

M/s Banorhey Mahandev Stone Crusher

VPO Lower Basal Tehsil and Distt Una HP 174303

Contact no 9418030665

=====

Date: -02.03.2026

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 Riverbed, situated at Khasra No. 6525/1 & 6526/1, measuring 3.6142 ha in Mauza/Mohal Badehra, Tehsil Haroli, District Una, Himachal Pradesh by Sh. Ashwani Kumar Prop. M/s Banorhey Mahadev Stone Crusher.

Reference No.: - TOR Identification No. T025B0107HP5748610N 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 Riverbed mining project, situated at Khasra No. 6525/1 & 6526/1, measuring 3.6142 ha in Mauza/Mohal Badehra, Tehsil Haroli, District 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 to 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. 5000/- through by Demand Draft.

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

Thank you

Ashwani Kumar

(Authorized Signatory)

Mr. Ashwani Kumar

Prop. M/s Banorhey Mahadev Stone Crusher

Draft EIA REPORT

of

Mining of Sand, Stone, and Bajri from Swan River

Located at

**Khasra No. 6525/1 and 6526/1,
Mauza/Mohal Badehra in Tehsil Haroli,
District Una, Himachal Pradesh**

Project Area: - 3.6142 Hectare

Production Capacity: - 1,36,080 MTPA (Excluding Waste)

Proposed by

Sh. Ashwani Kumar Prop. M/s Banorhey Mahadev Stone Crusher

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

Category- B1'

ToR Identification No: - TO25B0107HP5748610N dated 04-12-25

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

Monitoring done by:- Noida Testing Laboratories

NABET Certificate No: - TC-12094



**ENVIRONMENTAL CONSULTANT
SHIVALIK SOLID WASTE MANAGEMENT LIMITED**



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

Valid up to Aug 17th, 2026

Address: SCO 20-21, 1st floor, Near Hotel Dolphin, Baltana, Zirakpur, (Punjab)140604

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ANNEXURES

ANNEXURE I:- TOR LETTER

ANNEXURE II:- LETTER OF INTENT (LOI)

ANNEXURE III :- MINING OFFICER'S LETTER

ANNEXURE IV:- JOINT INSPECTION REPORT, JAMABNDI AND TATIMA

ANNEXURE V:- APPROVED MINING PLAN ALONG WITH MINE PLATES

ANNEXURE VI:- PANCHAYAT NOC FOR MINING

ANNEXURE VII:- DFO LETTER ALONG WITH AUTHENTICATED LIST OF FLORA AND FAUNA

ANNEXURE VIII:- NOC FOR WATER SOURCE

ANNEXURE IX:- ENVIRONMENTAL MONITORING POLICY

ANNEXURE X:- BASELINE MONITORING REPORTS



TOR LETTER



सत्यमेव जयते

File No: HP SEIAA/2025/1353

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,

ASHWANI KUMAR
S/O Bahal Singh V.P.O Chatara ward no. 6 tehsil Una, Chat Una, Himachal Pradesh, 174306., UNA,
HIMACHAL PRADESH, 174306
banorheymahadev123@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 Stone, boulder, Bajri and sand from Khasra no. 6525/1 and 6526/1 Mauza/Mohal Badehra, tehsil Haroli, distt. Una Himachal Pradesh by Sh. Ashwani Kumar, M/s Banorhey Mahadev Stone Crusher, submitted to Ministry vide proposal number SIA/HP/MIN/555266/2025 dated 17/10/2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0107HP5748610N
(ii) File No.	HP SEIAA/2025/1353
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals Mining of Stone, boulder, Bajri and sand from Khasra no. 6525/1 and 6526/1 Mauza/Mohal Badehra, tehsil Haroli, distt. Una Himachal Pradesh by Sh. Ashwani Kumar, M/s Banorhey Mahadev Stone Crusher.
(vii) Name of Project	
(viii) Name of Company/Organization	ASHWANI 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/ 555266/2025, TOR's

SIA/HP/MIN/555266/2025

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b)	Processing fee	HP SEIAA/2025/1353 UTR reference no. 390678439373 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 6525/1 and 6526/1 falling in Mauza/Mohal Badeltra, Tehsil Haroli, District Una, Himachal Pradesh.
e)	Jamabandi	Jamabandi for the year 2019-2020
f)	Land Status	Private land
g)	Capacity	1,36,080 MT/year
h)	Mining Area	03-61-42 ha
i)	Leases within 500 meter from the periphery of the area applied.	One mining leases exist within 500 meters.
j)	Letter of Intent	LoI issued on dated 01.08.2025, valid for two years.
k)	EMP Cost	-
l)	CER cost	-

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

Copy To

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

- 6.The Integrated Regional Office, MoEF&CC, CGO Complex, Shivalik Khand, Longwood, Shimla, HP-171001.
 7.The Monitoring Cell, MoEF&CC,Gol, 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 complianee 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



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

S. No	Terms of Reference
	State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
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

S. No	Terms of Reference
	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
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

S. No	Terms of Reference
	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 Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area
1.45	<ol style="list-style-type: none"> 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 SELAA 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.

S. No	Terms of Reference
	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 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)
Mining of Stone, boulder, Bajri and sand	Mining of Stone, boulder, Bajri and sand	136080	Tons per Annum (TPA)	Road	

Signature Not Verified

Digitally Signed by : Sh. Jyoti Chand Rana
Member Secretary, SEIAA

Date: 04/12/2025

COMPLIANCE OF TOR

The table below gives the compliance of Terms of Reference issued vide ToR identification No. TO25B0107HP5748610N dated 04.12.2025 by the State Environment Impact Assessment Authority (SEIAA) Himachal Pradesh for proposed Riverbed Mining project for extraction of Sand, Stone and Bajri situated at Khasra 6525/1 and 6526/1 measuring 3.6142 ha. (Private Land/ Riverbed) falling in village Badehra Tehsil Haroli, District Una, Himachal Pradesh by Sh. Ashwani Kumar Prop. M/s Baronhey Mahadev 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 mine should be given.	Letter of Intent attached as Annexure- II.
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 3.6142 ha., production 136080 MTPA (Sand, Stone & Bajri), maximum of 15120 tons of waste, consisting of Silty Sand/Topsoil and Clay will be mined.
4	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features	Complied and Included in Chapters 2 and 3.



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

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.	Safety measures for riverbed mining of sand, stone & bajri are detailed in Chapter 7 .
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.	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.	Not applicable.
12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the	DFO letter attached as Annexure-VII .

	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.	
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	Not Applicable. Not applicable. No such ecological zones exist within 10 km. DFO certification attached as Annexure-VII .

	be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	
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.	Not applicable.

	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).	
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 Riverbed mining ; 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	Baseline data and meteorological details included in Chapter 3 . PM10 composition with free silica also provided.

	<p>also be collected. The location 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.</p>	
23	<p>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.</p>	<p>Air quality modeling is included in Chapter 4; wind rose in Chapter 3.</p>
24	<p>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.</p>	<p>Total requirement: 1.97 KLD (1.5 KLD for dust suppression, 0.67 KLD for domestic use). Details in Chapter 2.</p>
25	<p>Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.</p>	<p>Water will be supplied from borewell near project site.</p>

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 is 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 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-V .
31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear	No vegetation within lease; year-wise plantation plan and budget in Chapter 10 . Species list in Chapter 4 .

	<p>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.</p> <p>Phase-wise, plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.</p>	
32	<p>Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.</p>	Traffic study included in Chapter 4.
33	<p>Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.</p>	A Temporary rest shelter with water, first aid, and protective gear detailed in 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.	This is a draft EIA Report submitted for Public Hearing.
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 ₹2.97 lakhs; Recurring cost ₹ 14.11 lakhs/year; ₹ 70.55 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 include.	Not applicable; this is a new project. Surface plan, contour details, drainage, and geological maps are enclosed.

