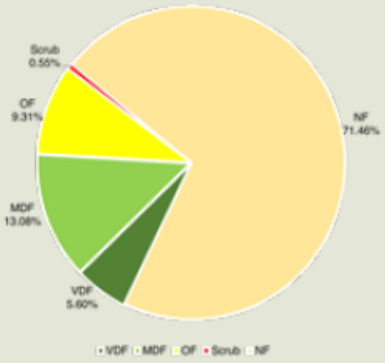


Table 10.10.2 Forest Cover of Himachal Pradesh

(km^2)

Class	Area	% of Calculated Area by Sol
VDF	3,117.60	5.60
MDF	7,280.29	13.08
OF	5,182.46	9.31
Total	**15,580.35**	**27.99**
Scrub	308.69	0.55

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

Table 3-23 Forest cover in Himachal Pradesh

(km²)

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

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

3.14.2 Forests Cover in Una District

Northen 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 240C to 27 0C 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, Dendracalamus 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.

3.15 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 January 2026.

3.15.1 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. The status of individual species was assessed using the revised IUCN category system.

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

- Pre monsoon:- December2025 – 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.

The environmental sensitivity map is shown in Fig. 3-19

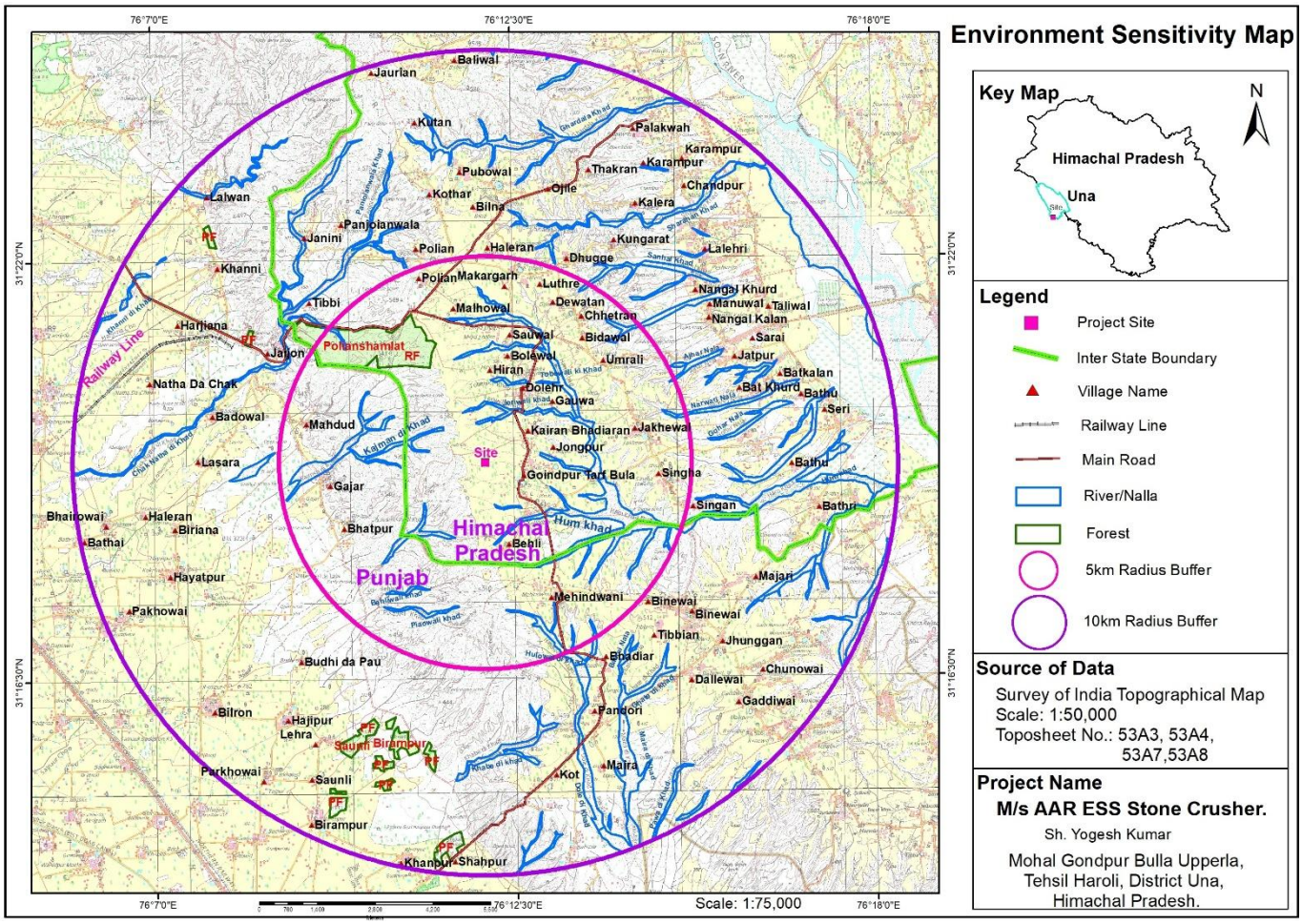


Figure 3-19 ENVIRONMENTAL SENSITIVITY MAP WITHIN 5 KM AND 10 KM RADIUS

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.

3.15.2 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).

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 2.20 km in NNE direction.
2.	EB-2	3-7	About 3.81 km in SE direction.
3.	EB-3	3-7	About 5.59 km in WNW direction.
4.	EB-4	3-7	About 6.31 km in SSW direction.

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

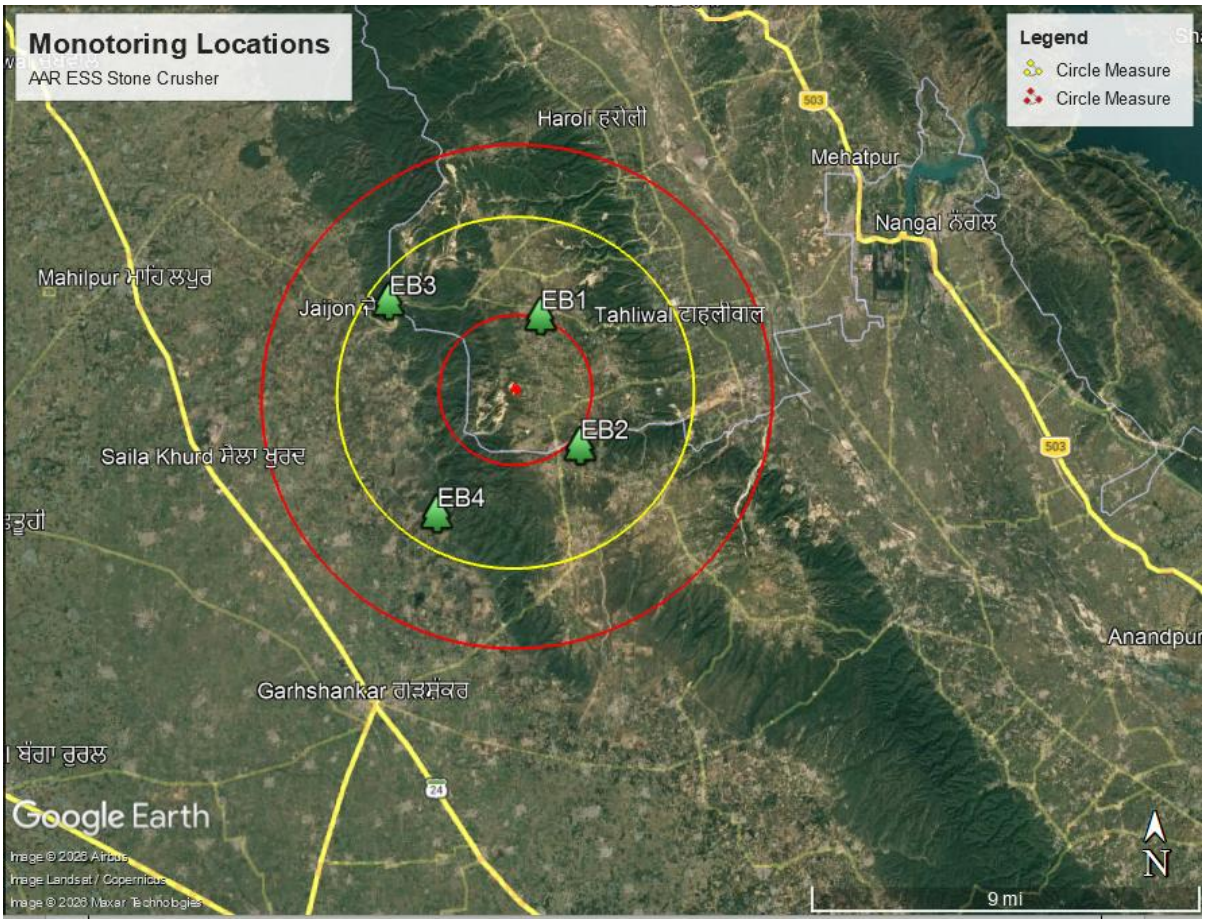


Figure 3-20 SAMPLING LOCATIONS FOR FLORAL STUDIES

Shannon Wiener Diversity Index: H = - Pi(lnPi), where Pi 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:

The Shannon-Wiener Diversity Index, H, is calculated using the following equation: H = - Pi(lnPi) where Pi is the proportion of each species in the sample.

Table 3-26 Distribution of Species

Sr. No	Species	Frequency	Pi	ln(Pi)	Pi*In(Pi)
	EB-1				
1.	*Albizia procera*	20	0.091	-1.705	-0.310
2.	*Acacia catechu*	40	0.250	-2.079	-0.260
3.	*Albizia procera*	40	0.250	-1.386	-0.347
4.	*Dalbergia sissoo*	20	0.125	-2.079	-0.260
5.	*Solanum nigrum*	40	0.250	-1.386	-0.347
6.	*Xanthium stramonium*	40	0.250	-1.386	-0.347
		180			**-1.871**
	EB-2				
1.	*Acacia nilotica*	40	0.182	-2.398	-0.218
2.	*Cassia fistula*	40	0.182	-1.705	-0.310
3.	*Eucalyptus sp.*	20	0.091	-2.398	-0.218
4.	*Euphorbia royleana*	40	0.182	-1.705	-0.310
5.	*Ficus religiosa*	40	0.182	-1.705	-0.310
6.	*Mangifera indica*	40	0.182	-1.705	-0.310
7.	*Populus deltoides*	20	0.091	-1.705	-0.310
8.	*Lantana camara*	20	0.091	-2.398	-0.218
		220			**-2.204**
	EB-3				
1.	*Albizia procera*	20	0.100	-1.609	-0.322
2.	*Bauhinia variegata*	40	0.200	-2.303	-0.230
3.	*Mangifera indica*	20	0.100	-2.303	-0.230
4.	*Malva parviflora*	40	0.200	-1.609	-0.322
5.	*Datura stramonium*	20	0.100	-2.303	-0.230
6.	*Lantana camara*	20	0.100	-2.303	-0.230
7.	*Populus deltoides*	40	0.200	-1.609	-0.322
8.	*Xanthium stramonium*	40	0.200	-1.609	-0.322
		200			**-2.209**
	EB-4				
1.	*Mangifera indica*	20	0.167	-1.792	-0.299
2.	*Acacia catechu*	40	0.167	-1.792	-0.299
3.	*Bauhinia variegata*	40	0.167	-1.792	-0.299
4.	*Ficus religiosa*	20	0.083	-2.485	-0.207
5.	*Malva parviflora*	40	0.167	-1.792	-0.299
6.	*Bombax ceiba*	40	0.083	-2.485	-0.207
7.	*Dalbergia sissoo*	40	0.167	-1.792	-0.299
8.	*Lantana camara*	40	0.167	-1.792	-0.299
		240			**-2.206**

At location EB1 Diversity Index H is 1.871

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 **1.871**, 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 below:**

Table 3-27 FLORA IN THE STUDY AREA (CORE ZONE & BUFFER ZONE)

S.No.	Species	Family	Habit	Source
1.	*Acacia catechu*	Fabaceae	Tree	P
2.	*Acacia nilotica*	Fabaceae	Tree	P
3.	*Achyranthes aspera*	Amaranthaceae	Herb	S
4.	*Adhatoda vasica*	Acanthaceae	Shrub	S
5.	*Ageratum conyzoides*	Asteraceae	Herb	S
6.	*Albizia procera*	Mimosaceae	Tree	S
7.	*Bauhinia variegata*	Fabaceae	Tree	P
8.	*Barleria cariatata*	Acanthaceae	Herb	S
9.	*Bombax ceiba*	Bombacaceae	Tree	P
10.	*Celtis australis*	Cannabaceae	Tree	S
11.	*Carissa carandas*	Apocynaceae	Shrub	S
12.	*Cassia fistula*	Fabaceae	Tree	P
13.	*Cordia dichotoma*	Boraginaceae	Tree	S
14.	*Cryptolepis buchanani*	Asclepiadaceae	Climber	P
15.	*Dodonaea viscosa*	Sapindaceae	Shrub	S
16.	*Dalbergia sissoo*	Fabaceae	Tree	S
17.	*Datura stramonium*	Solanaceae	Shrub	P
18.	*Dodonaea viscosa*	Sapindaceae	Shrub	S

19.	*Eucalyptus sp.*	Myrtaceae	Tree	P
20.	*Eupatorium species*	Asteraceae	Herb	P
21.	*Euphorbia royleana*	Euphorbiaceae	Shrub	S
22.	*Ficus benghalensis*	Moraceae	Tree	P
23.	*Ficus religiosa*	Moraceae	Tree	P
24.	*Ficus rumphii*	Moraceae	Tree	P
25.	*Jasminum dispermum*	Oleaceae	Shrub	S
26.	*Lantana camara*	Verbenaceae	Shrub	P
27.	*Mallotus philippensis*	Euphorbiaceae	Tree	S
28.	*Mangifera indica*	Anacardiaceae	Tree	P
29.	*Malva parviflora*	Malvaceae	Shrub	S
30.	*Murraya koenigii*	Anacardiaceae	Shrub	S
31.	*Morus alba*	Moraceae	Tree	S
32.	*Phoenix sylvestris*	Arecaceae	Tree	S
33.	*Populus deltoides*	Salicaceae	Tree	P
34.	*Sida acuta*	Malvaceae	Herb	S
35.	*Solanum nigrum*	Solanaceae	Herb	S
36.	*Saccharum munja*	Poaceae	Grass	S
37.	*Sapindus mukorossi*	Sapindaceae	Tree	S
38.	*Terminalia arjuna*	Combretaceae	Tree	P
39.	*Terminalia bellirica*	Combretaceae	Tree	S
40.	*Terminalia chebula*	Combretaceae	Tree	S
41.	*Tinospora cordifolia*	Menispermaceae	Climber	P
42.	*Urena lobata*	Malvaceae	Shrub	S
43.	*Vitex negundo*	Lamiaceae	Shrub	S
44.	*Xanthium stramonium*	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.

3.15.3 Faunal Diversity of The Study Area

The Faunal population in the area is composed mainly of domesticate 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.

3.15.4 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
Domestic Animals:				
1	Cow	*Bos indicus*	Not listed	NA
2	Buffalo	*Bos bubalis*	Not listed	DD
3	Goat	*Capra aegagrus hircus*	Not listed	DD
Wild Animals (Mammals)				
1	Field mouse	*Apodemus sylvaticus*	Not listed	LC
2	Nilgai	*Boselaphus tragocamelus*	Not listed	LC
3	Golden Jackal	*Canis aureus*	Not listed	LC
5	Indian Palm Squirrel	*Funambulus palmarum*	Not listed	LC
6	Indian Grey	*Herpestes edwardsii*	Not listed	LC

7	Indian hare	*Lepus nigricollis*	Not listed	LC
8	Rhesus macaque	*Macaca mulatta*	Not listed	LC
9	Fruits bat	*Pteropus conspicillatus*	Not listed	LC
10	Rat	*Rattus rattus*	Not listed	DD
Avian flora (Birds):				
1	Jungle Myna	*Acridotheres fuscus*	Not listed	LC
2	Common Myna	*Acridotheres tristis*	II	LC
3	Pintail (Duck)	*Anas acuta*	Not listed	LC
4	Common Teal	*Anas crecca*	II	LC
5	Mallard (wild duck)	*Anas platyrhynchos*	Not listed	LC
6	Gadwall	*Anas strepera*	Not listed	LC
7	Pond Heron	*Ardeola grayii*	Not listed	DD
8	Spotted Owlet	*Athene brama*	Not listed	LC
9	Cattle Egret	*Bubulcus ibis*	II	LC
10	Red-rumped Swallow	*Cecropis daurica*	II	DD
11	Pied kingfisher	*Ceryle rudis*	II	DD
12	Blue Rock Pigeon	*Columba livia*	Not listed	LC
13	Oriental Magpie	*Copsychus saularis*	II	LC
14	Indian roller	*Coracias benghalensis*	Not listed	LC
15	House Crow	*Corvus splendens*	Not listed	LC
16	Common Cuckoo	*Cuculus canorus*	II	LC
17	Fork-tailed Drongo	*Dicrurus adsimilis*	Not listed	LC
18	Asian Koel	*Eudynamys scolopacea*	Not listed	NA
19	White-breasted King	*Halcyon smyrnensis*	Not listed	LC
20	Small Green Bee	*Merops orientalis*	II	LC
21	House Sparrow	*Passer domesticus*	II	LC
22	Rose ringed Parakeet	*Psittacula krameri*	II	LC
23	Red vented Bulbul	*Pycnonotus cafer*	Not listed	LC
24	Spotted Dove	*Streptopelia chinensis*	II	NA
25	Pied Myna	*Sturnus contra*	Not listed	LC
26	Marsh Sandpiper	*Tringa stagnatilis*	II	LC
27	Common Babbler	*Turdoides caudatus*	Not listed	NA
28	Hoopoe	*Upupa epops ceylonensis*	Not listed	NA

LC: Least Concern, NA: Not Assessed, DD: Data deficient, NT: Near Threatened
***Source**: Field Studies by SSWML and Secondary data*

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.

3.16 SOCIO-ECONOMIC PROFILE

3.16.1 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. Yogesh Kumar, proprietor of M/s Aar Ess Stone Crusher. The mining area covers 3.5376 hectares, identified under Khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171. Within 500 meters, it forms a cluster with an existing mining lease of 3.9645 hectares, bringing the total cluster area to 7.5021 hectares. The site is located in Mauza/Mohal located at Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh.

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-eight villages in Himachal Pradesh, where the project is located, and twenty-seven 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° 19' 22.82" N	76° 12' 2.76" E
2	31° 19' 18.62" N	76° 12' 9.12"E

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

3.16.2 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.

3.16.3 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.

3.16.4 BASELINE DATA

A total number of 55 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, 28 are located in Himachal Pradesh and 27 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.

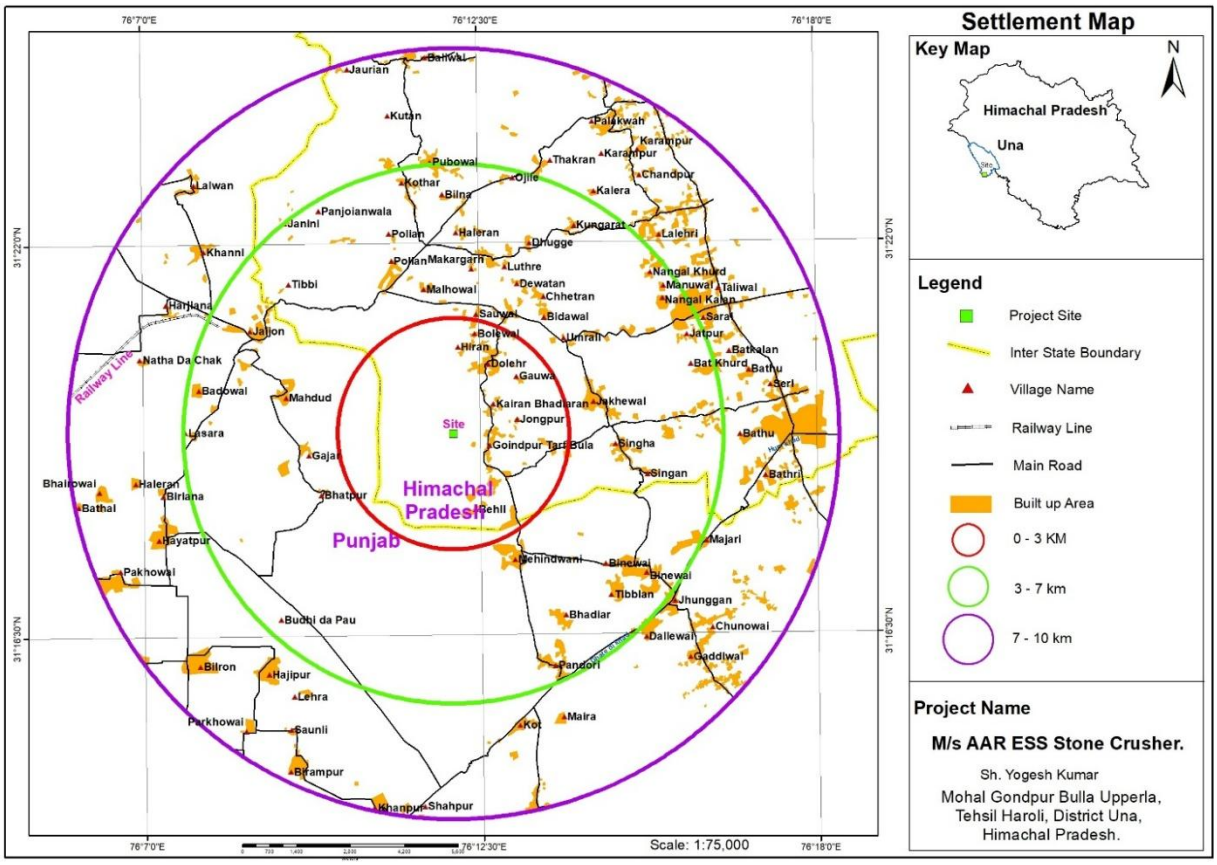


Figure 3-21 SHOWING LOCATION OF VILLAGES WITHIN 10 KM RADIUS OF BOUNDARY

3.16.5 PRIMARY DATA

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.

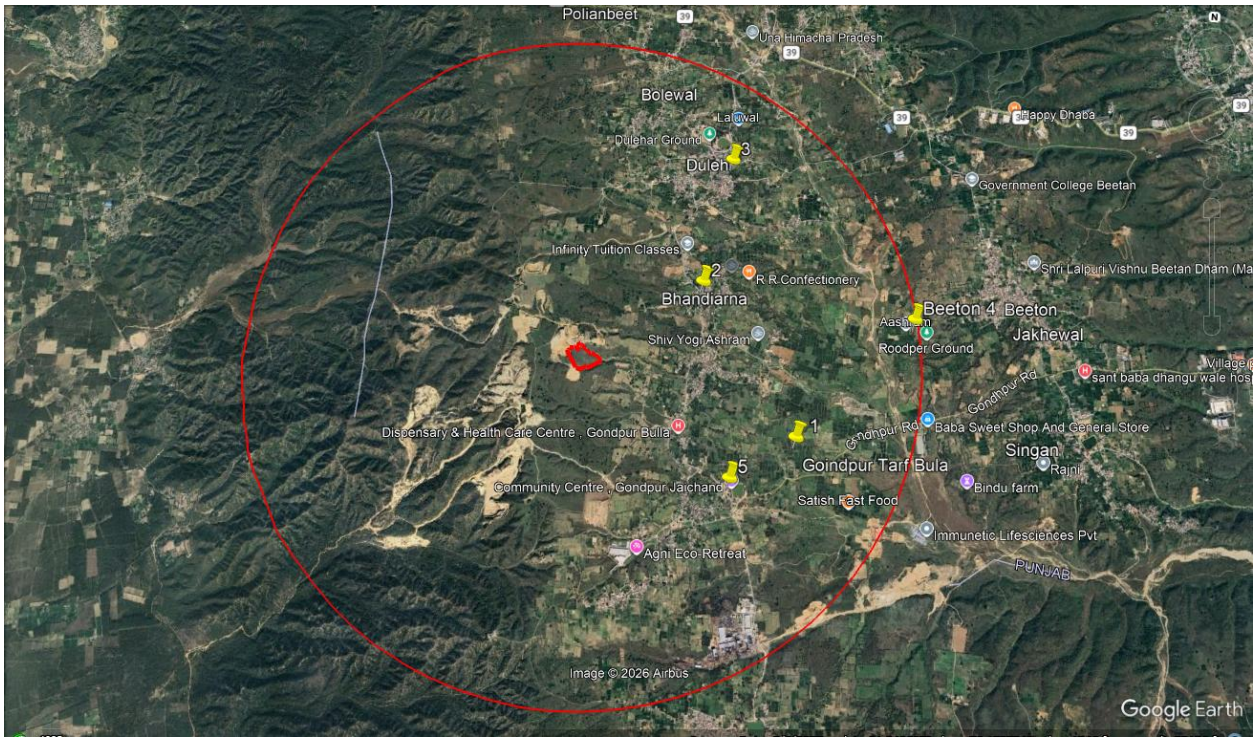


Figure 3-22 MAP SHOWING THE LOCATION OF FIVE VILLAGES WITHIN THE IMPACT AREA

According to the toposheet analysis, a total of 55 villages lie within a 10 km radius of the project site in Himachal Pradesh. Five villages from Himachal Pradesh, located within the impact area (0–3 km), were selected for the primary survey. These include Goindpur Tarf Bula, Bhandiarna, Dulehr, Beeton, and Gondpur Jaichand. All of these villages are situated within Tehsil Haroli, forming part of the designated primary study area.

3.16.6 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 RADIOUS), BASED ON CENSUS 2011, HP REGION**

Sr. No.	Name of the Villages	No_HH	TOT_P	TOT_M	TOT_F	P_06	P_SC	P_ST	P_LIT
1	Palakwah (469)	401	1854	914	940	235	483	2	1408
2	Thakaran	78	353	179	174	31	1	0	243
3	Karampur	189	1011	524	487	103	55	0	770
4	Pubowal (523)	457	2154	1126	1028	224	827	0	1611
5	Ojale	32	165	95	70	17	8	0	112
6	Haleran	162	732	356	376	76	41	0	492
7	Jorian	33	183	102	81	25	170	0	128
8	Makor Ghar	79	392	196	196	44	0	0	291
9	Polianbeet (525)	259	1295	662	633	150	490	151	934

10	Maluwal	102	548	285	263	65	201	0	411
11	Janani	45	274	135	139	42	212	28	175
12	Dulehar (526)	359	1780	906	874	204	80	83	1386
13	Bhadiaran	163	765	389	376	80	0	1	576
14	Hiran	369	1892	937	955	178	110	0	1462
15	Goindpur Tarf Bula (529)	248	1273	652	621	131	216	0	992
16	Singa Urf Sur Kalan (531)	486	2313	1157	1156	302	303	323	1716
17	Kungrat (527)	182	808	401	407	90	508	0	639
18	Chhetaran	336	1837	913	924	217	249	0	1365
19	Chandpur	195	966	495	471	103	10	0	784
20	Lalehri (470)	816	4242	2158	2084	485	545	12	3240
21	Nangal Khurd (471)	270	1498	760	738	188	304	0	1131
22	Manuwal	170	901	458	443	87	106	0	746
23	Nangal Kalan (472)	217	1169	608	561	139	106	0	877
24	Nangal Jatpur	383	1968	1025	943	219	238	0	1427
25	Tahaliwal Uparla	59	317	165	152	54	0	0	219
26	Bat Kalan (473)	142	752	397	355	87	27	0	519
27	Bathu (475)	361	1862	931	931	215	278	0	1424
28	Bathri (476)	539	2684	1383	1301	364	971	62	1770
Total Villages = 28		**7132**	**35988**	**18309**	**17679**	**4155**	**6539**	**662**	**26848**

3.16.7 Demographic Profile of the study area within 10 Km, H.P Region

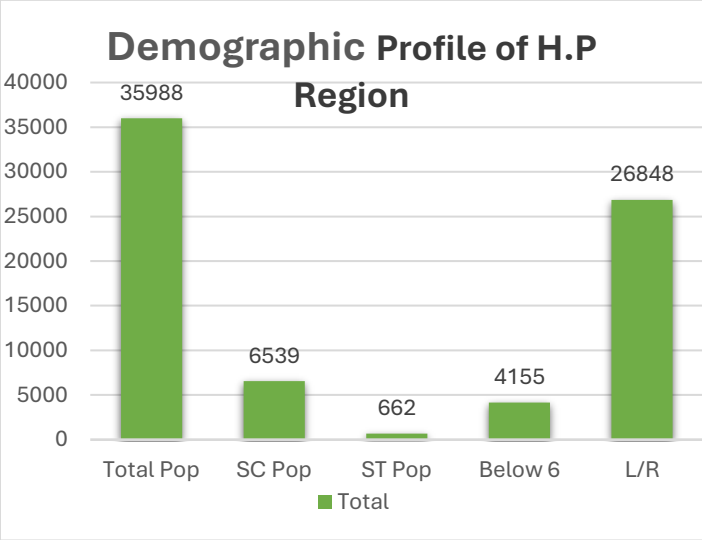
The demographic characteristics of the study area covers 28 villages within a 10 km radius, comprising 7132 households and a total population of 35988 in which Males constitute 50.87% (18309) and females 49.12% (17679). The sex ratio in the study area is 965, which is slightly lower than the overall state figure of 972. Children under 6 years total 4155 which is about 11.54%. The literacy rate is 74.60%, which is quite good, but still a little lower than the state average of 82.80%. Scheduled Castes form 18.16% of the population (6539 individuals), while minimal number of Scheduled Tribe population is present that is 1.83%. Detailed village-wise data is provided below."

Table 3-30 DEMOGRAPHIC DETAILS OF THE STUDY AREA (10 KM RADIUS), BASED ON CENSUS 2011–PUNJAB REGION

Sr. No.	Name of the Tehsils	Name of the Villages	No_HH	TOT_P	TOT_M	TOT_F	P_06	P_SC	P_ST	P_LIT
1	Mahilpur	Lalwan (339)	270	1341	708	633	148	719	0	957
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		Chak Natha (343)	44	208	123	85	11	0	0	151
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	Bathal (283)	68	345	163	182	39	62	0	235
12		Bilron (351)	482	2325	1161	1164	260	837	0	1689
13		Purkhowal (268)	189	944	481	463	107	588	0	708
14		Hajipur (354)	391	1827	929	898	203	495	0	1181
15		Lehra (355)	107	539	271	268	84	496	0	370
16		Sauli (356)	95	467	249	218	44	309	0	327
17		Birampur (357)	367	1759	895	864	220	834	0	1233
18		Khanpur (358)	270	1363	698	665	149	683	0	844
19		Shahpur (359)	97	447	244	203	56	361	0	338
20		Kot (480)	253	1331	687	644	174	183	0	858
21		Bhadiar (479)	575	2836	1422	1414	319	465	0	1803
22		Mehindwani (478)	491	2361	1192	1169	293	370	0	1589
23		Binewal (477)	979	4532	2307	2225	493	1131	0	3320
24		Majari (475)	144	144	307	329	75	0	0	490
25		Gaddiwal (483)	179	823	437	386	84	195	0	560
26		Dalewal (482)	332	1574	788	786	192	392	0	1123
27		Maira (481)	123	608	310	298	60	533	0	441
Total Villages = 27			**6792**	**32070**	**16622**	**15940**	**3813**	**9983**	**0**	**22585**

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

The demographic profile of the study area covers 27 villages within a 10 km radius, comprising 6792 households and a total population of 32070 Males constitute 51.83% (16622) and females 49.70% (15940). The sex ratio in the study area is 959, which is marginally higher than the overall state average of 895. Children under 6 years total 3813 which is about 11.89%. The literacy rate is 70.42%, which is quite good, but still a little lower than the state average of 75.84%. Scheduled Castes form 31.13% of the population (9983 individuals), while minimal number of Scheduled Tribe population is not found. Detailed village-wise data is provided below."



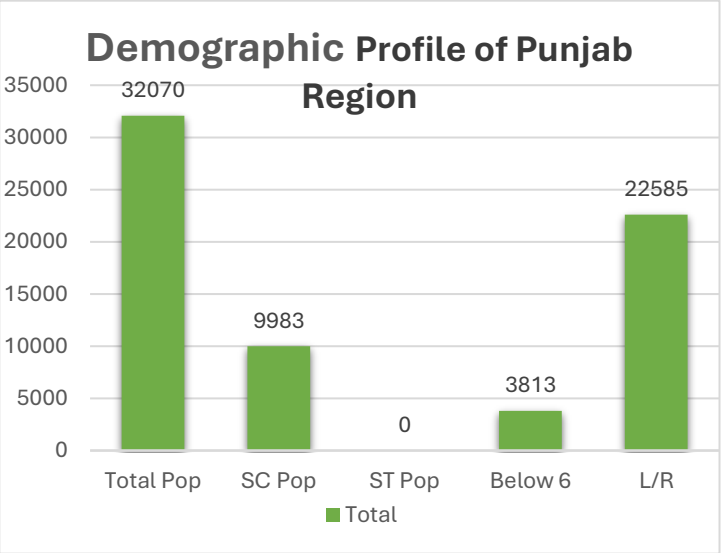
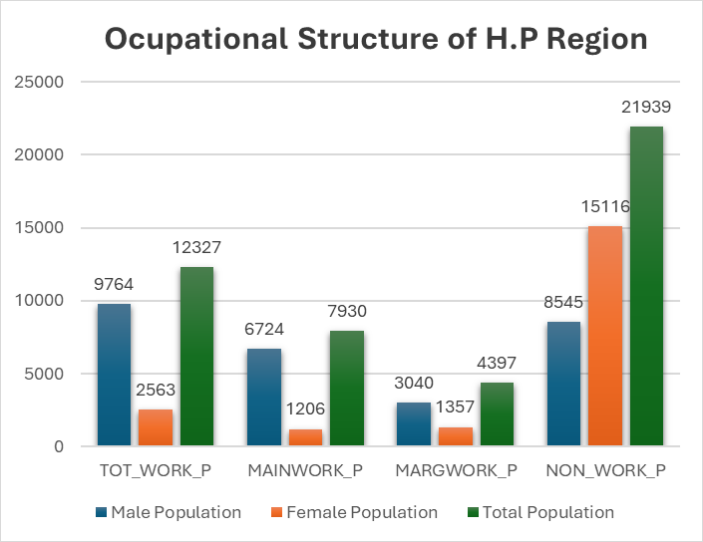


Table 3-31 DEMOGRAPHIC PROFILE OF THE STUDY AREA H.P REGION AND PUNJAB REGION

Table 3-32 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	
Haroli	28	12327		7930		4397		21939		Mahilpur and	27	10005		7784		2221		22557	
		M	F	M	F	M	F	M	F			M	F	M	F	M	F	M	F

		9764	2563	6724	1206	3040	1357	8545	15116	Garhshankar		8730	1275	6995	789	1735	486	7892	14665



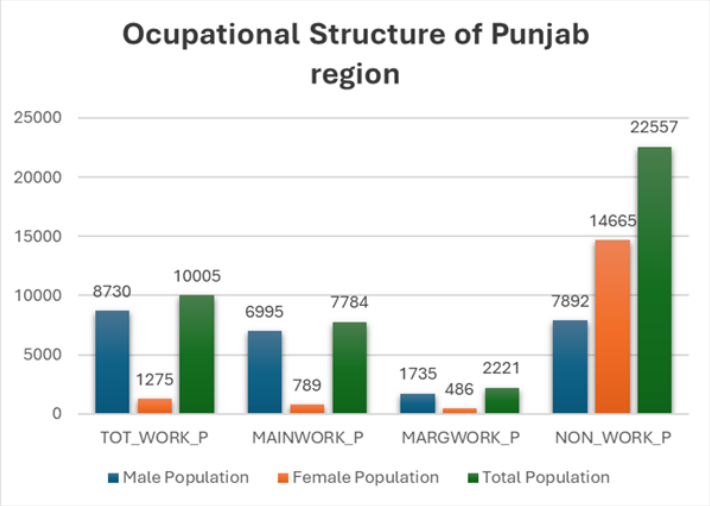


Figure 3-23 VISUAL REPRESENTATION OF OCCUPATIONAL STRUCTURE IN THE STUDY AREA (HIMACHAL PRADESH AND PUNJAB)

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 34.25% of the total. of this, 22.03% are identified as main workers while 12.21% are marginal workers. The remaining 60.96% of the population are classified under non-workers.

In the Punjab region of the study area, the working population constitutes 31.19% of the total with 24.27% identified as main workers and 6.9% as marginal workers. The remaining 70.33% of the population are classified as non-workers.

Himachal Pradesh has a slightly higher overall workforce participation (34.25%) with more marginal workers (12.21%) compared to Punjab's 6.9%. Punjab, however, records a lower total workforce (31.19%) but a greater proportion of main workers (24.27%) than Himachal Pradesh."

This distribution indicates that a significant proportion of workers are engaged in stable, regular employment. However, female participation in economic activities remains limited, and a large share of the population continues to fall outside the workforce. The data highlights both the strength of regular employment opportunities and the concern of minimal female involvement.

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.

3.16.9 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 Chhinnmastika. 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 will generate employment and ancillary business opportunities and improving the standard of living of locals. A total of 10 people will gain direct employment through the project. 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/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.

C) Economy

The local economy is mainly based on Agriculture. 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, and Amb serve as the principal industrial hubs 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

Tahliwal area is about 7.02 Km in NE direction away from the mine site which is well connected with road and railway. The Nearest Railway Station:- Doaba Railway Station is about 7.0 km in the WNW direction (Aerial Distance). The Nearest Airport:- Adampur Airport Jalandhar is about 43.23 km in WNW direction (Aerial Distance). The Nearest Highway:- National Highway (NH-503) is about 17.33 km in ENE 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 17.54 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. Una 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.

3.16.10 BASIC AMENITIES

i) Educational

The Una has educational facilities at all levels, including schools, colleges, and institutes, located approximately 17.54 km (aerial distance) in NNE direction. The nearest School is The Government Elementary School at Bhandiarna village situated about 1.15 km to the NE direction. Govt. Government College Beetan, Una, lies 3.75 km to the NE direction, while ICFAI University, Una, is around 17.58 km to the NE direction from the project site.

ii) Medical

The Una has facilities of Nursing Homes, Charitable Hospitals, Health Centers, and Civil Hospitals besides many private clinics which is about 17.54 km from the project site, Civil Hospital Haroli Una is situated at the 11.96 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 study area is also well connected through mobile networks, ensuring reliable communication. The Post and telecommunication facilities such as post office, telegraph office, telephone services, FAX, STD, and ISD are available in the nearby villages. For advanced and modern facilities, Una town is located approximately 17.54 km (Arial distance) from the project site.

3.16.11 BASIC INFRASTRUCTURES AVAILABLE IN FIVE SURROUNDING VILLAGES SELECTED FOR PRIMARY SURVEY

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

Table 3-33 INFRASTRUCTURE DETAIL IN FIVE SURROUNDING VILLAGES

Sr.No.	Name of Infrastructure	Name of the Villages									
		Goindpur Tarf Bula		Bhandiarna		Dulehr		Beeton		Gondpur Jaichand	
		2011	2026	2011	2026	2011	2026	2011	2026	2011	2026
1	**Medical Facilities**										
	Dispensary	√	√	×	×	√	×	√	×	√	×
	PHC	×	×	×	×	√	√	×	√	×	×
	Hospital	×	×	×	×	×	×	×	×	×	×
	Veterinary Hospital	√	×	×	×	×	×	√	×	√	×
2	**Educational Facilities**										
	Primary School	√	×	√	×	×	√	×	×	×	√
	Secondary School	×	√	√	×	√	√	√	×	×	√
	Sr. Sec. School	√	√	√	√	√	×	√	×	×	√
	College	×	×	×	×	×	×	×	×	×	×
	ITI	×	×	×	×	×	×	×	×	×	×
3	**Transport**										
	Kuccha Road (Gravel)	√	√	√	√	√	√	√	√	√	√
	Puccha Road (Black Topped)	√	√	√	√	√	√	√	√	√	√
	Bus Services (within 5 km)	√	√	√	√	√	√	√	√	√	√
4	**Communication**										
	Post Office	√	×	×	×	√	√	√	×	√	×
	Telephone	√	√	√	√	√	√	√	√	√	√
5	**Civic Amenities**										
	Water	√	√	√	√	√	√	√	√	√	√
	Electricity (Power Supply)	√	√	√	√	√	√	√	√	√	√
6	**Social/ Cultural Facilities**										
	Community Center	×	×	×	×	×	×	×	×	×	√
	Banks	√	√	√	×	√	√	×	×	×	×

	Sports Field (Playground within 5 Km)	×	×	√	√	√	√	×	√	×	×

3.16.12 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.

3.16.13 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.

3.16.14 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**:-**

- Strengthen healthcare facilities and expand higher education with vocational training.
- Support ancillary businesses such as Dhaba's, shops, and transport.
- Provide skill training for youth, women, and marginalized groups.
- Strengthen healthcare outreach and vocational initiatives.
- Prioritize local workforce participation.
- Integrate sustainable mining practices for long-term community and environmental benefits.

3.16.15 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.

13.16.16 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.

****

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. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. 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	AP	NV	SW	GW	S	EB	SE	RH	
1	**Operational Phase**										
4.1	Deterioration of Air, Water, and Soil, Noise quality, due to mining operation	N	-	-	-	-	N	-	+	-	**AQ/NV:-** Air pollution due to dust emission& increase in Noise by transportation. **WP:-** No Wastewater generated from mining activity which can cause water pollution. **RH:-** Accident during loading & unloading of material and due to transportation. OH/OH&S: risk of injury to worker during loading nd and unloading of material **SE:** Employment generation for local people. **EB:** Impact on ecology and

4.2	Contamination of water due to wastewater generated during Mining	N	N	N	N	-	N	N	N	-	**GW:-** Ground water contamination might be possible, wastewater not
4.3	Intersect ground water level due to mining activity Mining activity	N	N	N	N	-	N	N	N	N	**GW:** Ground water may Intersect ground water level if restrictions in evacuation is not followed (up to 1 meter) mining will be carried
4.4	Contamination in air quality,	N	-	N	N	N	N	N	N	N	**AQ:** 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 428 meters above MSL and lowest point in 482 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 ™

AERMOD CLoud ™ 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 (December 2025 to February 2026)
- ✓ 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

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.

$$E = k\,X\,0.0016\,X\left(\frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}\right)$$

Where,

E = Emission Factor, kg/ton

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

u = Mean wind speed, m/s

4.9.5 Emission of PM10 due to Transportation

The hauling of sand 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 trucks/ trolley to ply in an hour for transportation of materials and capacity 9 tonne each will make 118 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 travelled.
(VMT).