	<p>II. Surface plan of the area indicating contours of main topographic features, drainage and mining area.</p> <p>III. geological maps and sections and sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.</p>	
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In addition to the standard Terms of Reference (ToR) prescribed by the MoEF&CC, the following Specific ToR points have been stipulated by SEAC:-

Sr. No.	Terms of Reference	Cross Ref. in EIA Report
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 Riverbed mining project.

4.	The project proponent shall submit a certificate from the Director (Industries) to the fact that the proposed mining site is recommended/approved on the basis of the District Survey Report prepared & approved by SEIAA authorities in conformity with the SO No. 141 (E), SO No. 3611(E) and as per Sustainable Sand Mining Management Guidelines, 2016 and Enforcement & Monitoring Guidelines for Sand Mining, 2020 published by MoEF&CC, GoI.	Certificate from the Director (Industries) will be submitted during the Final EIA presentation.
5.	Hard copy of the application along with the relevant document shall be ink signed & submitted in the office of SEIAA Secretariat.	Agreed and will be complied.
6.	The project proponent shall submit compliance report to the issue raised during public hearing.	Not applicable, as the draft EIA is being submitted for public hearing
7.	The project proponent shall submit proposed EMP and including CER activities as its part. All the commitments 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 Sand, Stone & Bajri 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 pollution content within permissible limits.

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

The proposed project covers an area of 3.6142 hectares, located on private land. Additionally, the project forms a cluster within 500 meters of an existing mining lease covering 2.9510 hectares.

As per the Mining officer's letter stating that there is one another mine lease within the 500-m periphery of the lease area, detail given below: -

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

Sr. No	Name of mine lease	Area in Hectare	Khasra No.	Status of Mining Lease
1	M/s Thakur Enterprises Unit - IV.	2-95-10 Hect.	6503/1	Operational

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 3.6142 hectares. Its Terms of Reference (TOR) were approved through letter No. TO25B0107HP5748610N dated 04-12-2025, attached as **Annexure-I**.

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

1.2 IDENTIFICATION OF PROJECT

The proposed Riverbed mining is for extraction of Sand, Stone & Bajri by Sh. Ashwani Kumar, Proprietor of M/s Banorhey Mahadev Stone Crusher, located at Khasra 6525/1 and 6526/1, located at Mauza/Mohal Badehra, Tehsil Haroli, District Una, Himachal Pradesh.

The Letter of Intent has been sanctioned in favour of Sh. Ashwani Kumar, Proprietor of M/s Banorhey Mahadev Stone Crusher. This letter was issued by the Department of Industries, Himachal Pradesh, under reference No. Udyog-Bhu (Khani-4) Laghu-610/2025-5028 dated 01.08.2025. Letter of Intent is attached as **Annexure II** & joint Inspection Report along with Tatima & Jamabandi attached as **Annexure IV**.

The Mining Plan has been approved vide letter no. Udyog-Bhu (Khani-4) Laghu- 610/2025-5028 issued on dated 01.08.2025 is attached as **Annexure V**.

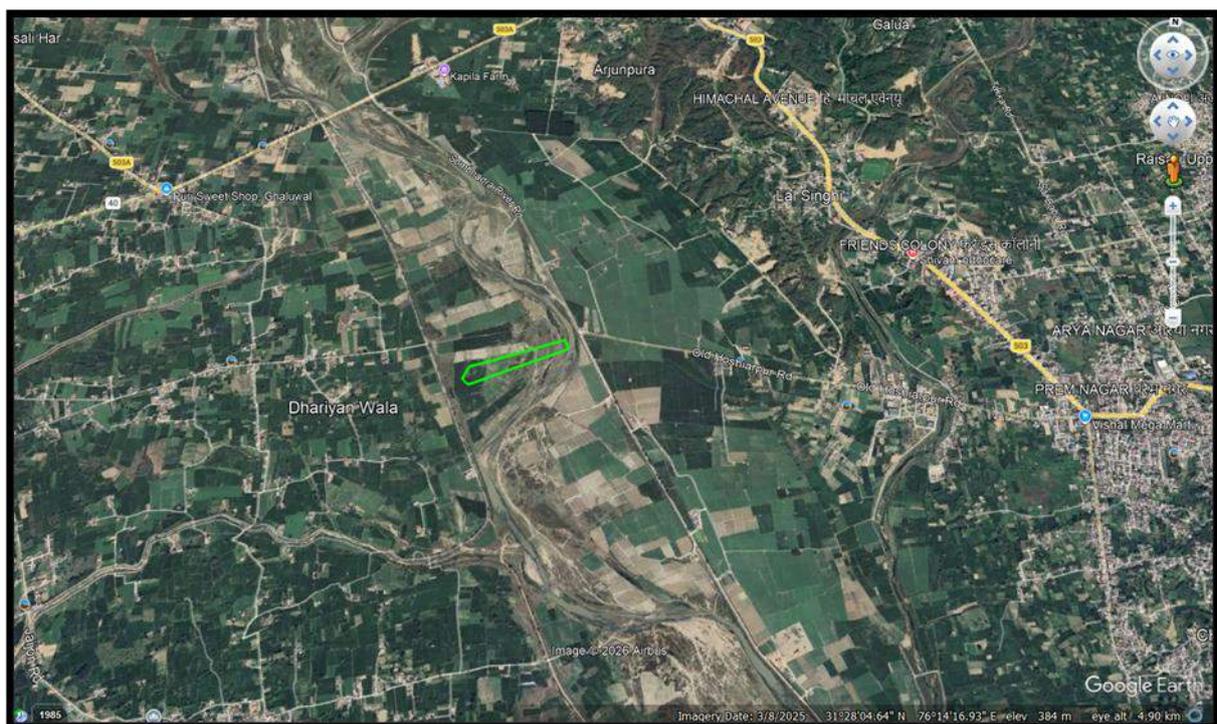


FIGURE 1-1: LOCATION OF THE PROJECT

1.3 PROJECT PROPONENT

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

This is a newly proposed riverbed mining project. The key management personnel are as follows: - **Sh. Ashwani Kumar, Proprietor of M/s Banorhey Mahadev Stone Crusher.**

The owner possesses in-depth knowledge of riverbed 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 project of Sand, Stone, and Bajri mining from Swan River is located in Khasra 6525/1 and 6526/1 village Badehra, Tehsil Haroli, District Una, Himachal. The mining lease area covers 3.6142 hectares of riverbed mining and has been sanctioned in Favor of Sh. Ashwani Kumar, Proprietor of M/s Banorhey Mahadev Stone Crusher., vide letter dated 01.08.2025. The project aims to extract 1,36,080 MTPA of minerals, with an estimated project cost of Rs. 10 lakhs. The Mining Plan has been approved on 09.09.2025. There are no litigations or court cases pending against the project.

TABLE 1-2 SALIENT FEATURE OF THE PROJECT

Project Name	Mining of Stone, Bajri and sand from Swan River Proposed by Sh. Ashwani Kumar.
Mining Lease Area	3.6142 Hectare
Location of mine	Khasra 6525/1 and 6526/1 village Badehra, Tehsil Haroli, District Una, Himachal Pradesh.
Latitude	31° 28' 9.08" N to 76° 14' 8.70" E
Longitude	31° 27' 59.56" N to 76° 13' 50.48" E
Toposheet number	H43E2
Minerals of mine	Sand, Stone and Bajri
Proposed production of mine	136080 TPA
Method of mining	Manual
No of working days	270 days
Cost of the Project	10 lacs
Water demand	0.67 (Domestic) + 1.5 (Dust Suppression) = 1.97 KLD
Sources of water	Water from proponent's own borewell will be used for drinking purposes and for Sprinkling purposes. permission for borewell has been applied. Online application form is attached to Annexure-VIII.
Manpower	15

Waste Generation	Max. 15120 TPA mine waste will be generated as waste & will be used for maintenance of road & plantation purposes.
Nearest railway station	Una Railway Station: about 3.87 Km in the ENE direction (Aerial Distance).
Nearest state highway /national highway	National Highway NH-503: About 1.86 km NW direction.
Nearest airport	Gaggal Airport Kangra in North Direction at 77.15 Km in the N direction (Aerial Distance).
Seismic zone	Seismic zone -IV.

1.4.1 Nature of the project

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

It is classified as a B1 category minor mineral activity under the EIA Notification, 2006 and its amendments. The mining lease area covers 3.6142 hectares and is located in Khasra 6525/1 and 6526/1 measuring 3.6142 ha. (Private Land/ Riverbed) falling in village Badehra Tehsil Haroli, District Una, Himachal Pradesh.

As per the Mining officer's (MO) letter another mine lease exists within the 500-m periphery of this lease area attached as **Annexure-III**. Mining will be carried out using scientific and eco-friendly methods to minimize environmental impact and comply with all regulations.

Materials extracted will be used for construction activities like buildings, roads, and infrastructure development. The project is proposed by **Sh. Ashwani Kumar Prop. M/s Banorhey Mahadev 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

Excavated stone, bajri and sand are one of the largest non-fuel mineral commodities by tonnage produced in Himachal Pradesh, supplying some of the most important construction materials. Further, average unit value of stone, sand and bajri is one of the lowest of all mineral commodities. This production of aggregate in a particular area is a function of the availability of natural resources, the size of population, the economy of the area and various developmental and infrastructural works being undertaken in the area like road construction, hydro-electric projects etc.

A stable river is able to consistently transport the flow of sediments produced by watershed such that its dimensions (width and depth) pattern and vertical profile are maintained



without aggrading (building up) or degrading (scouring down) the number of boulders, cobbles, pebbles and sand deposited in riverbed equals to the amount delivered to the river from watershed and from bank erosion minus amount transported downstream each year.

Benefits of Sustainable Riverbed Mining

- Prevents the riverbed from becoming shallow due to the deposition of sediments.
- Scientific mining prevents the excessive erosion, which can damage flora, agriculture land and Settlements situated in close proximity.
- It maintains the water retention capacity and help to avoid flood like situations.
- It generates useful economic resource for construction and generates employment in local area.

1.5 SCOPE OF THE STUDY

The Environmental Impact Assessment report has been prepared based on the terms of Reference for EIA study issued by HP SEIAA vide letter No. SIA/HP/MIN/555266/2025 & ToR identification no. TO25B0107HP5748610N Dated 04.12.2025. The three months base line monitoring has been done in winter period from Dec 2025 – Feb 2026.

The EIA study has been conducted as per the applicable rules/guidelines of Ministry of Environment and Forests, Govt. of India including general/sectoral provisions and in accordance with prescribed ToR by SEAC. The EIA study includes, but not necessarily restricted to the following:

- (a) Literature Review
- (b) Field Studies
- (c) Impact assessment and preparation of the EIA/EMP

An outline of the activities carried out in stages A, B, C are briefly described below.

Stage A: Environmental Baseline Monitoring (EBM)

Assessment of relevant features of the project those are likely to have an impact on environment during construction and operation phases.

Stage B: Impact prediction

Assessment of likely emissions from the proposed facility and assessment of impacts using scientific tools to delineate post project scenario.

Stage C: Environmental monitoring and management plan

Suggesting adequate pollution control measures to offset adverse impacts if any, Preparation of EIA and EMP documents and defending the study findings before the regulatory authorities.



The EIA study has been conducted by collection of primary baseline data of ambient air quality, surface and ground water quality, soil quality, noise levels, metrology flora and fauna ,socioeconomic status within study area of 10 km radius from the project site i.e core area. The secondary data has also been collected from respective government and private institutions The impacts are predicted on the basis of baseline environment data highlighting the positive & negative impact on account of proposed mining activities. Environmental Management Plan is prepared for mining project, suggesting various mitigation measures to reduce/eliminate adverse impacts of the riverbed mining to meet the prescribed standards.

1.6 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

1.7 STATUS OF LITIGATION

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

1.8 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 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 mining activities within the state.

1.8.1 Guidance Applicable for Riverbed Mining by CPCB

i) Categorization of Mining Activities

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

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

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

ii) Environmental Concerns Highlighted

CPCB emphasizes that 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.

1.8.2 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 proposed project is a Riverbed mining project of Stone, Bajri and sand from Swan River located at Khasra 6525/1 and 6526/1 measuring 3.6142 ha. (Private Land/ Riverbed) falling in village Badehra Tehsil Haroli, District Una, Himachal Pradesh. The letter of Intent for the grant of mining lease issued in favor of Sh. Ashwani Kumar Prop. M/s Baronhey Mahadev Stone Crusher. The letter of intent by the Department of Industries has been issued vide letter No. Udyog-Bhu (Khani-4) Laghu-610/2025-5028 dated 01.08.2025, are attached **ANNEXURE-II**.

As per MoEF, New Delhi Gazette dated 14th September 2006 and amended thereafter, the proposed mining project is categorized as category 'B1' project. As per the mining officers letter stating that there are one another mine lease exist within the periphery of 500 meters from the project site. Resulting the total area of all mines are 3.6142 ha. The proposed mining activity will be carried out from river bed. It has been proposed to collect 136080 MTPA Sand, Stone & Bajri. Max. 15120 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-610/2025-5028 dated 01.08.2025 attached as **ANNEXURE-V**.

The lease area is situated in the swan river. The height elevation point of the mining lease area is 382 Meters above MSL and the lowest point is 381 meters above MSL.

2.1 SITE HISTORY

The proposed mining site at the river bed 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 river bed 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

This is a new project. No forest land is involved. The project is a manual opencast mining project, where mining of Stone, Sand & Bajri will be done from the bed of Swan River. No Rotational mining will be done. As per mine plan entire mining lease falls within river course & get replenished into monsoon season. Method of mining is opencast, manual without drilling & blasting, restricted up to 1m depth. Mineral's transportation will be done through



road. The production of stone is for captive stone crusher. The demand for stone grit produced from Stone crusher is limited to the local domestic market and it has no potential for export. The extracted sand will directly sale to the local market.

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 located at Mohal / Mauza Badhera, Tehsil Haroli, District Una, Himachal Pradesh. The mining lease area/project area is part of swan River primary tributary of Satluj River and falls in Topography sheet No. H43E2. Buffer map showing features in 10 km radius in **Figure no. 2.3**. Evacuation Route Map showing the mining lease area is given in **Figure 2.2**.