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

Were,

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 from Vehicles- There will be no source of NO2 emission from mining

except from vehicles. The ARAI emission factors for NO2 emitting from heavy vehicles (diesel) is 10.51 g/mile.

Emission of CO from Vehicles- There will no source of CO emission from mining except from vehicles. To estimate the emission of CO from these vehicles exhaust ARAI-2007 emission factors were used. The ARAI emission factors for CO emitting from heavy vehicles (diesel) is 6.32 g/mile.

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 does not have option for modelling SO2 emissions from vehicle exhaust.

4.9.6 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 December 2025-February 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 production per day.
- 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_{10}, & Nox, CO

Assumptions

The dispersion modelling assumptions considered are as follows:-

- The fugitive emission rate for PM_{10} 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	kg/tonne	0.000495
2.	Transportation on Haul Road (PM10 Emission)	g/mile/vehicle	80.28034
4.	Transportation (NOx) Emission)	g/mile/vehicle	10.51
5.	Transportation (CO) Emission)	g/mile/vehicle	6.32

4.9.7 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 PM_{10}, CO & NOx 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.

Ambient air quality monitoring was carried out at 8 locations during December 2025-February 2026 including project site.

4.9.8 Equal Concentration Contour Plots (Isopleths):

The maximum of 24 hourly highest GLC's of PM10, CO and NOx during mining operation (Area source) is summarized in **Table 4-4.**

Table 4-3 SUMMARY OF AREA/LINE AREA SOURCE MODELING

Sl. No.	Pollutants	1st Maxim. Incremental Levels (µg/m3 & mg/m3)	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	NOx	2.55	100	East [100°]	Near project area
3	CO	2.01	200	NNE [20°]	Near project area

4.9.9 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 polluant. The resultant ambient air Quality after the Implementation of the proposed plant is given in table below:-

Table 4-4 PREDICTED MAXIMUM CUMULATIVE SHORT-TERM GROUND LEVEL CONCENTRATION

Pollutants	**1st Maxim. Increment al Concentration (µg / m3)**	**Location**		**Max. AAQ Concentration Recorded within project area during study period (µg / m3)**	**Resultant Concentration (µg / m3)/ mg/m3**	**NAAQS Standard (µg/m3)/ mg/m3**
		Distance in Meter	**Direction**			
PM10 (worst)	4.24	100	East	58.69	63.03	100.00
PM10 (control)	2.15	100	East	58.69	60.84	100.00
NOx	2.55	100	East	20.65	23.20	80.00
COs	2.01	200	NNE	840	842.01	2000

The predicted GLCs of Pollutants 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 NOx are likely to be well within the AAQ standards However, the baseline concentrations of PM_{10} were also within the AAQ standard. The incremental concentration of the PM_{10} is not as much due to the proposed project.

The maximum incremental concentration of PM10(worst) is 4.24µg/m^3 & PM10(control) is 2.15µg/m^3, NOx 2.55 µg/m^3 (24-Hour average time) at a distance of 100 m towards the East direction and CO 2.01 µg/m^3 (8-Hour average time) at a distance of 200 m towards the East

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 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.

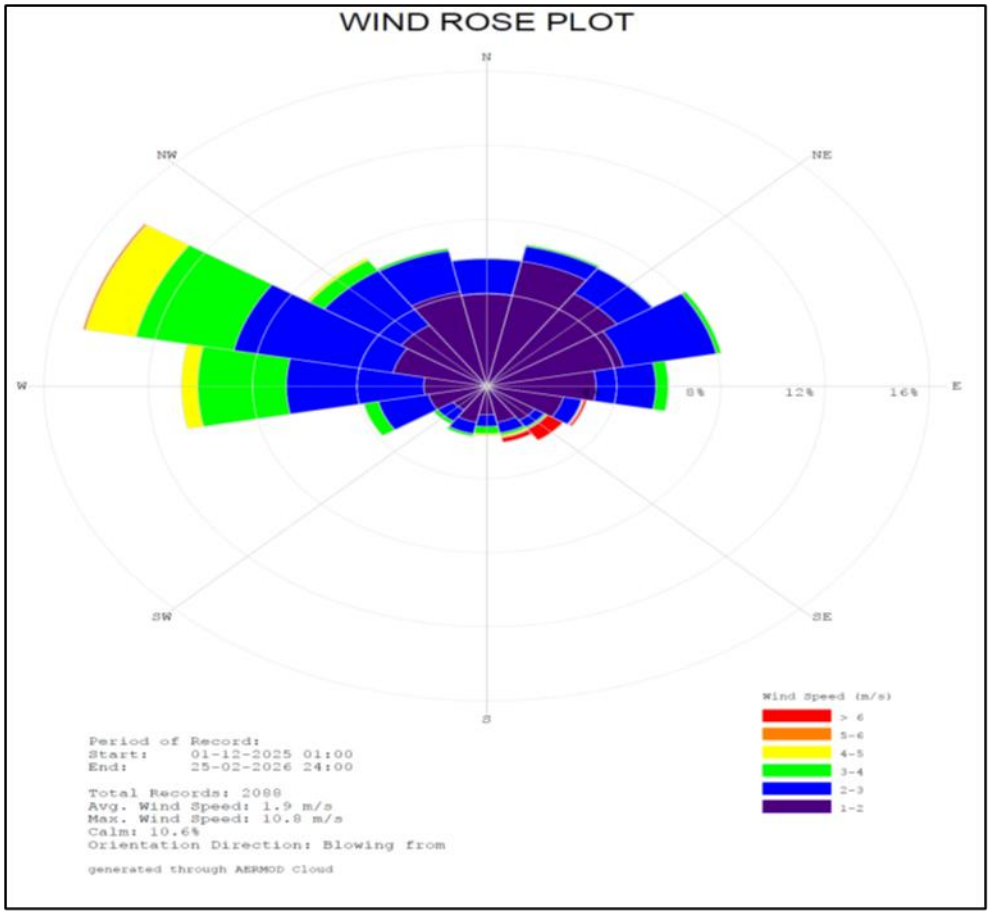


Figure 4-1 WIND-ROSE DIAGRAM (Oct to Dec 2025)

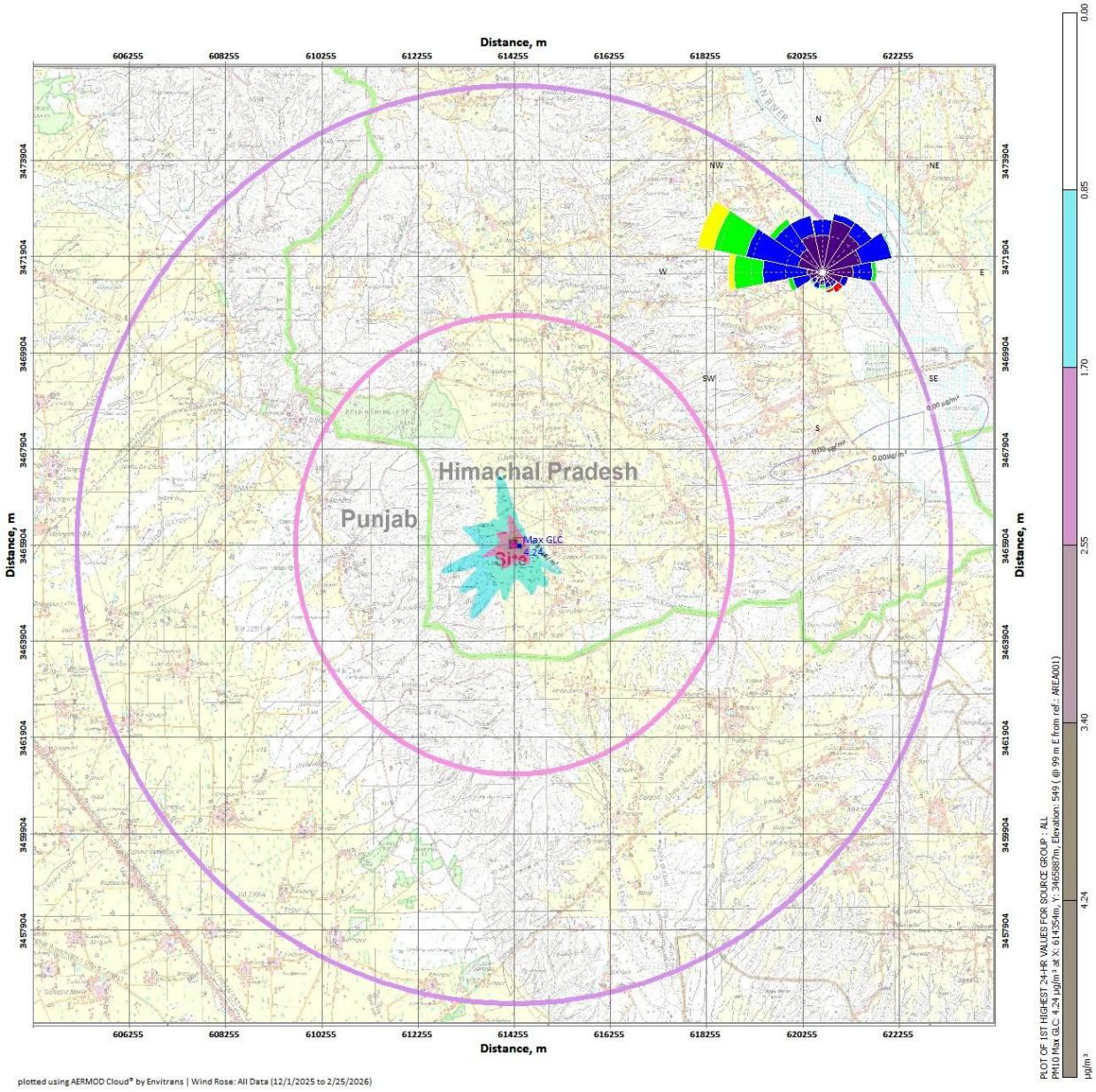


Figure 4-2 SPATIAL DISTRIBUTION OF PREDICTED GLCS OF PM10 DUE TO MINING ACTIVITY

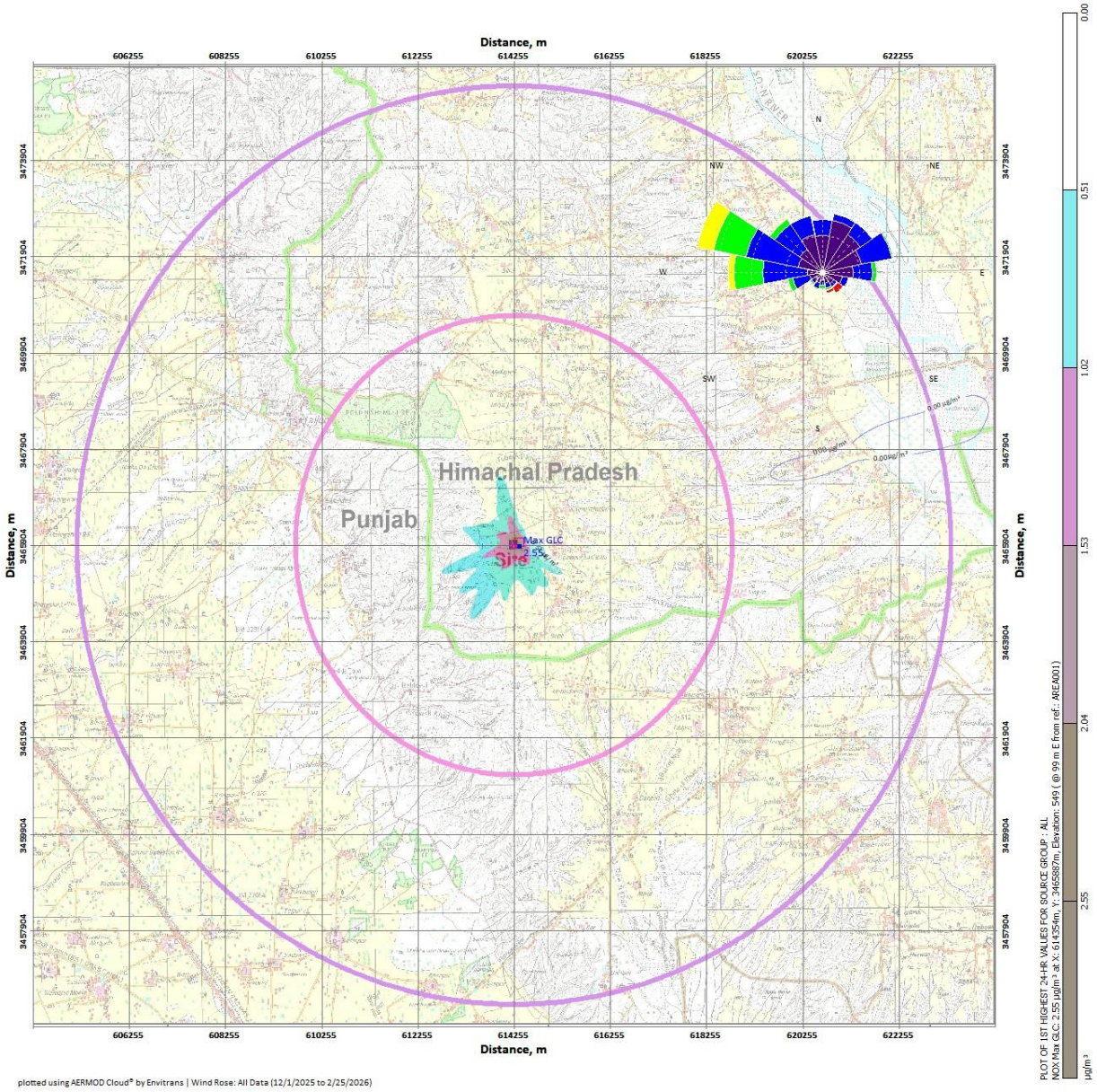


Figure 4-3 SPATIAL DISTRIBUTION OF PREDICTED GLCS OF NOX DUE TO MINING

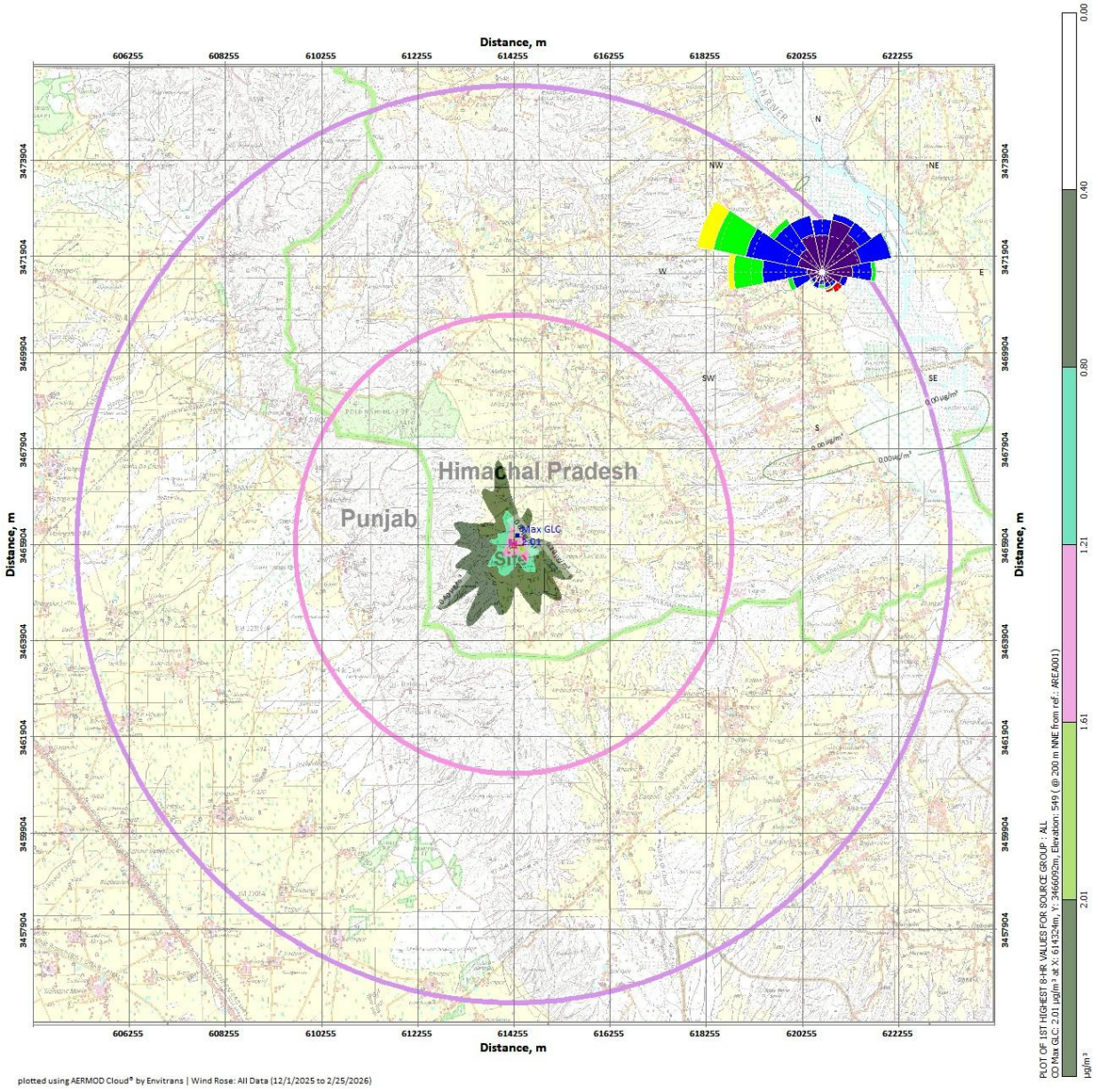


Figure 4-4 SPATIAL DISTRIBUTION OF PREDICTED GLCS OF CO DUE TO MINING ACTIVITY

4.9.10 Prediction of Incremental GLC of Pollutants on Air Environment

The incremental increase in GLC of PM_{10} due to mining operation (Area/Line Area source) presented in **Table below.**

S.No.	Within project area	Pollutant	98th Percentile Baseline Concentration (µg/m3)	Incremental GLC (µg/m^3)	Total Predictive GLC (µg/m^3)	NAAQS Concentration Limit (µg/m^3)
1	Within project area	PM10-worst	57.28	4.24	61.52	100

2	Within project area	PM10-control	57.28	2.15	59.43	100
3	Within project area	NOx	20.20	2.55	22.75	80
4	Within project area	CO	810	2.01	812.01	2000

4.9.11 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_{10} is 4.24 µg/m3 in worst-condition and is 2.15 µg/m3 in control-condition, NO_x 2.55 µg/m3 and CO 2.01 µg/m3 at à distance of 100 to 200 m towards the East/ NNE direction near the project area, it will decrease with the increase in distance.

SO2 –

There will be no source of SO_2 emission from mining. Also, there is no emission factor defined for exhaust emission of SO_2 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_{10} and will not go beyond the threshold limit of NAAQS.
- The concentration NOx 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_2 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 tarpauli

4.9.12 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 (PM10, PM2.5, NOx, SOx, 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):

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

Were,

Ip = the index for pollutant p

Cp = the rounded concentration of pollutant p

BPHi = the breakpoint that is greater than or equal to

CpBPLo = the breakpoint that is less than or equal to

Cp BPHi = the breakpoint that is greater than or equal

to CpIHi = the AQI value corresponding to BPHi

ILo = the AQI value corresponding to BPLo

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 peopleon 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.	Monitoring Stations	PM10	PM2.5	SO_2	NO_2	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

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:-

4.9.12.1 Disturbed sleep, insomnia, and fatigue.

4.9.12.2 Decrease in speech reception, communication.

4.9.12.3 Distraction and diminished concentration thus adversely affecting the performance efficiency.

4.9.12.4 Potential cardiovascular, respiratory, and neuralgic damages in certain extreme cases.

4.10.2 Mitigation Measures:-

4.9.12.5 Limit vehicle movement to daytime; maintain equipment; provide quiet rest shelters.

4.9.12.6 Install noise barriers; mandate ear protection; rotate shifts to reduce exposure.

4.9.12.7 Allow regular breaks; train workers on noise risks; use acoustic insulation in work areas.

4.9.12.8 Ensure only PUC-certified vehicles are operated

4.9.12.9 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)	Night time 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, Gondpur Bulla	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.

4.11.2 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.

4.11.3 Green Belt Management

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	*Albizia lebbeck*	White siris
2	*Bauhinia variegata*	Kachnar
3	*Berberis spp.*	Kashmal
4	*Bombax ceiba*	Simbal
5	*Celtis australis*	Khirak
6	*Cenchrus ciliaris*	Anjan
7	*Cynodon dactylon*	Dhoob
8	*Dodonaea viscosa*	Hop bush
9	*Grewia optiva*	Behul
10	*Olea ferruginea*	Kahu
11	*Pinus roxburghii*	Chir
12	*Prinsepia utilis*	Bhekal
13	*Pyrus pashia*	Kainth
14	*Saccharum bengalense*	Munj
15	*Zanthoxylum armatum*	Tirmira

4.9.13 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 2.7782 ha area, and 600 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 favorable and eco-friendly measures to reduce the impact of the proposed miming 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 snakes and scorpions.

4.12 CONCLUSION

- Before detailing the study area, a cursory understanding of the state scenario was prudent. The biodiversity of this region is largely related to its tropical moist sub-deciduous forests.
- 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, 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, 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.

4.13 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.

4.14 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 condition.
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.

4.15 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.

4.16 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.

****

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 PM2.5, PM10, SO2 and NO2 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 monitored	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 Groundwater level (bgl) and Surface water quality as per IS 2296:1991.	Periodic during operation phase asper 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

****

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 for the conduct of 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

7.4.1.1 Formation of deep pits should not be allowed.

7.4.1.2 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 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

7.4.4.1 Training will be given to the workers on how to use hand equipment.

7.4.4.2 First aid will be provided on-site only if any accident occurs.

7.4.4.3 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

7.4.5.1 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, Distt. 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, Distt. 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.

****

8 PROJECT BENEFITS

8.1 BENEFIT OF MINING

The proposed project is mining of sand, stone and bajri from the Hillslope 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 resources 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 entrepreneurs 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.

****

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.

****

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.

10.1.1 Objectives

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

10.1.1.1 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.

10.1.1.2 Implement sustainable mining practices that minimize ecological disturbance, especially to riverine ecosystems, aquatic life, and surrounding habitats.

10.1.1.3 Establish clear principles for responsible resource extraction, waste management, and site rehabilitation.

10.1.1.4 Conduct awareness programs for workers and staff to promote understanding of occupational health and safety, environmental conservation, and best practices in hillslope mining.

10.1.1.5 Adopt mitigation measures to reduce environmental impacts such as air and water pollution, noise, and erosion caused by mining operations.

10.1.1.6 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.

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, overloading 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 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 nearby stream will be avoided.

10.4.2 Ground water

Mining activity shall not intercept 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.

10.4.2.1 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 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 though 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. Corridors 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 hillslope 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 environmental 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

	Title	Activities	Capital cost INR lakhs)	Recurring cost per year (INR lakhs)	Recurring cost for 5 yrs (INR lakhs)	Timeline of implementation
ENVIRONMENT MANAGEMENT PLAN (EMP)						
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 a six month (As per CPCB guideline)

2.	Air Pollution Control-Haulage Roads, Mining Areas & surroundings	Management of Haulage Roads & mine road of 800 meters including Sprinkling. Tractor trolley with sprinkler **Depreciation cost of water sprinkler*	2.0	0.61	3.05	Twice a day Or as per requirement
3.	Green Belt Development & Plantation	Area for Plantation = 3.5376 Ha. **No. of plants = 4245 Plants** Plantation is proposed @* 1200 plants per Hect. *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**	5.47	2.57	12.85	After formation of each Benches
4.	Retaining Structures /Check-Dams	Check Dam/Retaining wall structure Check Dam/Retaining structure -500 m*1*2=1000 cum. ***@1469.25/cu.m*(@Rs. 979.50/cu.m and 50% escalation cost. Dry rubble masonry in breast wall and retaining walls revetment walls and parapets etc. as per Standard Schedule of Rate 2009 H.P.)***	14.69	1.46	7.34	As per mining plan, five numbers of Check dams /Retaining Wall of (500 meters' length 1 meters' Width and 2.0 meter's height) has been proposed for protect the debris to move downwards.

5.	Sub-grade mineral / Topsoil Management	Protection wall for waste dump **Dimension* R1* (L -99 m X W- 1 m X H-3m) =198 Cu.m *@1469.25/cu.m*(@Rs.979.50/cu.m* and *50% escalation cost. Dry rubble masonry in breast wall and retaining walls revetment walls and parapets etc. as per Standard Schedule of Rate 2009 H.P.)*	2.90	0.29	1.45	**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.	0.15	0.05	0.25	**Once in year**
7.	Sanitation Facility and Domestic Water Management	Septic Tank	0.50	0.10	0.50	**Once mining operations starts**
8.	Additional Activity, if any	-----NA-----	------	------	------	------
		Total EMP	**25.71**	**5.88**	**29.44**	**------**
	B. Corporate Env. Responsibility (CER)					
1.	Fodder for nearest Gaushala for 5 years	Fodder for Gaushala located at Badhiyaran	-------	1.00	5.00	-------
2.	Solar Plant	5 KVA Solar Plant at Govt. Sr. Sec. School Gondpur bulla	3.00	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	0.1	0.5	After Grant of EC.
		Total (CER)	**3.15**	**1.3**	**6.5**	**------**
		Total (A+B)	**29.22**	**7.18**	**35.94**	**------**

10.11 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.

****

11 SUMMARY AND CONCLUSION

11.1 INTRODUCTION

The proposed Hill Slope Mining for Extraction of Sand, Stone and Bajri located at Khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh. by Sh. Yogesh Kumar, partner of M/s AAR ESS Stone crusher. The total lease area for the project is 3.5376 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 Hill Slope by Sh. Yogesh Kumar, Proprietor of M/s AAR ESS 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. TO25B0108HP5581127N dated 04.12.2025 by State Environment Impact Assessment Authority, 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-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. Yogesh Kumar partner M/s AAR ESS Stone crusher.
2	**Mining Lease Area**	3.5376 Hectare
3	**Location of mine**	Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171, Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh.
4	**Latitude**	31° 19' 22.82" N to 31° 19' 18.62" N

5	**Longitude**	76° 12' 2.76" E to 76° 12' 9.12"E
6	**Toposheet number**	53A3, 53A4, 53A7, 53A8
7	**Minerals of mine**	Sand, Stone and *Bajri*
8	**Proposed production of**	120775 MTPA (Excluding Waste)
9	**Method of mining**	Semi Mechanized
10	**Waste Generation**	52167 TPA of mine waste will be generated as waste during the mining process.
11	**No of working days**	270 days
12	**Cost of the Project**	10 Lakhs
13	**Water demand**	0.45 (Domestic) + 2.40 (Dust Suppression) =2.85KLD
14	**Sources of water**	Bore well is the water source for drinking and dust suppression.

11.3 BASELINE MONITORING STATUS

The Environmental Baseline data in this EIA report of Air, water, soil, and noise levels were monitored during the Winter season (December 2025 to February 2026). 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 analyzed 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.

- 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 Trolly. 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 though 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 benched 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, 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. 25.71 lakhs, a recurring annual expenditure of Rs. 5.88 lakhs, and an additional recurring investment for five years of Rs. 29.44 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.

****

12 DISCLOSURES OF CONSULTANTS

12.1 INTRODUCTION

M/s Shivalik Solid Waste Management Ltd. has been engaged as consultant by Sh. Yogesh Kumar partner M/s AAR ESS Stone crusher to conduct Environmental Impact Assessment study of the Proposed hill slope mining project situated at Mauza/Mohal Gondpur bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh. The brief about the consultant is given below in **Table 12-1**.

Table 12-1 BRIEF DETAILS OF CONSULTANT

Name of the Consultancy Company	**M/s Shivalik Solid Waste Management Ltd.**
Address	**Registered Office:-** Village-Mujra, P.O. Dabhota, Tehsil Nalagarh, Distt. Solan, Himachal Pradesh – 174101. Phone/Telefax: 01795-260427, 260227. **Zirakpur Office:-** SCO 20-21, 1st Floor, Near Hotel Dolphin, Baltana, Zirakpur Punjab- 140604. Phone/Telefax: 01762 – 509496.
Website	www.sswml.com
Nature of Services	Treatment, Storage & Disposal Facility, **EIA Consultancy**, 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.

****



CERTIFICATE

The Certification Body
of
Quality Circle Forum of India
Certifies that

SHIVALIK SOLID WASTE MANAGEMENT LTD,
NALAGARH

has successfully implemented
FIVE-S Workplace Management System in their units
An audit was performed and it was found that
all the requirements are fulfilled.

This certificate is valid until 28.02.2026

subject to the continued satisfactory implementation of workplace management system for sustenance and improvements with a check by Surveillance audit.

5S

Date : 08.02.2023

Code: 5S1119-0094

D.K.Srivastava
Executive Director



bsi.

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
Latest Revision Date: 2024-06-20

Effective Date: 2024-08-20
Expiry Date: 2027-08-19

Page: 1 of 1

...making excellence a habit.™



bsi.

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
Latest Revision Date: 2024-06-20

Effective Date: 2024-08-20
Expiry Date: 2027-08-19

Page: 1 of 1

...making excellence a habit.™



bsi.

Certificate of Registration

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM - ISO 45001:2018

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: **OHS 589719**

and operates an Occupational Health and Safety Management System which complies with the requirements of ISO 45001:2018 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.

[Previously certified to BS OHSAS 18001:2007 since 05-09-2012]

For and on behalf of BSI:

Theuns Kotze, Managing Director Assurance - IMETA

Original Registration Date: 2018-06-29
Latest Revision Date: 2024-06-20

Effective Date: 2024-08-20
Expiry Date: 2027-08-19

Page: 1 of 1

...making excellence a habit.™



IGBC

CII
Confederation of Indian Industry

Membership Certificate

This is to certify that

Shivalik Solid Waste Management Ltd

is an Annual Member of Indian Green Building Council (IGBC)

Bearing Membership No **IGBCCS232298**

This certificate shall be valid up to December 2026

K S Venkatagiri
Executive Director
CII - IGBC

B Thiagarajan
Chairman
Indian Green Building Council

C Shekar Reddy
Vice Chairman
Indian Green Building Council

Indian Green Building Council
CII - Sohrabji Godrej Green Business Centre, Survey No. 64, Near Hitech City, R R Dist, Hyderabad - 500 084
T: +91 40 4418 5132 / 33 F: +91 40 4418 5189 E: igbc@cii.in W: igbc.in



National Accreditation Board for Testing and Calibration Laboratories

NABL

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)

Name of Legal Entity: SHIVALIK SOLID WASTE MANAGEMENT LIMITED

Signed for and on behalf of NABL

Anuja Anand
Director

Chakravarthy T. Kannan
Chief Executive Officer



भारतीय गुणवत्ता परिषद्
QUALITY COUNCIL OF INDIA
Creating an Ecosystem for Quality

NABET

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/ACO/23/3065 dated Dec 13, 2023. The accreditation needs to be renewed before the expiry date by Shivalik Solid Waste Management Limited, Solan following due process of assessment.

Issue Date
December 13, 2023

Valid up to
August 17, 2026

Mr. Ajay Kumar Jha
Sr. Director, NABET

Certificate No.
NABET/EIA/23-26/RA 0310

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.

****

Annexures

सत्यमेव जयते

File No: HPSEIAA/2025/1354

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,

YOGESH KUMAR
VPO Gondpur Bulla, Tehsil Haroli, District Una, H.P., UNA, HIMACHAL PRADESH, 176601
yogeshsharmamine@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 145 147 149 150 165 166 167 169 171, Mohal and Mauza Gondpur Bulla of Tehsil Haroli, District Una, Himachal Pradesh. submitted to Ministry vide proposal number SIA/HP/MIN/555156/2025 dated 18/10/2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0108HP5581127N
(ii) File No.	HPSEIAA/2025/1354
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Mining of Sand, Stone and Bajri from Khasra No 145 147 149 150 165 166 167 169 171, Mohal and Mauza Gondpur Bulla of Tehsil Haroli, District Una, Himachal Pradesh.
(viii) Name of Company/Organization	YOGESH KUMAR
(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/ 555156/2025, **TOR** HP SEIAA/2025/1354
b)	Processing fee	UTR reference no. HDFCN52025101331005169 on dated 13/10/2025

		having amount of Rs. 25,000/-
c)	Project type	Extraction of Sand, Stone and Bajri
d)	Project Location	Khasra number 145, 147, 149, 150, 165, 166, 167, 169 & 171 falling in Mauza/Mohal Gondpur Bulla, Tehsil Haroli, District Una, H.P.
e)	Jamabandi	Jamabandi for the year 2023-2024
f)	Land Status	Private land/Hill slope
g)	Capacity	1,20,775 MT/year
h)	Mining Area	03-53-76 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 27.05.2025, 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 AssessmentAuthority(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 AssessmentAuthority(SEIAA) Appraisal Committee hereby decided to grant Terms of Reference for instant proposal of M/s. YOGESH KUMAR 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.

Annexure 1

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 areashould 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 givenwith 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 rea 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 rea 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 Wildlifeand 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	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	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. 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. 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. 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. 5) Hard copy of the application along with the relevant document shall be ink signed & submitted in the office of SEIAA Secretariat. 6) The project proponent shall submit compliance report to the issue raised during public hearing. 7) The project proponent shall submit proposed EMP and including CER activities as its part. All

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, Bajari	Sand, Stone, Bajari	120775	Tons per Annum (TPA)	Road	NA

Signature Not Verified

Digitally Signed by : Sh Duni Chand Rana
Member Secretary, SEIAA

Date: 04/12/2025

PERFORMA FOR THE JOINT INSPECTION OF THE AREA APPLIED FOR A FRESH MINING LEASE

1. General

1.1 Name of the applicant		Sh. Yogesh Kumar Partner AAR ESS Stone Crusher Village & PO Gondpur Bulla, Tehsil Haroli District Una (H.P.) (HID 83936133)
1.2 Address of the applicant	Father's Name	Sh. Sukhdev
	Village	Gondpur Bulla
	P.O.	Gondpur Bulla
	Tehsil	Haroli
	District	Una
	Pin No	176601
1.3 Approach and location of the area	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 katcha road diverting RHS from road at village Dulehar.	
1.4 Purpose for which lease is applied e.g. For setting up of stone crusher, Hollow block, Screening unit, free sale etc	For use in Stone crusher under name & Style AAR ESS Stone Crusher Village & PO Gondpur Bulla, Tehsil Haroli District Una (H.P.)	
1.5 Date of Joint Inspection	22-10-2024	

1.6 Members present during joint inspection

Sr. No	Name & Designation	Particulars
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 Tahliwal	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 HPSPCB Una	Member
7.	Sh. Parvesh Kumar JE, SDSCO Una	Representative of Subdivisional Soil Conservation officer Una.
8.	Sh. Rajan Sharma	Naib Tehsildar Dulehar
9.	Sh. Baljit Singh	Kanungo
10.	Sh. Jagtar Singh	Halqa Patwari
11.	Sh. Neeraj Kaant Mining Officer Una	Member Secretary

Mining Officer
Distt. Una

JIR of M/S AAR ESS Stone Crusher Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over Khasra No. 115, 147, 149, 150, 165, 166, 167, 169 & 171 measuring 03-53-70 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.

Scanned with OKEN Scanner

2. Revenue Department

2.1 Status w.r.t. Demarcation of Applied for area: *The area was demarcated on 20.06.2024.*

2.2 Detail of area applied

Kh. No	Area (In Hects.)	Owner Govt. / private	Kism	Mohal	Mauza	Panchayat	Any other
145	00-25-39	Private	Banjar kadeem	Gondpur Bulla upperla	Gondpur Bulla upperla	Gondpur Bulla	
147	00-78-39	Private	Banjar kadeem				
149	00-17-57	Private	Banjar kadeem				
150	00-07-52	Private	Banjar kadeem				
165	00-42-58	Private	Banjar kadeem				
166	01-62-88	Private	Banjar kadeem				
167	00-03-66	Private	Banjar kadeem				
169	00-10-09	Private	Banjar kadeem				
171	00-05-68	Private	Banjar kadeem				
	03-53-76						

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. 06 dated 15.08.2022*

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. Yogesh Kumar Partner M/s AAR ESS Stone Crusher 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. 145, 147, 149, 150, 165, 166, 167, 169 & 171 measuring 03-53-76 Hectares (Private Land, Hill slope) falling in Mohal & Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.

Mining Officer
Distt. Una

11/12/24

3. Forest Department		
3.1 Types of land i.e. Reserve Forest/Protected Forest/Demarcated Forest/ Non Forest Government Land/ Private Land etc.	*Private land*	
3.2 Whether attract FCA, 1980		*No*
If yes, then specify Kh. Nos, which attract FCA		

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 nallas/stream etc., if yes please specify and mark on location plan and what precautions are required:
No soil conservation works, nursery plantation, check dams, taming of nallas/stream etc. exists near the applied area for mining lease.

3.4 Whether there is any property of the Forest Department nearby which may have a direct effect if mining is allowed

No

3.5 Any other observation/condition

Recommendations: -

Since the area applied for the mining lease for collection/extraction of sand, stone & bajri to be used in Stone crusher unit, applied by Sh. Yogesh Kumar Partner M/s AAR ESS Stone Crusher Village & PO Gondpur Bulla, Tehsil Haroli District Una (H.P.) (Private land/ Hill slope). The area is covered with small vegetation in form of shrubs. The Forest department has no objection to the grant of this mining lease over Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171 measuring 03-53-76 Hectares (Private Land, Hill slope) falling in Mohal & Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.

Mining Officer
Distt. Una

Range Officer
Forest Range
Una H.P.-174303

Divisional Forest Officer
Una Forest Division, Una (H.P.)

Scanned with OKEN Scanner

4. PWD Department

4.1 Whether any road exists near area				Yes	✔ 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	✔ 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 exists any bridge, culvert etc. within area/near area	Yes	✔ 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.

Recommendations: -

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. Yogesh Kumar Partner M/s AAR ESS Stone Crusher Village & PO Gondpur Bulla, Tehsil Haroli District Una (H.P.), PWD department has no objection in grant of this mining lease over Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171 measuring 03-53-76 Hectares (Private Land, Hill slope) falling in Mohal & Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.

Executive Engineer,
H.P.P.W.D. Division Haroli
Distt. Una (H.P.)

Assistant Engineer
Tahliwal Sub Division (B&R)
HP.PWD at Haroli-177220

Mining Officer
Distt. Una

Scanned with OKEN Scanner

5.5 JAL SHAKTI VIBHAG				
5.5. 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

Recommendations: -

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 & bajri to be used in Stone crusher unit, applied by Sh. Yogesh Kumar Partner M/s AAR ESS Stone Crusher Village & PO Gondpur Bulla, Tehsil Haroli District Una (H.P.), Jal Shakti Vibhag has no objection in grant of this mining lease over Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171 measuring 03-53-76 Hectares (Private Land, Hill slope) falling in Mohal & Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.

Executive Engineer
Jal Shakti Division Haroli

Assistant Engineer,
Jal Shakti Sub-Division
Tahliwal Distt. Una (H.P.)

Mining Officer
Distt. Una

Scanned with OKEN Scanner

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 03-53-76 Hectares is a Hill slope area (Pvt. Land) bearing Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171 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
HPSPCB
Una 1303

HR of M/s AAR ESS Stone Crusher Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection/extraction of Sand, Stone & Bajri over Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171 measuring 03-53-76 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.

Scanned with OKEN Scanner

6. Industries Department		
6.1 Location of applied for area (nearest village/important features)		*The site applied for a mining lease is located in Mohal & Mauza Gondpur Bulla upperla Tehsil Haroli Distt. Una HP and is approachable from approximately 3Km kutcha road diverting PHS from road at village Dulehar.*
6.2 Purpose of Mining Lease.		***For the Stone crusher unit***
6.3 Overlapping of areas with any other lease/contract		✔ **NO**
If yes please give detail **N.A**		
6.4 Location of the nearest mining area/quarry: *M/s Bhakra Stone Crusher Village & P.O Gondpur Bulla, Tehsil Haroli, Distt. Una HP (Khasra No. 128, 129, 130, 131, 132, 135, 114, 125, 127, 134, 139, 140, 141, 142, 115, 105, 106, 107, 108, 109, 110 & 116 falling in Mauza /Mohal Gondpur Bulla Tehsil Haroli Distt. Una HP)*		
6.5 Average daily production anticipated in Metric Tons		*300-350 ton per day*
If yes, please mark on location plan and suggest precaution		*Attached*
6.6 Suitability of mineral as per the purpose given above (Give detail)		*The applied area is in form of hillock & is mostly comprised of conglomerate beds with soil matrix & is suitable to be used in a crusher.*

Mining Officer
Distt. Una

IOR of M/s A.S.R.S.S Stone Crusher Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for mining lease for collection extraction of Sand, Stone & Bajri over Khasra No. 143, 147, 149, 150, 165, 166, 167, 169 & 171 measuring 03-13-76 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.