TABLE 2 1: DETAILS OF MINING LEASE AREA

Sr. No	Khasra Number	Area in Hectare	Owner of Land	Kism	Mauza/Mohal
1	6525/1 and 6526/1	3.6142	Private Land	Gair mumkin Nadi	Badhera

***Source: Approved Mine Plan**

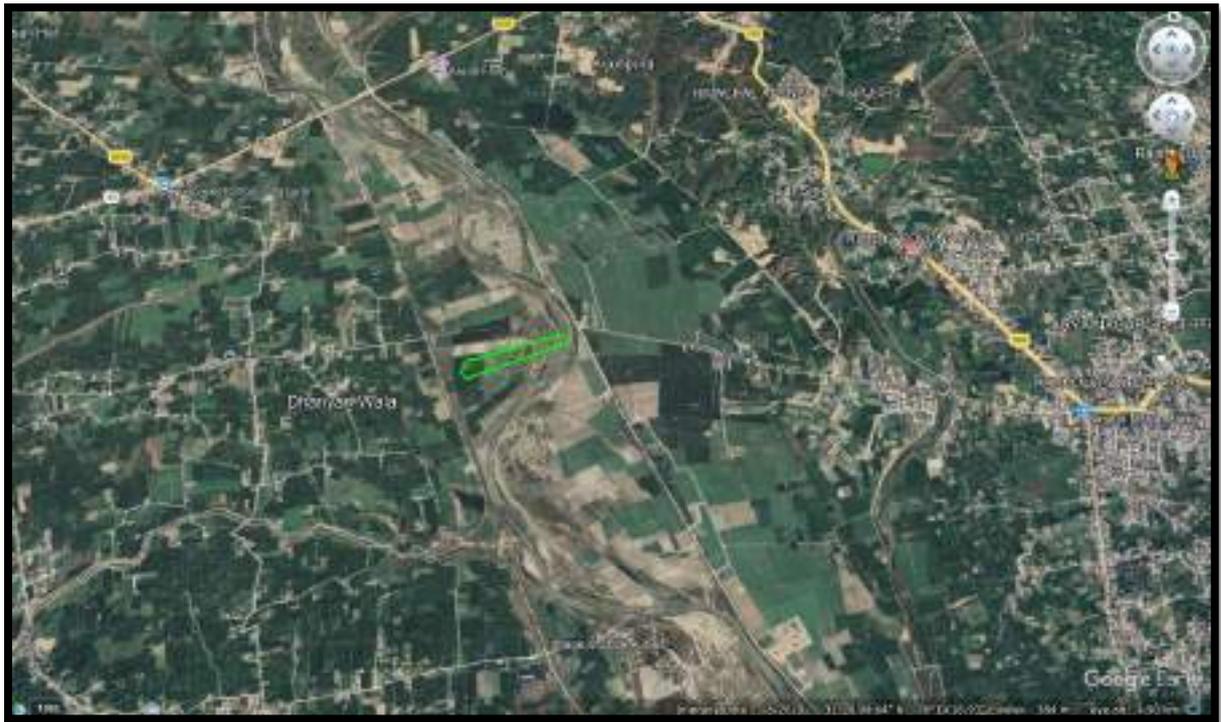


FIGURE 2-1 IMAGE SHOWING PROJECT LOCATION

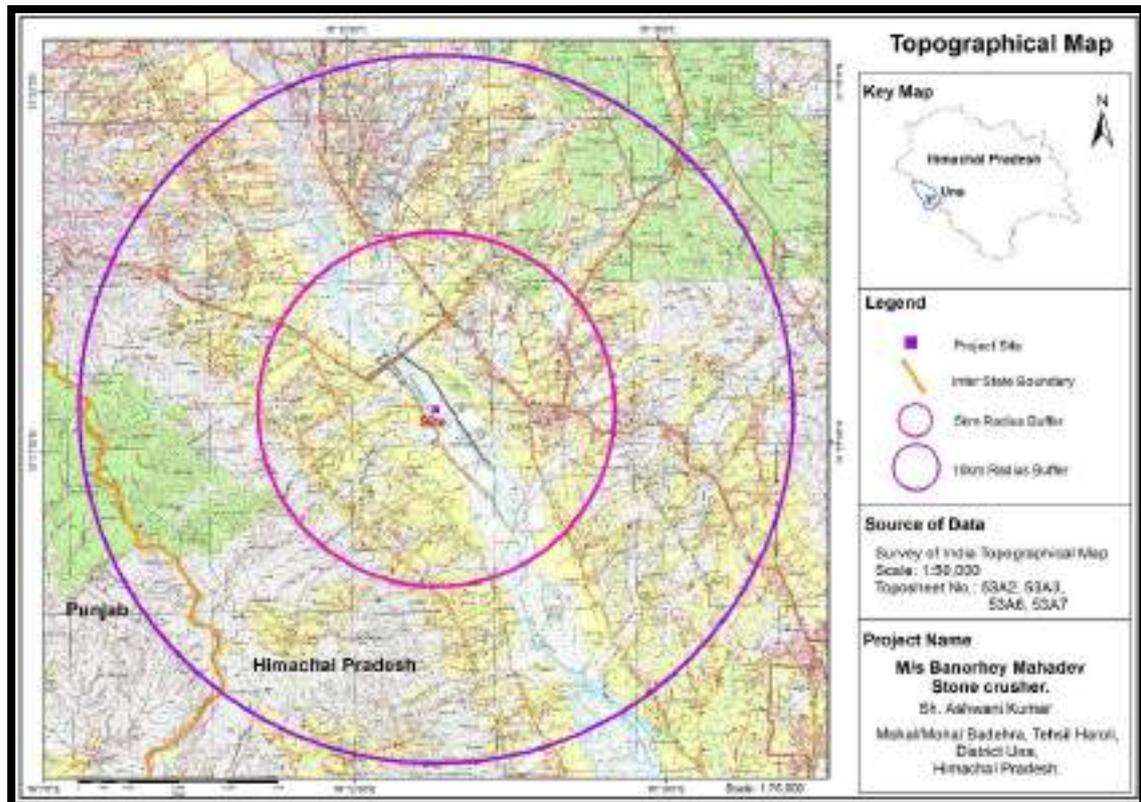


FIGURE 2-2:-MAP SHOWING 5 KM & 10 KM BUFFER FROM THE PROJECT SITE

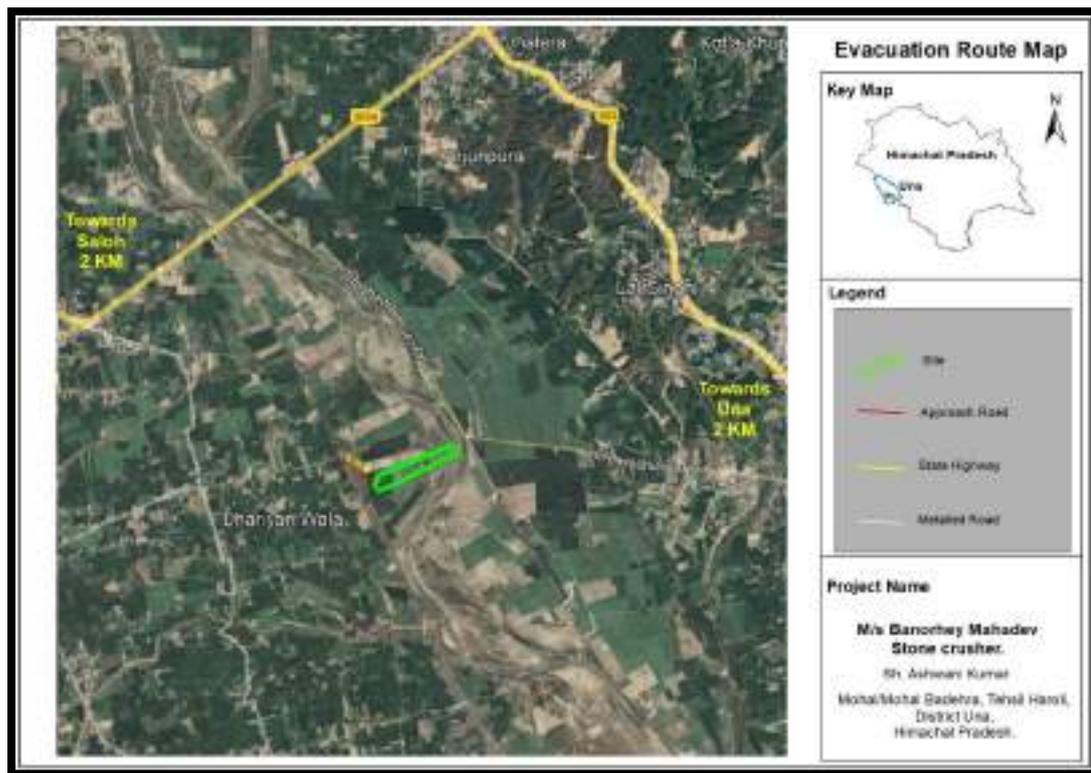


FIGURE 2-3 EVACUATION ROUTE MAP

2.5 SIZE AND MAGNITUDE OF OPERATION

The proposed project is a Riverbed mining project of Stone, Bajri and sand from Swan River located at Khasra 6525/1 and 6526/1 measuring 3.6142 ha. (Private Land/ Riverbed) falling in village Badehra Tehsil Haroli, District Una, Himachal Pradesh.

Due to the presence of one other leases within 500 meters, the project forms a cluster of 8.3731 hectares falling Category 'B1' project under EIA Notification, 2006. The project aims to extract 136080 TPA of sand, stone, and bajri using manual method, without drilling or blasting. Max. 15120 TPA of mine waste in the form of Silty sand and Topsoil, will also be collected.

2.7 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION

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

S. No.	Activity	Estimated Time frame
1	Submission of EIA/EMP Report to SEIAA	Month 1
2	Public Consultation (if applicable)	Month 2-3
3	Appraisal and Grant of Environmental Clearance	Month 4-5
4	Grant of Mining Lease by State Government	Month 6
5	Site Preparation and Mobilization	Month 6-7
6	Commencement of Mining Operations	Month 7 onwards

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

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

2.9 GENERATION OF MINE WASTE AND ITS DISPOSAL

Max. 15120 TPA of Topsoil and Silt sand/Clay will be generated as waste during mining operation. Waste will be sold out as per market demand.

2.10 GEOLOGY

Local geology

The district Una lies in the south-western of Himachal Pradesh. It is bounded by Kangra district in the north and north-east, Hamirpur district in the east, Bilaspur in the south-east and Punjab in the west and south. The district is stretched between 31°17'52"-31° 52'0" north longitudes and 75°58'0"-76°28'25" east longitudes. Una district covers an area of 1,550 sq.



km. Himalayan foothill zone bounded by plains of Punjab in the east and Solasinghi Dhar in the west. In the western part also, there is hill range whose maximum height is about 600 meters. The ranges trend in a general NW-SE direction and the area between these forms' longitudinal valley of the Swan River. The altitudes of the area vary from 350 meters to 1,200 meters on the Solasinghi Dhar. The stratigraphy of the area is given in table 2-2.

Shivalik range experience heavy rainfall. The Swan River is itself a tributary of Satluj river and the confluence is just south of Santokhgarh. The hill ranges covered by scanty vegetation comprising, mostly shrubs. The breadth of Jaswan Dun valley ranges from 7 kilometres to 14 kilometres and the town of Una which is not in the middle of the Dun is on the elevation of 427 above the sea level.

While Una is bounded by the river Beas on the north and river Satluj in the east, the Swan River which is basically a seasonal river flows right across the Jaswan valley towards south and submerges in the Satluj near Anandpur. The Swan River indeed is the life belt of Jaswan-Dun Valley which on its course receives innumerable tributaries both from left and right thereby abounds quick sands and is risky to cross when in speed. Geological map of the district Una is given in below figure 2.5.

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

2.11 GEOLOGICAL MAP OF SWAN RIVER CATCHMENT

The lease area is situated in the Swan River, a primary tributary of the Satluj River. It is a rain fed stream and originates from the village of Dharamsal of Una district at a height of 801 MRL. The general flow of Swan River is towards NE-SW up to the confluence with River Satluj. The total length of the Swan River is 80 Km out of which 60 km falls in Himachal Pradesh. The total catchment area of the Swan River is about 1400 sq.km. out of which 1200 sq. km. falls in the Una district and the rest in Punjab where it joins Satluj. The stream is perennial in nature and water flows in it throughout the year.

Geometry of Swan River (Part of H.P.) Catchment

Total area of catchment = 1222 Sq Kms

Area of Catchment up to the Mining Site = 209.17Sq Kms

Number of tributaries on right bank = 23

Number of tributaries on left bank = 8

Stream order up to lease area = 5

Maximum length of water shed = 75 Kms

Maximum breadth of water shed = 25 Kms and Length breadth ratio = 3:1, Higher the ratio, Higher is the asymmetry of water shed

Profile of Riverbed

Highest point of catchment in Himachal Pradesh = 801 Meters



Elevation at lease area = 382 to 381 Meters

The annual deposition at the place of mining:

The annual deposit at the mining lease is about 5 cm depending upon the location. At some places it may be more than the 5 cm.

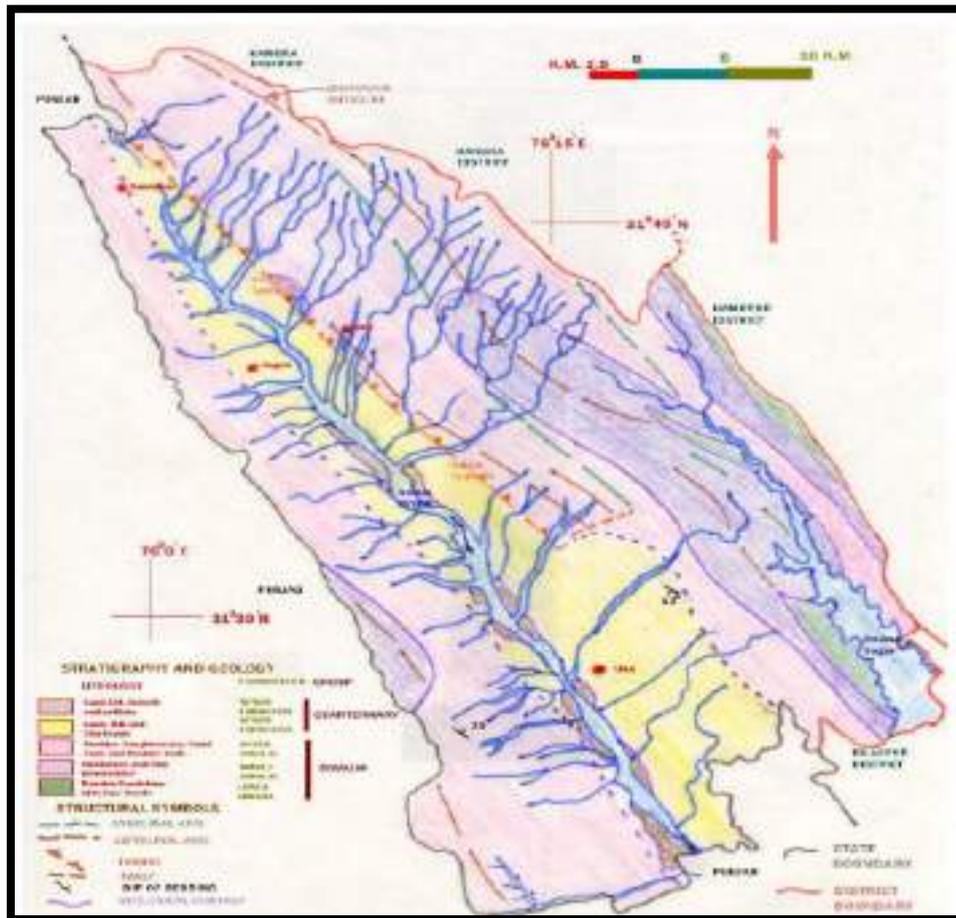


FIGURE 2-4:-GEOLOGICAL MAP OF UNA DISTRICT

2.9 TECHNOLOGY AND PROCESS DESCRIPTION

- The mining is confined to extraction of Sand, Stone and bajri from the proposed mine site. As per the policy guidelines, no mining shall be allowed within 1/10th from the riverbanks or five meters whichever is higher. The Highest point of lease area is 382 meters above MSL, and lowest point is 381 meters above MSL and Average width in lease (River) is about 700-745 meters. No rotational mining is proposed.
-
- No blasting is required.
- Only manual extraction of Sand, Stone & Bajri shall be undertaken.