Scanned with OKEN Scanner

6.7 Feasibility of Mining

(i) Name of Mineral: *Sand, Stone & Bajri*

(ii) Type of mining Hill Slope/Riverbed: ***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 at distance of 4km from 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 indemnity 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

Scanned with OKEN Scanner

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 Sand, Stone & Bajri to be used in stone crusher unit is a Hill slope private land comprising Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171 measuring 03-53-76 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 for 20 years on rent in favour of Sh. Yogesh Kumar S/o Sh. Sukhdev Partner M/s AAR ESS Stone Crusher 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. 145, 147, 149, 150, 165, 166, 167, 169 & 171 totaling measuring 03-53-76 Hectares.*
4. *The google coordinates of area are 31°19'20"N 76°11'59"E.*
5. *The area applied forms a compact block and approximately 60-65% 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 indemnity 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 20.06.2024.*
13. *The applicant will start mining operations after obtaining EIA clearance from the competent authority.*
14. *The land is private (Hill Slope) and has small 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

Scanned with OKEN Scanner

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 60-65% 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 to M/s Bhakra Stone Crusher Village & PO Gondpur Bulla, Tehsil Haroli, Distt. Una HP (Khasra No. 128, 129, 130, 131, 132, 135, 114, 125, 127, 134, 139, 140, 141, 142, 115, 105, 106, 107, 108, 109, 110 & 116 falling in Mauza /Mohal Gondpur Bulla Tehsil Haroli Distt. Una HP)*

Mining Officer
Distt. Una

Scanned with OKEN Scanner

8.Recommendations		
8.1Whether whole of the area is being recommended for mining		
If no. please specify the Kh. Nos. being recommended		
Any other recommendation in addition to recommendations given at top NO		
Final recommendation of the Committee *Keeping the facts & stipulations stated above, the Committee recommends the fresh mining lease (Private land, Hill slope) for collection/extraction of Sand, Stone & Bajri for use in the stone crusher unit applied by Sh. Yogesh Kumar Partner M/s AAR ESS Stone Crusher Village & Post Office Gondpur Bulla Tehsil Haroli District Una H.P. for use in stone crusher over Khasra No. 145, 147, 149, 150, 165, 166, 167, 169 & 171 measuring 03-53-76 Hectares falling in Mohal & Mauza Gondpur Bulla Upperla Tehsil Haroli District Una H.P.*		

Signatures: -

Sub Divisional Magistrate Sub Divisional Magistrate Haroli, Distt. Una (H.P.)	**Divisional Forest Officer** Divisional Forest Officer Una Forest Division, Una Range Officer Forest Range Una H.P. 174303	**Executive Engineer P.W.D.** Assistant Engineer Tahliwal Sub Division (B&R) HP.PWD at Haroli-177220 Executive Engineer, H.P.P.W.D. Division Haroli Distt. Una (H.P.)
Executive Engineer JSV Executive Engineer Jal Shakti Division Haroli Assistant Engineer, Jal Shakti Sub-Division Tahliwal Distt. Una (H.P.)	**Environmental Engineer H.P.EP&PCB** ASSISTANT ENVIRONMENTAL ENGINEER H.P. State Pollution Control Board Una (H.P.) 174303	**SubDivisional Soil Conservation Officer, Una** Section Incharge Soil Conservation Section Haroli Tehsil Haroli, District Una (H.P.) 11/12/2024 Sub Divisional Soil Cons. Officer Una, Distt. Una (H.P.)
Mining Officer Una Mining Officer Distt. Una		

Surveyor
F.P. Sub Div Gagret

Incharge पटवार चुल्ह
34 तह. हरोली

Scanned with OKEN Scanner

ANNEXURE-III

No. Udyog-Bhu(Khani-4)Laghu-525/2025
Government of Himachal Pradesh,
Department of Industries
Geological Wing

Dated: Shimla-171001, the 2025

LETTER OF INTENT

Sh. Yogesh Kumar, Partner M/s Aar Ess Stone Crusher, Village & P.O. Gondpur Bulla, Tehsil Haroli, Distt. Una has applied for grant of mining lease over an area measuring 03-53-76 hects., bearing khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171 (Private land, hill slope) falling in Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla of Tehsil Haroli, District Una, H.P. for the extraction of sand, stone & bajri for use in already established stone crusher unit under name & style of Partner M/s Aar Ess Stone Crusher 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 grant of mining lease and on the basis of recommendations of the Joint Inspection Committee, the matter was referred to the Government for approval. The Government vide letter No. Ind-II(F)6-11/2025 dated 22.05.2025 conveyed the approval for the issuance of Letter of Intent for the grant of mining lease for extraction of sand, stone and bajri, for use in already established stone crusher in favour of Sh. Yogesh Kumar, Partner M/s Aar Ess Stone Crusher, Village & P.O. Gondpur Bulla, Tehsil Haroli, Distt. Una over an area measuring 03-53-76 hects. (Private land, hill slope) bearing khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171 falling in Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla of Tehsil Haroli, District Una, H.P. Accordingly, 'Letter of Intent' 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 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.

Scanned with OKEN Scanner

4. The party shall submit a certificate from the revenue authority to the effect that Khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171, falling in Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla of Tehsil Haroli, District Una, H.P., are free from all encumbrance and all the co-sharers of 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.

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. Yogesh Kumar,
Partner M/s Aar Ess Stone Crusher,
Village & P.O. Gondpur Bulla,
Tehsil Haroli, Distt. Una, (H.P)

Geologist Zone-II,
Himachal Pradesh

Endst. No. As above. 2371 Dated 27/05/25

Copy to the following for information and necessary action:

1. The Additional Chief Secretary (Industries) to the Govt. of Himachal Pradesh w.r.t. their letter No. Ind-II(F)6-11/2025 dated 22.05.2025.
2. The Mining Officer, Una, Distt. Una, H.P.
3. Guard file.

Geologist Zone-II,
Himachal Pradesh

Scanned with OKEN Scanner

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.

ANNEXURE-V

No. Udyog-Bhu(Khani-4) Laghu-366/2024-DSR -7378 **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 Impect Assessment Authority, Himachal Pradesh- reg.

Sir,

Kindly refer to your office File No. HPSEIAA/2008/22/Vol-XI1 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,

Director of Industries,
Himachal Pradesh.

ANNEXURE-VI

No. Udyog-Bhu(Khani-4)Laghu-525/2025 - 5787
Government of Himachal Pradesh
Department of Industries
"Geological Wing"
Dated; Shimla- 171009, 22/8/2025

To

Sh. Yogesh Kumar,
Partner M/s Aar Ess Stone Crusher,
Village & Post Office 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 Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171 measuring 03-53-76 hects (Pvt. land, hill slope) falling in Mauza Gondpur Bulla, Mohal Gondpur Bulla Upperla, Tehsil Haroli, Distt. Una, for which Letter of Intent has been issued on 27.05.2025.**

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 27.05.2025. 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.

Scanned with OKEN Scanner

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

Scanned with OKEN Scanner

MINING PLAN

(INCLUDING PROGRESSIVE MINE CLOSURE PLAN)
OF AREA APPLIED FOR MINING LEASE

MINERAL

SAND, STONE & BAJRI

KHASRA NOS.

145, 147, 149, 150, 165, 166, 167, 169 & 171 (PVT. LAND)

AREA

03-53-76 HECTARES (HILL SLOPE)

LOCATION

MOHAL & MAUZA GONDPUR BULLA UPPERLA,
TEHSIL HAROLI, DISTRICT UNA,
HIMACHAL PRADESH

APPLICANT

SH. YOGESH KUMAR,
PARTNER M/S AAR ESS STONE CRUSHER,
VILLAGE & P.O. GONDPUR BULLA, TEHSIL HAROLI,
DISTL. UNA, HIMACHAL PRADESH -160055

Seal of Geological wing Industries Deptt. Govt. of H.P. APPROVED

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

INDEX

	TITLE	PAGE NO.
	SALIENT FEATURES OF THE AREA	
	INTRODUCTION	1
1	**GENERAL**	2
	1.1 Name and address of Applicant	2
	1.2 Status of the Applicant	2
	1.3 Minerals which the Applicant intends to mine	2
	1.4 Period for which the Lease Area is granted	3
	1.5 Name and address of the R.Q.P. for preparing the Mining Plan.	3
	1.6 Name of Prospecting Agency	3
2	**LOCATION AND APPROACH TO THE AREA**	
	2.1 Location of the Area	3
	2.2 Detail of the area	7
	2.3 Nearest Departments	7
	2.4 Distance from important places in Kilometres	7
	2.5 Approach of the Area	7
3	**PHYSIOGRAPHIC ASPECTS OF THE AREA**	
	3.1 General	8
	3.2 Altitude, General Terrain Description, with map and Contours Encompassing the Mine area	11
	3.3 Climate of the Area	11
	3.4 Rainfall of the Area	13
	3.5 Any Other Important Features	15
	3.6 Description of the Area in which the Lease area is situated	15
	PART I DESCRIPTION OF GEOMORPHOLOGY AND MINE DEVELOPMENT	
1	**DESCRIPTION OF GEOMORPHOLOGY AND MINE DEVELOPMENT**	
	1.1 General	16
	1.2 Slope Angle	16
	1.3 Type of Drainage in the Area	16
	1.4 Susceptibility of the area to landslide	17
	1.5 Springs in the area	17
	1.6 Any other details	17
2	**GEOLOGY**	
	2.1 Geology of the Granted Lease Area	17
	2.2 Geology of the Area	21
	2.3 Details of prospecting work undertaken in the mining area	21
	2.4 The nature of rocks and their attitude	21

Seal of Geological wing, Industries Deptt. Govt. of H.P. APPROVED

3	**RESERVES ESTIMATE**	22
	3.1 Estimates of Geological Reserves of Each Mineral	23
	3.2 Constraining Considerations for Mining	23
	3.3 Estimated Mineable deposits of the mine area	24
	3.4 Conceptual Scheme of Mining and Life of Mine	26
4	**MINE DEVELOPMENT AND PLAN OF PROGRESSIVE MINING**	
	4.1 Proposed method of development/working of the deposit	26
	4.2 Development and production programme for the first five years	27
	4.3 Year-wise production, overburden, run of mine, saleable mineral, mineral rejects/ mine waste	29
	(a)Development and Production at the end of the 1st Year (Plate No-8)	29
	(b)Development and Production at the end of the 2nd Year (Plate No-9)	30
	(c)Development and Production at the end of the 3rd Year (Plate No-10)	31
	(d)Development and Production at the end of the 4th Year (Plate No-11)	32
	(e)Development and Production at the end of the 5th Year (Plate No-12)	33
	4.4 Proposed rate of production when the mine is fully developed and the expected life of the mine after its opening	34
	4.5 Balance material available in the area after five years of progressive mining and the estimated year of mine closure	34
	4.6 Salient feature of the mode of working	35
	4.7 Extent of mechanization	35
	4.8 Blasting	35
	4.9 Mine Drainage	35
	4.10 Waste Management	35
	4.11 End use of minerals	36
	4.12 Details of the density of road transportation of minerals	36
PART - II	**ENVIRONMENT MANAGEMENT PLAN**	
1	**BASELINE DATA**	
	1.1 Detail of Population Distribution	37
	1.2 Socio-Economy of the Village	37
	1.3 Land Use Detail with 5 Kms. Radius	38
	1.4 Agriculture	40
	1.5 Horticulture	45
	1.6 Animal Husbandry	46
	1.7 Fisheries	49
	1.8 Flora	50
	1.9 Climate of the Area	53
2	**ENVIRONMENT MANAGEMENT PLAN**	
	2.1 Impact on Air	54

Seal of Geological wing Industries Deptt Govt. of H.P. APPROVED

	2.2 Impact on Water	54
	2.3 Impact on Noise Level	54
	2.4 Waste Disposal Arrangement, if Any	55
	2.5 Socio-Economic benefits	55
	2.6 Transport of Mineral	55
PART- III	***PROGRESSIVE MINE CLOSURE PLAN/RECLAMATION PLAN***	
1	***RECLAMATION PLAN***	
	1.1 Mine Waste Disposal	56
	1.2 Top Soil Utilization	56
	1.3 Preventive Retaining Structure	57
	1.4 Plantation Work	57
2	***STRATEGY FOR PROTECTION OF THE POINT OF PUBLIC UTILITY. ETC.***	59
3	***MANPOWER DEVELOPMENT***	59
4	***USE OF MINERAL***	59
5	***ANY OTHER RELEVANT INFORMATION***	59
PART- IV	***CERTIFICATE & DECLARATION***	
	Certificate	
	Declaration	
	Photographs	
ANNEXURES		
	PLATES TITLE: -	***PLATE NO.***
1	***LOCATION MAP***	*1*
2	***LULC MAP***	*2*
3	***MAP SHOWING SURFACE AND GEOLOGICAL FEATURES OF THE LEASE AREA***	*3*
4	***GEOLOGICAL X-SECTIONAL AREA OF THE LEASE***	*4*
5	***ULTIMATE PIT PLAN***	*5*
6	***WORKING X-SECTIONAL AREA OF THE LEASE***	*6*
7	***SLICE PLAN***	*7*
8	***PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE FIRST YEAR***	*8*
9	***PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE SECOND YEAR***	*9*
10	***PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE THIRD YEAR***	*10*
11	***PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE FOURTH YEAR***	*11*
12	***PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE FIFTH YEAR***	*12*
13	***POST RECLAMATION PLAN***	*13*

Seal of Geological wing, Industries Deptt. Govt. of H.P. APPROVED

SALIENT FEATURES OF THE AREA APPLIED FOR MINING LEASE FOR EXTRACTION OF SAND, STONE & BAJRI

Project		Mining Project (Lease Area)
Name of Mineral		Sand, Stone and Pebbles(Boulder & Bajri)
Application No.		Online
Letter of Intent		Udyog-Bhu(Khani-4)Laghu-525/2025-2371 dated 27.05.2025 i
Applicant Address		Sh. Yogesh Kumar, Partner M/s Aar Ess Stone Crusher, Village & P.O. Gondpur Bulla, Tehsil Haroli, Distl. Una, Himachal Pradesh
Coordinates of Area		31°19'22.82"N - 76°12'2.76"E (Uphill) 31°19'18.62"N - 76°12'9.12"E (Downhill)
Location of Mine	Village	Gondpur Bulla
	Mauza & Mohal	Gondpur Bulla
	Khasra Nos.	145, 147, 149, 150, 165, 166, 167, 169 & 171
	Land Type	Private land
	Panchayat	Gondpur Bulla
	District	Una
	State	Himachal Pradesh
Name of Lease		Hill Slope
Distances (In Kms)	Una	25.00 Kms.
	Haroli	17.00 Kms.
	Santokhgarh	15.00 Kms.
	Shimla	155.0 Kms.
	Hoshiarpur	48.0 Kms.
Total Applied Area		03-53-76 Hectares
Total Minable area		03-53-76 Hectares
Total Mineable Quantity		862650 MT (Including Silt/Clay)
Average Yearly Production		120770 MTPA (Excluding Mining Wastage)
Elevations	Highest	590 meter
	Lowest	566 meter
Period of mining Lease Area		As per the Grant order
Ultimate Pit Limit		566 meter
Method of Mining		Manual
No. of Working Days		270
End-use of mineral		For manufacturing of Grit and M-Sand
Manpower requirement		10-15 persons

Seal of Geological wing, Industries Deptt Govt. of H.P. APPROVED

भूविज्ञान शाखा
उद्योग विभाग शिमला
Geological wing
Deptt. of Industries
Shimla
APPROVED
with conditions
शर्तों के साथ अनुमोदित
Vide letter No. Udyog IBm (Khan-4) Lagbm-525/2025-5787
दिनांक
Dated.....
22/08/25

Geologist (Zone-II)
Geological Wing
Deptt. of Industries Shimla-1

INTRODUCTION: -

Sh. Yogesh Kumar, Partner M/s Aar Ess Stone Crusher, Village & P.O. Gondpur Bulla, Tehsil Haroli, Distl. Una, Himachal Pradesh has applied for grant of mining lease over an area measuring 03-53-76 hects., bearing khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171 (Private land, hill slope) falling in Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla of Tehsil Haroli, District Una, Himachal Pradesh for the extraction of sand, stone & bajri for use in already established stone crusher unit under the name & style of Partner M/s Aar Ess Stone Crusher 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 grant of mining lease and on the basis of recommendations of the Joint Inspection Committee, the matter was referred to the Government for approval. The Government vide letter No. Ind-II(F)6-11/2025 dated 22.05.2025 conveyed the approval for the issuance of Letter of Intent for the grant of mining. Accordingly the department vide letter no. Udyog-Bhu(Khani-4)Laghu-525/2025-2371 dated 27.05.2025 issued letter of intent for the grant of mining lease for the extraction of sand, stone and bajri, for use in the already established stone crusher in favour of Sh. Yogesh Kumar, Partner M/s Aar Ess Stone Crusher, Village & P.O. Gondpur Bulla, Tehsil Haroli, Distt. Una, Himachal Pradesh over an area measuring 03-53-76 hects. (Private land, hill slope) bearing khasra Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171 falling in Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla of Tehsil Haroli, District 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 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 Nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171, falling in Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla of Tehsil Haroli, District Una, Himachal Pradesh are free from all encumbrance and all the co-shares of above said land have given their consents.

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

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 the requisite clearance from the Competent Authority.

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 on a hill slope and is accessible via an approximately 3 km kutcha road branching off to the right-hand side (RHS) from the main road at Village Dulahar. The mining lease area consists of accumulations of recent alluvial deposits derived from the erosion of older geological formations. At the request of the lessee, a Mining Plan has been prepared, which includes comprehensive mapping of the applied lease area, covering topographical, lithological, and other relevant features. The Mining Plan outlines a systematic and scientific approach for the extraction of minor minerals within the lease area. Additionally, it incorporates a phased program for afforestation and addresses the preservation of public utility points.

1. GENERAL

1.1 Name and address of the applicant

1.1.a Name of the Applicant	Sh. Yogesh Kumar,
	Partner, M/s AAR ESS Stone Crusher
1.1.b Address of the Applicant	Village & PO 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 AAR ESS Stone Crusher"*** 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)

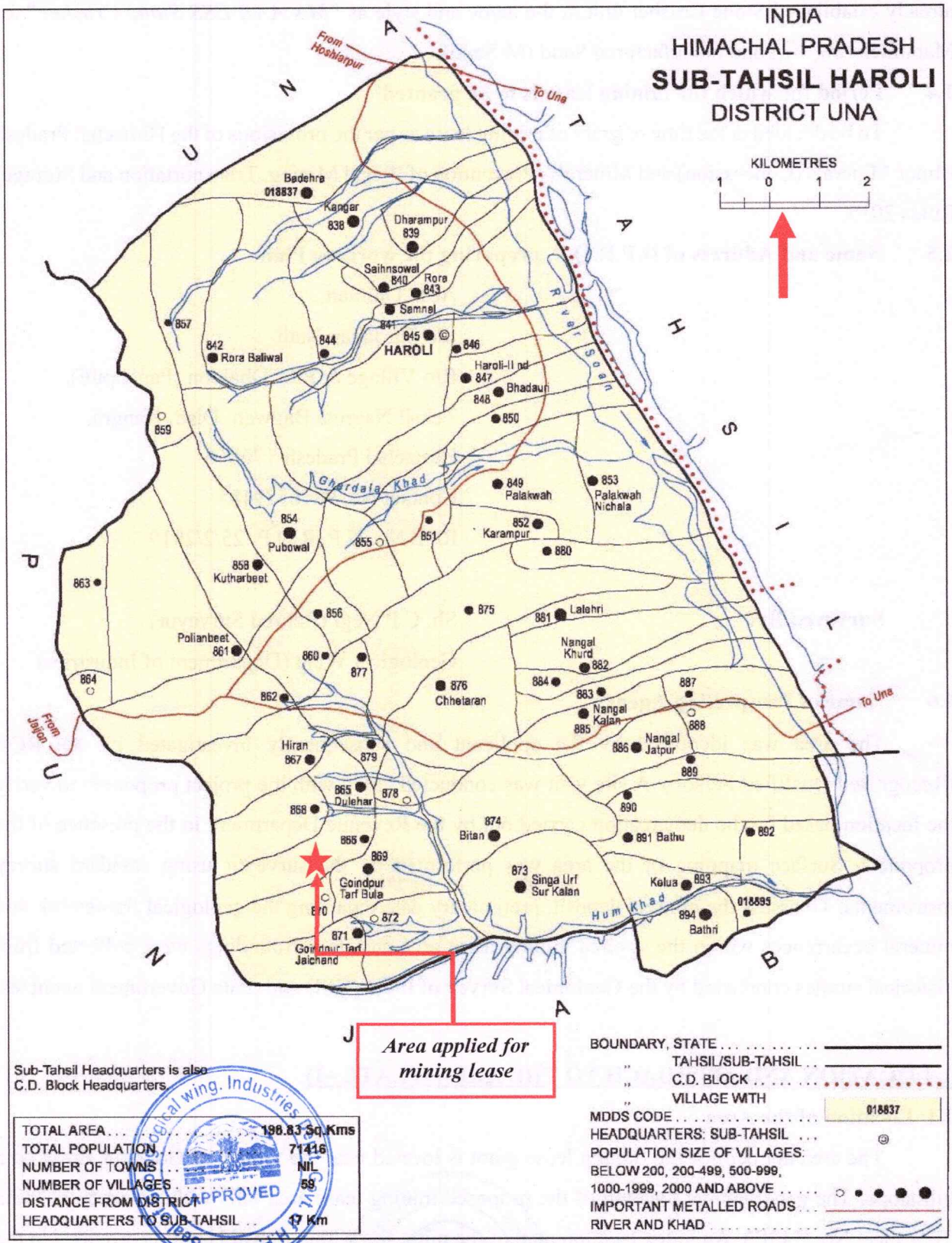
1.6 Name of Prospecting Agency

The area was identified by the applicant and subsequently investigated by the RQP (Recognised Qualified Person). A site visit was conducted along with the project proponent to verify the location based on the demarcation carried out by the Revenue Department in the presence of the proponent. Surface mapping of the area was performed by the surveyor using standard survey instruments. To assess the mineral deposit, preliminary data regarding the geological framework and mineral occurrences within the applied mining lease area and its surroundings were collected from historical studies conducted by the Geological Survey of India (GSI) and State Government agencies.

2. LOCATION AND APPROACH TO THE AREA (PLATE –1)

2.1 Location of the Area

The area applied for the mining lease grant is located near the village of Gondpur Bulla on a hill slope. The geographical location of the proposed mining lease area falls within Survey of India Toposheet No. H43E3. An index location map of the mine site within Tehsil Haroli is provided in the figures on page 4. The mine area's location is clearly marked on the toposheet, with boundary pillar coordinates detailed in the table on page 5. Additionally, high-resolution satellite imagery and photographic views of the mine site are presented in the figures on page 6.



Index map of Tehsil block showing the location of the mining lease area

(Location Map enclosed as Plate No. – I)

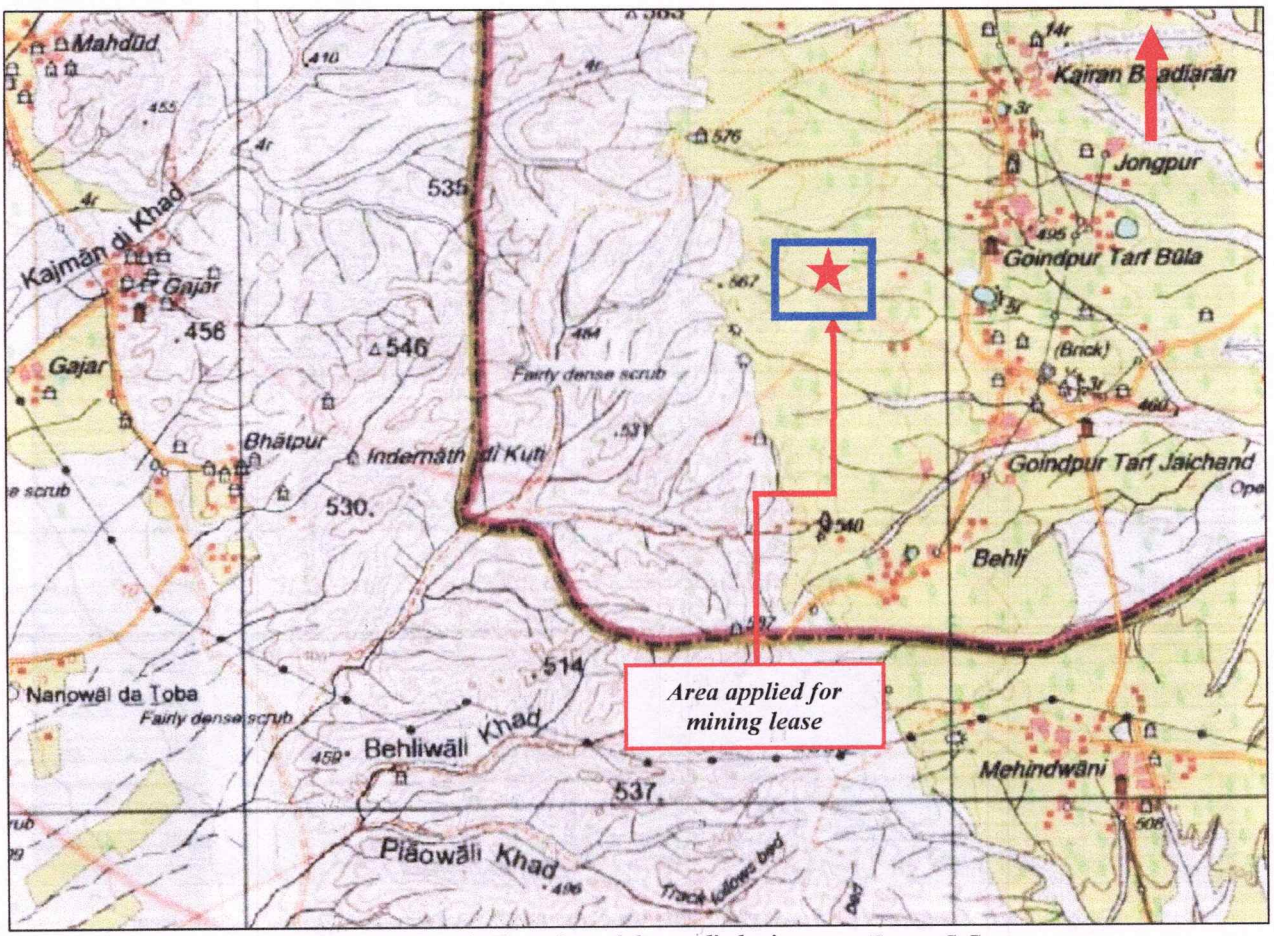


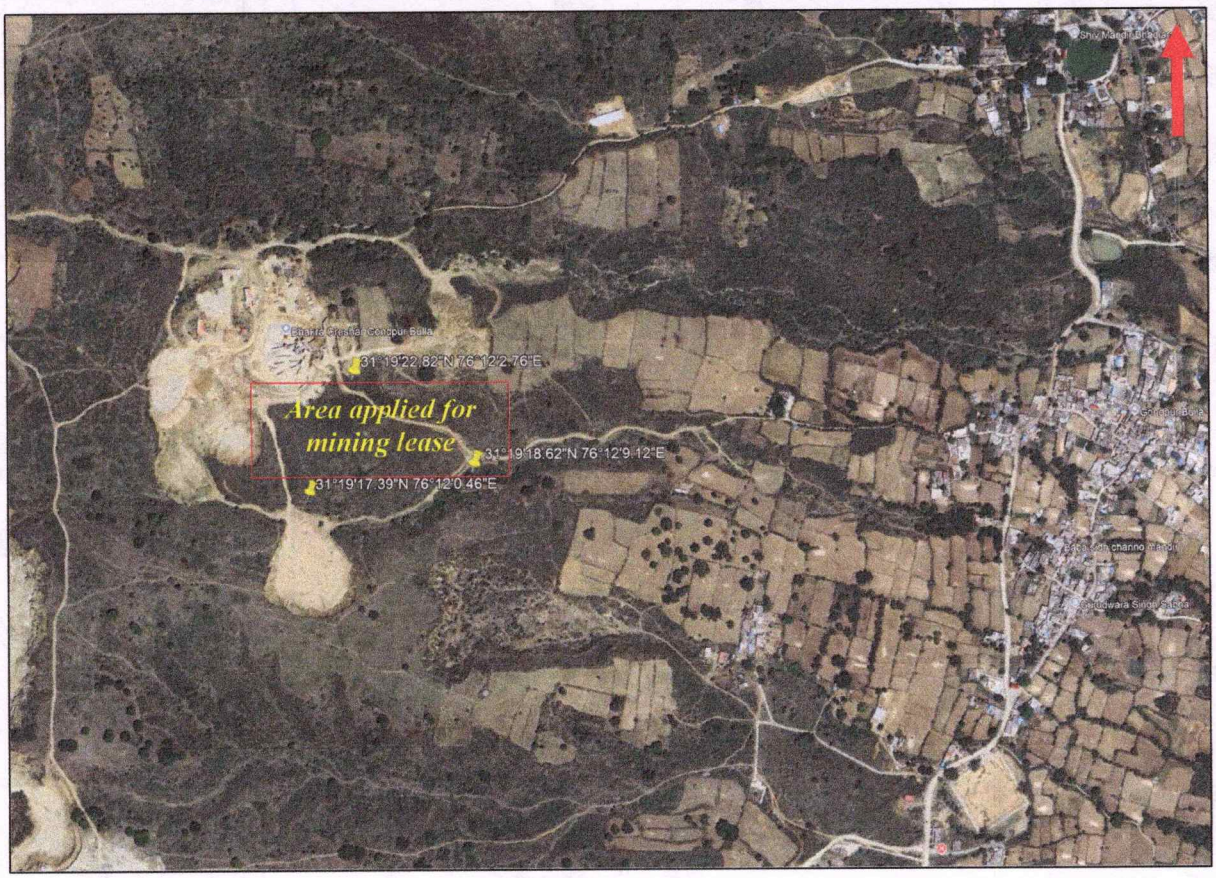
Image showing the Location of the applied mine area (Source SoI)

TOPO-SHEET NUMBER H43E3

Table showing the approximate location of boundary pillar coordinates

Pillar No	Latitude	Longitude
P1	31°19'22.82"N	76°12'2.76"E
P2	31°19'22.51"N	76°12'0.68"E
P3	31°19'22.01"N	76°11'58.78"E
P4	31°19'17.39"N	76°12'0.46"E
P5	31°19'18.62"N	76°12'9.12"E

Seal of Geological wing, Industries Deptt. Govt. of H.P. APPROVED



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
145, 147, 149, 150, 165, 166, 167, 169 & 171	Private land	Banjar Kadeem	Gondpur Bulla	03-53-76	Gondpur Bulla
TOTAL			**03-53-76 Hects. (35376 Sq. m.)**		

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 kilometres

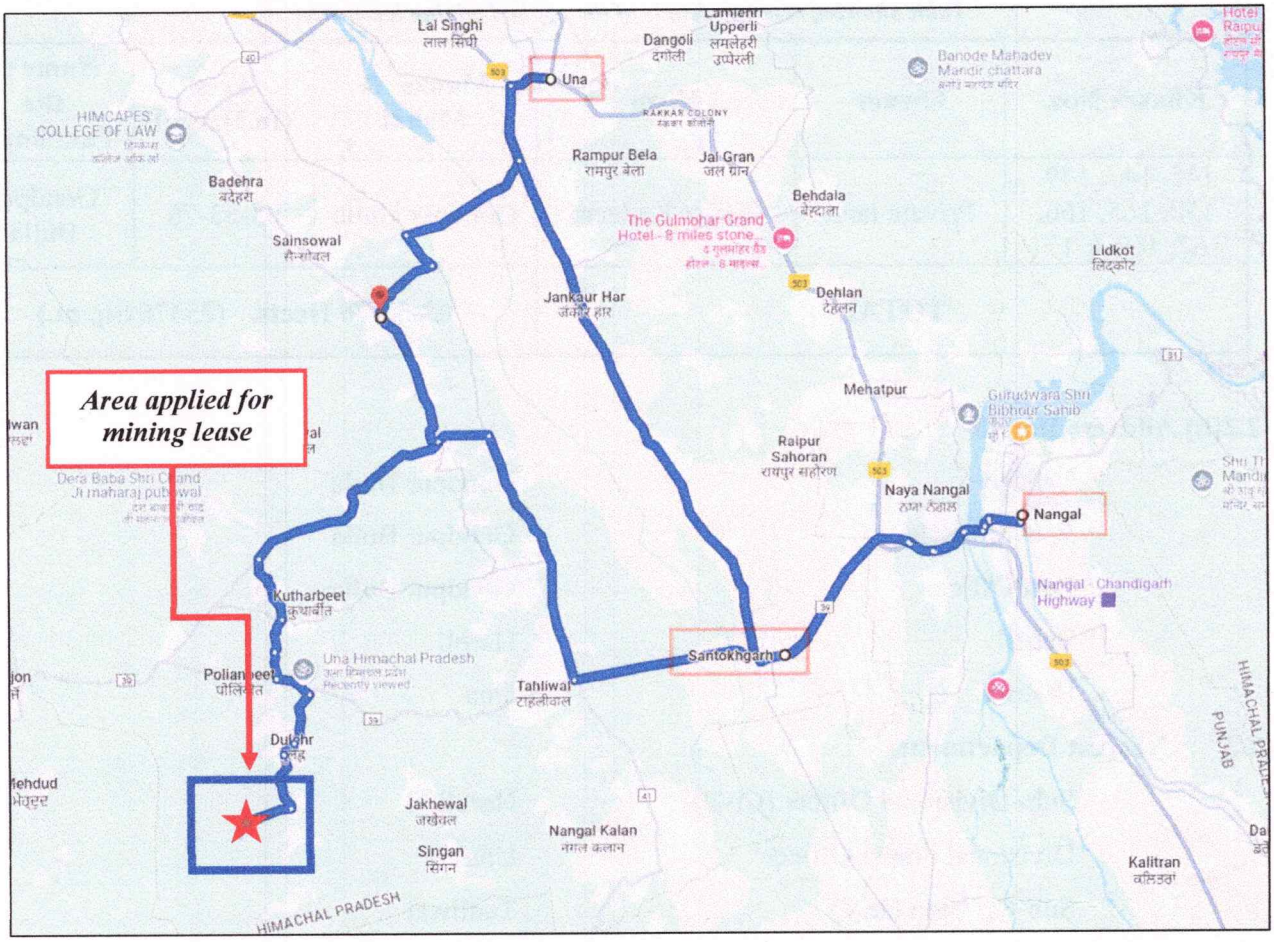
Una	25.00 Kms.
Haroli	17.00 Kms.
Santokhgarh	15.00 Kms.
Shimla	155.0 Kms.
Hoshiarpur	48.0 Kms.

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 1.0-kilometre Kaccha road diverting RHS from Gondpur Bulla. The site is at a distance of

Geological wing Industries Deptt Govt. of H.P. Seal APPROVED

approximately 17.00 kilometres from the nearest major town Haroli. The highest point of the applied mining lease area is 590 meters above MSL and the lowest point is 566 meters above MSL.



Google Map view showing the Approach to the Mining Lease area

3. PHYSIOGRAPHIC ASPECTS OF THE AREA

3.1 General

Una, a district in southwestern Himachal Pradesh, was established on 1st September 1972 when the Himachal Pradesh government reorganized the former Kangra district into three separate districts: Una, Hamirpur, and Kangra. The district has developed a strong industrial sector due to its proximity to Punjab, with major industrial centers located in Mehatpur, Gagret, Tahliwal, and Amb. On 11th January 1991, Una was connected to the rail network through a 14 km broad-gauge track linking Nangal (Punjab) to Una. The district's terrain is predominantly hilly, forming part of the Himalayan foothills known as the Siwalik range. Several important hill ranges (Dhars) characterize the landscape, including Sola Singhi Dhar (Jaswan Dhar), Chaumukhi Dhar, Dhionsar Dhar, Ramgarh Ki Dhar, and Bangar Ki Dhar, all 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 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.

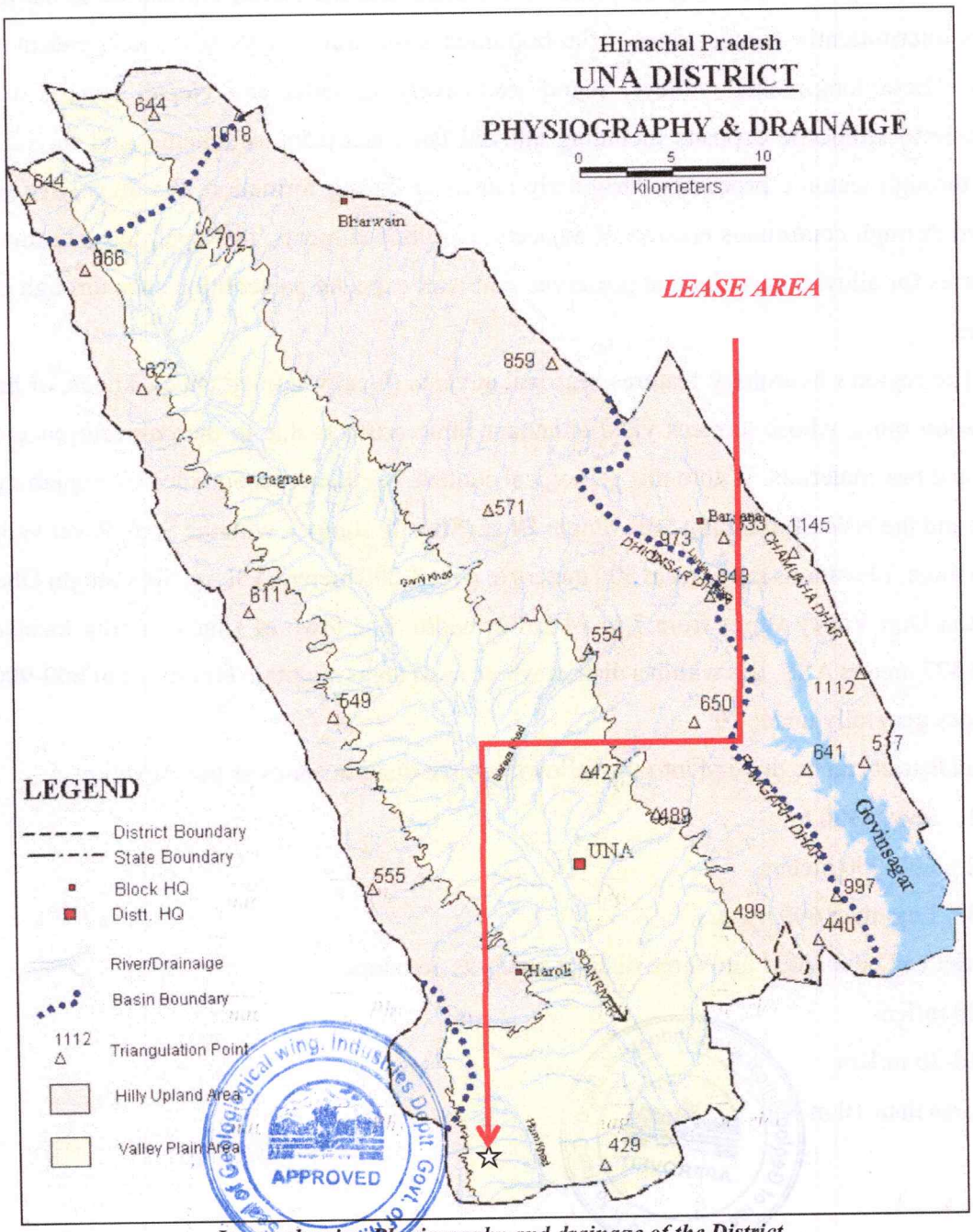


Image showing Physiography and drainage of the District

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 palaeolithic 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.

20 m/Km

10-20 m/Km

Less than 10 m/Km

Seal of Geological wing. Industries Deptt. Govt. of H.P. APPROVED

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

3.2 Altitude, General Terrain Description, with map and Contours Encompassing the Mine area: -

The applied lease area is located on a hill slope, as depicted in Plate No. III, which shows the mining lease area mapped at a 1:2000 scale with two-meter contour intervals. The elevation within the lease area ranges from 590 meters above mean sea level (MSL) at its elevation to 566 meters MSL at its lowest point. This privately owned land features typical hill slope terrain with minimal vegetation, consisting primarily of scattered small bushes and plants.

3.3 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 north-eastern areas. While similar to the adjacent Punjab plains, 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 Showing Climate around the applied lease area

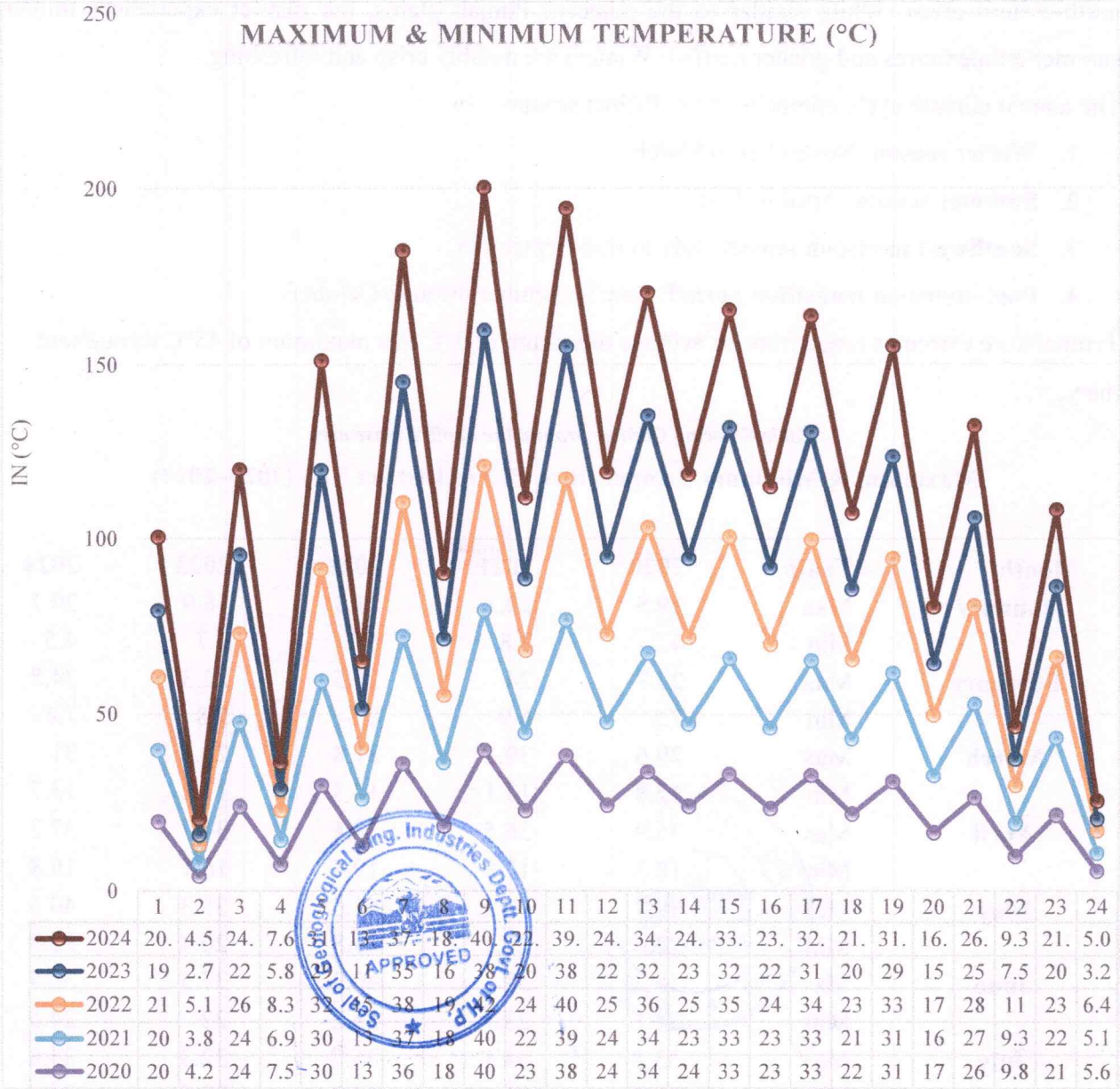
Maximum & Minimum Temperature (°C) of District Una (2020–2024)

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

Seal of Geological wing Industries Deptt. Govt. of H.P. APPROVED

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



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.

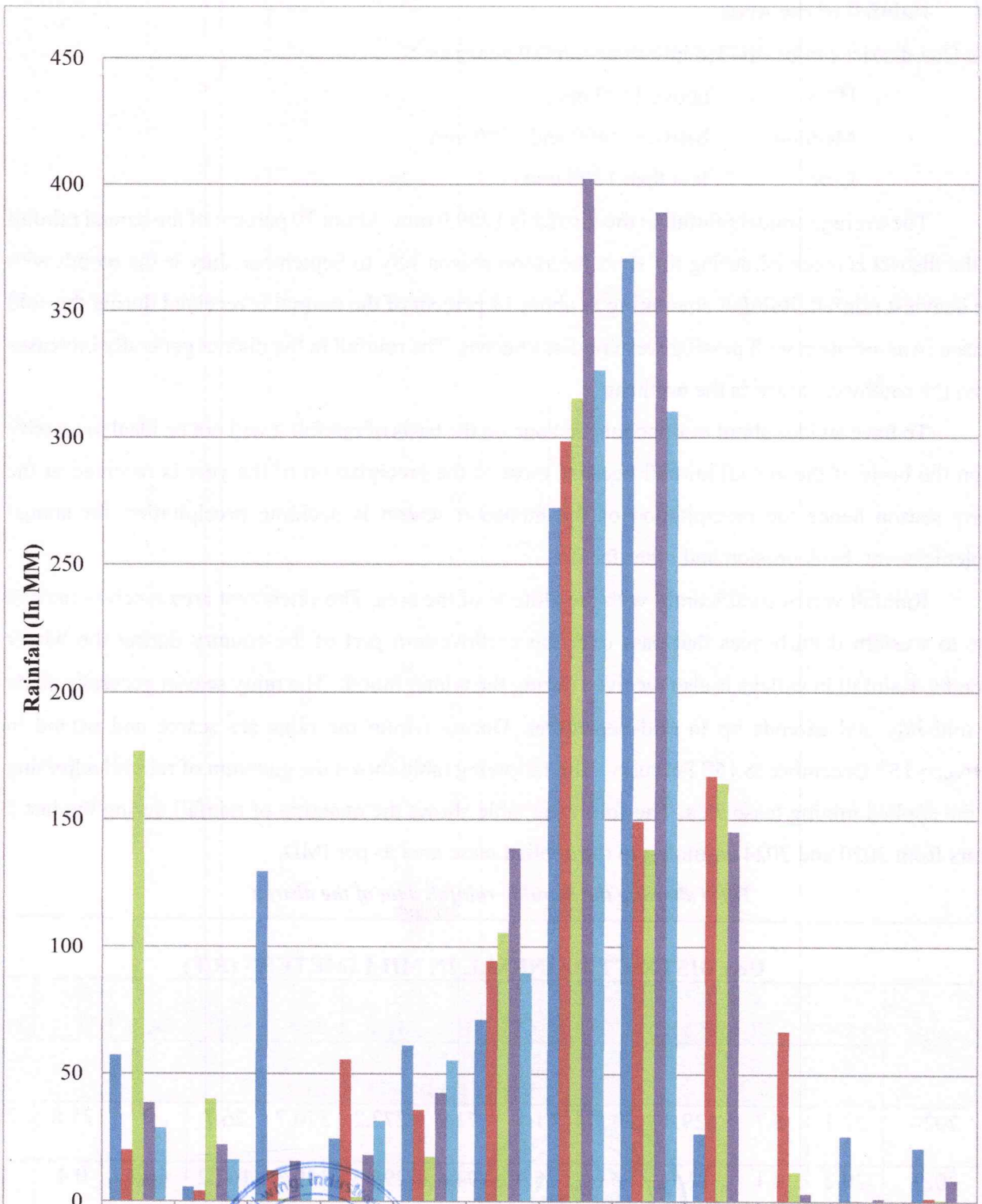
Rainfall varies significantly with the altitude of the area. The catchment area receives rainfall due to western disturbances that pass over the northwestern part of the country during the winter months. Rainfall in valleys is also received during the winter month. The rainy season generally starts in mid-July and extends up to mid-September. During winter the rains are scarce and extend in between 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 2020 and 2024 adjoining to the applied lease area as per IMD.

Table showing the 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
	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	4.7	17.7	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

Geological Wing Industries Dept. Govt. of H.P. APPROVED



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
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
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	0	0	0	0

Graph Average monthly rainfall data of the district Una from the year 2020to 2024

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

3.5 Any Other Important Features

Una district was established on 1 September 1972 and is located in the southwestern part of Himachal Pradesh, with its headquarters at Una town. Covering a geographical area of 1,542 square kilometers (2.8% of the state's total area), the district lies between 31°18'00" to 31°55'00" North latitude and 75°55'00" to 76°28'00" East longitude, falling within Survey of India degree sheets No. 53A and 44M. It is bordered by Kangra district to the north, Hamirpur and Bilaspur districts to the northeast, and Punjab state to the southwest.

Agriculture forms the backbone of the district's economy, with over 70% of the population engaged in farming and related activities. Major crops include maize, wheat, rice, sugarcane, pulses, and various vegetables. The district has 443 square kilometers of cultivable land, with 388 square kilometers currently under cultivation and about 85 square kilometers under irrigation. Groundwater serves as the primary water source for both irrigation and domestic use, supported by an extensive network of water supply wells, tube wells, springs, traditional water channels (kulhs), and lift irrigation schemes. Notably, the Bhabaur Sahib Lift Irrigation Scheme commands 923 hectares under Phase I and 2,640 hectares under Phase II.

3.6. Description of the area in which the lease is situated

The proposed mining lease area is located on a hill slope near the village of Gondpur Bulla. The hillside primarily consists of terrace alluvium deposits, including boulders, bajri (cobbles and pebbles), clay, and sand/silt. Geological studies indicate that the rocks within and surrounding the mining lease area belong to the Siwalik Group, characterized by conglomeratic deposits of boulders, pebbles, cobbles, clay, sand, and silt.

The mining site, situated on a hill slope adjacent to Gondpur Bulla village, is accessible via a 1.0-kilometre kuccha road branching off to the right-hand side from Gondpur Bulla. The location lies approximately 17.00 kilometres from Haroli, the nearest major town



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 applied mining lease area is 590 meters above MSL and the lowest point is 566 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 formation of gullies. Only small gullies pass beside the mining lease area. These small gullies drain into the local Nalla and further drain into the Satluj River which is a perennial stream of the area.

1.4 Susceptibility of Area to Landslide

The mining lease area features a gently sloping hill terrain with adjacent lands that are nearly flat, presenting minimal gradient. This geomorphological configuration essentially eliminates any landslide risk in the vicinity of the proposed mining site. The hillslope predominantly consists of conglomerate bedrock formations with a thin soil veneer. The slope maintains consistent gradients throughout the lease area, and when coupled with systematic, scientifically conducted mining operations, the potential for landslides becomes negligible. Furthermore, comprehensive site examinations have revealed no adverse joint patterns within the lease area that could potentially trigger rock or slope failures.

1.5 Springs in the Area

A comprehensive survey of the proposed mining lease area has confirmed the complete absence of natural springs within the designated boundaries. Detailed hydrological investigations, including visual inspections and subsurface evaluations, have verified that no spring activity - either perennial or seasonal - is present across the entire leasehold.

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 is 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 comprises of hogback ridges, consequent, subsequent, obsequent, and

APPROVED

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

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 clay stone.

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, braccia and lumps of clay stone 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's 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.

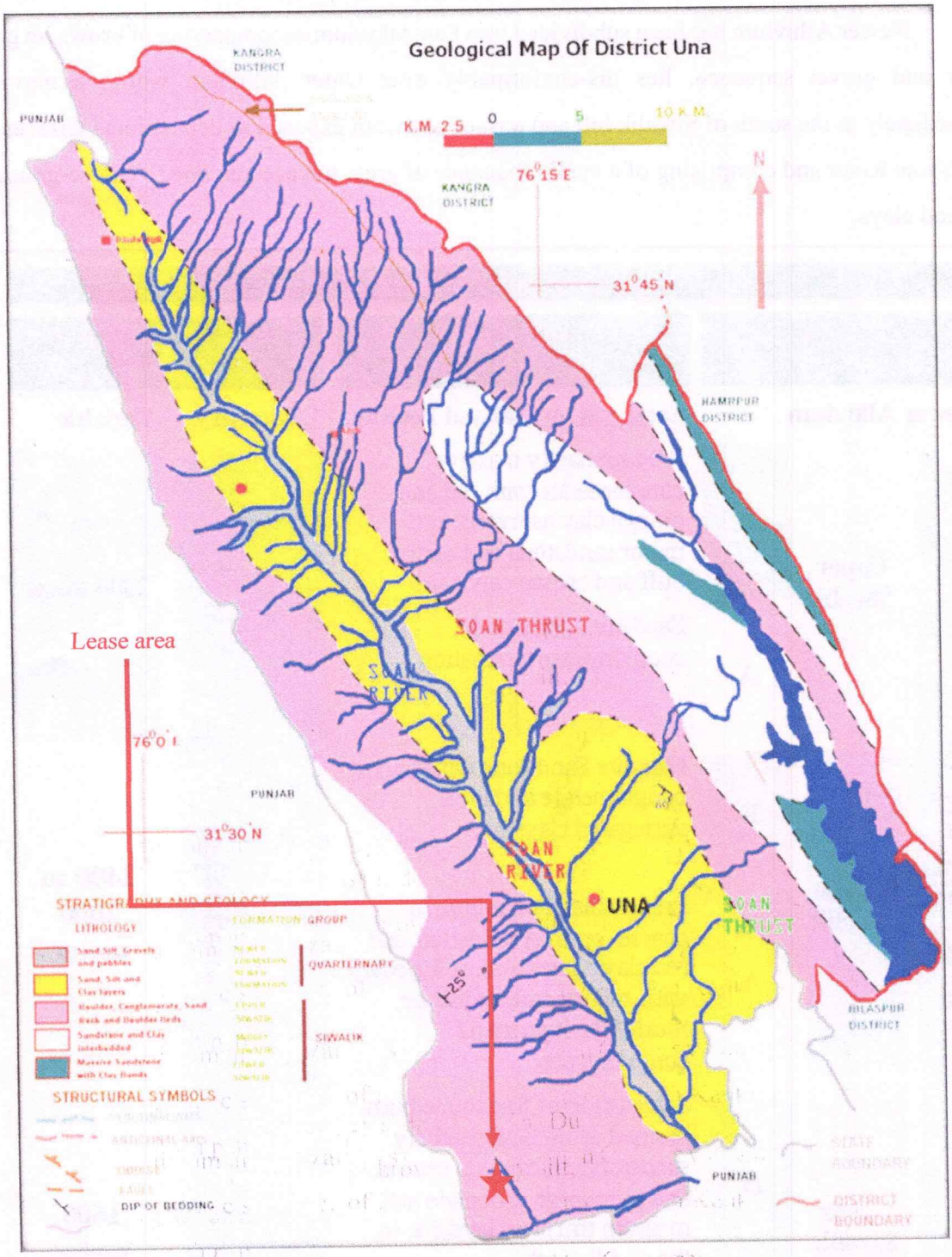
Middle Siwaliks: - The Middle Siwalik Subgroup comprises of a large thickness of coarse micaceous Claystone along with some interbeds of earthy clay and conglomerate. It normally succeeds the Lower Siwalik along a gradational contact. The Claystone is less sorted than those in Lower Siwaliks. Clay bends are dull-coloured and silty. The general thickness is 1400 to 2000 meters

Upper Siwaliks:-The 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.

Seal of Geological Mining Industries Deptt. Govt. of H.P. APPROVED

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.

Seal of Geological wing, Industries Dept. of H.P. APPROVED

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	Predominantly massive conglomerate with red and orange clay as matrix and minor sandstone and earthy buff and brown calystone	Neogene	2300 meter
		A	Sandstone, clay and conglomerate alternation		
	Middle Siwalik	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 Siwalik	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		

Seal of Geological wing, Industries Deptt. Govt of H.P. APPROVED

Alluvial fans, river terraces and gravel beds of recent age and the Claystone, claystone and conglomerate belonging to the Siwalik Group are the main Formations in this District. The Siwalik comprises conglomerates, friable Claystone, siltstone, and claystone. 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.

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019



Image showing the type and nature of rocks of the applied area

(3) RESERVES ESTIMATE

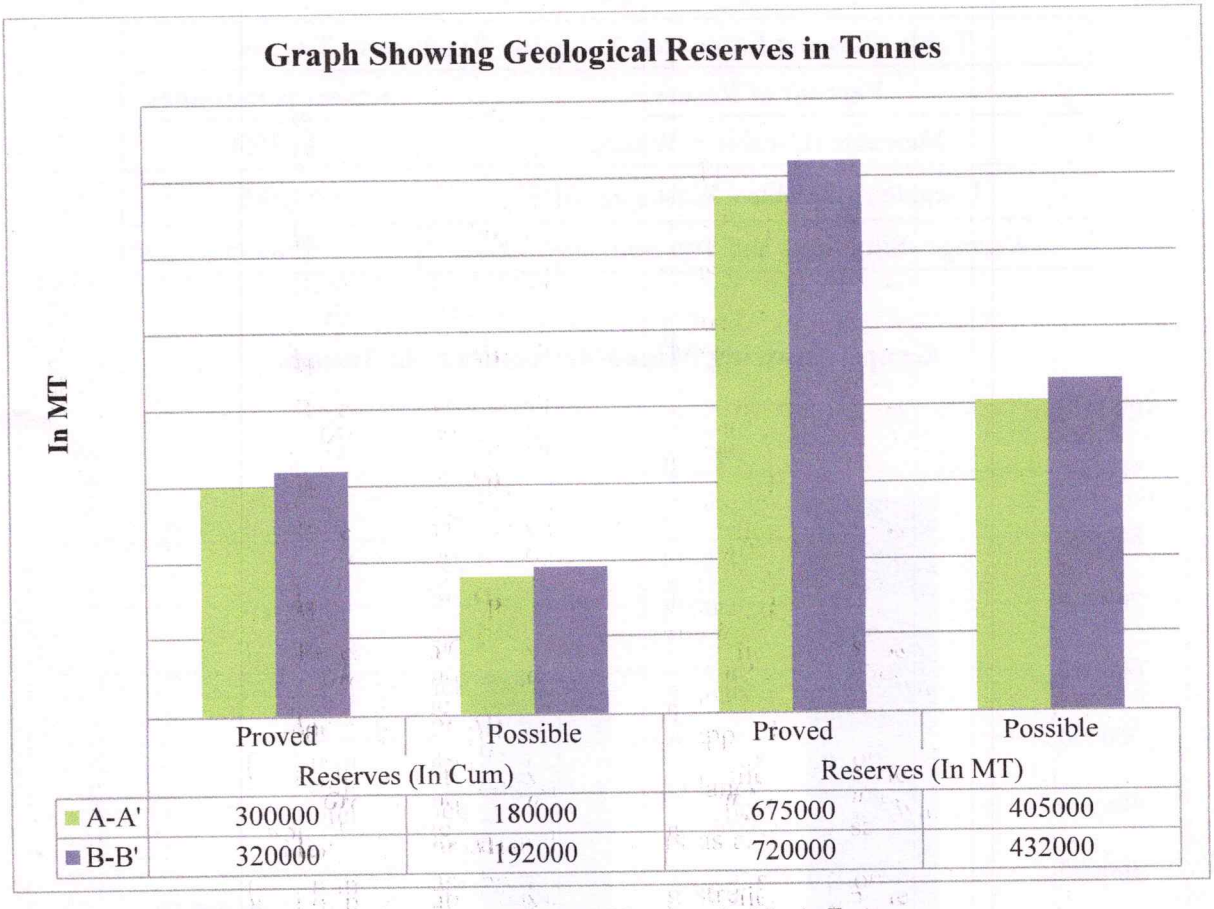
3.1 Estimates of the Geological Reserve of Each Mineral

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 100-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:

Geological wing, Industries Dept. H.P. APPROVED

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'	3000	100	300000	180000	675000	405000
B-B'	3200	100	320000	192000	720000	432000
TOTAL					***1395000***	***837000***



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

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

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.

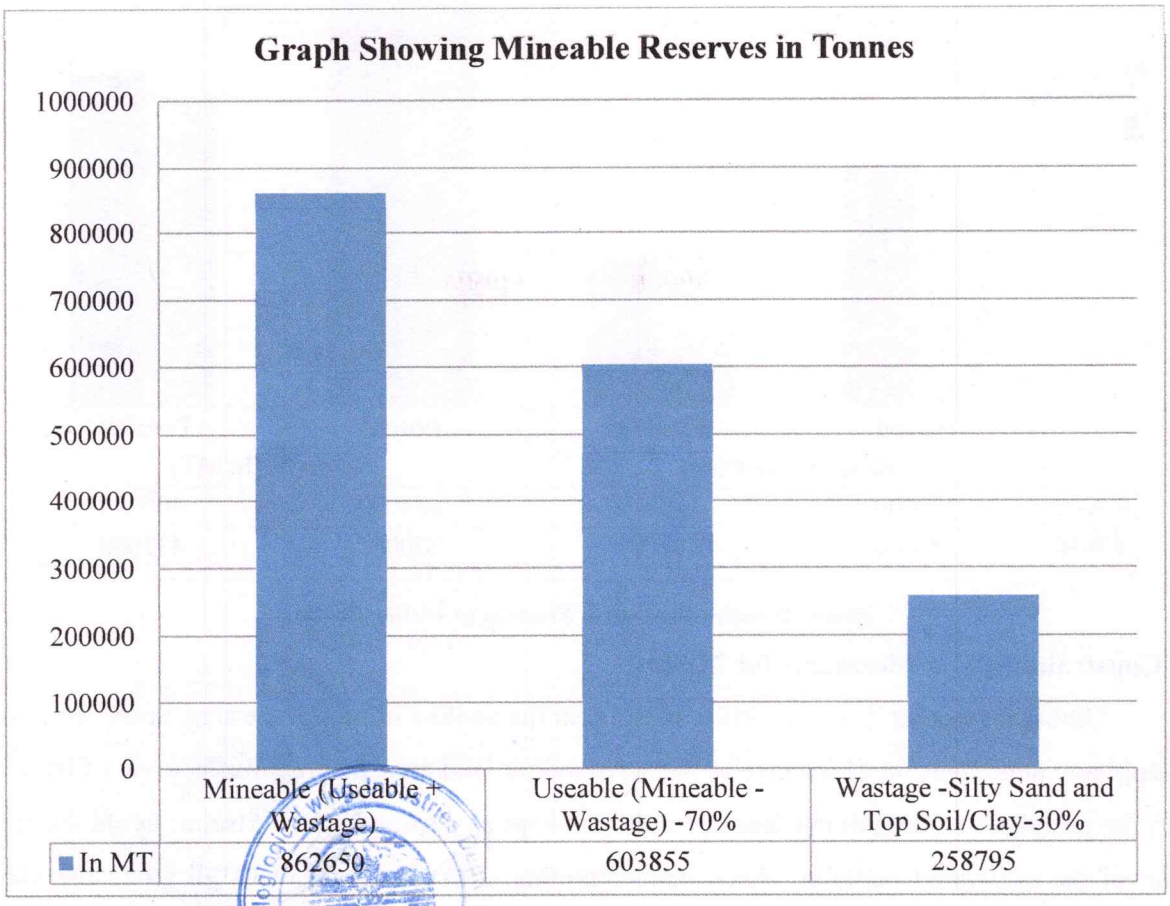
3.3 Estimated Mineable Deposits of the Mine Area:

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 100.00 meter 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

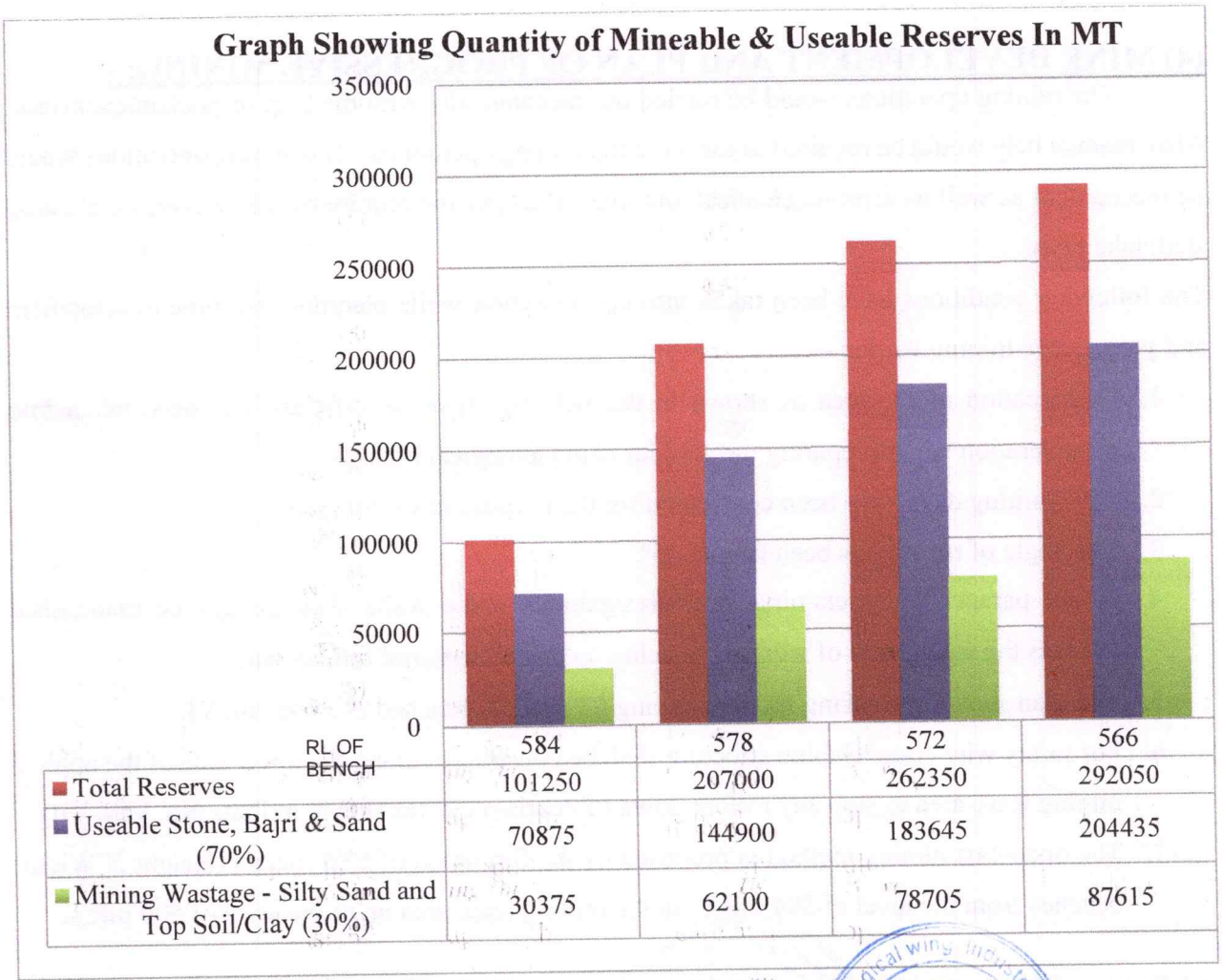
Table Showing Estimated Mineable Reserves in Tonnes	
Percent of Reserves	**Reserves in tonnes**
Mineable (Useable + Wastage)	862650
Useable (Mineable - Wastage) -70%	603855
Wastage -Silty Sand and Top Soil/Clay-30%	258795



Graph Showing Mineable Reserves in Tonnes

Table showing the quantity of mineable reserves in MT

Table showing quantity of mineable reserves in MT							
Bench	*Rl 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	584	10000	2.25	4.50	101250	70875	30375
2	578	18400	2.25	5.00	207000	144900	62100
3	572	21200	2.25	5.50	262350	183645	78705
4	566	23600	2.25	5.50	292050	204435	87615
TOTAL					**862650**	**603855**	**258795**



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.

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

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 584 onwards by preparing 6X6 meters (Height X Width) benches. Four (04) 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 poclain/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 584 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.

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

The method of mining shall be adopted on the basis of the concept of modifying hill slopes within the proposed limits of mining, up to the ultimate pit limit. The area will be restored by developing benches and pits along the hill slopes, ensuring minimum disturbance to the surroundings.

Mining operations in the applied lease area shall mainly be carried out through mechanical means after obtaining approval from the competent authorities. Semi-mechanical methods and, wherever necessary, manual operations will also be employed. However, no drilling or blasting activities shall be undertaken.

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

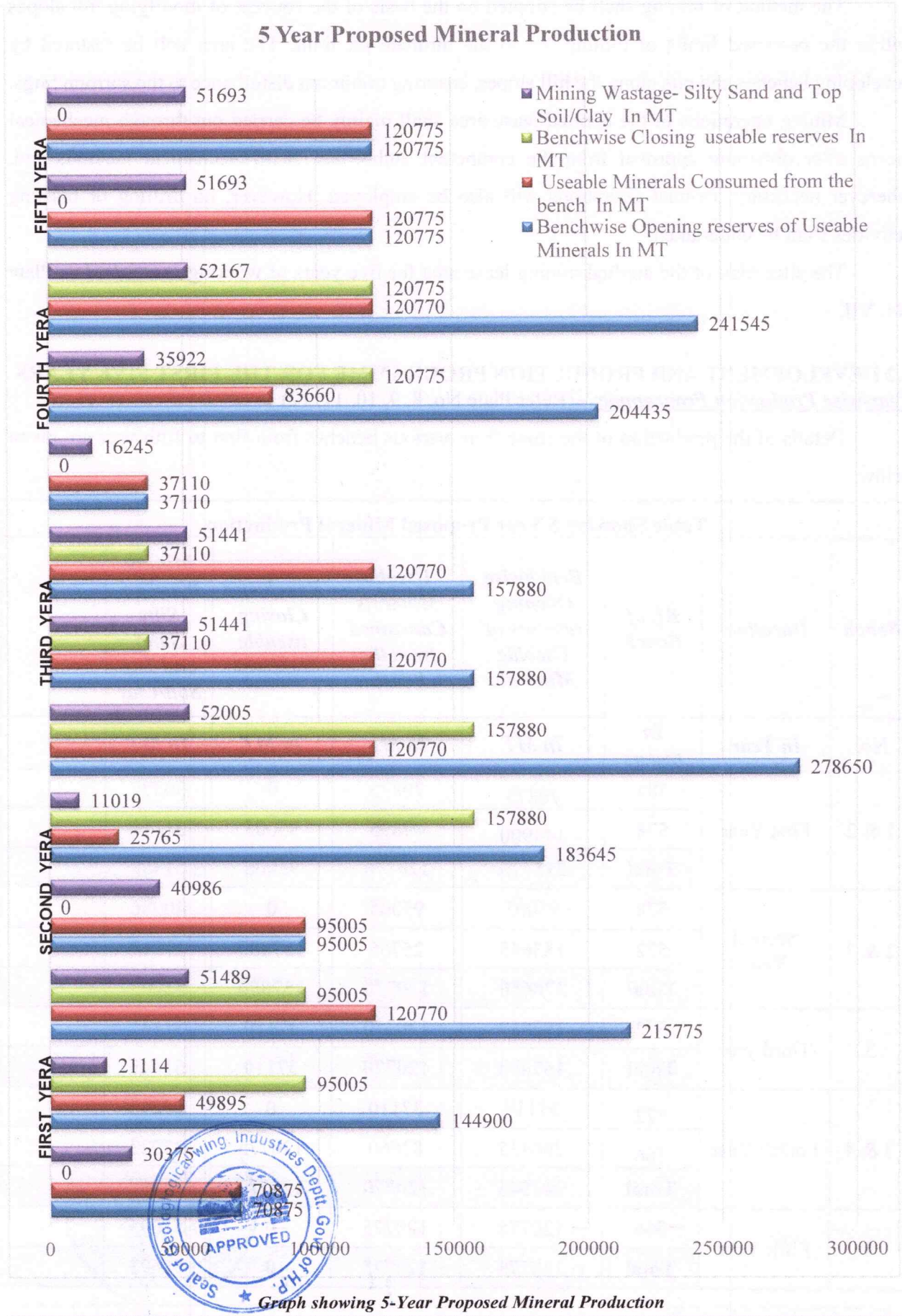
Year-wise Production Programme: - (Refer Plate No. 8, 9, 10, 11, 12)

Details of the production of the stone from various benches from first to fifth year are given below:

Table Showing 5 Year Proposed Mineral Production

Bench	*Duration*	*RL of Bench*	*Benchwise Opening reserves of Useable Minerals*	*Useable Minerals Consumed from the bench*	*Benchwise Closing useable reserves*	*Mining Wastage-Silty Sand and Top Soil/Clay*	
No.	*In Year*	*In meters*	*In MT*	*In MT*	*In MT*	*In MT*	
1 & 2	First Year	584	70875	70875	0	30375	
		578	144900	49895	95005	21114	
		Total	**215775**	**120770**	**95005**	**51489**	
2 & 3	Second Year	578	95005	95005	0	40986	
		572	183645	25765	157880	11019	
		Total	**278650**	**120770**	**157880**	**52005**	
3	Third year	572	157880	120770	37110	51441	
		Total	**157880**	**120770**	**37110**	**51441**	
3 & 4	Fourth Year	572	37110	37110	0	16245	
		566	204435	83660	120775	35922	
		Total	**241545**	**120770**	**120775**	**52167**	
4	Fifth Year	**566**	120775	120775	0	51693	
		Total	**120775**	**120775**	**0**	**51693**	

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019



Seal of Geological Wing, Industries Deptt. Govt. of H.P.
APPROVED

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 Ist year (Plate No.-8)

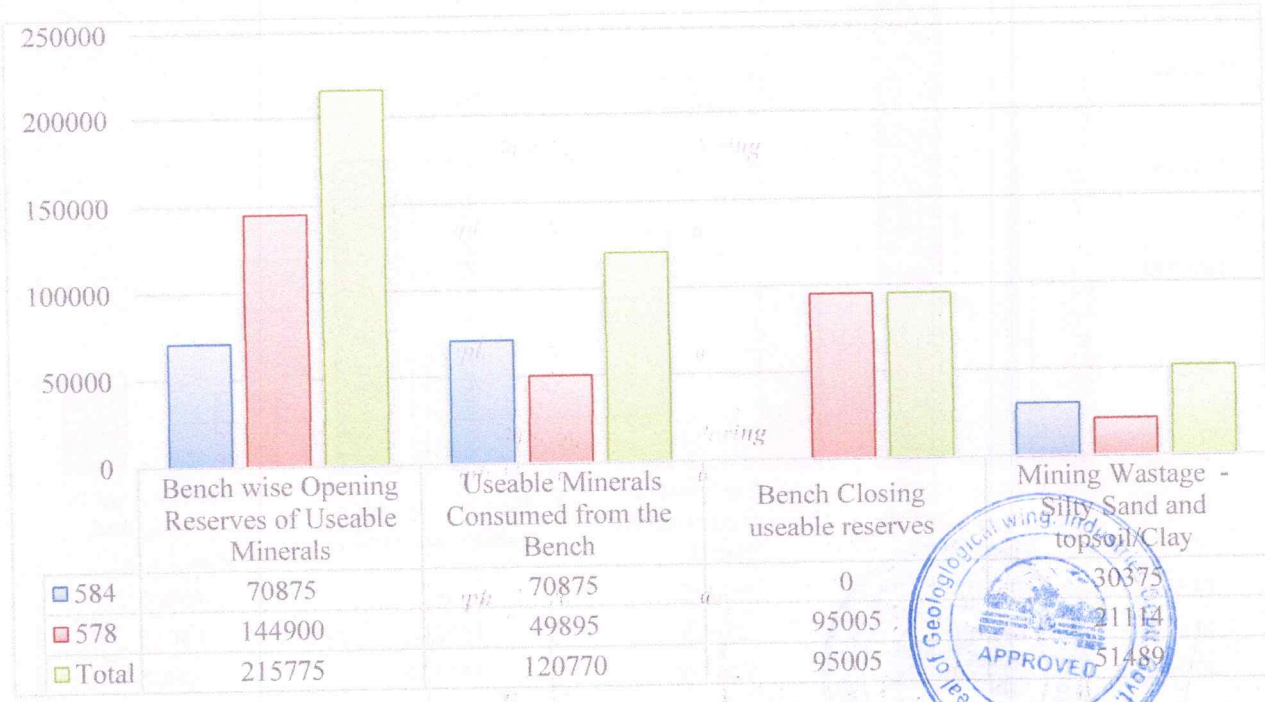
The proposed annual production to meet the requirement of the stone crusher unit is estimated at 1,20,770 metric tonnes of mineral (stone, boulder, and bajri) for the first year. For this purpose, benches at 584 mRL and 578 mRL shall be opened, having total usable reserves of 2,15,775 metric tonnes. In addition, about 51,489 metric tonnes of material will be generated as mining waste.

During the first year, the bench at 584 mRL shall be fully exhausted, while the bench at 578 mRL shall be worked partially. After completion of excavation, re-grassing and plantation of bushes and local tree species shall be carried out at the location marked as P-1, after spreading the soil cover.

Further, one check dam of 8 metres length and 1.5 metres height shall be constructed at the location marked C-1 on Plate No. 8. The topsoil available on the surface shall be collected and stacked at the designated soil dump S-1 location, while the waste material shall be dumped at the D.Y. location as shown in Plate No. 8.

Table showing activity during the 1st year

Production Of Each Mineral in the First Year (In MT)						
Bench	***Duration***	***Rl of Bench***	***Bench-wise Opening Reserves of Useable Minerals***	***Useable Minerals Consumed from the Bench***	***Bench Closing useable reserves***	***Mining Wastage - Silty Sand and topsoil/ Clay***
1 & 2	First Year	584	70875	70875	0	30375
		578	144900	49895	95005	21114
		Total	**215775**	**120770**	**95005**	**51489**



Graph Showing Reserves during 1st Year

Seal of Geological Wing, Ind. Dept. of H.P. APPROVED

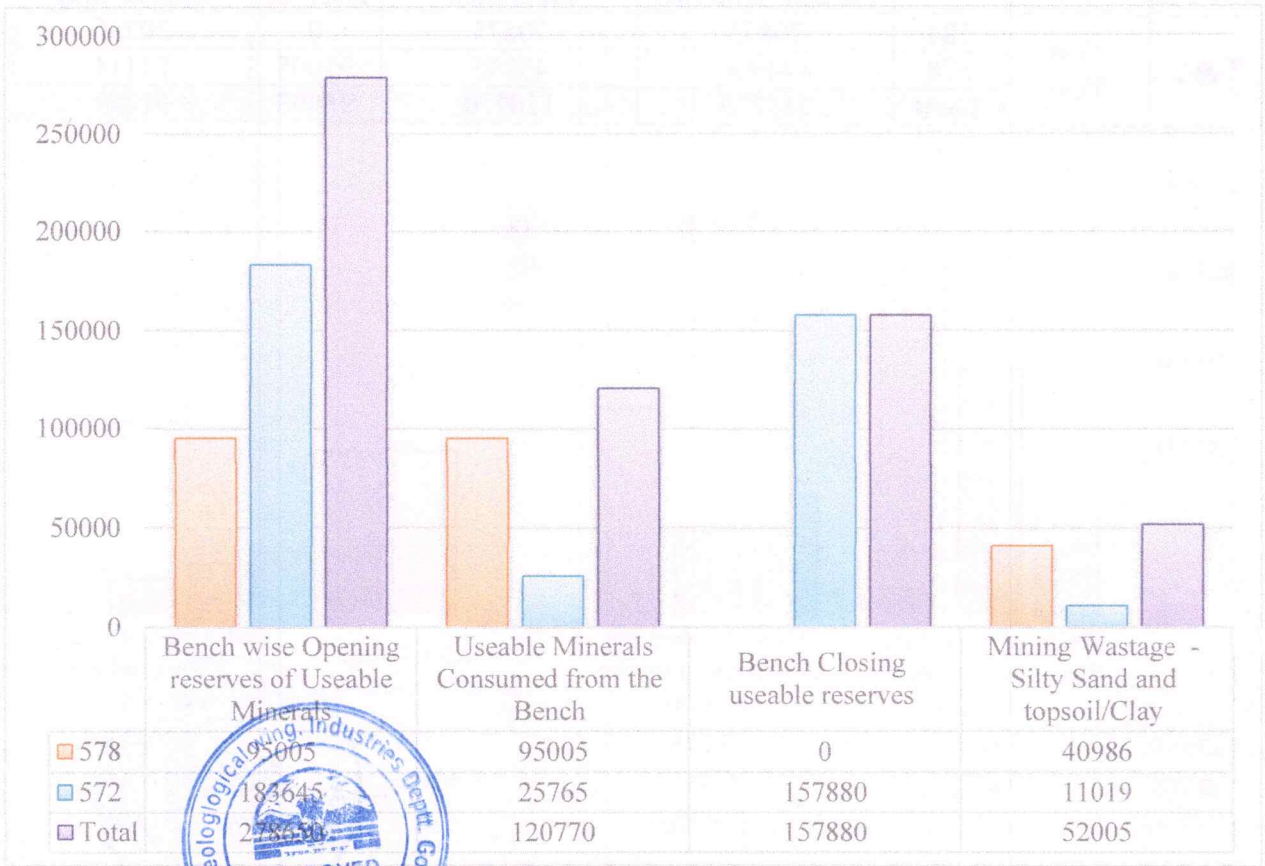
Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

4.3 (B) Developments and Production at the End of the IInd Year (Plate No.-9)

During the second year, a production of 1,20,770 metric tonnes of mineral (Stone/Boulder and Bajri) is proposed for the stone crusher unit. This will be achieved by fully exhausting the bench at 578 mRL and partly working the bench at 572 mRL, from which 25,765 metric tonnes will be extracted. The remaining reserves of this bench will be utilised in the next year. The total usable reserves of these benches are 2,78,650 metric tonnes. About 51,489 metric tonnes of mining waste will be generated, while the topsoil shall be collected and stored at S-2 (Plate No. 9). Re-grassing and plantation of bushes and local trees will be carried out at P-2 after spreading soil cover. In addition, a check dam of 8.00 m length and 1.50 m height shall be constructed at C-2 (Plate No. 9) to control erosion and manage water.