- Keeping in view the high replenishment factor every year, no rotational mining has been proposed. Whole block shall be explored every year.
- After considering the safe zone from banks and peripheral area the balance of the mining lease area of 33600 square metres, area is minable.
- Mining activity will be undertaken only during the dry seasons and dry parts of the river.
- The competency of river is observed at the place of mining is high and it carry the size of boulder of more than 25-30cms X 10 X40 cms X 16 X 24 cms.
- The boulders from the effective catchment are brought down in the river only during monsoons.
- 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 2.6 for stone crusher unit for manufacturing Grit.

2.10 PROJECT DESCRIPTION

The proposed project is a Riverbed mining project of Stone, Bajri and sand from Swan River located at Khasra 6525/1 and 6526/1 measuring 3.6142 ha. (Private Land/ Riverbed) falling in village Badehra Tehsil Haroli, District Una, Himachal Pradesh. The letter of Intent for the grant of mining lease issued in favor of Sh. Ashwani Kumar Prop. M/s Baronhey Mahadev Stone Crusher.

2.11 PRODUCTION PARAMETERS

The mining lease has been proposed by Sh. Ashwani Kumar Prop. M/s Baronhey Mahadev Stone Crusher. The lease has been sanctioned in favor of Sh. Ashwani Kumar. The mining lease area is 3.6142 Hectare located Mohal / Mauza Badhera, Tehsil Haroli, District Una, Himachal Pradesh. It has been proposed to collect approximately 136080 TPA of Sand, Stone & Bajri. 15120 TPA of Silt & clay will be generated as a waste during the mining process. Waste shall be used for road filling works & Plantation rest of waste material if left will be dumped in his proponent's own land.

The different constituents of river borne deposition such as sand, stone & Bajri, and Silt /Clay based on size classification were considered for reserve calculation. Although it is not possible to mark these units separately on the geological map as such two pits at different locations of 1X1X1 meter were got dug in the mining lease area and material so excavated was separated into different size and their percentage was worked out this percentage was taken in to account during calculation of reserves. The competency of river as observed at the place of mining is high and it carry the size of boulder of more than 25-30cms X 10 X40 cms X 16 X 24



cms. The Mineral production percentage & its Targets for the Next five years is given below.in table 2-3 and 2-4.

TABLE 2-1 PERCENTAGE OF MINERAL IN MINE LEASE AREA

Sr. No.	Minerals	Percentage in mine lease area(%)
1.	Stone	35%
2.	Bajri	25%
3.	Sand	30%
4.	Silt	10%
Total		100

*Source:- Approved Mine Plan

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

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

Year	Production of Material (in MT)				
	Stone	Gravel/Bajri	Sand	Silt and Clay	Total
1st Year	37800	52920	45360	15120	151200
2nd Year	37800	52920	45360	15120	151200
3rd Year	37800	52920	45360	15120	151200
4th Year	37800	52920	45360	15120	151200
5th Year	37800	52920	45360	15120	151200
Total	189000	264600	226800	75600	756000

2.12 WORKING DEPTH (BELOW GROUND LEVEL)

During the lease period, the deposit will be worked from the top surface to 1 m/3 feet bgl or above ground water table whichever comes first.



FIGURE 2-5: 5 YEARS OF WORKING PLAN OF MINE LEASE AREA

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

No liquid effluent will be generated during this process. About 136080 metric tons per annum of stone bajri & sand. 15120 TPA silt & clay extracted waste will be generated during the mining processes.

2.14 RECLAMATION AND RESTORATION

- The mined area, being part of the river course cannot be reclaimed for any other purpose.
- The land under lease area mining would always remain riverbed, during and as well as post mining.
- Thus, the topography or land use of the khad bed will not be changed.
- The mining depth will be up to one meter or up to water level whichever is less, thus water level will not be disturbed.

- Entire quarried area will be replenished and reclaimed by the river during monsoon flood.

Plantation

As per mining plan the entire mining lease area falls within river course and gets flooded during monsoons; therefore, no plantation is possible within this area. However, plantation can be taken up in the land in the Khasra number 4738 in Village Badoh Tehsil Ghanari, District Una HP with permission and consent of landowners with species like Khirak, Shisham, Beul, Kachnar, Shisham, Drek etc. We will also plant the variety of wild fruit plant that is suitable to the mine lease area Like Aam, Shehtoot etc.

Survival rate

The estimated survival rate proposed to be achieved shall be 80%..

2.15 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.
- Preference will be given to employing 100% local people
- Along with this , proper consultation will be taken from time to time with the geologist/mie engineer and also possibilities of hiring them shall be explored as per financial conditions of the project

2.16 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 504 metric tons of sand, stone and bajri would be required to be moved daily. Though route map shown in **figure 2-4**.

During mine operation traffic intensity

During mine operation traffic Density

Total capacity of mine	: 136080 TPA including waste
No. of working days	: 270 Days
Per day capacity of mine	: 504 tonnes/day
Truck capacity	: 15 tonnes
No. of trip deployed	: 33 trips/day
Working hours per days	: 8 hours
*No. of tipper trucks/tractor trolley deployed/h: = 4-5 tractor trolley approx.	

2.17 POWER, WATER SUPPLY AND OTHER ONSITE REQUIREMENTS

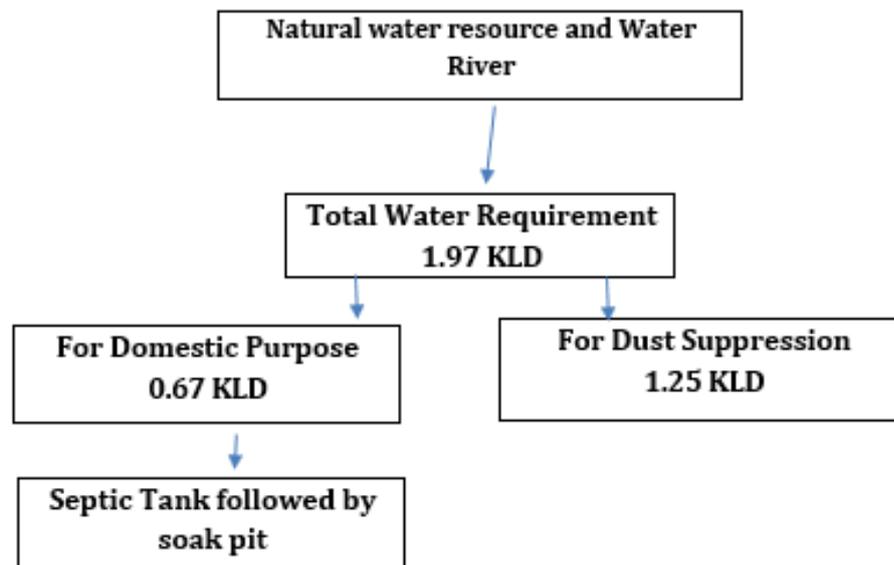
No raw material will be required in the proposed project. The operation involves the extraction of Sand, Stone and Bajri in its existing form and loaded into tractor trolleys to the stone crusher unit for manufacturing grit. The practice is quite sound in the area and ensure continuous lifting of the material.

Power requirement

All the activities will be carried out manually. The operation will be done only daytime (9am to 6pm) hence there will be no power requirement at the project site.

Water requirement & supply

The total amount of water required for the project is **1.97 KLD**, Water will be used from the own borewell. Permission for groundwater extraction has been applied for drinking and for Sprinkling purposes.



Water is required for drinking, domestic purposes and for dust suppression. The number of working people is 10, so the total water requirement will be around 1.97 KLD. About 0.67 KLD will be required for dust suppression and 1.25 KLD for domestic purpose.

Temporary rest shelter

A temporary rest shelter will be provided for the workers near to the 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 outside lease area in nearby settlement area.

2.18 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 2-6 DESCRIPTION OF ACTIVATES AND ANTICIPATED IMPACTS

Activities/issues of concern	Anticipated environmental impacts
<p>Land alteration/regime modification</p> <ul style="list-style-type: none"> > Mobilization of labour > Mining of riverbed (Sand/Stone & Bajri) > Acquired land area 3.1642 ha. > Land use in conformation of Mine plan 	<ul style="list-style-type: none"> > Undercutting and collapse of riverbanks. > Riverbank cutting and erosion. > Upstream erosion as a result of an increase in channel slope and changes in flow velocity > Downstream changes in patterns of deposition. > Changes in channel bed and habitat type > Existing ecology and habitat
<p>Mining of mineral & transportation</p> <ul style="list-style-type: none"> > Machinery and equipment deployment > Haulage of mined out material to the cruncher site > On-site storage and handling of material > Laying of utilities – roads, & water 	<ul style="list-style-type: none"> > Pollution due to operation of equipment > Pollution due to fill up of extracted materials > Top-soil management > Haulage of material and on-site vehicular movement > Waste generation due to on-site activity > Safety and health issues of workers
<p>Human settlements</p> <ul style="list-style-type: none"> > Temporary/permanent movement of population during operation phase > Transportation requirements Requirements of public/civic amenities > Waste generation due to mining Mine waste silt & clay 	<ul style="list-style-type: none"> > Alteration in settlement patterns > Alteration in traffic movement Socio-economic activities due to the proposed project > Silt & clay increase the turbidity& total suspended solid.

Health and safety	<ul style="list-style-type: none">> 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
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3 DESCRIPTION OF ENVIRONMENT

3.1 INTRODUCTION

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

Fresh environmental baseline monitoring has been conducted. Data on air, water, soil, and noise quality was systematically collected during the post-monsoon season (Dec 2025 to Feb 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 10 km 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 Badehra
- Tehsil Haroli
- District Una (Himachal Pradesh)

3.3 STUDY PERIOD

Baseline monitoring was conducted during the post-monsoon season, from Dec 2025 to Feb 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

Riverbed Mining in Himachal Pradesh is undertaken through a structured framework defined in the District Survey Reports (DSRs). Operations are carried out using manual, 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.

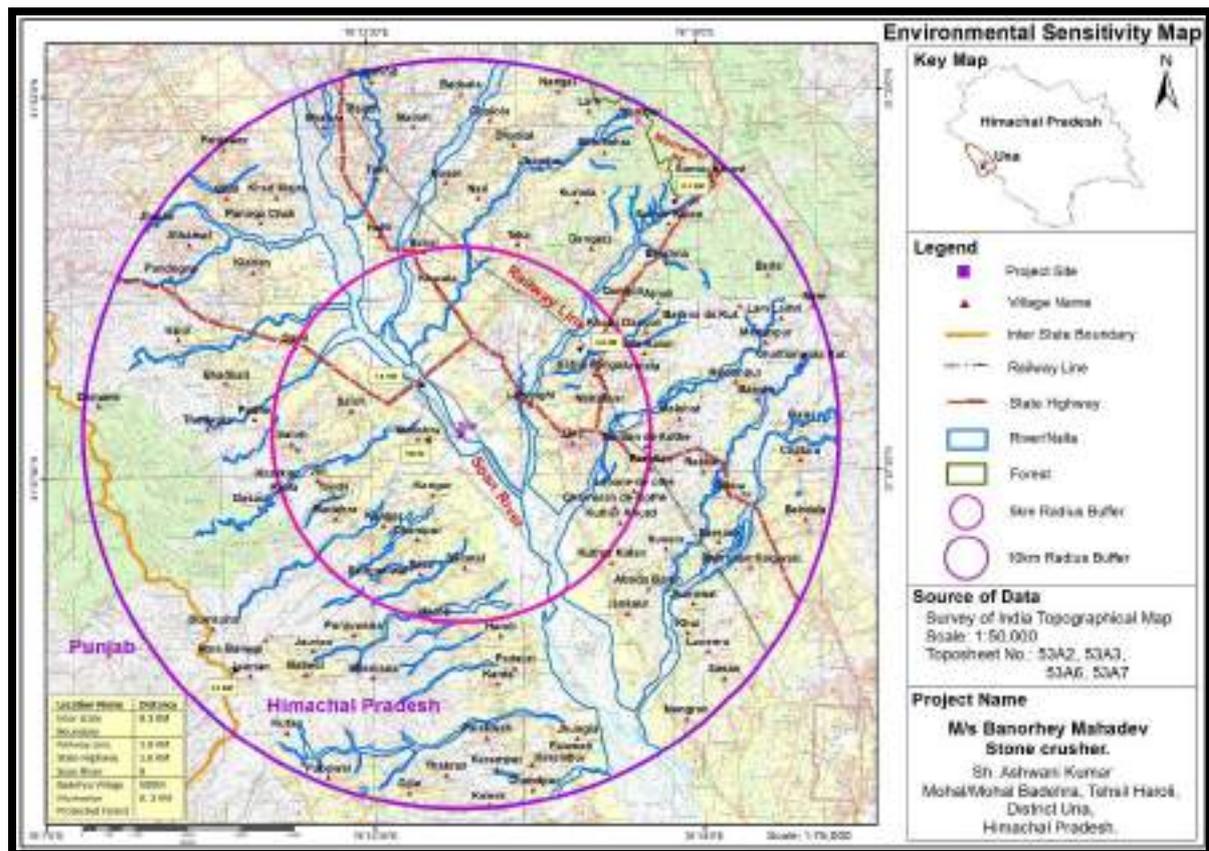


FIGURE 3-1 ENVIRONMENTAL SENSITIVITY MAP DEPICTING THE PROJECT SITE WITHIN 5 KM AND 10 KM RADIUS

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 have gradually expanded through continuous erosion of adjacent Siwalik sediments. In Nepal, these basins became repositories for alluvial deposits that preserved and later exposed paleolithic sites through erosional processes.

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

3.7.2 Topography

Una District's topography is a blend of hilly terrain (Shivalik ranges) and fertile plains, making it unique among Himachal districts. The variation in elevation and physiographic diversity strongly influence its agriculture, settlement patterns, and connectivity with Punjab.