Table showing activity during the 2nd year

Production Of Each Mineral in Second Year (In MT)						
Bench	***Duration***	***Rl of Bench***	***Bench wise Opening reserves of Useable Minerals***	***Useable Minerals Consumed from the Bench***	***Bench Closing useable reserves***	***Mining Wastage - Silty Sand and topsoil/Clay***
2 & 3	Second Year	578	95005	95005	0	40986
		572	183645	25765	157880	11019
		Total	**278650**	**120770**	**157880**	**52005**



Graph Showing Reserves during 2nd Year

Seal of Geological Mining, Industries Deptt. Govt. of H.P. APPROVED

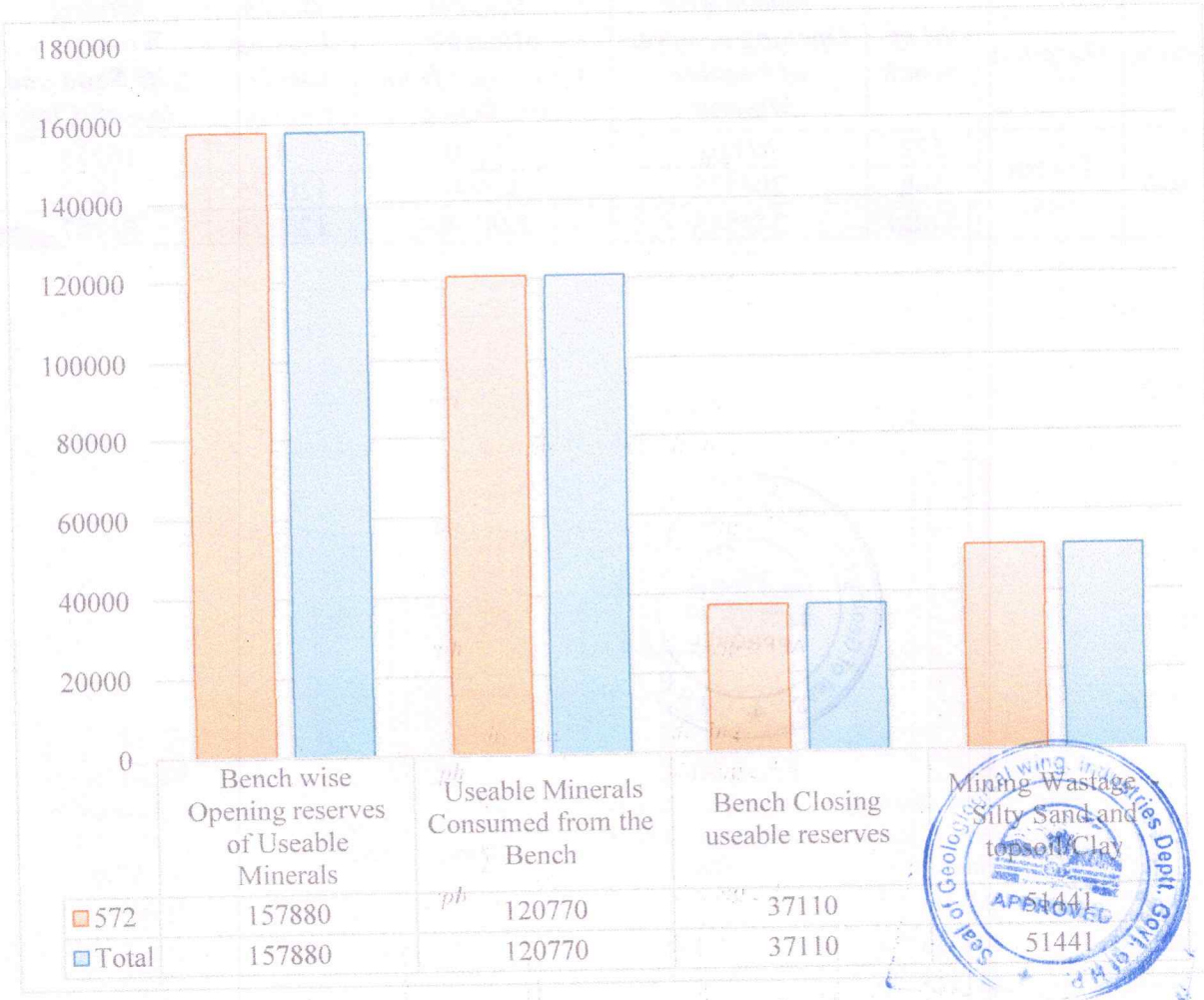
Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

4.3 (C) Developments and Production at the End of the Third Year (Plate No.-10)

During this year, production of 1,20,770 metric tonnes of mineral (Stone/Boulder and Bajri) shall be achieved from the 572 mRL bench, which will be partially worked. The balance reserves of this bench will be utilised in the next year. About 51,441 metric tonnes of mining waste will be generated. The topsoil generated shall be dumped at S-3 (Plate No. 10), while the previously stored topsoil will be lifted and spread over the exhausted benches. Re-grassing and plantation shall be undertaken on this bench at location P-3. In addition, a check dam of 8.00 m length and 1.50 m height shall be constructed at location C-3 (Plate No. 10).

Table showing activity during the 3rd year

Production Of Each Mineral in the Third Year (In MT)						
Bench	***Duration***	***Rl of Bench***	***Bench wise Opening reserves of Useable Minerals***	***Useable Minerals Consumed from the Bench***	***Bench Closing useable reserves***	***Mining Wastage - Silty Sand and topsoil/Clay***
3	Third year	572	157880	120770	37110	51441
		Total	**157880**	**120770**	**37110**	**51441**



Graph Showing Reserves during 3rd Year

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

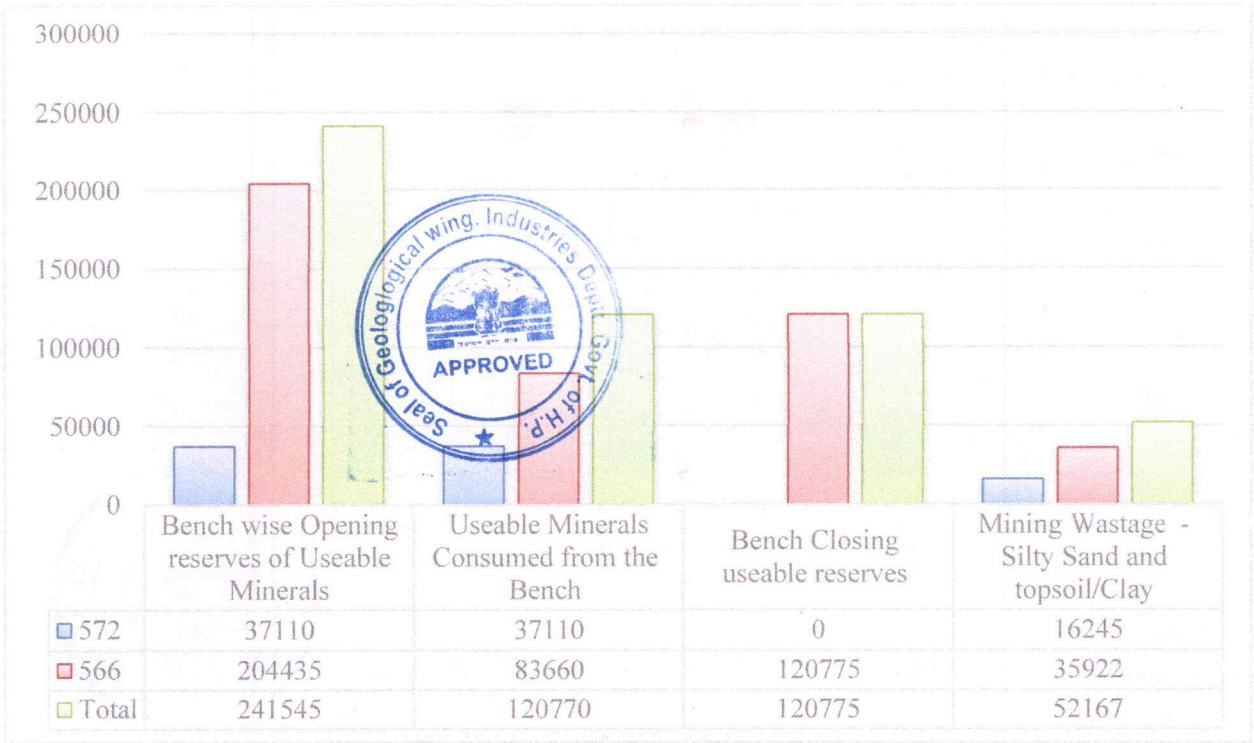
4.3 (D) Developments and Production at the End of the Fourth Year (Plate No.-11)

During this year, a production of 1,20,770 metric tonnes of mineral (Stone/Boulder and Bajri) is proposed to meet the requirement of the stone crusher unit. To achieve this, the remaining material from the 572 mRL bench and a new bench at 566 mRL shall be worked, having total usable reserves of 2,41,545 metric tonnes. The bench at 572 mRL will be fully exhausted, while the bench at 566 mRL shall be partly worked, with 83,660 metric tonnes extracted. The balance reserves of this bench will be utilised in the next year.

About 52,167 metric tonnes of mining waste will be generated. The topsoil produced shall be collected and dumped at S-4 (Plate No. 11). Re-grassing and plantation of bushes and local tree species shall be carried out at P-4 (Plate No. 11) after spreading the soil cover. Further, a check dam of 8.00 metres length and 1.50 metres height shall be constructed at C-4 (Plate No. 11) for water management and erosion control.

Table showing activity during the 4th year

Production Of Each Mineral in the Fourth Year (In MT)						
Bench	***Duration***	***Rl of Bench***	***Bench-wise Opening reserves of Useable Minerals***	***Useable Minerals Consumed from the Bench***	***Bench Closing useable reserves***	***Mining Wastage - Silty Sand and topsoil/Clay***
3 & 4	Fourth Year	572	37110	37110	0	16245
		566	204435	83660	120775	35922
		Total	**241545**	**120770**	**120775**	**52167**



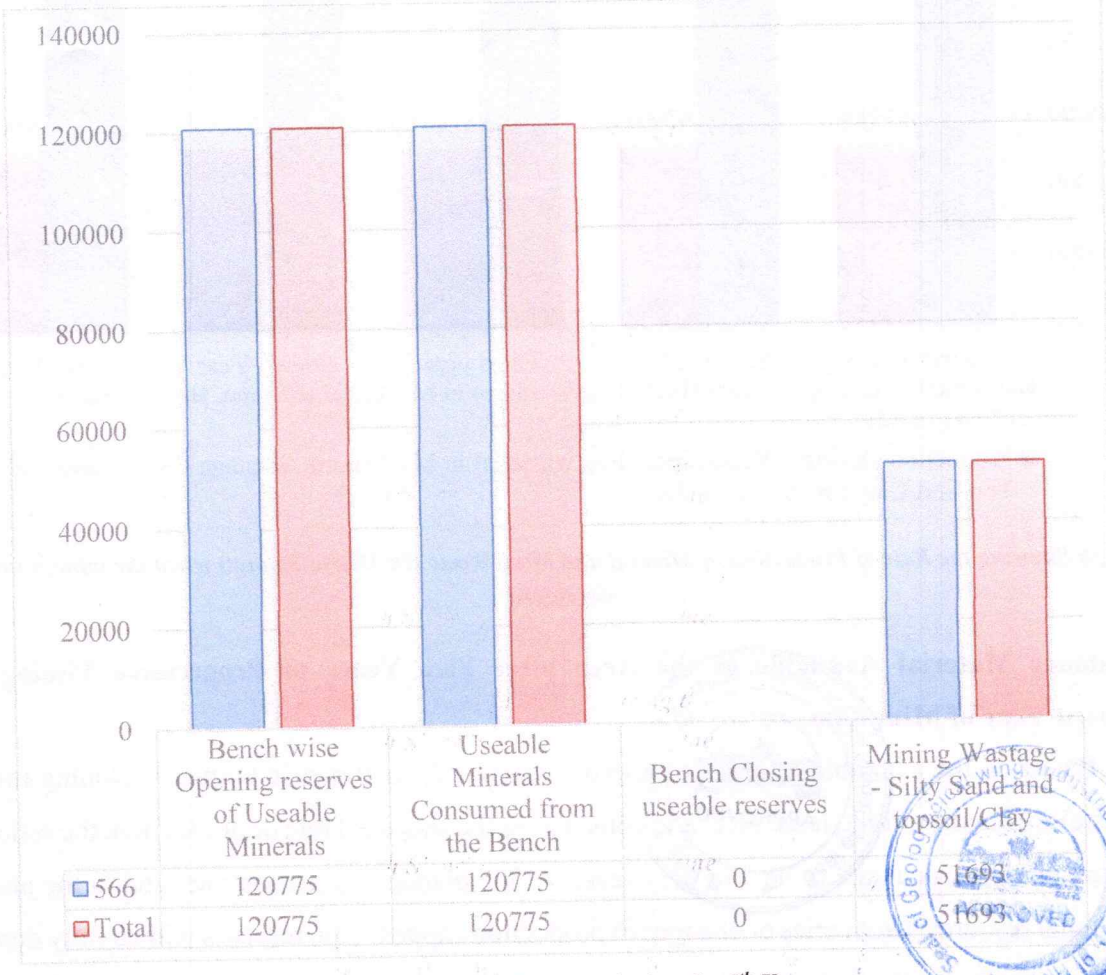
Graph Showing Reserves during 4th Year

4.3(E) Developments and Production at the End of the Fifth Year (Plate No.-12)

During FIFTH year, the entire remaining material of 1,20,775 metric tonnes from the 566 mRL bench shall be extracted to meet the requirement of mineral (Stone/Boulder and Bajri). This bench shall be fully exhausted. About 51,693 metric tonnes of mining waste will be generated. The topsoil generated shall be dumped at S-5 (Plate No. 12), while the previously stored topsoil shall be lifted and spread over the exhausted benches. Re-grassing and plantation shall be undertaken on this bench at P-5 (Plate No. 12). In addition, a check dam of 8.00 metres length and 1.50 metres height shall be constructed at C-5 (Plate No. 12).

Table showing activity during the 5th year

Production Of Each Mineral in Fifth Year (In MT)						
Bench	***Duration***	***Rl of Bench***	***Bench-wise Opening reserves of Useable Minerals***	***Useable Minerals Consumed from the Bench***	***Bench Closing useable reserves***	***Mining Wastage - Silty Sand and topsoil/Clay***
4	Fifth Year	**566**	120775	120775	0	51693
		Total	**120775**	**120775**	**0**	**51693**

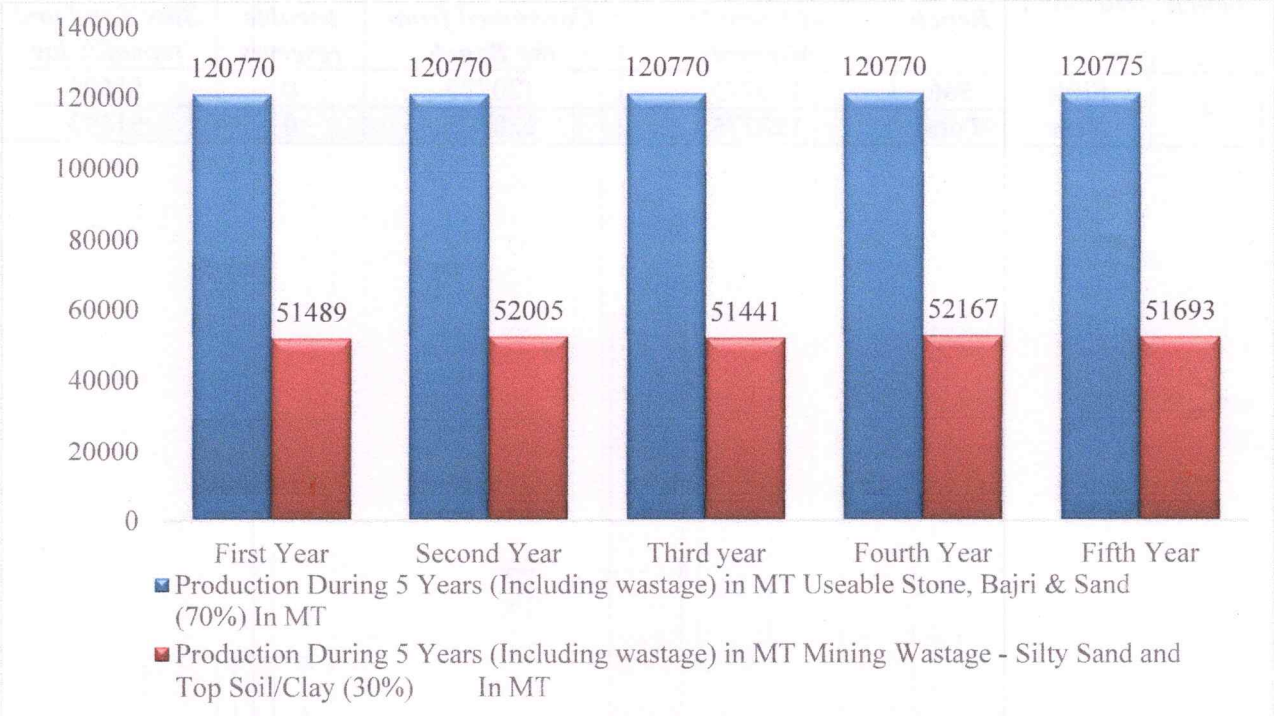


Graph Showing Reserves during the 5th Year

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

4.4 Proposed Rate of Production of Minerals (including wastage) and the Expected Life of the Mine after its opening:

Production During 5 Years (Including wastage) in MT			
Duration	***Useable Stone, Bajri & Sand (70%)***	***Mining Wastage - Silty Sand and Top Soil/Clay (30%)***	***Total***
In Year	***In MT***	***In MT***	***In MT***
First Year	120770	51489	172259
Second Year	120770	52005	172775
Third year	120770	51441	172211
Fourth Year	120770	52167	172937
Fifth Year	120775	51693	172468
Total	**603855**	**258795**	**862650**



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

Based on the available reserves of approximately 8,62,650 metric tonnes (including mineral and waste) within the mining lease area, and considering the proposed rate of production, the estimated life of the mine is calculated to be five (05) years. At the planned extraction rate, and in the absence of additional resource discoveries or changes in production capacity, the reserves will be fully depleted within this timeframe. Accordingly, the mine's operational lifespan under the present mining plan is projected to be five years.

4.6 Salient Feature of Mode of Working

The proposed mining operations will be carried out through a combination of mechanical and manual methods. Mechanical excavation will be conducted using excavators, poclains, and backhoe loaders, while manual mining will involve the development of six-meter-high benches to ensure systematic and safe extraction. No blasting activities will be undertaken unless explicit permission is obtained from the competent authorities, ensuring compliance with regulatory and safety standards.

4.7 Extent of Mechanization

The mining operations will be conducted through a combination of mechanical and manual methods. Mechanical extraction will be carried out using excavators, backhoe loaders, or chain-mounted excavators, while manual labour will also be employed where necessary. However, mechanical mining activities will commence only after obtaining the requisite permissions from the competent authorities, ensuring full compliance with regulatory and environmental guidelines.

4.8 Blasting

As per the current mining plan, no blasting operations are proposed for the excavation of minor minerals within the lease area. The extraction will be carried out solely through mechanical means (excavators, backhoe loaders, or chain-mounted excavators) and manual methods, ensuring minimal environmental disturbance and enhanced safety.

4.9 Mine Drainage

The proposed mining lease area is situated on a hill slope, and post-mining, the natural topography will retain a sufficient gradient to allow rainwater to drain naturally, eliminating the need for a specific drainage design. Additionally, no water bodies, seepages, or springs are present within the lease area that would require channelization. As per groundwater data obtained from the IPH Department, the water table is located 100-120 feet below the surface, ensuring that mining operations will neither encounter nor disturb the groundwater level.

4.10 Waste Management

Being the hilly terrain of the site, open-cast mining has been proposed as the most feasible extraction method. During bench development, an estimated 258795 metric tonnes of silt-mixed clay/soil and mining waste will be generated. This waste material will be systematically disposed of within the applied mining lease area at designated DY (Waste) locations, as depicted in Plates No. 8 to 12, following a year-wise dumping plan. Additionally, the topsoil and waste material will be repurposed by spreading them over worked-out benches to facilitate land reclamation and plantation efforts, ensuring sustainable post-mining land rehabilitation.

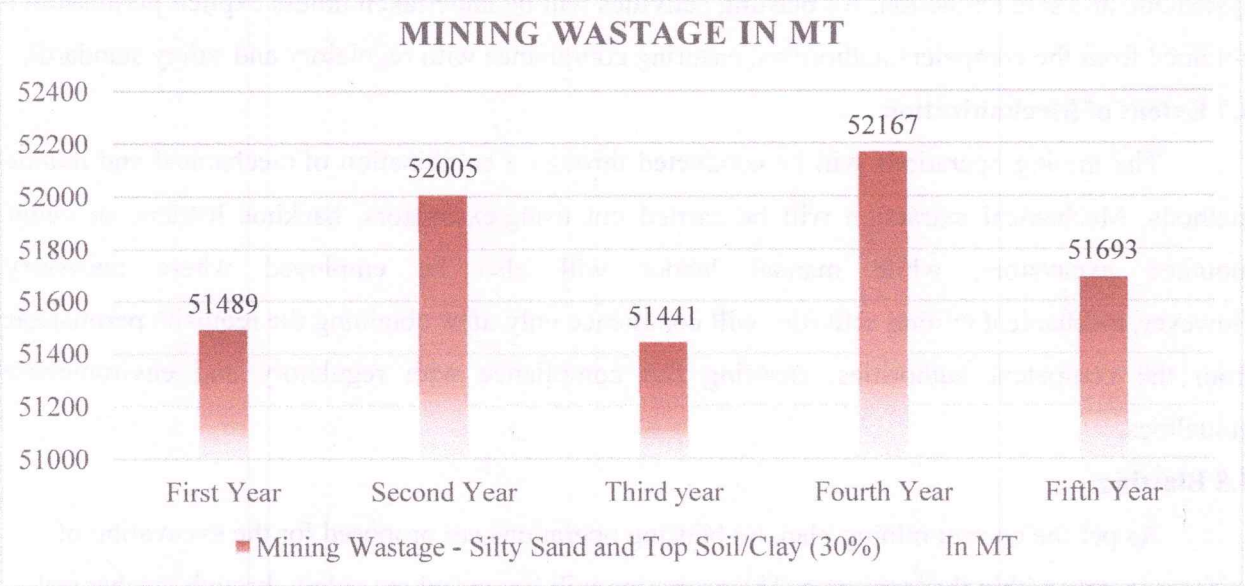
The year-wise silt mixed clay and topsoil generated is as under.

APPROVED

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

Table Showing Yea wise Wastage generated in 5 years

Mine Waste During 05 Years of Production in Metric Tonnes					
YEAR	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR
Mine Waste	51489	52005	51441	52167	51693



Graph Showing year wise Top Soil generated during 5 years period in Metric Tonnes

A portion of the excavated silt-mixed clay/soil and mining waste may have commercial value as filling material, subject to market demand. The remaining non-marketable material will be strategically dumped at designated waste disposal sites (DY) within the lease area or used for ecological restoration. This includes spreading the material over worked-out benches to support plantation efforts or preparing the land for agricultural development, ensuring sustainable post-mining land use.

4.11 End Use of Minerals

The extracted minor minerals from the mining lease area shall be transported to the applicant's already established stone crusher unit, operating under the name ***"M/s AAR ESS Stone Crusher."*** Here, the raw material will be processed to produce grit and manufactured sand (M-Sand), which are essential for construction and infrastructure projects

4.12 Details of Density of Road Transportation of Minerals

The applied mining lease area is located on a hill slope, ensuring minimal disruption to local traffic since no existing routes connect the site to the stone crusher unit. As per the proposed mining plan, an average of 120770 metric tonnes of usable material (excluding Silty Sand and topsoil/Clay and wastage) will be extracted annually. This translates to roughly 440-450 metric tonnes per day, assuming 270 working days per year. To facilitate transportation, an estimated 30-35 trucks (each with a 15 MT capacity) will be required daily.

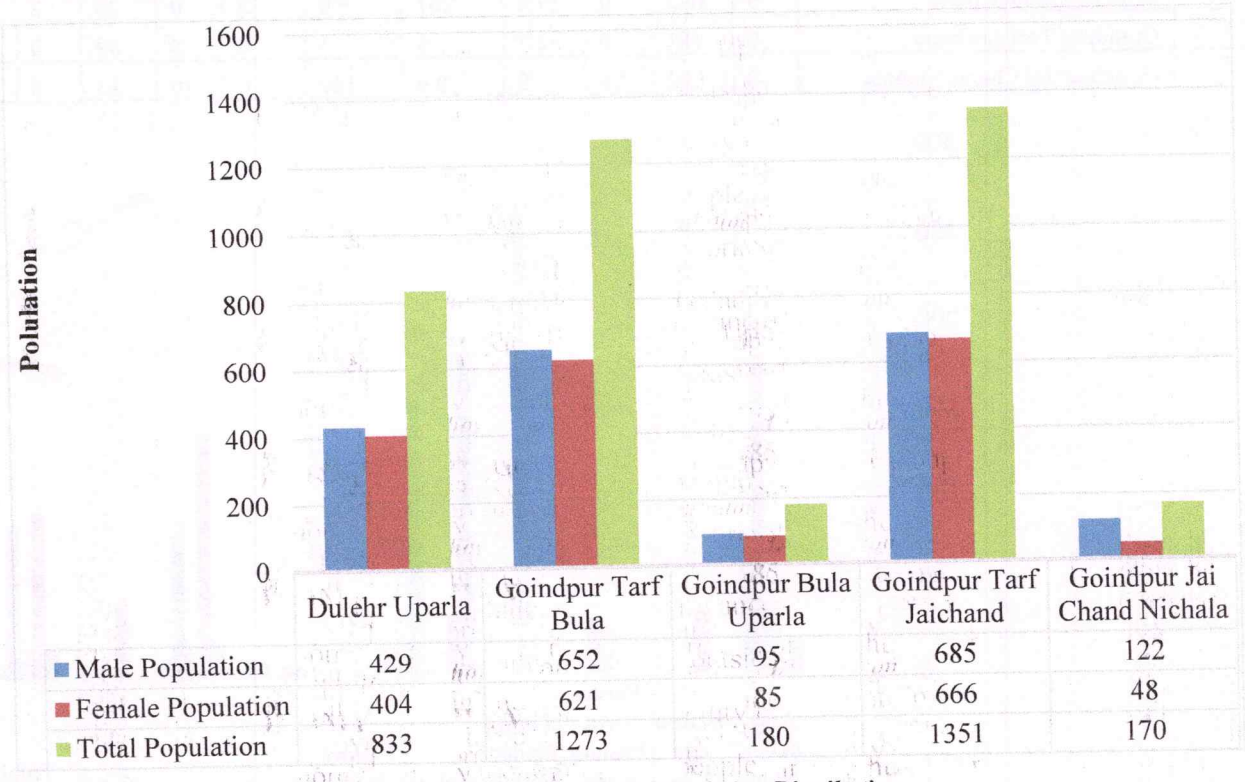
PART –II
ENVIRONMENT MANAGEMENT PLAN

(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

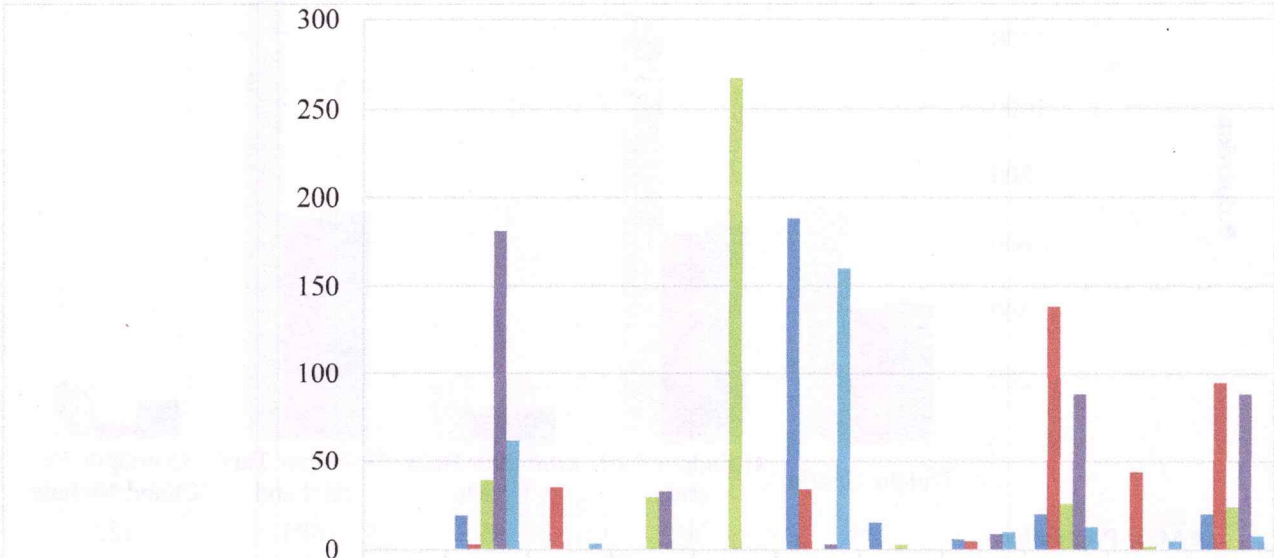
1.2 SOCIO-ECONOMY OF THE VILLAGE:

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

Table Showing Details of the Land use Pattern of the Surrounding Villages												
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



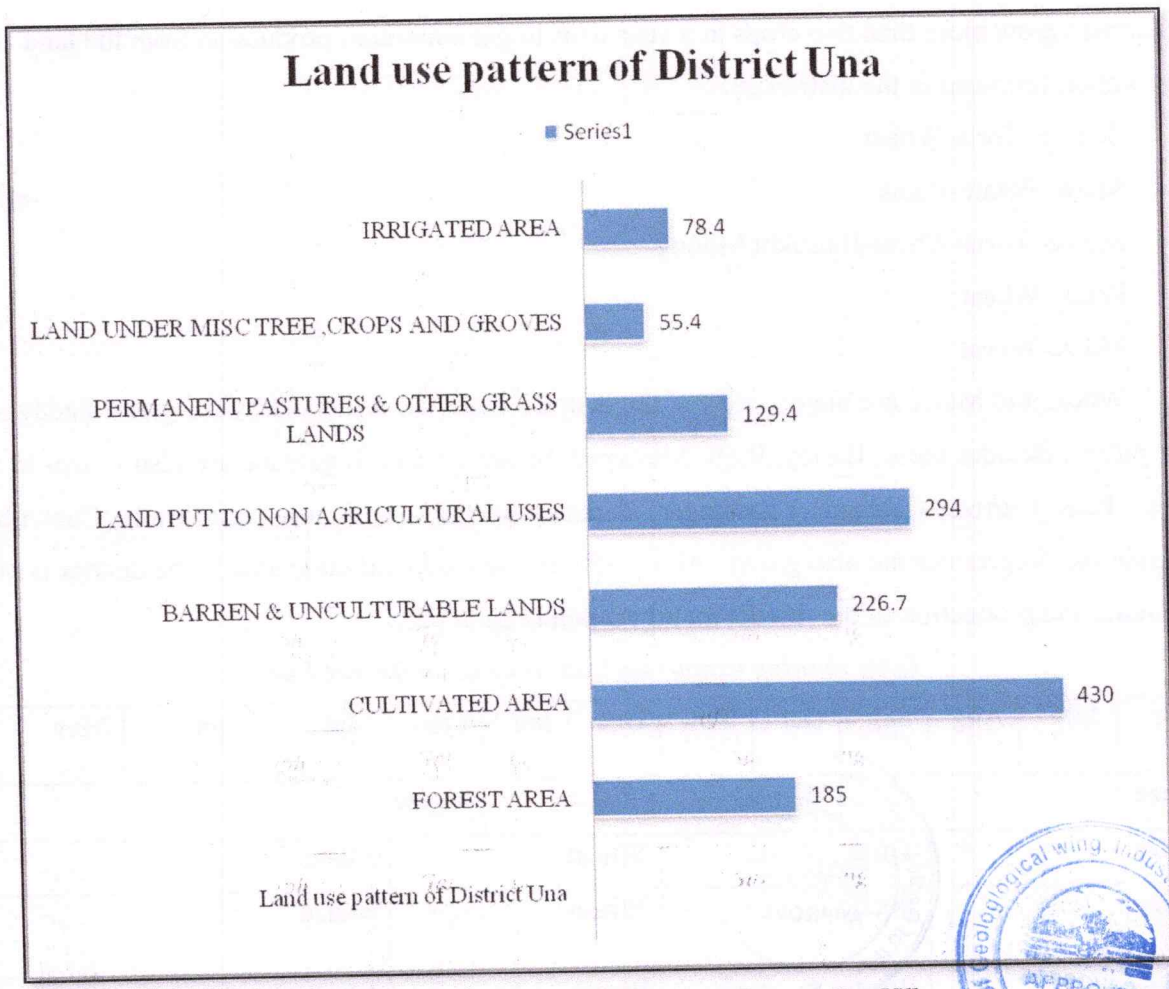
	Forest (in Hect.)	Area under Non-agricultural Uses (in Hect.)	Barren and Un-cultivable Land (in Hect.)	Permanent Pastures and Other Grazing Lands(in Hect.)	Land Under Miscellaneous Tree Crops etc.	Culturable Waste Land	Fallow lands other than current fallows	Current Fallows	Net Area Sown	Total Irrigated Land Area	Total Un-irrigated Land Area
Dulehr Uparla	0	19	0	0	0	188.2	15.3	6.1	20	0	20
Goindpur Tarf Bula	0	3	35	0	0.0	34	0	5	139	44	95
Goindpur Bula Uparla	0	39.3	0	29.4	267	0	3	0	26	2	24
Goindpur Tarf Jaichand	0	181	0	32.7	0	3	0	9	89	0	89
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^2**
1	**FOREST AREA**	**185 m^2**
2	**CULTIVATED AREA**	**430 m^2**
3	**BARREN & UNCULTURABLE LANDS**	**226.7 m^2**
4	**LAND PUT TO NON-AGRICULTURAL USES**	**294 m^2**
5	**PERMANENT PASTURES & OTHER GRASSLANDS**	**129.4 m^2**
6	**LAND UNDER MISC TREE, CROPS AND GROVES**	**55.4 m^2**
7	**IRRIGATED AREA**	**78.4 m^2**



Graph Showing General Land Use Pattern of Surrounding Villages

Geological Wing, Industries Deptt. Govt. of H.P. APPROVED

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

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		

Geological Wing Industries Seal of HP APPROVED

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			

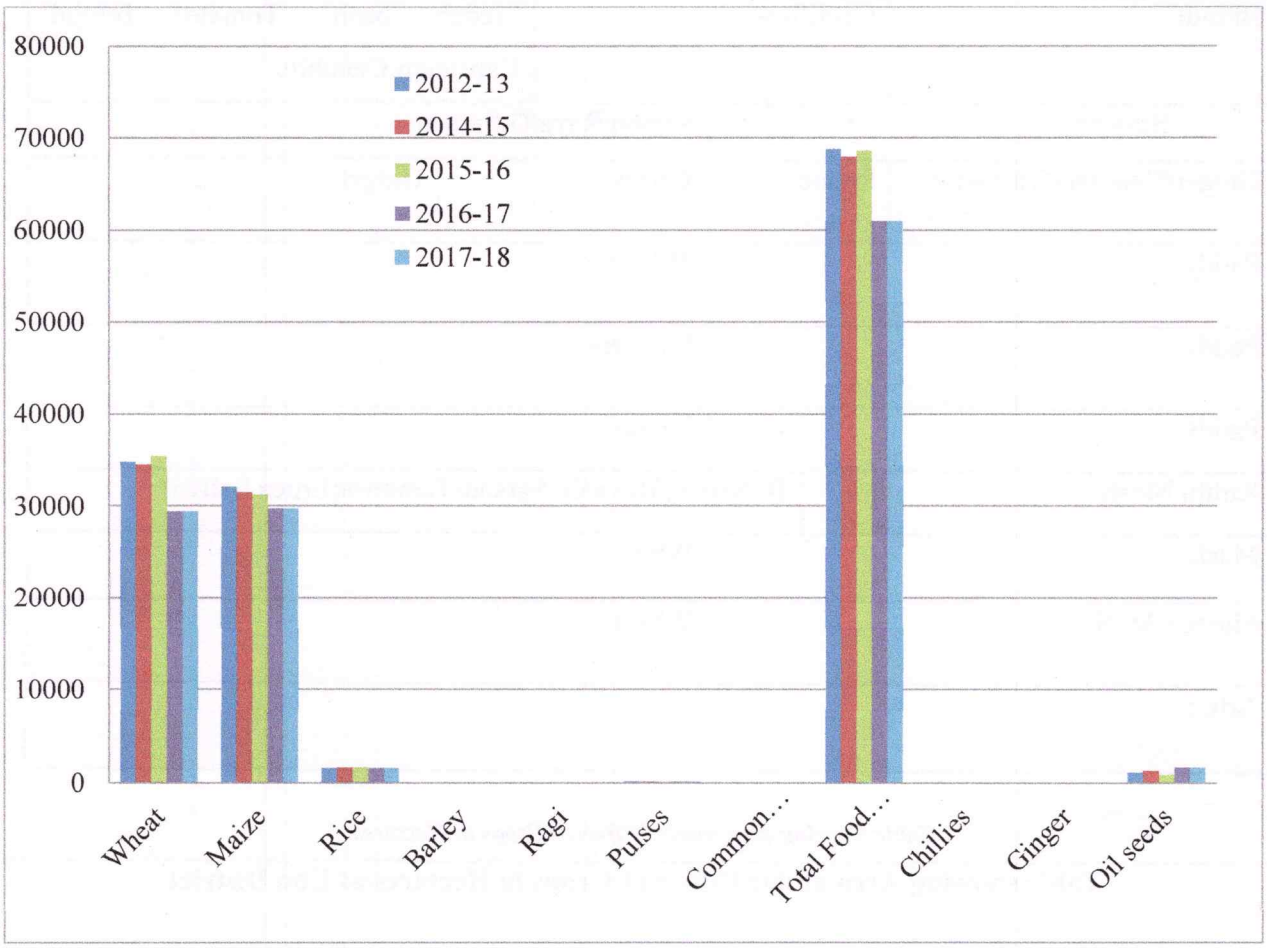
Table showing area under Different Crops in Hectares

Table showing Area under Different Crops in Hectares at Una District

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

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019



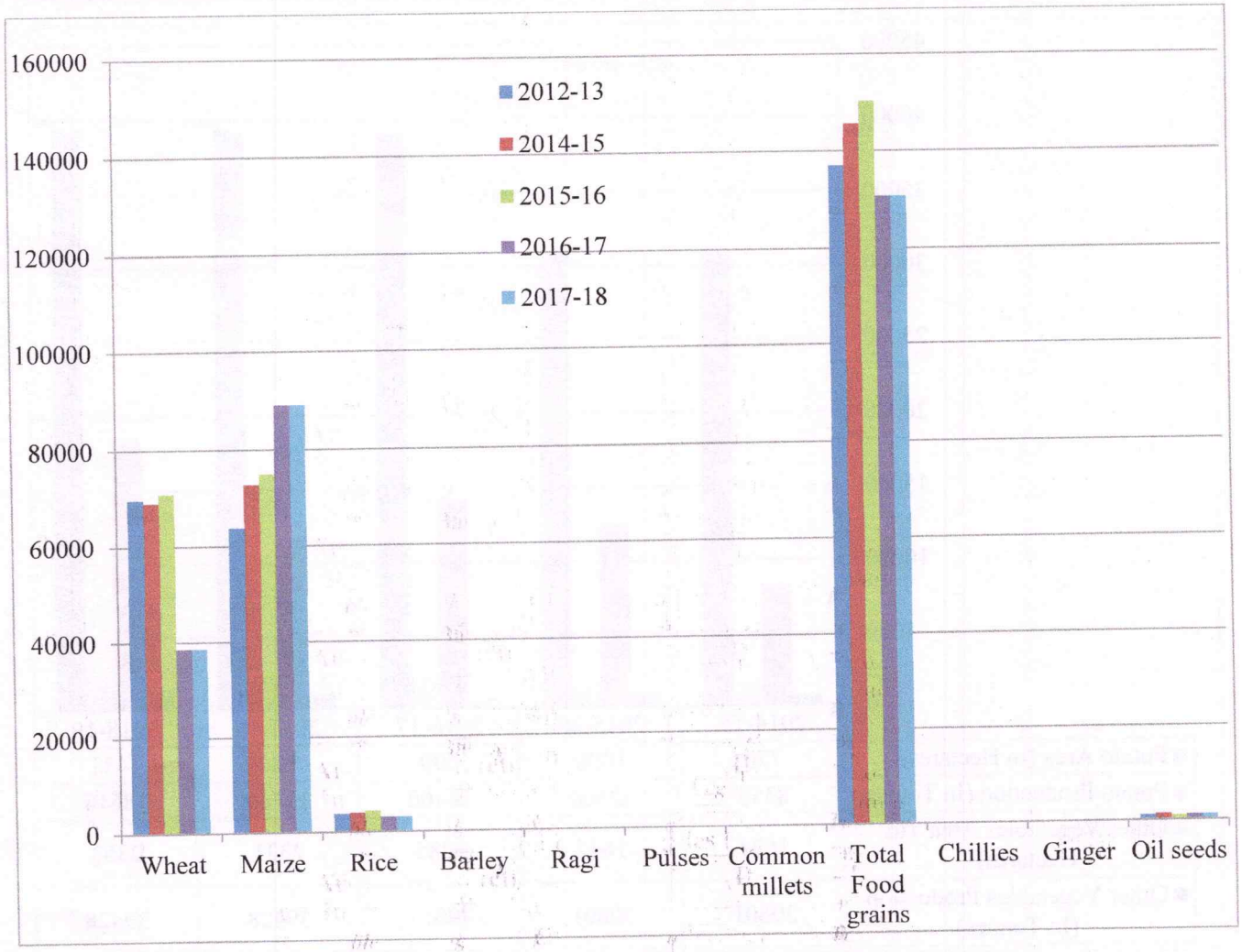
Graph Showing Area under Different Crops in Hectares

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



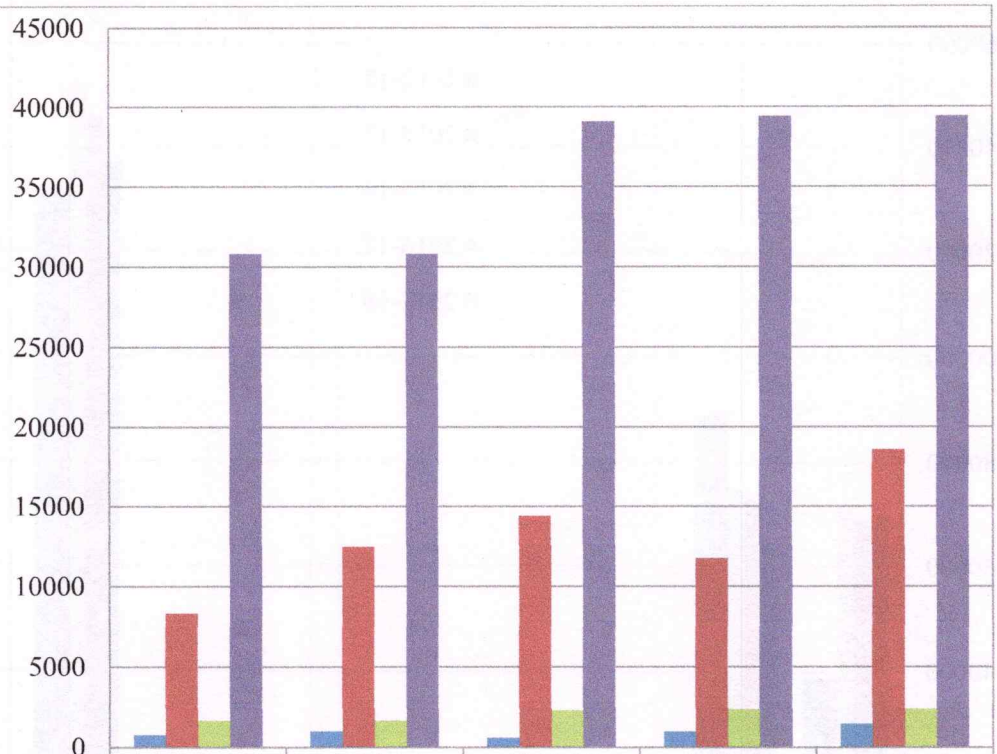
Graph Showing Production of Different Crops in MT

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

Arun Dhiman
REG.NO. – H.P./R.Q.P/35/2/2019



	2014-15	2015-16	2016-17	2017-18	2018-19
Potato Area (In Hectares)	770	1000	600	980	1431
Potato Production (In Tonnes)	8350	12500	14400	11760	18610
Other Vegetables Area (In Hectares)	1634	1647	2285	2331	2353
Other Vegetables Production (In Tonnes)	30801	30801	39067	39428	39428

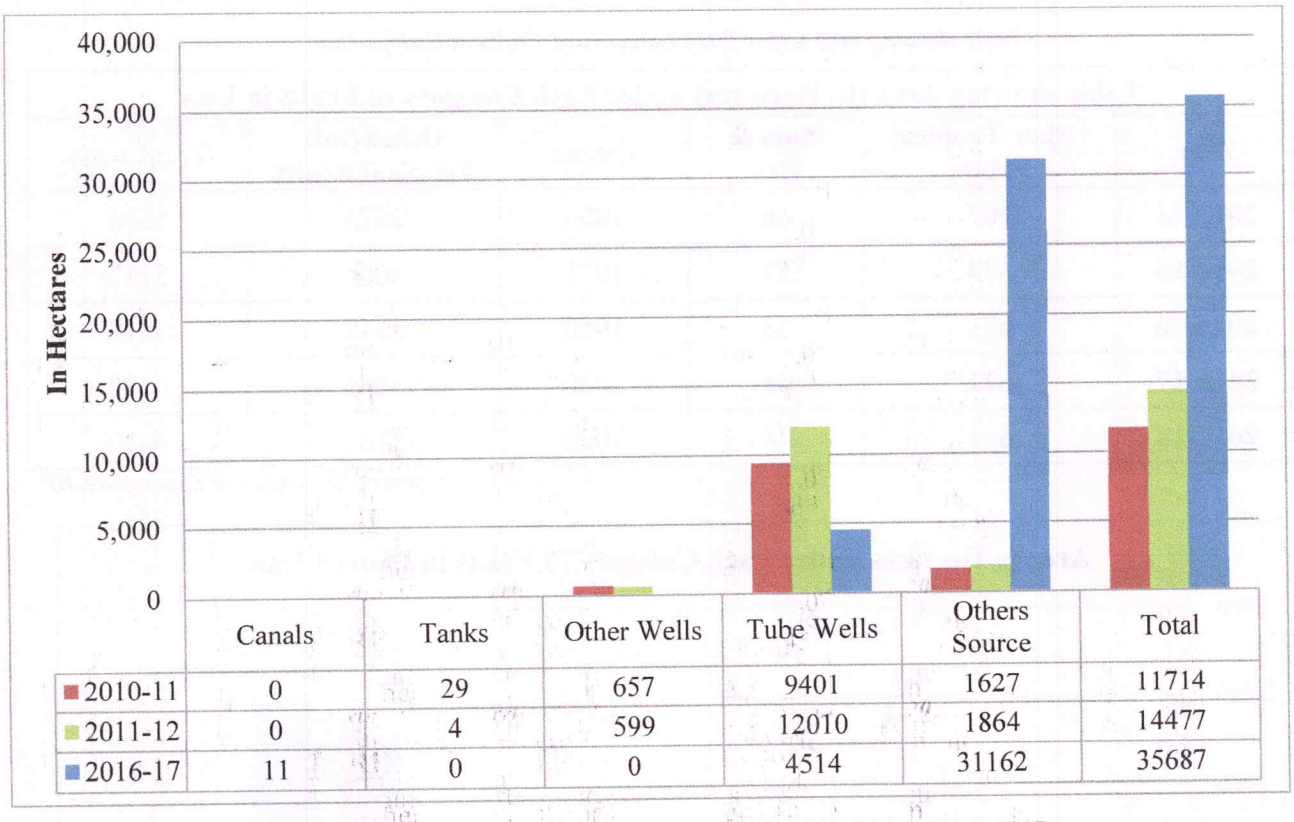
Graph showing the production of vegetables in District Una

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





	Canals	Tanks	Other Wells	Tube Wells	Others Source	Total
2010-11	0	29	657	9401	1627	11714
2011-12	0	4	599	12010	1864	14477
2016-17	11	0	0	4514	31162	35687

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:

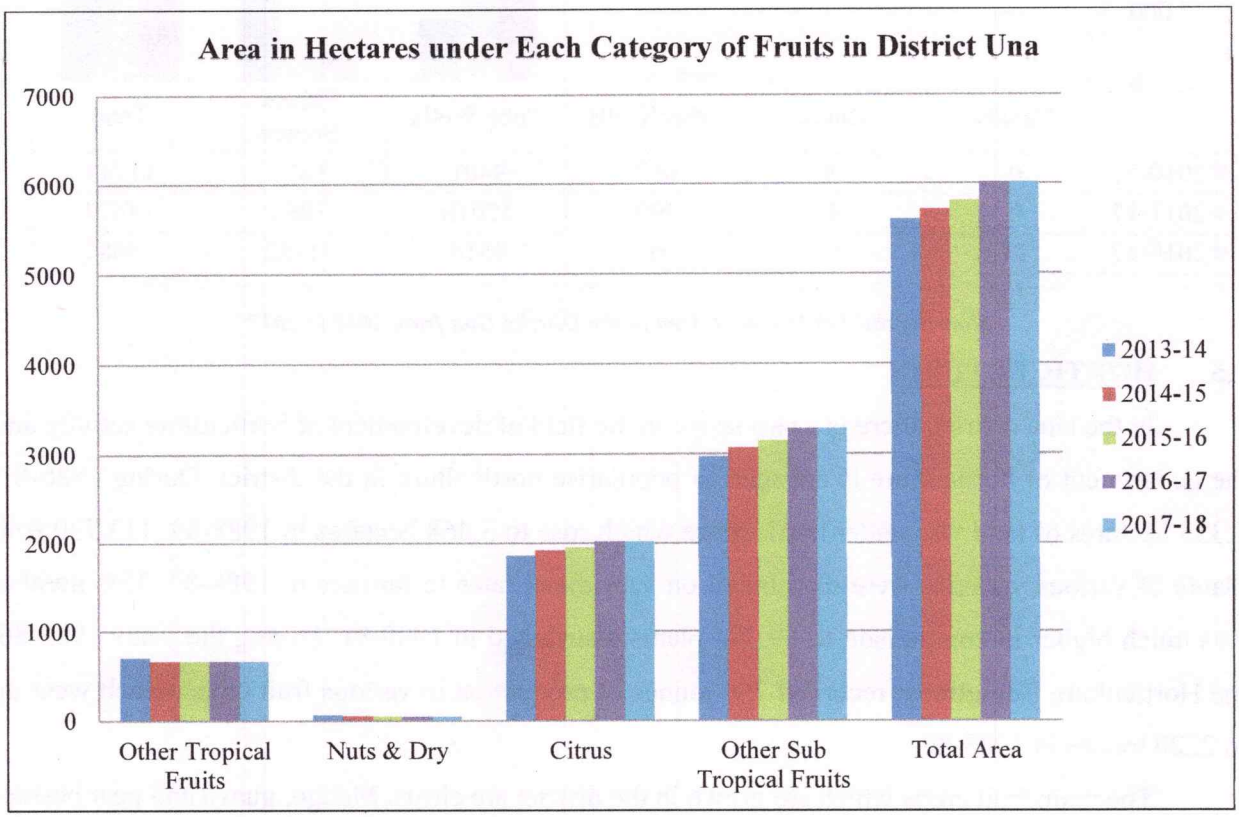
I Plum
II. Peach
III. Apricot
IV. Pear
V Nuts and dry fruits
VI Citrus fruits
VII. Sub Tropical fruits like Mango, Guava, Lichi, Papaya etc.

Dept. of Geological wing, Industries Dept. Govt. of H.P.
APPROVED

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

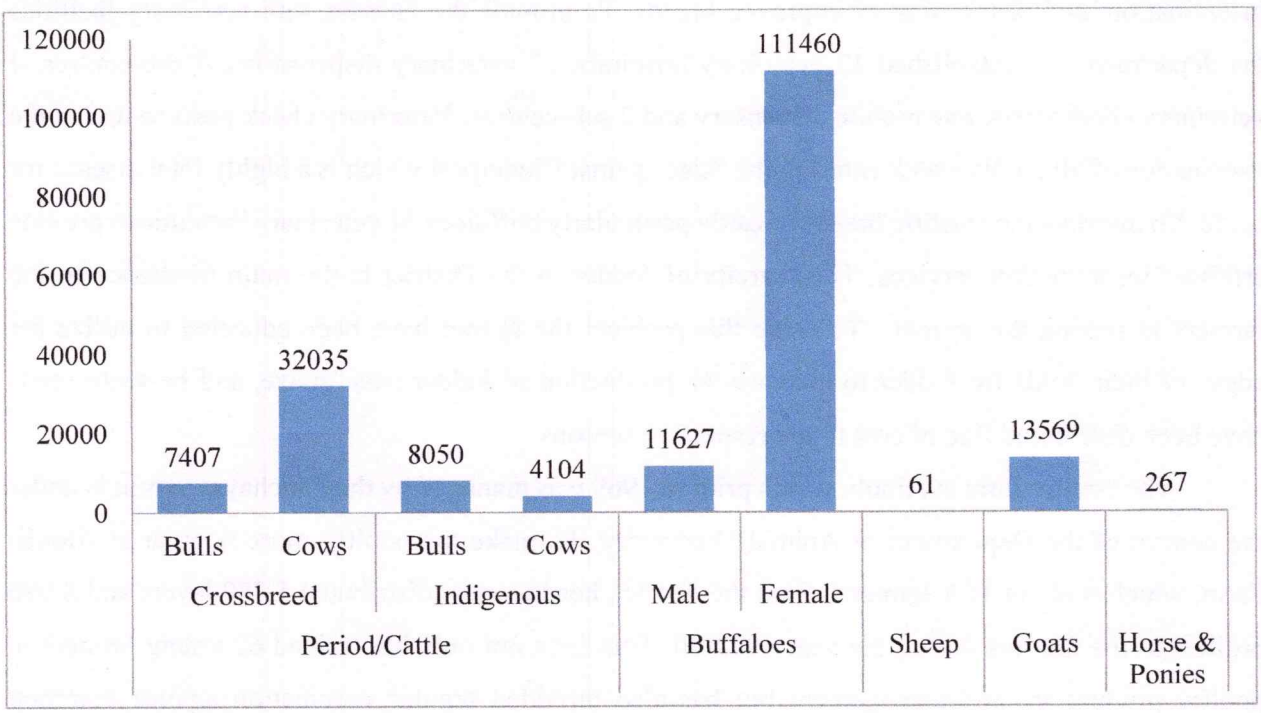
The following are important poultry bids:

I. Fowl
II. Ducks (Rare)

Table showing Livestock census of District Una

Animal Husbandry Population in District Una										
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

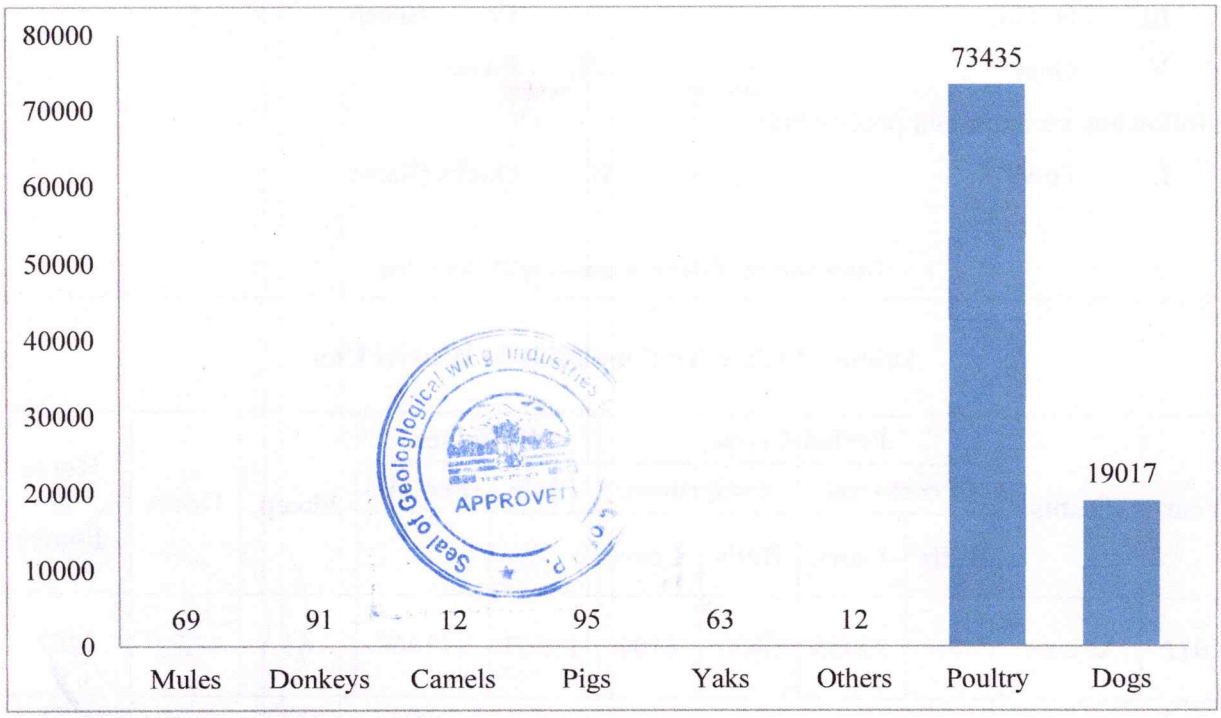


Graph Showing Livestock Census of the Una District

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.

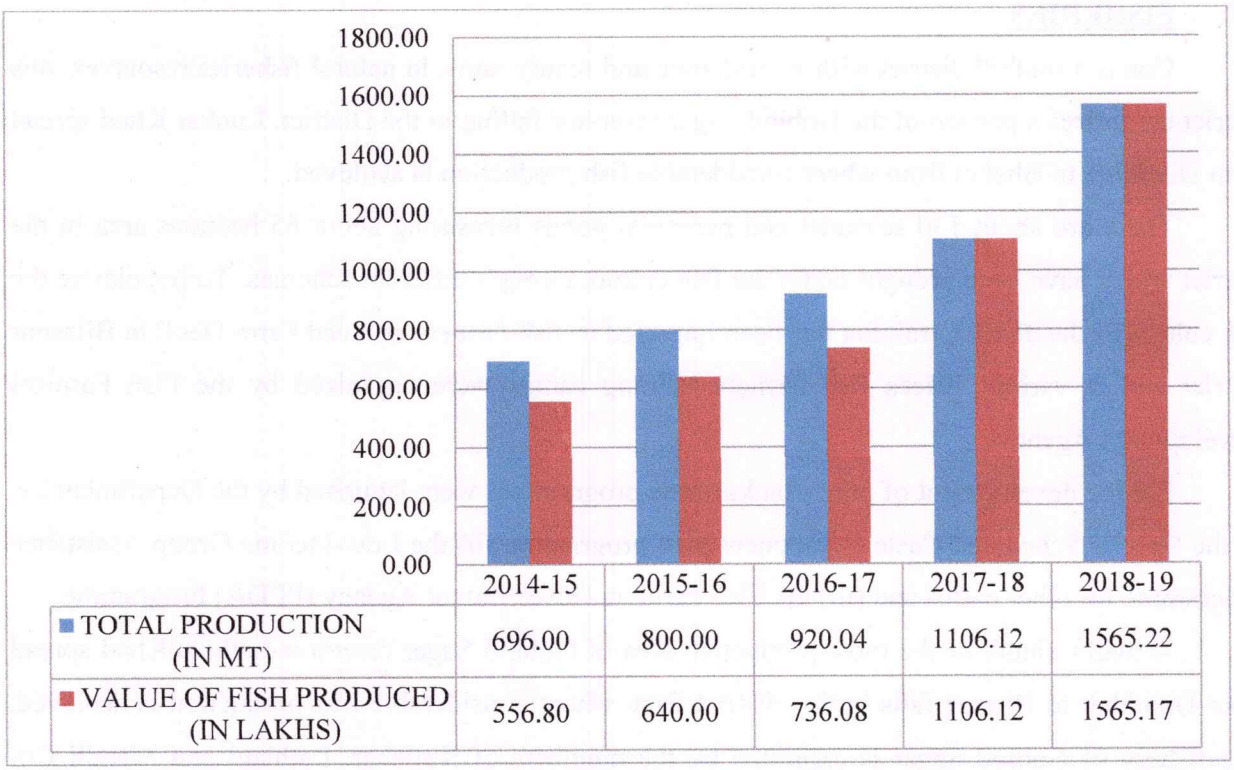
A major chunk of the most productive area of Gobind Sagar reservoir-LathianiKhad spread from Dumkhar to Bhakra falls in this district from where considerable fish production is achieved. The fishery of Gobind Sagar is exploited by the members of Kutlehar. Lathiani and Mandli Co-operative societies.

Table Showing Annual Production of Fisheries and Its Value of Catch in District Una

Table showing Annual Production of Fisheries at Una District		
YEAR WISE	**TOTAL PRODUCTION (IN MT)**	**VALUE OF FISH PRODUCED (IN LAKHS)**
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





	2014-15	2015-16	2016-17	2017-18	2018-19
TOTAL PRODUCTION (IN MT)	696.00	800.00	920.04	1106.12	1565.22
VALUE OF FISH PRODUCED (IN LAKHS)	556.80	640.00	736.08	1106.12	1565.17

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	(Grewiaoppsitifolia)
5	Chil	(Pinus Rose burghi)
6	Simbal	(Bomberemalabaricum)
7	Tuni	(Cedrclatoana)

Geological wing, Industries H.P. APPROVED Seal of

8	Jamun	(Engeniajambolana
9	Bamboo	
10	Brah	
11	Tos	

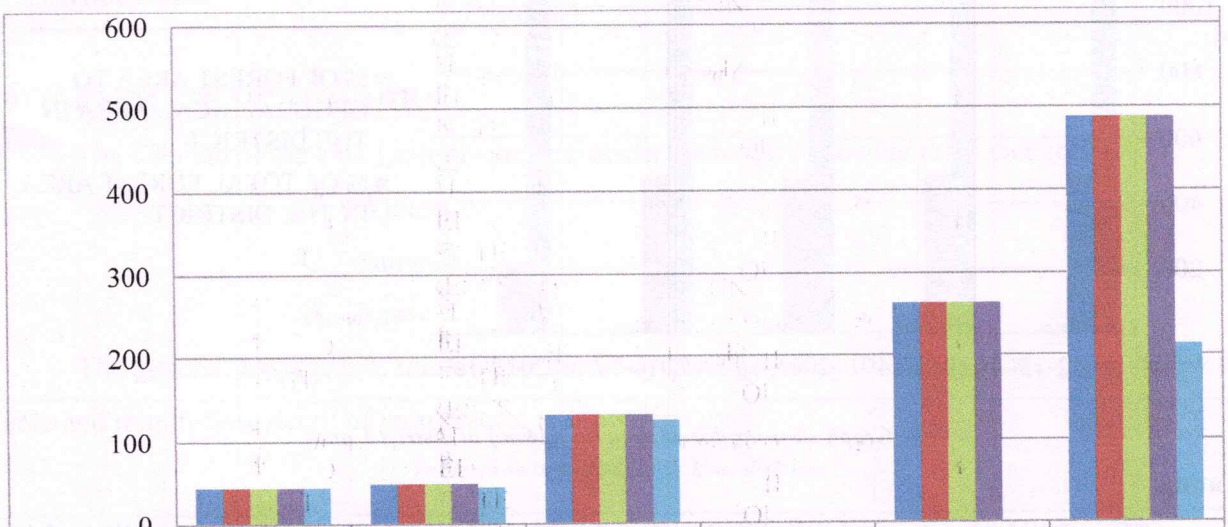
Broadleaf species

Ber and other bushes

Table Showing classification of forest area (in sq.km.) of district Una

CLASSIFICATION OF FOREST AREA (IN SQ.KM.) OF UNA DISTRICT						
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



	RESERVED FOREST	DEMARCATED PROTECTED FORESTS	UN-DEMARCATED PROTECTED FORESTS	UNCLASSIFIED FORESTS	OTHERS FORESTS	TOTAL
2012-13	44	48	131	0	264	487
2013-14	44	48	131	0	264	487
2015-16	44	48	131	0	264	487
2016-17	44	48	131	0	264	487
2017-18	44	44	124	0	0	212

Graph showing the classification of forest area (in sq.km.) of district Una

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

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 Climate in Una district

CLIMATE AROUND THE MINING LEASE AREA DISTRICT UNA, HIMACHAL PRADESH			
CLIMATE	**WINTER**	**SUMMER**	**RAINY SEASON**
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 waste 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 proposed mining lease area is situated in Village Gondpur Bullha, featuring a hill slope topography and accessible via a 1.0 km kaccha road branching off RHS from Gondpur Bulla. Located approximately 17 km from the nearest major town, Haroli, the site currently experiences negligible traffic. However, transporting extracted minerals to the crusher unit and approaching roads may involve traversing private and government-owned lands. The project proponent will secure prior agreements with all relevant landowners and independently resolve any logistical challenges to ensure seamless operations.

The region's road network well-connected to key hubs like Una, Nangal, Hoshiarpur, Panchkula, and Chandigarh is structurally robust and capable of accommodating the anticipated mining-related traffic. As the existing infrastructure is deemed sufficient, no road upgrades or reinforcements are planned, minimizing potential disruptions to local communities or transportation systems.



Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

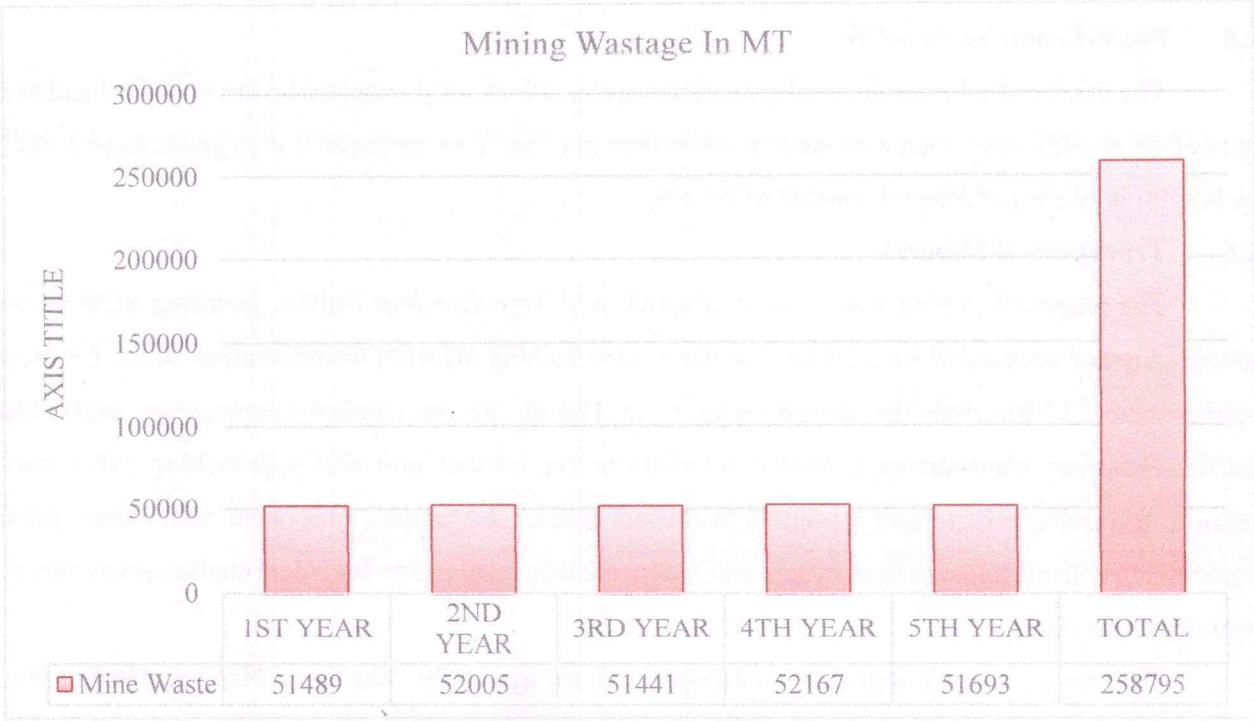
PART-III
PROGRESSIVE MINE CLOSURE PLAN/ RECLAMATION PLAN

1.1 MINE WASTE DISPOSAL

A) YEAR WISE GENERATION OF MINE WASTE

Production of mine waste during five years

Year Wise Mining Wastage (Silty Clay and Top Soil)						
YEAR	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR	***TOTAL***
Mine Waste	51489	52005	51441	52167	51693	***258795***



Graph showing year-wise generation of mine waste

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 waste material generated during mining operations will be transported to the designated dump site using a combination of trucks and manual labor, adding a nominal cost of approximately Rs. 10 per tonne to the overall mining expenses. Based on the projected total waste production of 43,132 tonnes over five years, the cumulative expenditure for waste disposal is estimated at Rs. 4,31,320/-.

1.2 TOPSOIL ARRANGEMENT:

The extracted topsoil will be carefully spread over the developed benches created during mining operations to facilitate ecological restoration. This systematic application of topsoil will create suitable

conditions for growing plantations, enabling progressive reclamation of the mined areas. The approach ensures effective land rehabilitation by restoring vegetation cover, preventing soil erosion, and maintaining the ecological balance of the site in compliance with sustainable mining practices.

1.3 PREVENTIVE RETAINING STRUCTURES

a. To ensure effective erosion control and water management, five retaining structures/gabion check dams (each measuring 8 meters in length × 1.5 meters in height) will be constructed progressively over the five-year mining period, as illustrated in the year-wise schemes (Plate Nos. 8–12).

b. Each structure is estimated to cost Rs. 60,000 resulting in a total expenditure of Rs. 1,80,000 for all five structures. These engineered barriers will mitigate soil erosion, stabilize slopes, and enhance water retention capacity, aligning with sustainable mining practices and regulatory requirements for environmental protection. The phased implementation ensures systematic land rehabilitation while optimizing cost efficiency.

1.4 PLANTATION WORK (RE-GRASSING OF MINING AREA)

Recognizing the critical role of vegetation in restoring ecological balance, the project incorporates a comprehensive afforestation program designed to rehabilitate the mined area systematically. In the initial phase, fast-growing grasses and bushes with fibrous root systems will be planted to stabilize the soil and prevent erosion through their natural binding properties. Once the ground is secured, native tree species—carefully selected in consultation with ecological experts—will be introduced, considering site-specific factors such as soil composition, topography, and climatic conditions.

The long-term vision for post-mining land use focuses on establishing a self-sustaining grazing ecosystem, combining hardy pasture grasses with strategically scattered native trees and shrubs. This approach not only promotes biodiversity and carbon sequestration but also ensures the land remains productive for local communities. By prioritizing ecological resilience and sustainable land management, the project aligns with global best practices in environmental stewardship while fulfilling regulatory obligations for mine closure and reclamation.

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.

APPROVED
Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

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	1St Year	8000	40
2	2nd year	8000	40
3	3rd year	8000	40
4	4th Year	8000	40
5	5th Year	8000	40
	Total	**40000**	**200**

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 significant volume of construction activity is taking place in both the private and Government sectors. Grit is a basic requirement for construction, and to ensure an uninterrupted supply, it is necessary to promote such mining activity so that the demand for construction material can be met locally.

Safety Measures Proposed in the Mining Lease Area

- To ensure safe and scientific mining operations, the following safety measures shall be adopted after assessing the potential hazard risks:
- All provisions of the Mines Act, 1952, Metalliferous Mines Regulations, 1961, Mineral Conservation and Development Rules, and other applicable mining laws shall be strictly complied with.
- Personnel working in dusty areas shall be provided with protective respiratory devices.
- Only experienced drivers with valid licences/documents shall be permitted to transport minerals.
- Occupational health check-ups of all employees/workers shall be conducted periodically (at least once every year) to monitor health impacts due to dust exposure. Corrective measures shall be taken immediately, if required.
- All emergency contact numbers (hospitals, police, fire services) shall be displayed at the site. Workers shall be informed about the nearest health centres and hospitals. First aid kits will be kept readily available at the site.
- All supervisory staff shall be provided with reliable communication facilities.
- Road signage shall be installed and properly maintained at suitable stretches after site assessment.

Arun Dhiman
REG.NO. – H.P./R.Q.P/25/2/2019

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. 145, 147, 149, 150, 165, 166, 167, 169 & 171 (Pvt. Land) measuring 03-53-76 Hectares(Hill Slope) falling in Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla of Tehsil Haroli, District Una, Himachal Pradesh for the extraction of sand, stone & bajri in favour of Sh. Yogesh Kumar, Partner M/s Aar Ess Stone Crusher, Village & P.O. Gondpur Bulla, Tehsil Haroli, Distl. Una, Himachal Pradesh to be used in already established stone crusher unit in the name and style as for use in already established stone crusher unit under name & style of Sh. Yogesh Kumar, Partner ***M/s Aar Ess Stone Crusher*** *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*

DECLARATION

*This is to declare that the Mining Plan includes the Progressive Mine Closure Plan of minor mineral quarry comprising of of Khasra nos. 145, 147, 149, 150, 165, 166, 167, 169 & 171 (Pvt. Land) measuring 03-53-76 Hectares(Hill Slope) falling in Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla of Tehsil Haroli, District Una, Himachal Pradesh for the extraction of sand, stone & bajri to be used in already established stone crusher unit in the name and style as "**M/s Aar Ess Stone Crusher**" for Manufacturing Grit and manufactured Sand (M-Sand), has been prepared with my consent and approval and that we/I 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. Yogesh Kumar,
Partner M/s Aar Ess Stone Crusher,

Address

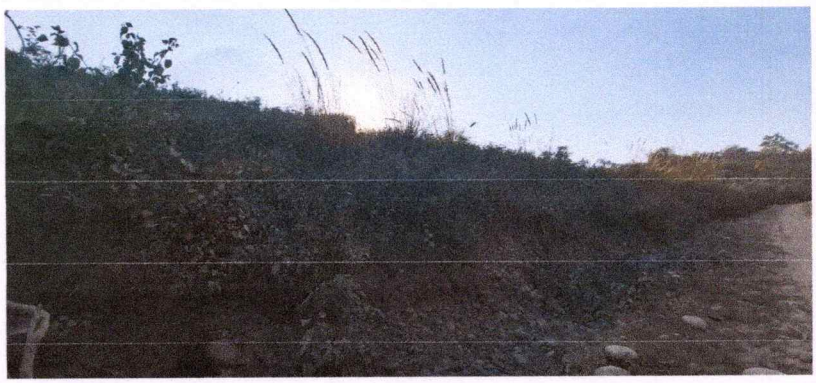
Village & P.O. Gondpur Bulla, Tehsil Haroli, Distl. Una, Himachal Pradesh

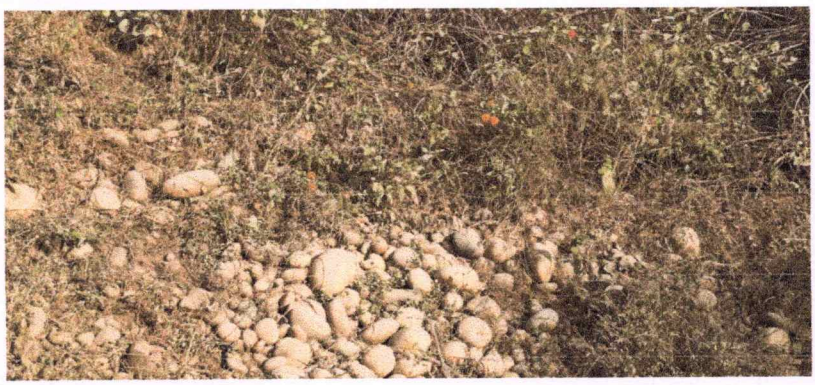
APPROVED

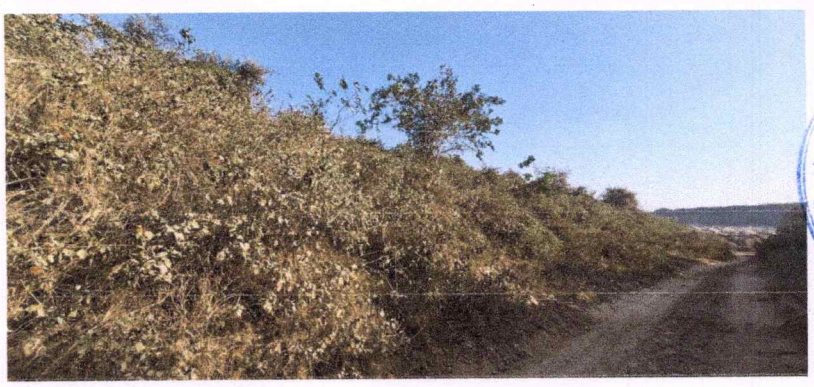
Photographs of the Applied lease Area









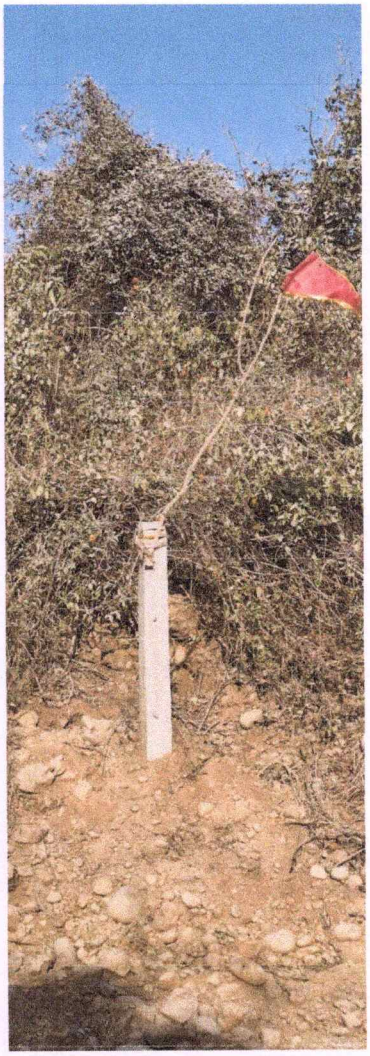


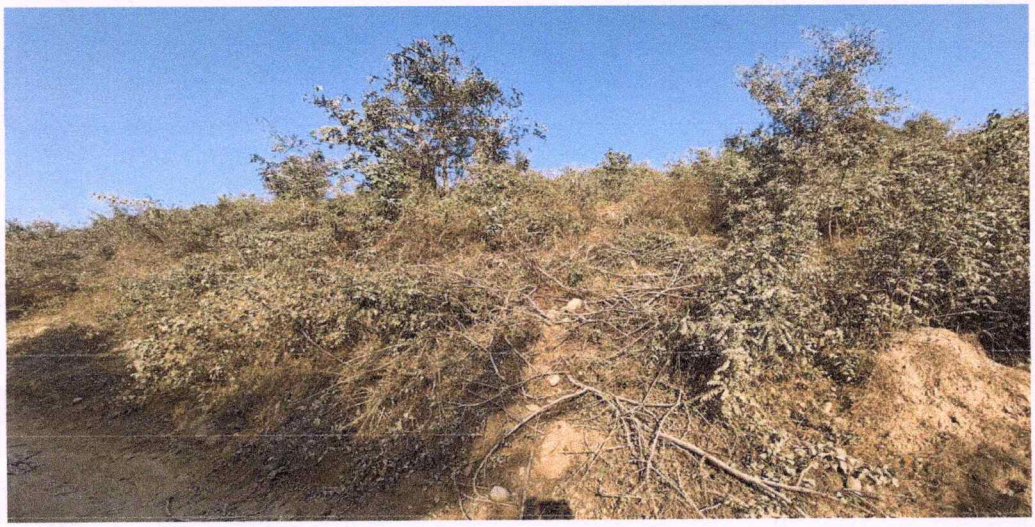


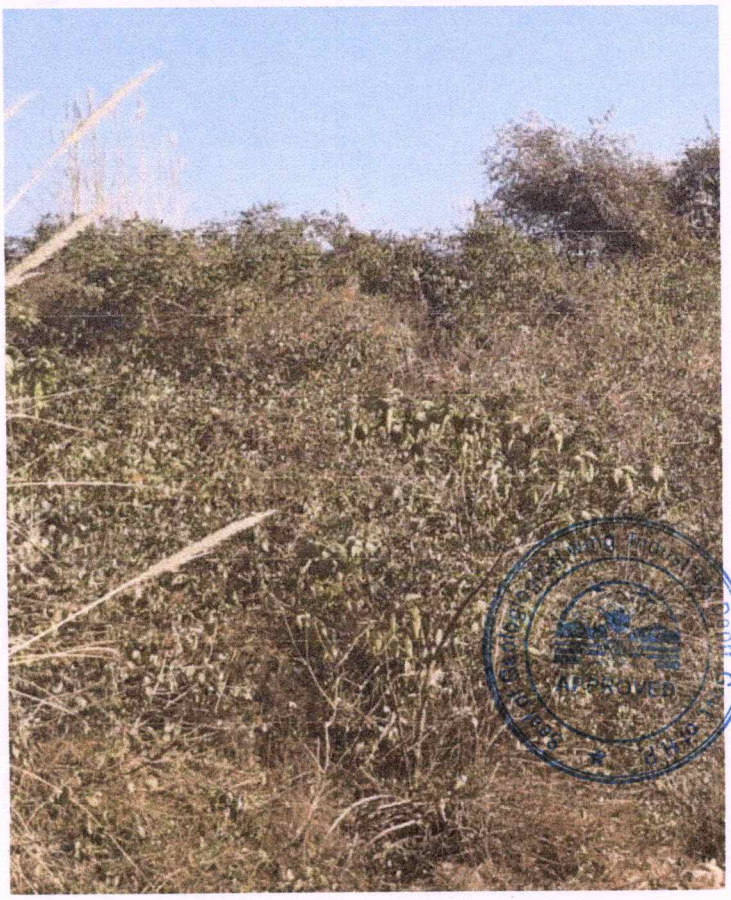


Photographs of the Applied lease Area









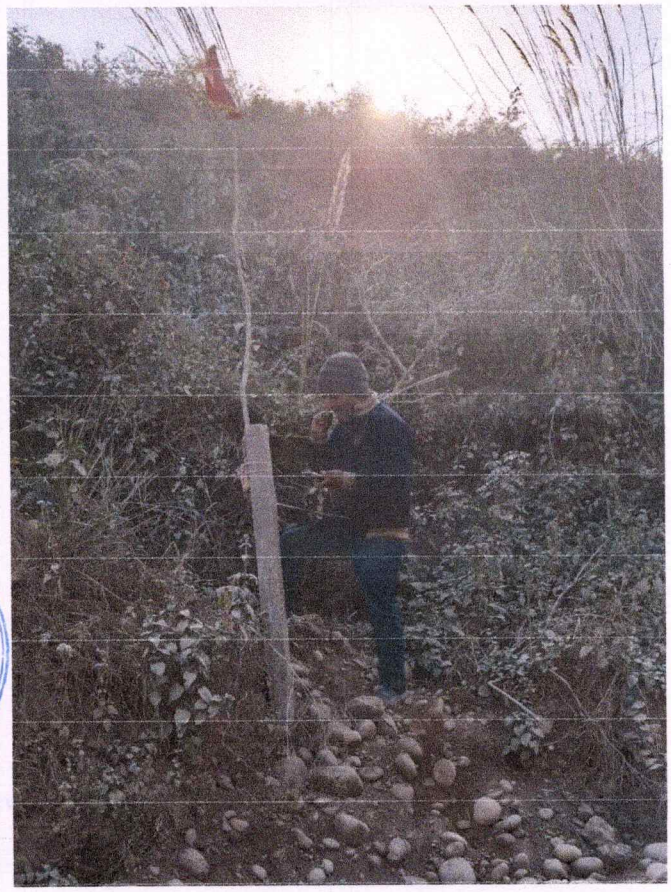


PLATE 1

INDIA
HIMACHAL PRADESH
TAHSIL HAROLI
DISTRICT UNA

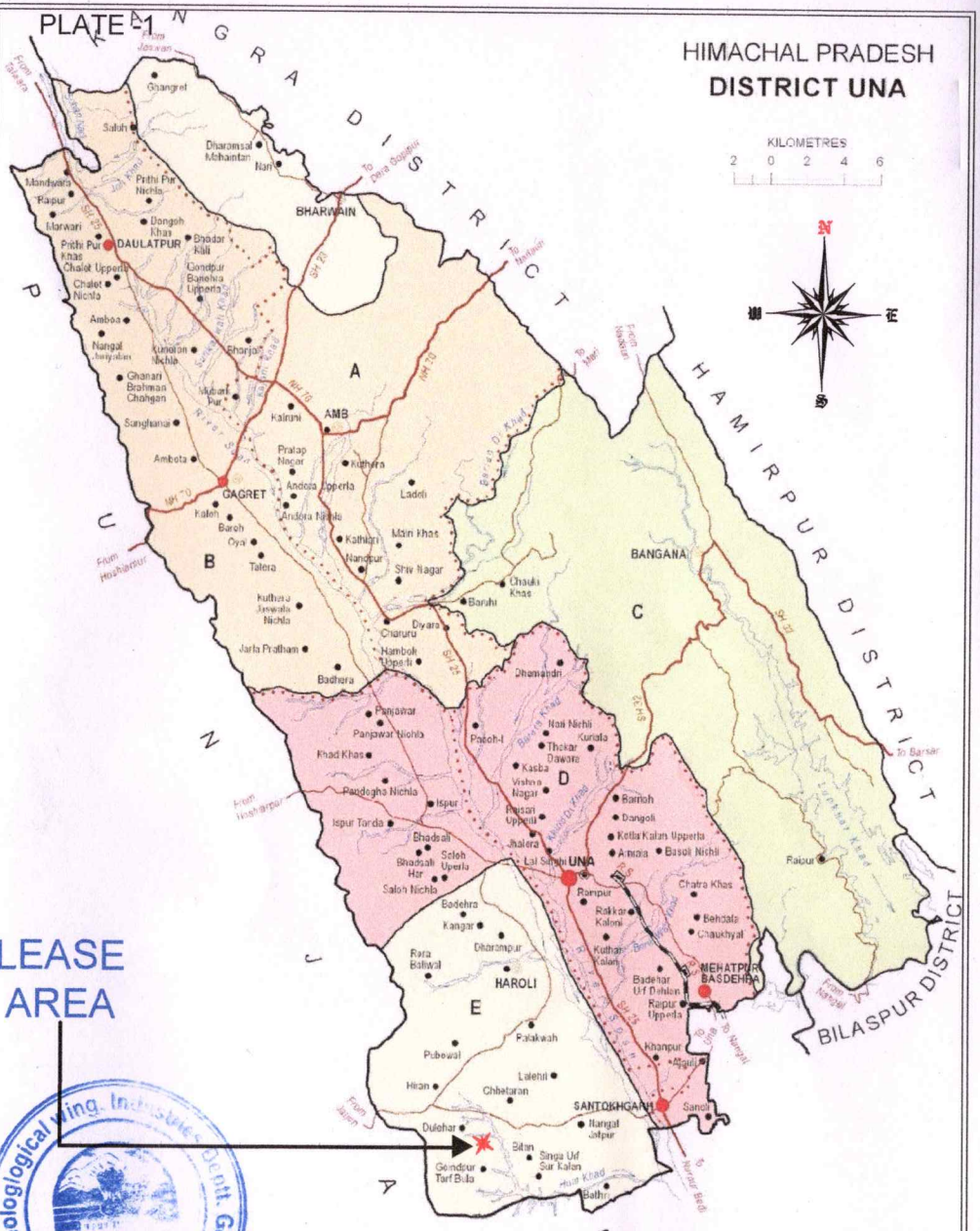


Sub-Tahsil Headquarters is also
C.D. Block Headquarters.

TOTAL AREA	198.83 Sq.Kms
TOTAL POPULATION	71416
NUMBER OF TOWNS	NIL
NUMBER OF VILLAGES	59
DISTANCE FROM DISTRICT HEADQUARTERS TO SUB-TAHSIL	17 Km

BOUNDARY, STATE
,, TAHSIL/SUB-TAHSIL
,, C.D. BLOCK
,, VILLAGE WITH 018837
MDDS CODE
HEADQUARTERS: SUB-TAHSIL
POPULATION SIZE OF VILLAGES: BELOW 200, 200-499, 500-999, 1000-1999, 2000 AND ABOVE
IMPORTANT METALLED ROADS
RIVER AND KHAD

HIMACHAL PRADESH
DISTRICT UNA



Geological Wing, Industries Deptt. Govt. of H.P. APPR

PLATE -1 Location map of the Mining Site

M/s Aar Ess Stone Crusher

Applicant	*Sh. Yogesh Kumar, Partner M/s Aar Ess Stone Crusher,*
Address	*Village & P.O. Gondpur Bulla, Tehsil Haroli, Distl. Una, Himachal Pradesh*

Prepared and Certified By:

Arun Dhiman
RQP Registration No.
HP/ROP/25/2/2019

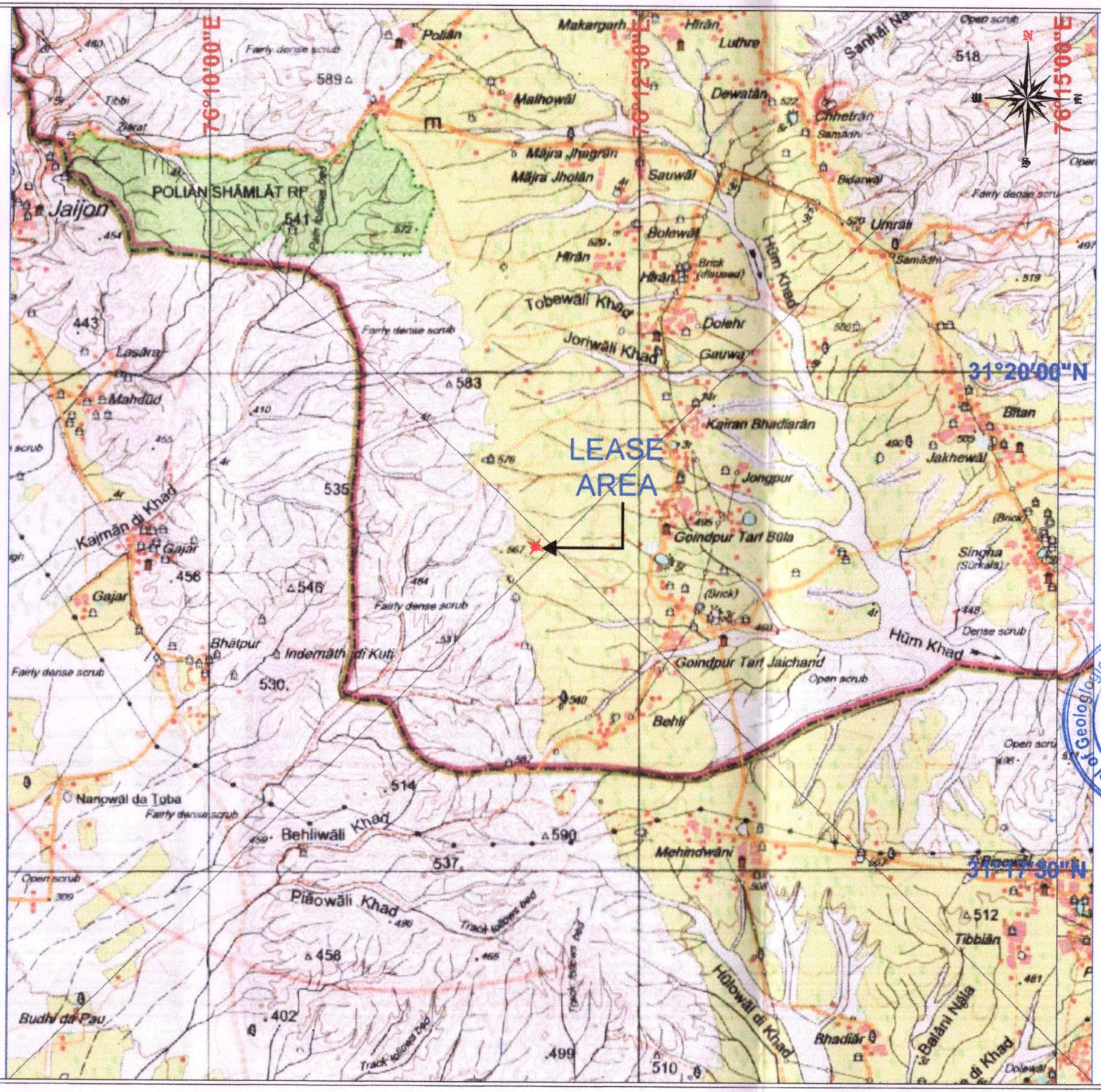


PLATE -2

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. Pack-track with pass. Foot-path	
Streams: with track in bed; undefined. Canal	
Dams: masonry or rock-filled; earthwork. Weir	
River: dry with water channel, with island & rocks. Tidal river	
Submerged rocks. Shoal. Swamp. Reeds	
Wells: lined; unlined. Tube-well. Spring. Tanks: perennial; dry	
Embankments: road or rail; tank. Broken ground	
Railways, broad gauge: double; single with station; under constrn	
Railways, other gauges: double; single with distance stone; do	
Mineral line or tramway. Kiln. Cutting with tunnel	
Contours with sub-features. Rocky slopes. Cliffs	
Sand features.(1)flat. (2)sand-hills(permanent). (3)dunes(shifting)	
Towns or Villages: inhabited; deserted. Fort	
Huts: permanent; temporary. Tower. Antiquities	
Temple. Chhatri. Church. Mosque. Idgah. Tomb. Graves	
Lighthouse. Lightship. Buoys: lighted, unlighted. Anchorage	
Mine. Vine on trellis. Grass. Scrub	
Palms: palmyra, other. Plantain. Conifer. Bamboo. Other trees	
Areas: cultivated, wooded. Surveyed tree	
Boundary, international	
,, state: demarcated, undemarcated	
,, district; subdivision; tahsil or taluk; forest	
Boundary pillars: surveyed, unlocated	
Heights, triangulated: station; point; approximate	△200 . 200 .200
Bench-mark: geodetic, tertiary; canal	BM 63·3 .BM 63·3
Post office. Telegraph office. Overhead tank	
Rest house or Inspection bungalow. Circuit house. Police station	
Camping ground. Forest: reserved; protected	CG RF PF
Spaced names: administrative; locality or tribe	KIKRI NAGA
Hospital. Dispensary. Veterinary. Hospital / Dispensary	
Aerodrome. Helipad. Tourist site	
Power line: with pylons surveyed; with poles unsurveyed	

M/s Aar Ess Stone Crusher

Applicant	*Sh. Yogesh Kumar, Partner M/s Aar Ess Stone Crusher,*
Address	*Village & P.O. Gondpur Bulla, Tehsil Haroli, Distl. Una, Himachal Pradesh*

Seal of Geological wing. Industries Deptt. Govt. of H.P. APPROVED

Land use Land Cover Map
Based on Sol Toposheet
Toposheet No.- H43E3
(Source:Sol)

Prepared and Certified By:

Arun Dhiman
RQP Registration No.
HP/RQP/25/2/2019

PLATE -2

Plate No. 3.

GEOLOGICAL INDEX

- SOIL COVER
- QUARTZITE

TOPOGRAPHICAL INDEX

- LEASE BOUNDARY
- 567.00 SURVEY STATION
- CONTOUR LINES
- HAUL ROAD
- X-SECTION LINES
- FACE ADVANCE

Seal of Geological wing, Industries Deptt. Govt. of H.P. APPROVED

M/S AAR-ESS STONE CRUSHER.

OWNER	SH. YOGESH KUMAR
SCALE	1:2000 (1 CM = 20 METERS)
CONTOUR INTERVAL	2.00 METERS.

MAP SHOWING SURFACE AND GEOLOGICAL FEATURE OF THE LEASE AREA.

COORDINATES : -

A N-31°19'18.95"
E-76°12'07.88"

B N-31°19'19.71"
E-76°12'02.84"

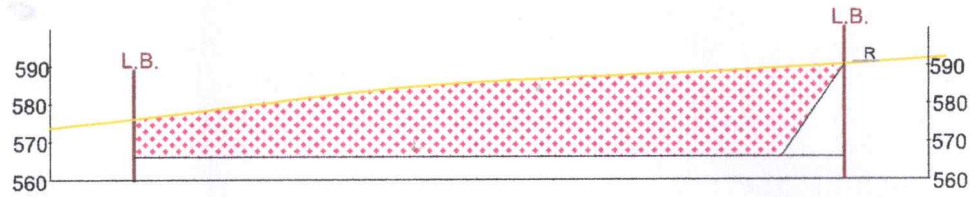
NORTH: -

CERTIFIED THAT THE PLAN IS CORRECT.

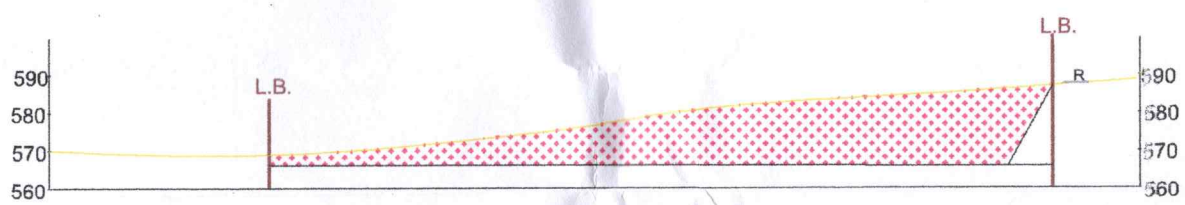
Arun Dhiman
RQP Registration No.
HP/ROP/25/2/2019

Plate No.III.

Plate No. 4.



X- SECTION ALONG A-A'



X- SECTION ALONG B-B'

Geological wing. Industries Deptt. H.P. APPROVED

GEOLOGICAL INDEX

- SOIL COVER
- QUARTZITE
- LEASE BOUNDARY
- R — APPROACH ROAD

M/S AAR-ESS STONE CRUSHER.	
OWNER	SH. YOGESH KUMAR
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
RQP Registration No.
HP/RQP/25/2/2019

Plate No. IV.

Plate No. 5.

GEOLOGICAL INDEX

- SOIL COVER
- QUARTZITE

TOPOGRAPHICAL INDEX

- LEASE BOUNDARY
- 567.00 SURVEY STATION
- CONTOUR LINES
- HAUL ROAD
- X-SECTION LINES
- FACE ADVANCE
- ULTIMATE PIT LIMIT

M/S AAR-ESS STONE CRUSHER.	
OWNER	SH. YOGESH KUMAR
SCALE	1:2000 (1 CM = 20 METERS)
CONTOUR INTERVAL	2.00 METERS.

ULTIMATE PIT LIMIT.

COORDINATES : -

A N-31°19'18.95"
E-76°12'07.88"

B N-31°19'19.71"
E-76°12'02.84"

NORTH: -

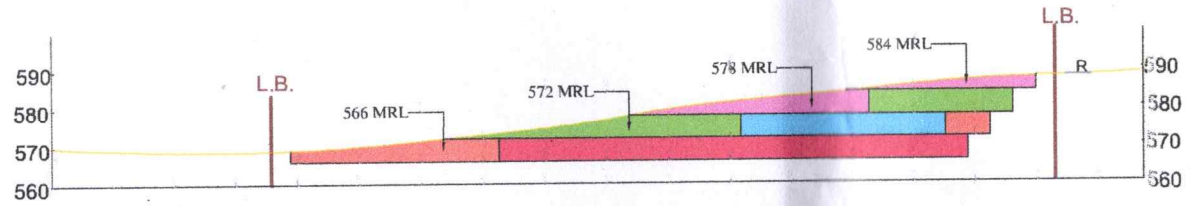
CERTIFIED THAT THE PLAN IS CORRECT.

Arun Dhiman
RQP Registration No.
HP/RQP/25/2/2019

Seal of Geological wing, Industries Deptt. Govt. of H.P. APPROVED

Plate No.V.

Plate No. 6.



WORKING - SECTION ALONG X-X'

APPROVED

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
566	BENCH HEIGHT

M/S AAR-ESS STONE CRUSHER.

OWNER	SH. YOGESH KUMAR
SCALE	1:2000 (1 CM = 20 METERS)

WORKING X-SECTIONAL AREA OF THE LEASE.

CERTIFIED THAT THE PLAN IS CORRECT.

Arun Dhiman
RQP Registration No.
HP/RQP/25/2/2019

Plate No. VI.

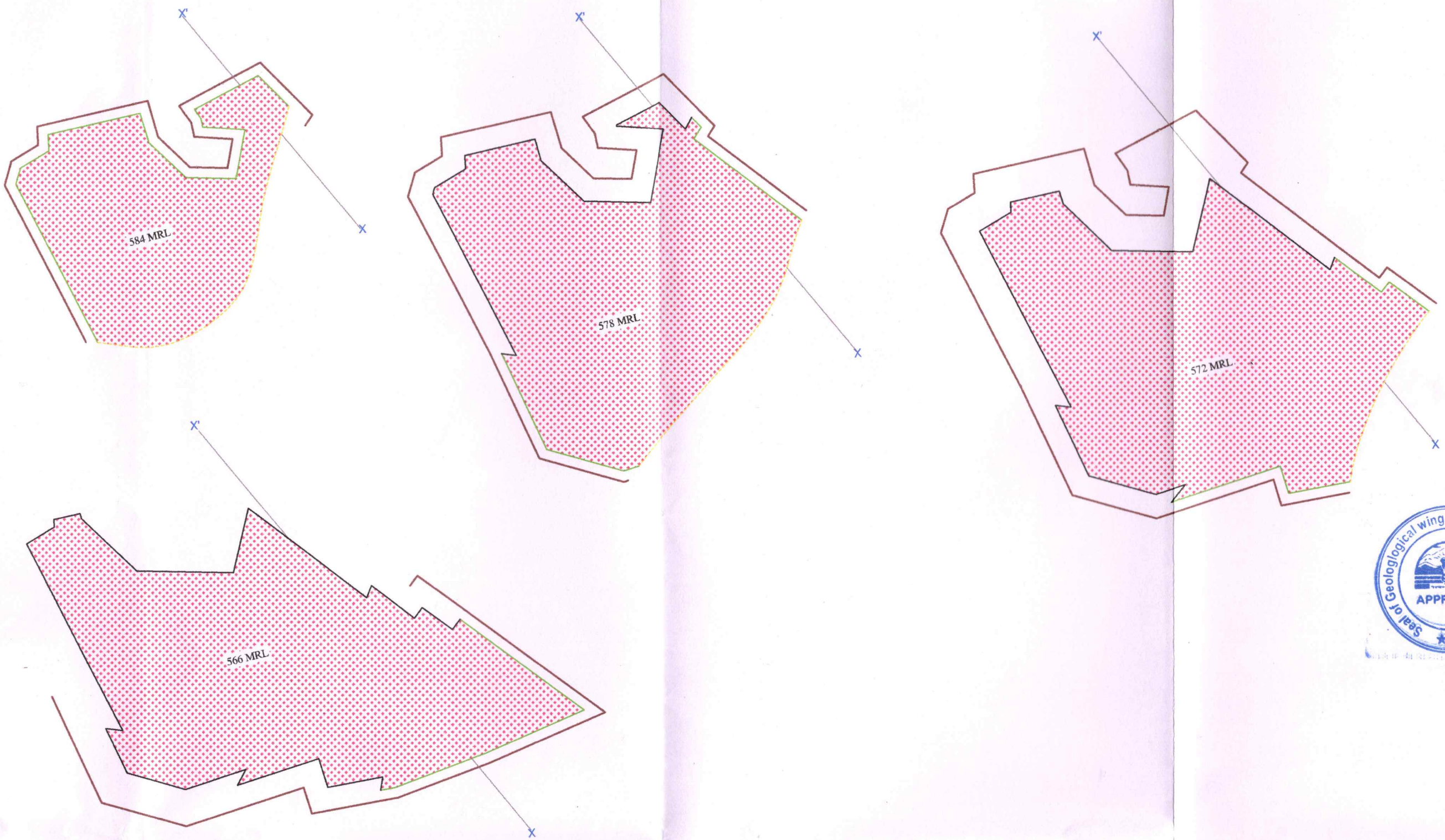


Plate No. 7.

GEOLOGICAL INDEX

- SOIL COVER
- QUARTZITE
- LEASE BOUNDARY
- SECTION LINE

M/S AAR-JESS STONE CRUSHER	
OWNER	SH. YOGESH KUMAR
SCALE	1:2000 (1 CM = 20 METERS)
SLICE PLAN 584 MRL TO 566 MRL.	

CERTIFIED THAT THE PLAN IS CORRECT

Arun Dhiman
RQP Registration No.
HP/RQP/25/2/2019

Seal of Geological wing, Industries Deptt. Govt. of H.P.
APPROVED

Plate No. 8.

GEOLOGICAL INDEX

- SOIL COVER
- QUARTZITE

TOPOGRAPHICAL INDEX

- LEASE BOUNDARY
- 567.00 SURVEY STATION
- CONTOUR LINES
- HAUL ROAD
- X-SECTION LINES
- FACE ADVANCE
- D-Y WASTE DUMP YARD
- S- TOP SOIL DUMP
- P- PLANTATION
- C- CHECK DAM

M/S AAR-ESS STONE CRUSHER.	
OWNER	SH. YOGESH KUMAR
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°19'18.95"
E-76°12'07.88"

B N-31°19'19.71"
E-76°12'02.84"

NORTH: -

Seal of Geological wing, Industries Deptt. Govt. of H.P. APPROVED

CERTIFIED THAT THE PLAN IS CORRECT.

Arun Dhiman
RQP Registration No.
HP/RQP/25/2/2019

Plate No.VIII.

Plate No. 9.

GEOLOGICAL INDEX

- SOIL COVER
- QUARTZITE

TOPOGRAPHICAL INDEX

- LEASE BOUNDARY
- 567.00 SURVEY STATION
- CONTOUR LINES
- HAUL ROAD
- X-SECTION LINES
- FACE ADVANCE
- D-Y WASTE DUMP YARD
- S- TOP SOIL DUMP
- P- PLANTATION
- C- CHECK DAM

M/S AAR-ESS STONE CRUSHER.	
OWNER	SH. YOGESH KUMAR
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°19'18.95"
E-76°12'07.88"

B N-31°19'19.71"
E-76°12'02.84"

NORTH: -

Seal of Geological wing, Industries Govt. of H.P. APPROVED

CERTIFIED THAT THE PLAN IS CORRECT.

Arun Dhiman
RQP Registration No.
HP/ROP/25/2/2019

Plate No.IX.

Plate No. 10.

GEOLOGICAL INDEX

- SOIL COVER
- QUARTZITE

TOPOGRAPHICAL INDEX

- LEASE BOUNDARY
- 567.00 SURVEY STATION
- CONTOUR LINES
- HAUL ROAD
- X-SECTION LINES
- FACE ADVANCE
- D-Y WASTE DUMP YARD
- S- TOP SOIL DUMP
- P- PLANTATION
- C- CHECK DAM

M/S AAR-ESS STONE CRUSHER.	
OWNER	SH. YOGESH KUMAR
SCALE	1:2000 (1 CM = 20 METERS)
CONTOUR INTERVAL	2.00 METERS.

PROPOSED AREA FOR PROJECTED MINERAL PRODUCTION FOR THE 3RD YEAR.

COORDINATES : -

A N-31°19'18.95"
E-76°12'07.88"

B N-31°19'19.71"
E-76°12'02.84"

NORTH: -

Seal of Geological wing Industries Deptt. Govt. of H.P. APPROVED

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
- 567.00 SURVEY STATION
- CONTOUR LINES
- HAUL ROAD
- X-SECTION LINES
- FACE ADVANCE
- D.Y WASTE DUMP YARD
- S TOP SOIL DUMP
- P PLANTATION
- C CHECK DAM

M/S AAR-ESS STONE CRUSHER.

OWNER	SH. YOGESH KUMAR
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°19'18.95"
E-76°12'07.88"

B N-31°19'19.71"
E-76°12'02.84"

NORTH: -

CERTIFIED THAT THE PLAN IS CORRECT.

Arun Dhiman
RQP Registration No.
HP/RQP/25/2/2019

Plate No.XI.

Plate No. 12.

GEOLOGICAL INDEX

- SOIL COVER
- QUARTZITE

TOPOGRAPHICAL INDEX

- LEASE BOUNDARY
- 567.00 SURVEY STATION
- CONTOUR LINES
- HAUL ROAD
- X-SECTION LINES
- FACE ADVANCE
- WASTE DUMP YARD
- TOP SOIL DUMP
- PLANTATION
- CHECK DAM

M/S AAR-ESS STONE CRUSHER.	
OWNER	SH. YOGESH KUMAR
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°19'18.95"
E-76°12'07.88"

B N-31°19'19.71"
E-76°12'02.84"

NORTH: -

Seal of Geological wing, Industries Deptt. Govt of H.P. APPROVED

CERTIFIED THAT THE PLAN IS CORRECT.

Arun Dhiman
RQP Registration No.
HP/RQP/25/2/2019

Plate No.XII.

Plate No. 13.

GEOLOGICAL INDEX

- SOIL COVER
- QUARTZITE

TOPOGRAPHICAL INDEX

- LEASE BOUNDARY
- 567.00 SURVEY STATION
- CONTOUR LINES
- HAUL ROAD
- X-SECTION LINES
- FACE ADVANCE
- WASTE DUMP YARD
- ULTIMATE PIT LIMIT
- PLANTATION
- CHECK DAM

M/S AAR-ESS STONE CRUSHER.	
OWNER	SH. YOGESH KUMAR
SCALE	1:2000 (1 CM = 20 METERS)
CONTOUR INTERVAL	2.00 METERS.

POST RECLAMATION PLAN.

COORDINATES : -

A N-31°19'18.95"
E-76°12'07.88"

B N-31°19'19.71"
E-76°12'02.84"

NORTH: -

Seal of Geological wing. Industries Dept. H.P. APPROVED

CERTIFIED THAT THE PLAN IS CORRECT.

Arun Dhiman
RQP Registration No.
HP/RQP/25/2/2019

Plate No.XIII.

ANNEXURE-VII

Udyog-Bhu(Khani-4)Laghu-525/2025 - 3720
Government of Himachal Pradesh
Department of Industries
"Geological Wing"
Dated, Shimla-171001, the 27/06/ 2025

To

Sh. Yogesh Kumar,
Partner M/s Aar Ess Stone Crusher,
Village & P.O. 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. Yogesh Kumar, Partner M/s Aar Ess Stone Crusher, 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.

Geologist-Zone-II,
Himachal Pradesh,
Dated

Endst. No. Udyog-Bhu(Khani-4)Laghu-525/2025
Copy to the Mining Officer, Una, with reference to letter No. Udyog(Bhu)-UNA-AAR ESS SCU- 1763, dated 25.06.2025 for information.

Geologist-Zone-II,
Himachal Pradesh

Scanned with OKEN Scanner

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 AAR ESS Stone Crusher , VPO Gondpur Bulla, Tehsil Haroli, District Una HP, over Kh. No. 145, 147, 149, 150, 165, 166, 167 169, 171 measuring 03-53-76 Hect.in Mouza Gondpur Bulla Muhal Gondpur Bulla Uperla, 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 Bhakra Stone Crusher VPO Gondpur Bulla, Tehsil Haroli District Una HP	128,129,130, 131,132,135, 114,125,127,134,139,140, 141,142,115,105,106,107, 108,109, 110 & 116	03-96-45 Hect.	Gondpur Bulla	Stone Crusher	Working

Mining Officer,
Department of Industries,
Himachal Pradesh,

C/S

Geologist Zone-II,
Department of Industries,
Himachal Pradesh

Geologist (Zone-II)
Geological Wing
Deptt. of Industries Shimla-1

Scanned with OKEN Scanner

ANNEXURE-VIII

HP FOREST DEPARTMENT
UNA FOREST DIVISION, UNA (HP)

To whom it may concern

As requested by M/S AAR ESS Stone Crusher, VPO Gondpur Bulla, Tehsil Haroli, Distt. Una (HP), the following information is hereby authenticated in respect of Khasra No. 145, 147, 149, 150, 165, 166, 167, 169, 171 area measuring 03-53-76ha. falling in Mauza Gondpur Bulla, Mohal Gondpur Bulla Uperla, 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°19'12"N 76°11'51"E and the aerial distance of proposed site is 17.20KM 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/ 1975-76 Dated Una, the 17-6-2025

Copy is forwarded to:-

1. M/S AAR ESS Stone Crusher, VPO Gondpur Bulla, Tehsil Haroli, Distt. Una (HP) w.r.t. his application dated 29.05.2025.

2. R.F.O. Una for information & necessary action w.r.t. his office letter No. 417 dated 06.06.2025.

Divisional Forest Officer,
Una Forest Division Una, (HP)

Case of AAR ESS STONE CRUSHER

Local Name	English Name	Botanical Name
Aisan Sain	Indian laurel	*Terminalia tomentosa*
Ak	Apple of Sodom, rubber bush, swallow-wort	*Calotropis procera*
Akha	Heart leaf raspberry	*Rubus paniculatus*
Am	Mango	*Mangifera indica*
Amaltas, Kaniar, Alis	Golden shower tree	*Cassia fistula*
Amla	Chinese laurel, currant tree	*Antidesma acidum*
Amla	Indian gooseberry	*Emblica officinalis*
Anar-dana	Wild pomegranate	*Punica granatum*
Arjun	Arjuna myrobalan	*Terminalia arjuna*
Badhla	Indian willow	*Salix tetrasperma*
Badrol		*Persea gamblei*
Bahankahar, Gin, agnimanth	Premna	*Premna mucronata*
Bakkar bel	Black creeper	*Ichnocarpus frutescens*
Ban	Beech-wood, goomar tree	*Gmelina arborea*
Ban Basuti	Blue-beard	*Caryopteris odorata* (syn. *C. bicolor, C. wallichiana*)
Ban Malti	Jasmine	*Jasminum multiflorum*
Bana	Five-leaved chaste tree	*Vitex negundo*
Bans Bainj, Sotha	Male bamboo	*Dendrocalamus strictus*
Bantaur		*Atylosia crassa*
Barasol Pan	Winged stalked Flemingia	*Flemingia semialta*
Barnahi,Billan	Elephant apple, wood apple, monkey fruit, curd fruit	*Limonia acidissima*
Barthua	Bridal couch tree, sage plant	*Hymenodictyon excelsum*
Basant	Yellow flax, golden-girl	*Reinwardtia indica*
Basuti	Malabar nut	*Adhatoda vasica*
Batindu		*Stephania elegans*
Behra	Belleric myrobalan	*Terminalia belerica*
Bel	Stone apple, holy fruit tree	*Aegle marmelos*
Ber	Jujube	*Zizyphus mauritiana*
Berna	Three-lived-caper	*Crataeva religiosa*
Bhabar Bagar	Baib grass	*Eulaliopsis binata*

Local Name	English Name	Botanical Name
Bhadrun		*Gymnosporia royleana*
Bhakara		*Saurauja napaulensis*
Bhang	Hemp, marijuana	*Cannabis sativa*
Bharmela		*Euonymus pendulus*
Bhirang	Shrubby deeringia	*Deeringia celosioidses*
Biul, Dhaman		*Grewia oppositifolia*
Bohar,Barh	Bengal fig, Indian fig	*Ficus bengalensis*
Burkani	Wild-berry	*Maesa indica*
Cha buti	Billygoat-weed, Chick weed, Goatweed, Whiteweed	*Ageratum conyzoides*
Chakunda	Negro coffee, coffee senna	*Cassia occidentalis*
Chamar bel	Bush Grape, fox-grape, three-leaved wild vine, threeleaf cayratia	*Cayratia trifolia*
Chamar Saman	Velvety melon feather-foil	*Glochidion velutinum*
Chamorar		*Ehretia laevis*
Charaki	Charming clematis	*Clematis grata*
Chhittar Chhun	Drooping prickly pear	*Opuntia monacantha*
Chhota Mendhru	Cape-myrtle, African box-wood	*Myrsine africana*
Chil	Chir-pine	*Pinus roxburghii*
Chilla	Downy-leaved false kamela	*Casearia elliptica*
Chirandi	Dandal	*Xylosma longifolium*
Chopar chilla		*Miliusa velutina*
Coibur,machrun		*Clematis nutans*
Dagur	Hairy fig, devil fig	*Ficus hispida*
Damani	Two-lobed cross berry	*Grewia laevigata*
Dargarhi	Himalayan mimosa	*Mimosa himalyana*
Dhakkari	Arni	*Clerodendrum phlomidis*
Dhao, Chhal	Axlewood	*Anogeissus latifolia*
Dhawin,Dhawi	Fire-flame bush	*Woodfordia floribunda*
Dholu		*Chrysopogan montana*
Dhurmalti	Jasmine	*Jasminum arborescens*
Drek, dek, beakin	Persian cedar, white lilac	*Melia azederach*
Dudh bel	Bread-flower	*Vallaris heynei*
Dudla	Willow leaved fig	*Ficus nemoralis*
Dudli	Telegraph Plant or Semaphore	*Desmodium motorium*

Local Name	English Name Plant	Botanical Name
Dura,Dogla, fegra	Wild Himalayan fig	*Ficus palmata*
Dusen	Indian squirrel tail	*Colebrookia oppositifolia*
Faindal	Christmas vine, snow-creeper, bridal-wreath	*Porana paniculata*
Flah, Dhak	Flame of the Forest, Bastard Teak, Parrot Tree	*Butea monosperma*
Gaddi Kuri	Spinous kino tree	*Bridelia squamosa*
Gajal Bel	Cowhage, velvet bean	*Mucuna pruriens*
Gandla	Curry leaf tree	*Murraya koenigii*
Ghanira Ghandheela	Oleander	*Nerium odorum*
Ghas bel	Dodder	*Cuscuta reflexa*
Giddardak	Wild-grape	*Ampelocissus latifolia*
Ginani		*Premna barbata*
Girgithan	Mock buckthorn	*Sageretia parviflora*
Gullhan		*Halmintonia suaveolens*
Gulodan	Buckthorn	*Rhamnus trigaeter*
Handa Bhera	Slow-match tree	*Careya arborea*
Harar	Black myrobalan, gallnut tree	*Terminalia chebula*
Har singar		*Nyctanthes arbortristis*
Hyum Garna	Caperberry, Caperbush	*Capparis sepiaria*
Jagru	Tick-trefoil, tick clover or beggar lice	*Demodium velutinum*
Jaman	Black-plum	*Syzygium cumini*
Jaman Khumb	Indian sarsaparilla	*Cryptolepis buchanani*
Jamnota	Barbados nut, purging nut	*Jatropha curcas*
Japani toot, tutra	Paper mulberry	Broussonetia papyrifera
Jhol	Clematis gouriana, Indian traveller's joy	*Clematis gouriana*
Jindru	Himalayan randia	*Randia tetrasperma*
Jugter bhur bel		*Aspidopterys wallichii*
Jung kinch	Wild yam	*Dioscorea deltoides*
Kachnar Karal	Malabar ebony, mountain ebony	*Bauhinia malabarica*
Kachnar, Karal	Budhist bauhinia, Mountain Ebony, Orchid tree	*Bauhinia variegata*

Local Name	English Name	Botanical Name
Kahi	Asian fodder cane	*Saccharum spontaneum*
Kainth	Wild Himalayan pear	*Pyrus pashia*
Kakal Ber	Jackal jujube	*Zizyphus oenoplia*
Kakrain	Zebra-wood	*Pistacia integerrima*
Kala Akha	Rough fruit-berry	*Rubus lasiocarpus*
Kala Dhao, hira harkinu	Mottled ebony	*Diospyros cordifolia*
Kalan	Kaim	*Mitragyna parvifolia*
Kali basuti	Patchouli	*Pogostemon plectranthoides*
Kamal	Monkey face tree	*Mallotus philippinensis*
Kandroi	Drooping fig	*Ficus Semicordata (syn. Ficus cunia)*
Kangu	Batoko's plum	*Flacourtia ramontchi*
Kante bans	Giant thorny bamboo	*Bambusa arundinacea*
Kao	Wild olive, iron tree, Indian oli	*Olea ferruginea*
Kapur mingar		*Strobilanthes auriculatus*
Karanda		*Ficus clavata*
Kararoi Tila pati		*Roylea cinerea*
Karmaru	black siris, fragrant albizia, Ceylon rosewood	*Albizzia odoratissima*
Karun	Himalayan mulberry	*Morus serrata*
Kasakuri		*Trema politora*
Kathaman		*Eugenia jambolana Var caryophyllifolia*
Kathi	Cassia indigo	*Indigofera besua (syn. Indigofera pulchella, Indigofera leptostachya)*
Kehmal	Indian ash tree	*Lannea coromandelica*
Kendu	Mountain persimmon	*Diospyros montana*
Keor	Bitter oleander	*Holarrhena antidysenterica*
Khair	Cutch tree	*Acacia catechu*
Khajoor	Date-sugar palm, Indian winepalm, sugar palm, wild dat palm	*Phoenix sylvestris*
Khalawa	Woolly dyeing rosebay	*Wrightia tomentosa*
Kikkar	Indian gum-arabic tree	*Acacia Nilotica spp indica*
Kinnu	Persimmon tree	*Diospyros chloroxylon*
Kumbhi		*Cordia vestita*
Kuri,HarShingar	Coral Jasmine, Tree of Sorrow,	*Nyctanthus arbor trist*

Local Name	English Name	Botanical Name
	Queen of the night	
Lambh	Black spear grass	*Heteropogan contortus*
Lambi	Wire-grass, spear-grass	*Aristida depressa*
Lantana,Ukkal Buti	Spanish flag, lantana	*Lantana camara*
Lasura	Assyrian plum	*Cordia myxa*
Ligga	Daar	*Boehmeria rugulosa*
Lunji	Brown sorghum	*Sorghum nitidum*
Maggar(Cultivated)	Bamboo	*Dendrocalamus hamiltonii*
Mahua	Indian butter tree	*Madhuca indica*
Makora Gha	Indian geranium grass	*Cymobopogan martinii*
Malti	Jasmine	*Jasminum Grandi florum*
Maltiwan	Hiptage	*Hiptage madablota*
Mandhar	Florida hopbush	*Dodonaea viscosa*
Mara	Bishop wood, Java wood	*Bischoffia javanica*
Maror Phalli	East Indian Screw Tree, Nut Leaved Screw Tree	*Helicteres isora*
Masandaru		*Linoceira intermedia*
Mirgu	Thunberg kutzu vine	*Cassine glauca*
Mund Bel	Sneeze Wort, Cotton milk plant Green milkweed climber, Green wax flower, Sneezing silk	*Wattakaka volubilis*
Nargan	Orange jasmine	*Murraya paniculata*
Nim	Indian lilac	*Azadirachta indica*
Ohi	Chinese albizia, silk tree	*Albizzia chinensis*
Padal	Yellow snake tree	*Strereospermum suaveolens*
Padar	False nettle	*Boehmeria platyphylla*
Padari, pilkhan, pakur	White fig	*Ficus Virens (syn. Infectoria)*
Palakh	Rumpf's fig	*Ficus rumphii*
Pansera	Tilki	*Wendlandia heynei*
Panwar	Foetid cassia, The Sickle Senna Wild Senna	*Cassia tora*
Parand	Honey-suckel mistle-toe	*Dendrophthoe falcate (syn. Loranthus longiflorus*
Parara,Paliro	Corky coral tree, flame tree	*Erythrina glabrescens*
Paror	Laurel-leaved snail tree	*Cocculus laurifolius*
Phalai	Amritsar-gum , black sally,	*Acacia modesta*

Local Name	English Name	Botanical Name
	blackwood	*Grewia elastica*
Phalsa	Dhaman	*Ficus religiosa*
Pippal	Sacred fig	*Drypetes roxburghii* (syn. *Putranjiva roxburghii*)
Putajen	Child-life tree, Indian Amulet Plant, Spurious Wild Olive	*Holoptelea integrifolia*
Rajain,Pardesi	Indian elm, kanju	*Caesalpinia decapetala*
Ralan, Arlu	Mysore thorn, cat's claw	
Ram ban	Century plant	*Agave americana*
Rara	Emetic nut	*Xeromphis spinosa* (syn. *Randia dumetorum*)
Rattak	Crab's eye	*Abrus precatotius*
Reru, riur	White babool, Distiller's acacia	*Acacia leucophloea*
Rihan, meda-lakri	Indian laurel	*Litsea chinensis*
Ritha	Soap-nut tree	*Sapindus mukorossi*
Rudhar		*Ficus sarmentosa*
Rumbal	Cluster fig	*Ficus racemesa*
Sagwan	Teak	*Tectona grandis*
Sakar		*Ehretia aspera*
Sal	Yellow Balau	*Shorea robusta*
Salangan		*Millettia extensa*
Salod	Indian kudju	*Pueraria tuberose*
Samma		*Engelhardtia spicata var colebrookia*
Sanan Suhanjua	Drum-stick tree	*Moringa oleifera*
Sandan , sanan		*Ougeinia oujeinensis*
Sankhiran	Black-Oil tree, Climbing-staff plant	*Celastrus panicultus*
Sarain	Jasmine	*Jusminum disparmum*
Sarpri		*Periploca calophylla*
Sason	Wild tea	*Osyris wightiana*
Satmnlia,Musli	Wild asparagus	*Asparagus racemosus*
Shisham, Tali	Bombay blackwood, Indian rosewood, sissoo	*Dalbergia sissoo*
Siah toot	Black fruited mulberry	*Morus laevigata*
Sia-toot	Japanese mulberry, Korean mulberry, Small-leaved mulberry tree	*Morus australis*
Simble	Silk cotton tree	*Bombax ceiba*

Local Name	English Name	Botanical Name
Siris,Sarin	Lebbek-tree, fry-tree, flea-tree	*Albizzia lebbek*
Sukhchain	Pongam	*Deriss Indica (syn. Pongmia pinnata)*
Tatpalanga	Broken bones plant, Indian calosanthes, Indian Trumpet,	*Oroxylum indicum*
Terni		*Tylophora hirsuta*
Thor, Choon	Royle's Spurge	*Euphorbia royleana*
Toot	White mulberry	*Morus alba*
Tor	Camel's foot climber, malu-creeper	*Bauhinia vahlii*
Tun	Indian cedar, Indian mahogany Indian toon	*Toona cilata*
Unga	Aramina Fibre, Congo Jute	*Urena lobata*

****

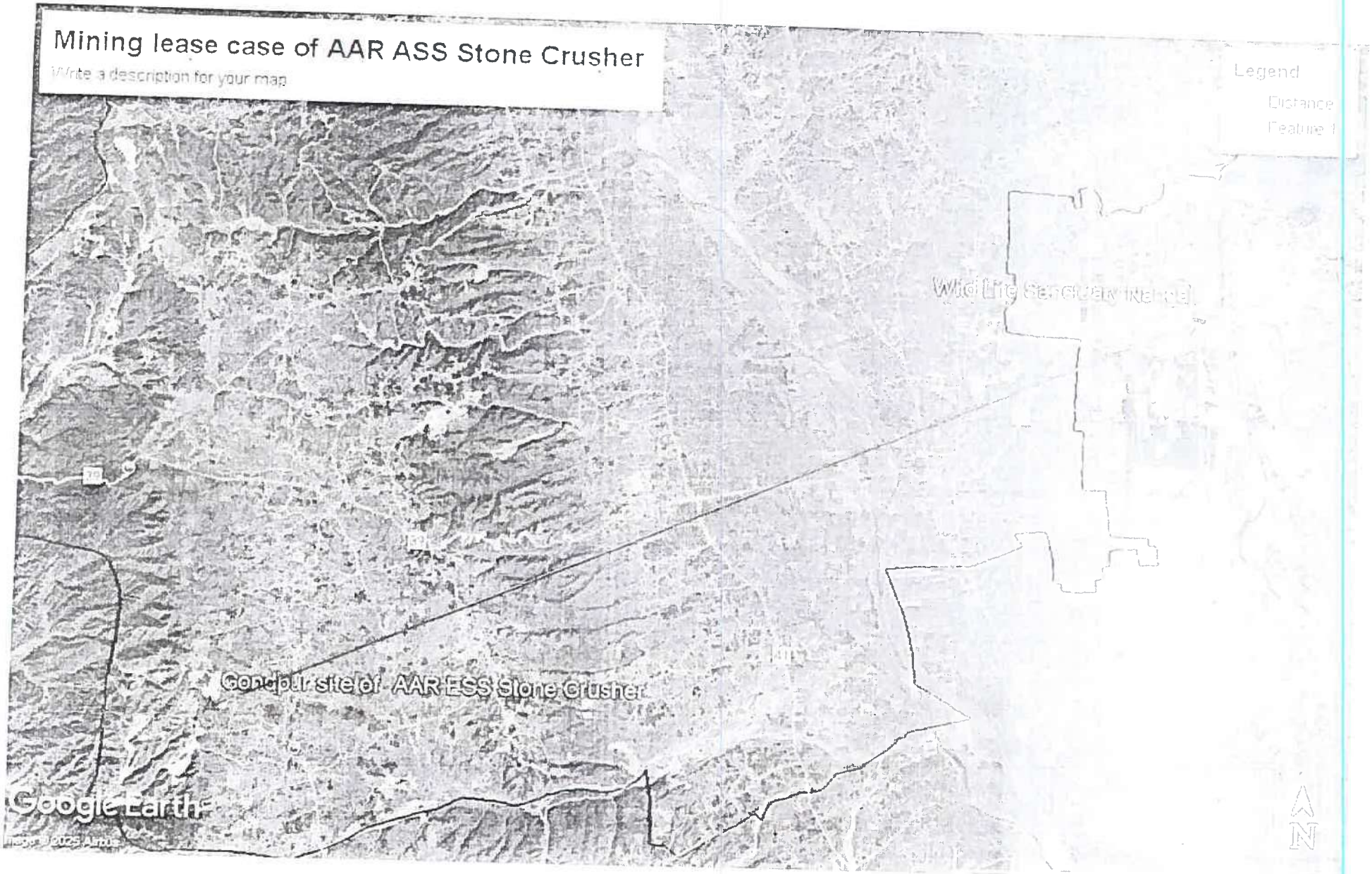
Local Name	English Name	Scientific Name
	MAMMALS	
Adjgar	The Viper	*Vipera Russellii*
Bagh	Leopard	*Panthera pardus*
Ban billi	Leopard cat	*Felis bangalensis*
Bejoo	The Honey Badger	*Mellivora expensis*
Chamgadar	The Bat	*Pteropus medina*
Chuchundar	The Gray Musk	*Suncus Caeruleu*
Lamab	The Common Ratsnake	*Bungarus mucosus*
Giddar	Jackal	*Canis aurenus*
Gilehri	The Squirral	*Funanbulus pennanti*
Goh	The Land Monitor Lizard	*Varanus bengalensis*
Jangli billi	Jangle cat	*Felis chaus*
Kachuha	The common Land Tortoise	*Testudo flagans*
Kakkar	Barking deer	*Muntiacus-Muntjak(vaginlis)*
Khargosh	Hare	*Lepus nigricoilis*

Local Name	English Name	Scientific Name
Kirla (Girgit)	The Indian Chamaleon	*Chameleon calcartus*
Kirli	The Common House Lizard	*Hemidactylus gleadovii*
Lal Bandar	Rhesus monkey	*Macaca mulatta*
Langoor	Langoor common	*Preshytes entellus*
Lomari	Lomari	*Vulpie bengalensis Fox*
Nag	The King Cobra	*Naja hamoh*
Nilgai	Blue bull	*Boselaphus tragocamelus*
Para	Para	*Hog deer*
Phaniar	The Common Cobra	*Naja tripudians*
Sambhar	The Sambhar	*Cervus unicoler*
Saup	The Common Warm Snake	*Typhlops braminus*
Seh	Porcupine	*Hystric indica*
Suar	Wild boar	*Sus sacrofa*
	BIRDS	
Bagla	The grey Heron	*Ardea cinera*
Bagla	The little Egret	*Egretta garzotta*
Batair	The common quail	*Cotarnix cotarnix*
Bhojanga or Hojanga	The King Crow	*Dicrurus macrocucus*
Bulbul	The redvented bulbul	*Molpastar cafer*
Chhota Falta	The Indian Spotted Dove	*Stroptapelia shinensis*
Fakta	The Indian ring dove	*Stroptapelia decaocto*
Hudhud	The Hooper	*Upapa epops*
Jangli Murga	The Jungle fowl	*Galus gonnerathi*
Jangli Murghi	The red jungle fowl	*Gallus galus*
Kabutar	The blue rock pigion	*Columberalivia*
Kaikil	The common king fisher	*Aleedo atthis*
Kala Titar	The black partridge	*Framcolinus francolinus*
Koel	The Koel	*Endynamis seolopaceus*
Maina	The Common myna	*Acrdothere tristris*
Mor	The common pea fowl	*Paro cristetus*
Murgabi	The Indian duck	*Anas poeciborhyncha*
Neel Kanth	The Blue Jay or Roller	*Coracia bengalensis*
Pahari Bulbul	The red whiskered bulbul	*Otocompsa jacosa*
Pahari Kowva	The Himalyan Jangle Crow	*Corbus bevaillonti*
Pahari Titar	The hill partridge	*Arborophila forgueola*
Safaid Bagla	The cattle Egret	*Bulbulcus ibis*
Selva kabutar	The eastern stock pigion	*Colamba oena*
Tatiri	The wattled lapuring	*Lobivanallus indicus*
Titar	The gray partridge	*F pondicrianus*

Local Name	English Name	Scientific Name
Tota	The large Indian Parakeet	*Psittacula eupatria*
	REPTILES	
Azgar	Python	
Goh	Monitor Lizard	
Gunther	Pit viper	
Kala Nag	King Cobra	
Lamab	Rat Snake	
Nag	Cobra	
	FISH	
Deola	Murral	
Godh	Ecl	
Karad	Backwa	
Maha-sher	----	

****

Range Officer
Forest Range
Una H.P.-174303



Range Officer
Forest Range

ANNEXURE-IX

राजस्व विभाग, हिमाचल प्रदेश - नकल जमाबंदी

एस.सी.ए रसीद संख्या: 5239135624992217

जिला : ऊना

तहसील/उप-तहसील: दुलेहड़ (उप-तहसील)

कानूनगोवृत : दुलेहड़

पटवार वृत : गोन्दपुर जयचन्द

नाम : a

पिता/पति : b

सेवा शुल्क : ₹ 30.00

नकल शुल्क : ₹ 2.00

कुल शुल्क : ₹ 32.00

हदबस्त न. : 529 राजस्व गांव : गोन्दपुर वला उपरला जमाबंदी वर्ष: 2023-2024 क्षेत्रफल ईकाई: है-आ-सै

खाता नम्बर जमाबंदी का नम्बर जो इस खाते पर लगाये जाते हैं, राजस्व पत्र सूची का विवरण	खतौनी नम्बर जहां मालिक का नाम दर्ज है, खाता पत्र का विवरण	मालिक का पूर्ण विवरण	काश्तकार/कब्जाधारक का पूर्ण विवरण	सिंचाई का साधन	खसरा नम्बर	भूमि का क्षेत्रफल व किस्म	राजस्व गांव का कुल मामला तथा भूमि की किस्मवार प्रति इकाई भू-राजस्व दर	टिप्पणी/कैफियत	
1	2	3	4	5	6	7	8	9	
1	1	कुल भाग (4) पवन कुमार, राम	कब्जा स्वंय		4	00-05-40	कब्जा व पड़ता	न.ई.	कि.ई.
1	1	सरूप, भोला नाथ पुत्र दाता				बंजर कदीम	किस्मवार	592	फकल आड रहन
———	———	राम पुत्र परस राम भाग बराबर			5	00-34-21	प्रति है-आ-	650	फकल आड रहन
खतौनिदार		(3) भाग योगेश कुमार, राजेश				बंजर कदीम	सै	658	फकल आड रहन
कुमार		कुमार, महेश कुमार पुत्र व			7	00-61-71	निम्नलिखित		
पुत्र दाता		श्रीमति कृष्ण कान्ता				बंजर कदीम	है:-		
मोहर		विधवा सुखदेव पुत्र दाता			40	00-11-88	वारानी अव्वल		
पुत्र		राम भाग बराबर (1) भाग				बंजर कदीम			
दूसरे		स्थानिय वासी			145	00-25-39	बगीचा		
सरल व पता						बंजर कदीम	वारानी		
मोल पुत्र					147	00-78-39	फलदार		
ग्रेजर						बंजर कदीम			
पुत्र					149	00-17-57	बंजर कदीम		
दर्शित						बंजर कदीम			
स्थानीय					150	00-07-52			
वासी						बंजर कदीम			
					165	00-42-58			
मोहर						बंजर कदीम			
———					166	01-62-88			
0.00						बंजर कदीम			
मोहर					167	00-03-66			
0.00						बंजर कदीम			
दस्तखत					169	00-10-09			
0.00						बंजर कदीम			

Patwari Manjot Singh
PC Gondpur Jaichand
Sub Tehsil....Dulehar
Distt. Una (H.P.)
27/08/2025

CSC COMMON SERVICES CENTRE
SHE...
LOK MITRA KENDRA, DULEHAR
CSC VLAK : 554143640015
M... 82788 53334

टेम्पलेट : हिमाचल प्रदेश - शिमला दिनांक: 27-Aug-2025 पृष्ठ संख्या: 1

Scanned with OKEN Scanner

1	2	3	4	5	6	7	8	9
					171	00-05-68 0353-76 Hecl गै.मु.खड्ड		
					1112	00-11-44 बंजर कदीम		
					1113	00-13-02 बंजर कदीम		
					1119	00-16-81 बंजर कदीम		
					16 किता	05-08-23 अकृष्ट 05-08-23 बंजर कदीम 05-02-55 गैर मुमकिन। 00-05-68		
	2 2		पवन कुमार, राम सवरुप, भोला नाथ योगेश कुमार, राजेश कुमार, महेश कुमार, श्रीमति कृष्ण कान्ता समभाग 25553/72393 भाग पट्टा दहिन्दगान एम/एस आर एस स्टोन क्रैशर गांव कुठारबीत 25553/72393 भाग पट्टा गरिन्दा अरसा 20 साल 12-01-2017 का 11-01-2037 तक		1200	07-23-93 बंजर कदीम		न.ई. कि.ई. 658 फकल आड रहन
		जोड़ भू-सम्पति			17 किता	12-32-16 अकृष्ट 12-32-16 बंजर कदीम 12-26-48 गैर मुमकिन। 00-05-68		

SHILPA
C S C LOK MITRA KENDRA, DULEHAR
CSC/LMK : 55414364001 5
MOB. 82788-53334

Scanned with OKEN Scanner

1	2	3	4	5	6	7	8	9

C S C COMMON SERVICES CENTRE
SHILPA.....
LOK MITRA KENDRA, DULEHAR
CSC/LMK : 554143640015
MOB. 82788-53334

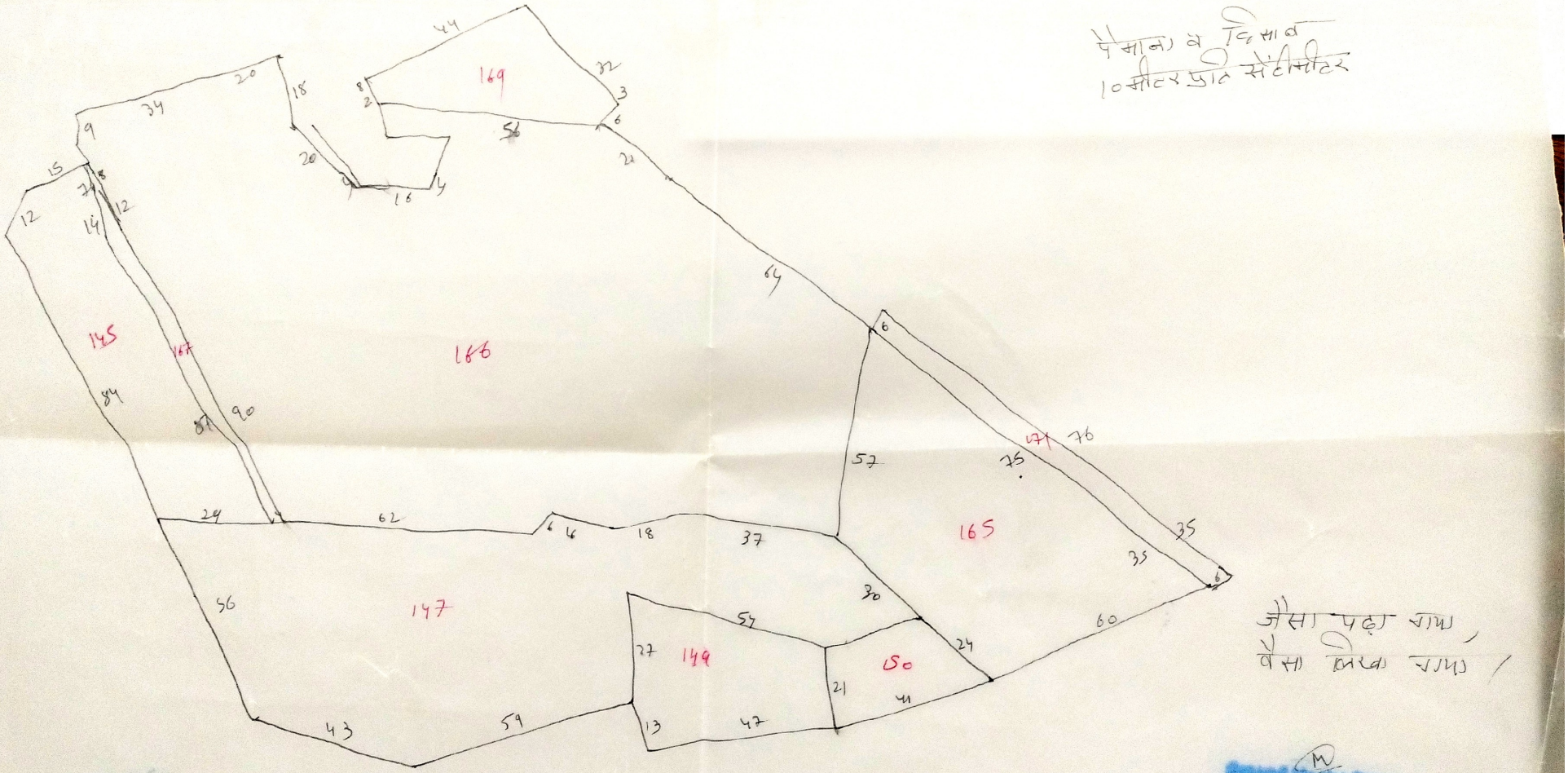
Certified that this copy has been generated from the database of Revenue Department at Centra Server- HP as accessed by the Lok Mitra Kendra Shilpa on 27-August-2025

To Verify; enter the Copy No above Bar Code at https://himbhoomilmk.nic.in
For Validity Refer : Notific. No:Rev-C(F)/10-1/2009 Dated 14-Feb-2011

Jam04012575060

Scanned with OKEN Scanner

नक्शा अक्स शजरा (मुतमी) किश्तवार बन्दोबस्त जदीद्सानी महाल मौ० नयुर कुतब उपतहसील हरोली जिला ऊना (हि०प्र०)

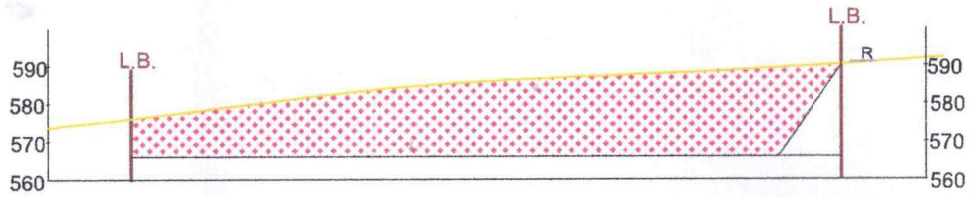


पैमाना व दिशा
10 मीटर प्रति सेंटीमीटर

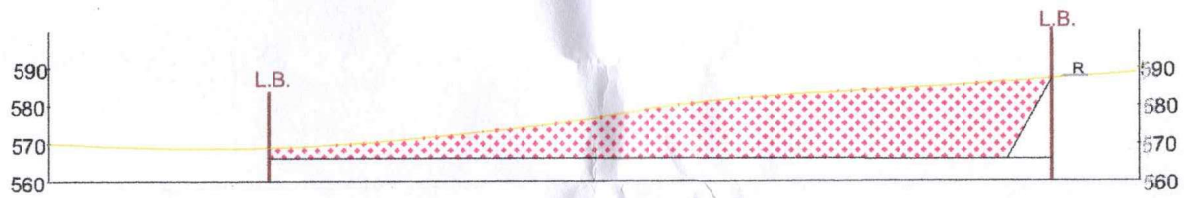
जैसा पढ़ा गया
वैसा लिखा गया

Gondpur Jaichand
Sub [illegible] Kulchar

Plate No. 4.



X- SECTION ALONG A-A'



X- SECTION ALONG B-B'

Geological wing, Industries Deptt. H.P. Seal APPROVED

GEOLOGICAL INDEX

- SOIL COVER
- QUARTZITE
- LEASE BOUNDARY
- R — APPROACH ROAD

M/S AAR-ESS STONE CRUSHER.	
OWNER	SH. YOGESH KUMAR
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
RQP Registration No.
HP/ROP/25/2/2019

Plate No. IV.

ANNEXURE-XI

कार्यालय ग्राम पंचायत गोंदपुर बुल्ला

विकास खण्ड हरोली तह० हरोली जिला ऊना (हि०प्र०)

प्रस्ताव न० ..06... तिथि 15/08/2022

आज दिनांक .15/08/2022..ग्राम पंचायत /ग्राम सभा गोंदपुर बुल्ला की वैठक प्रधान /उपप्रधान /श्री सतनाम सिंह जी की अध्यक्षता में पूर्ण कोरम सहित सम्पन्न हुई जिसमें निम्नलिखित प्रस्ताव पारित किया गया

विषय :- AAR ESS SATON KARSHER खसरा न० 4. 5. 7. 40. 145. 147. 149. 150. 165. 166. 167. 169. 171. 1112. 1113. 1119. महाल गोंदपुर बुल्ला उपरला में से रेत , पथर . बजरी आदि उठाने हेतु अनापति (N O C) प्रमाण पत्र देने हेतु प्रस्ताव पेश / /,

अध्यक्ष महोदय द्वारा उपस्तिथ ग्राम सभा सदस्यों के समक्ष प्रस्ताव रखा कि AAR ESS स्टोन क्रेशर खसरा न० 4. 5. 7. 40. 145. 147. 149. 150. 165. 166. 167. 169. 171. 1112. 1113. 1119. महाल गोंदपुर बुल्ला उपरला में से रेत , पथर.. बजरी आदि में माइनिंग करने के संबध में ग्राम पंचायत के पास अनापति प्रमाण पत्र लेने हेतु योगेश कुमार पुत्र श्री सुखदेब द्वारा लीज पर ली जाने वाली भूमि उपरोक्त खसरा न० पर माइनिंग की जानी है जिसके सम्बध में उपस्तिथ ग्राम सभा ग्राम पंचायत सदस्य सुझाब देवे |

वाद विचार विमर्श सर्वसम्मति बनी कि अनापति प्रमाण पत्र देने हेतु ग्राम पंचायत /ग्राम सभा माइनिंग करने के सम्बध में कोई आपति नहीं है |यह प्रस्ताव ग्राम पंचायत के वैठक में दिया जा रहा है जब भी ग्राम सभा की वैठक होगी उपरोक्त प्रस्ताव को ग्राम सभा में अनुमोदित करवाने हेतु रखा जायेगा |

प्रतिलिपि प्रस्ताव सम्बन्धित विभाग के सेवा में आगामी कार्यवाही हेतु प्रेषित है |पास हुआ स्वीकार है

नोट :-प्रमाणित किया जाता है किप्रतिलिपि प्रस्ताव कार्यवाही रजिस्टर अनुसार सही है |

Secretary
Gram Panchayat
Dev. Block. Haroli
Distt. Una (H.P.)

कार्यवाही रजिस्टर (PROCEEDING BOOK)

(नियम 10 और 34 देखें)

ग्राम पंचायत ..... विकास खण्ड..... जिला.....

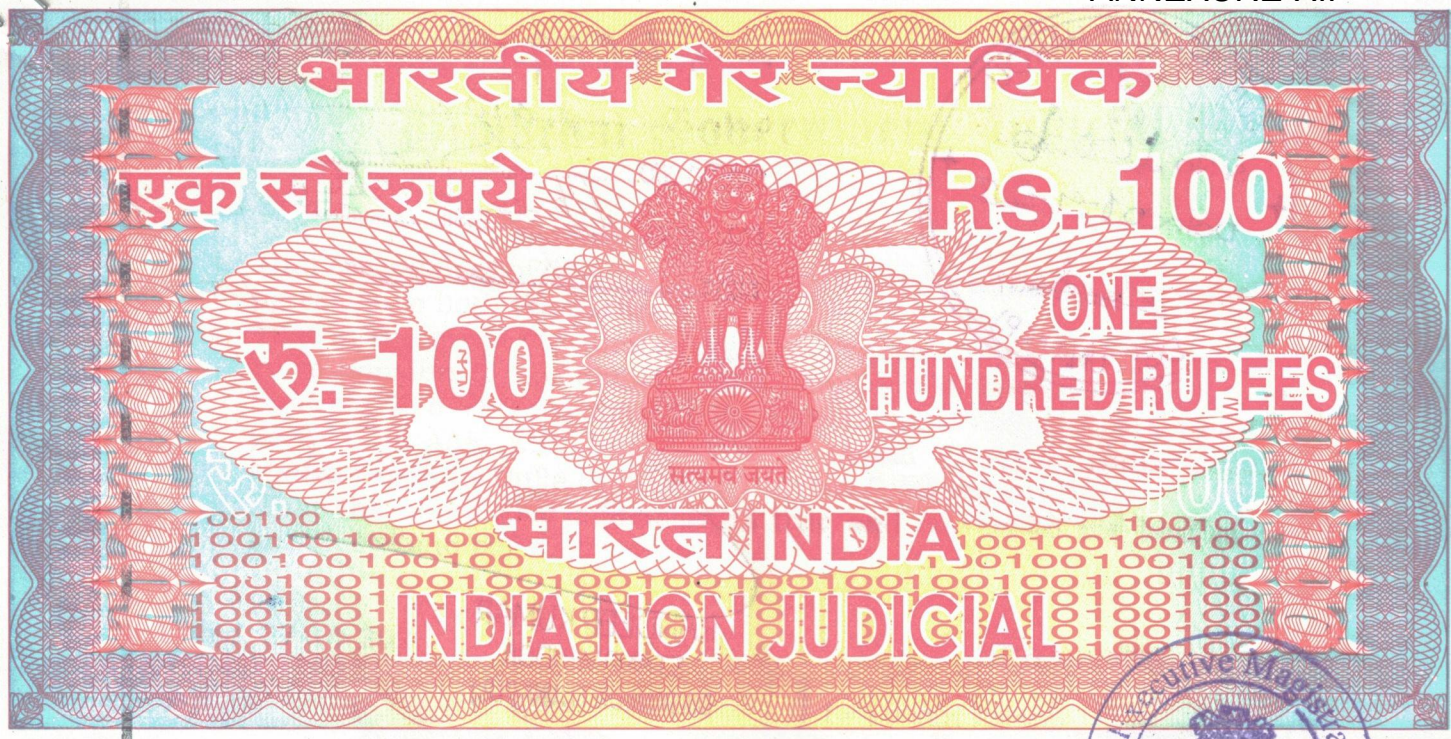
तिथि, मास और वर्ष	उपस्थित सदस्यों का नाम	निष्पादित कार्य का विवरण	Signature of the Panches Present पंचो के हस्ताक्षर
		प्रस्ताव नं० 06 विषय- AAR ESS SATON KARSHER खसरा नं० 4, 5, 7, 49, 145, 147, 149, 150, 165, 166, 167, 169, 171, 1112, 1113, 1119 मद्दाल गोन्दर उल्ला उपरला में रेह पत्थर, बजरी आदि उठाने हेतु अनापत्ति प्रमाण (NOC) देने हेतु प्रस्ताव पेश। अध्यक्ष महोदय द्वारा उपस्थित ग्राम सभा/ग्राम पंचायत के अवलोकन के समक्ष प्रस्ताव रखा कि AAR-ESS स्टोन क्रेशर खसरा नं० 4, 5, 7, 49, 145, 147, 149, 150, 165, 166, 167, 169, 171, 1112, 1113, 1119 मद्दाल गोन्दर उल्ला उपरला में रेह पत्थर, बजरी आदि में खोदी करने के संबंध में ग्राम पंचायत के पास अनापत्ति प्रमाण पत्र लेने बाबत प्रोपोजल कुमारी सुखदेव द्वारा जो पत्र दी गई है जिसके संबंध में उपस्थित ग्राम सभा ग्राम पंचायत अवलोकन हो। बाद विचार विमर्श सर्वसम्मति बनी की अनापत्ति प्रमाण पत्र देने हेतु ग्राम पंचायत/ग्राम सभा माईनिंग करने के सम्बंध में कोई आपत्ति नहीं है। पश्चात ग्राम पंचायत की बैठक में किया जा रहा है उनकी ग्राम सभा की बैठक होगी उपरोक्त प्रस्ताव को ग्राम सभा से अनुमोदित करवाने हेतु रखा जायेगा। अगर विधि प्रस्ताव सम्बंधित विभाग के स्तर से अनापत्ति पाई जाती है तो। पास हुआ सर्वसम्मति से	

Secretary
Gram Panchayat
Dev. Block, Haroli
Distt. Una (H.P.)

प्रधान तथा अन्य सदस्यों के हस्ताक्षर

ANAND STY. MART, JAL # 2456688

ANNEXURE-XII





हिमाचल प्रदेश HIMACHAL PRADESH

D 794183

No: 348/MC/NTD

Dt: 30-10-2023

Affidavit

We, Pawan Kumar, Ram Saroop, Bhola Nath Sons/o Sh. Data Ram S/o Sh. Paras Ram AND Yogesh Kumar, Rajesh Kumar, Mahesh Kumar Sons/o & Smt. Krishan Kanta Wd/o Sukhdev S/o Sh. Data Ram all residents of VPO Gondpur Bulla, Sub. Tehsil. Dulehar, Distt. Una H.P., do hereby solemnly affirm declare as under:-

मोहन लाल
डुलैहड़

1. That we are the owner (Co Share) of land measuring 03-53-76 Hectors Comprised in Khewat No. 01 Min, Khatoni No. 01 Min, Khasra Nos. 145,147,149,150,165,166,167,169,171,Kitta-09 as entered in Jamabandi for the year 2018-2019 situated in Mohal Gondpur Bulla Uperla, Sub-Tehsil. Dulehar, Distt. Una H.P.
2. That we have given consent in favour of Sh. Yogesh Kumar S/o Sh. Sukhdev R/o VPO Gondpur Bulla, Sub-Tehsil. Dulehar, Distt. Una H.P. partner of AAR ESS Stone Crusher Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla Sub Tehsil Dulehar Distt. Una H.P., to extract Material (Sand Stone & Bazari) from my/our above stated land for a period of 20 Years. And mining lease could be granted by the department of industry on this land.
3. That We Shell charge a sum of Rs. 1,00,000/- (Rupees One Lakh only) per years from Sh. Yogesh Kumar S/o Sh. Sukhdev R/o VPO Gondpur Bulla, Sub-Tehsil. Dulehar, Distt. Una H.P. partner of AAR ESS Stone Crusher Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla Sub Tehsil Dulehar Distt. Una H.P., on account of malkana for the above said land.

पवन कुमार

Rajesh Kumar
Executive Magistrate
Dulehar, Distt. Una (H.P.)
30/10/2023

4. That the expiries of 20 years we shell settle fresh malkana which shell be agreeable to both the parties.
5. That in the event of withdrawing from consent before 20 years we shall be responsible for the damage for suffered by Sh. Yogesh Kumar S/o Sh. Sukhdev R/o VPO Gondpur Bulla, Sub-Tehsil. Dulehar, Distt. Una H.P. partner of AAR ESS Stone Crusher Mohal Gondpur Bulla Upperla, Mauza Gondpur Bulla Sub Tehsil Dulehar Distt. Una H.P.,
6. That the above said statement is true and correct to the best of our knowledge and belief.

Dated :27-10-2023

DEPONENTS

1. Pawan Kumar
2. Ram Saroop
3. Bhola Nath
4. Yogesh Kumar
5. Rajesh Kumar
6. Mahesh Kumar
7. Krishan Kanta

Verification:-

We, further do hereby solemnly affirm and declare that the contents of this affidavit are true and correct best of my Knowledge and belief and nothing has been concealed from therein.

Dated :27-10-2023

DEPONENTS

1. Pawan Kumar
2. Ram Saroop
3. Bhola Nath
4. Yogesh Kumar
5. Rajesh Kumar
6. Mahesh Kumar
7. Krishan Kanta

Executive Magistrate Dulehar, Distt. Una (H.P.)

Rajan Kumar
Executive Magistrate
Dulehar, Distt. Una (H.P.)
30-10-23

(ANNEXUURE-XIII) **Annexure-A**

Basis for appraisal of EC (River Bed/hill slope/terrace deposit mining Projects),

SI. 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 145, 147, 149, 150, 165, 166, 167, 169 &171	Hill Slope	**Point**	Latitude	Longitude	Area 03-53-76 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° 19' 22.82" N	76° 12' 2.76" E					
				b	31° 19' 18.62" N	76° 12' 9.12"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)	---------	---------	---------	---------

Portion of the River or Stream Recommended for Mineral Concession	Length of area recommended for mineral concession (in kilometer)	Average width of area recommended for mineral concession (in meters)	Area Recommended for mineral concession (in square meter)	Mineable mineral potential (in metric tonne) (60% of total mineral potential)
---	---	---	---	---

Mineral Potential (for five years)

Boulder (MT)	Mine Waste (MT)	Total Mineable Mineral Potential (MT)
603855	258795	862650

S. No.	River or Stream or hill slope or terrace deposit	Portion of the river or stream/ hill/terrace deposit recommended for mineral concession(ha)	Length of area recommended for mineral concession (in kilometer)	Average width of area recommended for mineral concession (in meters)	Area Recommended for mineral concession (in square meter)	Mineable mineral potential (in metric tonne) (60% of total mineral potential)
(1)	---	---	---	---	---	---

ANNEXURE-XIV

No. IPH-SE-P&I-II-EEGWA/2017-18: 2260-61
Government of Himachal Pradesh
I &PH Department
Dated :Shimla the 15-11-17

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"

Scanned with CamScanner

o/c o/c

फगवाड़ा रोड, माहिलपुर (होशियारपुर) पंजाब (3431)
Phagwara Road, MAHILPUR (Hoshiarpur) Pb. - 146105

केवल तीन माह के लिए वैध
VALID FOR THREE MONTHS ONLY

D	D	M	M	Y	Y	Y	Y
3	1	0	3	2	0	1	7

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

शाखा क्रमांक Branch Serial No. 0001/2017

पंजाब नैशनल बैंक
punjab national bank

D No. 4530 RCC SHIMLA FINACLE

Draft is signed singly as it is for amount upto Rs. 50,000/-
(NOT OVER Rs.10000/-)

प्राधिकृत हस्ताक्षरकर्ता जी.बी.पी.ए.सं. AUTHORISED SIGNATORY WITH GBPA No.

प्राधिकृत हस्ताक्षरकर्ता जी.बी.पी.ए.सं. AUTHORISED SIGNATORY WITH GBPA No

9 8 7 6 5 4 3 2 1

TL OL TT OT

"029335" 000024000: 66

SP UNA HO <174303>
EE766944092IN
Counter No:2,OP-Code:012
To:THE MEMBER SEC,HP
shimla hp. PIN:171009
From:M/S L SINGH , UNA HP174303
Wt:50grams.
Amt:41.00 ,20/05/2017 ,12:14
Taxes:Rs.6.00<<Track on www.indiapost.gov.in>>

भारतीय डाक
India Post

Scanned with CamScanner

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +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	NTL 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_{10}), Fine Particulate ($PM_{2.5}$) Sampler

S. No.	Monitoring Date	PM10 IS:5182(Part-23)	PM2.5 IS:5182(Part-24)	SO_2 IS:5182(Part-2)	NO_2 IS:5182(Part-6)	CO 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/m³**	**60 µg/m³**	**80 µg/m³**	**80 µg/m³**	**2 mg/m³**

CHECKED BY

AUTHORIZED SIGNATORY

NODIA TESTING LABORATORIES LLP NTL

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-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	NTL 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_{10}), Fine Particulate ($PM_{2.5}$) Sampler

S. No.	Monitoring Date	PM10 IS:5182(Part-23)	PM2.5 IS:5182(Part-24)	SO_2 IS:5182(Part-2)	NO_2 IS:5182(Part-6)	CO 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
Min		**28.69**	**12.94**	**6.53**	**10.33**	**0.13**
Max		**47.89**	**26.68**	**11.85**	**14.85**	**0.41**
Avg.		**39.77**	**21.43**	**8.92**	**11.77**	**0.29**
P 98		**47.87**	**25.97**	**11.82**	**14.57**	**0.41**
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		**100 µg/m³**	**60 µg/m³**	**80 µg/m³**	**80 µg/m³**	**2 mg/m³**

CHECKED BY

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES LLP NTL

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011225-03	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 Drawn By	NTL 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_{10}), Fine Particulate ($PM_{2.5}$) Sampler

S. No.	Monitoring Date	PM10 IS:5182(Part-23)	PM2.5 IS:5182(Part-24)	SO_2 IS:5182(Part-2)	NO_2 IS:5182(Part-6)	CO 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/m³**	**60 µg/m³**	**80 µg/m³**	**80 µg/m³**	**2 mg/m³**

CHECKED BY

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES LLP NTL

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011225-04	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	NTL 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_{10}), Fine Particulate ($PM_{2.5}$) Sampler	

S. No.	Monitoring Date	PM10 IS:5182(Part-23)	PM2.5 IS:5182(Part-24)	SO_2 IS:5182(Part-2)	NO_2 IS:5182(Part-6)	CO 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
Min		**28.68**	**15.5**	**7.4**	**9.58**	**0.13**
Max		**55.42**	**31.54**	**13.45**	**14.85**	**0.44**
Avg.		**42.76**	**22.89**	**11.05**	**11.70**	**0.31**
P 98		**55.22**	**31.30**	**13.45**	**14.85**	**0.44**
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		**100 µg/m³**	**60 µg/m³**	**80 µg/m³**	**80 µg/m³**	**2 mg/m³**

CHECKED BY

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021225-05	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	NTL Representative	: **Monitoring Period**	Dec 2025 - Feb 2026
Sampling Location	Dulehar Villahe	: **Protocol Used**	CPCB Guidelines
Sampling Plan &Procedure	SOP-AAQ/08	: **Sampling Instrument Used**	Respirable Dust Sampler (PM_{10}), Fine Particulate ($PM_{2.5}$) Sampler

S. No.	Monitoring Date	PM10 IS:5182(Part-23)	PM2.5 IS:5182(Part-24)	SO_2 IS:5182(Part-2)	NO_2 IS:5182(Part-6)	CO 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
Min		**26.32**	**16.84**	**6.85**	**9.36**	**0.11**
Max		**51.25**	**32.01**	**10.89**	**13.58**	**0.4**
Avg.		**45.47**	**25.46**	**9.53**	**12.13**	**0.29**
P 98		**51.24**	**31.39**	**10.89**	**13.57**	**0.40**
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		**100 µg/m³**	**60 µg/m³**	**80 µg/m³**	**80 µg/m³**	**2 mg/m³**

CHECKED BY

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES LLP NTL

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021225-06	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	NTL Representative	:	**Monitoring Period**	Dec 2025 - Feb 2026
Sampling Location	Mehindwani Village	:	**Protocol Used**	CPCB Guidelines
Sampling Plan &Procedure	SOP-AAQ/08	:	**Sampling Instrument Used**	Respirable Dust Sampler (PM_{10}), Fine Particulate ($PM_{2.5}$) Sampler

S. No.	Monitoring Date	PM10 IS:5182(Part-23)	PM2.5 IS:5182(Part-24)	SO_2 IS:5182(Part-2)	NO_2 IS:5182(Part-6)	CO 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
Min		**35.43**	**18.32**	**6.83**	**7.73**	**0.25**
Max		**47.75**	**30.03**	**11.09**	**12.14**	**0.84**
Avg.		**41.44**	**22.98**	**8.85**	**10.06**	**0.53**
P 98		**47.29**	**29.35**	**10.89**	**12.02**	**0.81**
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		**100 µg/m³**	**60 µg/m³**	**80 µg/m³**	**80 µg/m³**	**2 mg/m³**

CHECKED BY

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES NTL

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021225-07	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 Drawn By	NTL Representative	:	**Monitoring Period**	Dec 2025 - Feb 2026
Sampling Location	Goindpur Taraf Bulla Village	:	**Protocol Used**	CPCB Guidelines
Sampling Plan &Procedure	SOP-AAQ/08	:	**Sampling Instrument Used**	Respirable Dust Sampler (PM_{10}), Fine Particulate ($PM_{2.5}$) Sampler

S. No.	Monitoring Date	PM10 IS:5182(Part-23)	PM2.5 IS:5182(Part-24)	SO_2 IS:5182(Part-2)	NO_2 IS:5182(Part-6)	CO 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/m³**	**60 µg/m³**	**80 µg/m³**	**80 µg/m³**	**2 mg/m³**

CHECKED BY

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES LLP NTL

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021225-08	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	NTL Representative	:	**Monitoring Period**	Dec 2025 - Feb 2026
Sampling Location	Gajjar Village	:	**Protocol Used**	CPCB Guidelines
Sampling Plan &Procedure	SOP-AAQ/08	:	**Sampling Instrument Used**	Respirable Dust Sampler (PM_{10}), Fine Particulate ($PM_{2.5}$) Sampler

S. No.	Monitoring Date	PM10 IS:5182(Part-23)	PM2.5 IS:5182(Part-24)	SO_2 IS:5182(Part-2)	NO_2 IS:5182(Part-6)	CO 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
Min		**23.67**	**13.65**	**6.14**	**7.17**	**0.21**
Max		**38.56**	**23.35**	**9.88**	**11.32**	**0.68**
Avg.		**30.87**	**17.35**	**8.35**	**9.44**	**0.49**
P 98		**38.23**	**23.01**	**9.79**	**11.15**	**0.67**
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		**100 µg/m³**	**60 µg/m³**	**80 µg/m³**	**80 µg/m³**	**2 mg/m³**

CHECKED BY

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES LLP NTL

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

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)

Requirement (as per CPCB Guidelines Limits in dB (A) Leq		
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: -

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

NOIDA TESTING LABORATORIES LLP N.T.L

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

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 Ca2+)	mg/l	64.4	65.8	64.0	66.1	62.0	66.5	75	200
13	Magnesium (as Mg2+)	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 SO4)	mg/l	26.0	25.4	28.0	25.0	24.2	26.6	200	400
17	Nitrate(as NO3)	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

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

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 CaCO3	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	*E. coli*	E.coli /100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent/100ml	

BDL- Below Detection Limit

Notes: -

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

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^{0}C)	IS:3025(Part-11)	---	7.46	7.58
2.	Temperature	IS:3025(Part-9)	^{0}C	21.0	20.0
3.	Turbidity	IS:3025(Part-10)	NTU	1.8	2.5
4.	Electric Conductivity @25^{0}C	IS:3025(Part-14)	µS/cm	320	338
5.	Sulphate (SO_4)	IS:3025(Part-24)	mg/l	18.0	21.0
6.	Nitrate (NO_3)	IS:3025(Part-34)	mg/l	1.56	1.98
7.	Total Hardness (as CaCO3)	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_2)	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^{0}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

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

24.	Potassium (as K)	IS:3025(Part-45)	mg/l	1.32	1.27
25.	Total Alkalinity (as $CaCO_3$)	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_2)	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	1.1×10^3	1.6×10^3
30.	Total Coliform	IS-1622	MPN/100 ml	2.4×10^3	2.5×10^3

BDL- Below Detection Limit

Notes: -

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES LLP NTL

NOIDA TESTING LABORATORIES LLP

(A Government of India Approved Testing Laboratory)

(An ISO : 9001 : 2015, ISO 45001 : 2018 (OH&S) Certified & NABL Accredited Laboratory)

MoEF, CC (Ministry of Environment, Forest & Climate Change) and UPPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Soil Quality	SQ-170226-05	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 Description : Soil Sample
Sample Quantity : 2.0 Kg
Sample Drawn By : **NTL Representative**
Analysis Duration : 17/02/2026 to 23/02/2026

		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/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: -

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED SIGNATORY