3.7.3 Drainage

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

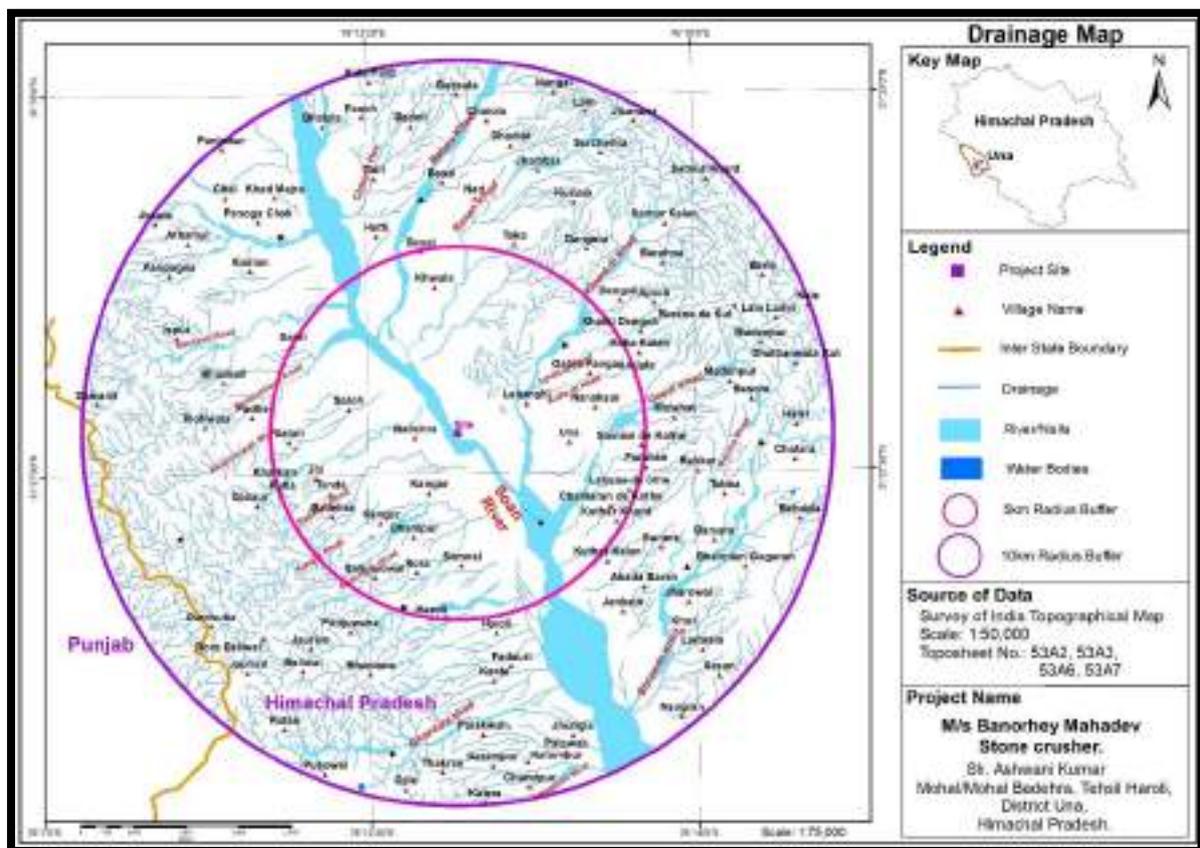


FIGURE 3-3 MAP SHOWING DRAINAGE NETWORK OF THE STUDY AREA

3.8 LAND USE COVER MAPPING

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

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

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

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

- **Image Extraction**

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

- **Geo-Rectification**

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

- **Image Enhancement**

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

- **Classification**

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

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

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

3.10 LAND USE/LAND COVER STUDY

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

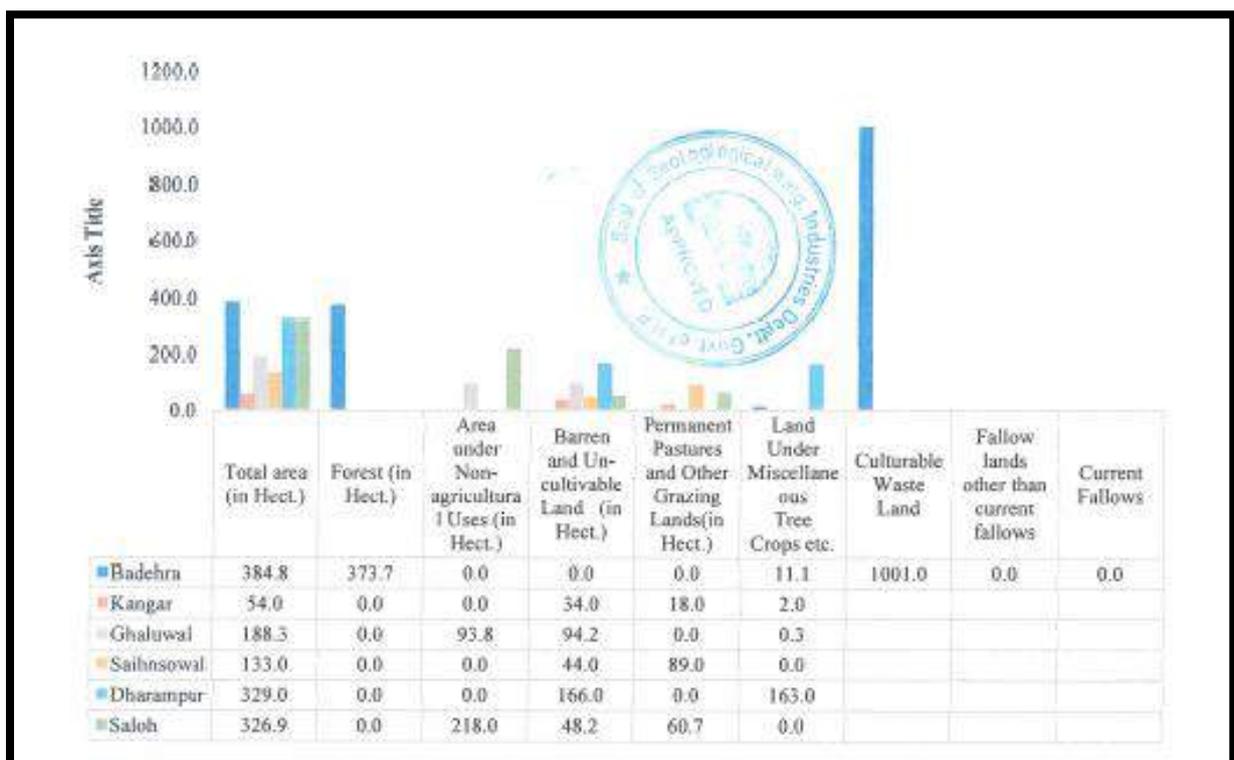


FIGURE 3-4 LAND USE PATTERN OF SURROUNDING VILLAGES IN UNA DISTRICT

***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

(a) Methodology

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

Table 3-1 LAND USE COVER OF THE STUDY AREA

S. no	Class	Area in Ha	Percentage
1	Builtup Area	1440	4.58
2	River/Water Bodies	1260	4.01
3	Agricultural Land	14416	45.89
4	Scrub Land	14054	44.74
5	Forest	245	0.78
Total		31415	100

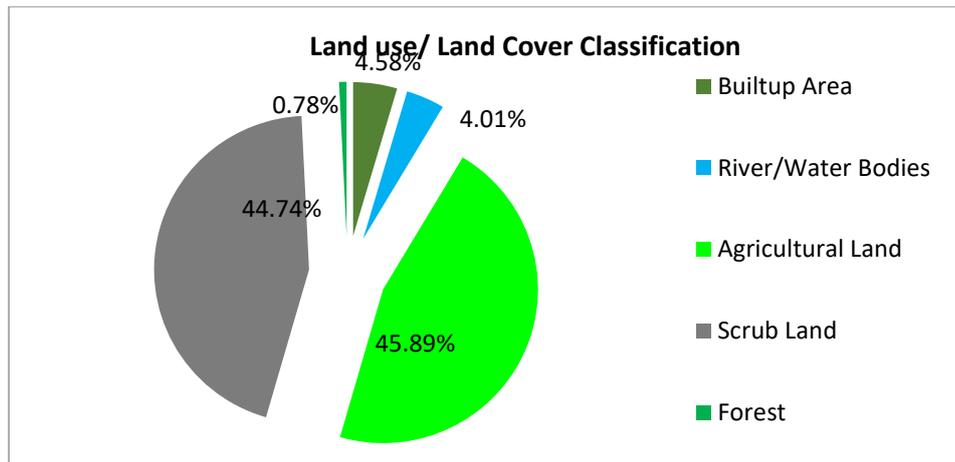


FIGURE 3-5 GRAPH GRAPHICAL PRESENTATION OF LAND USE/LAND COVER CLASSIFICATION

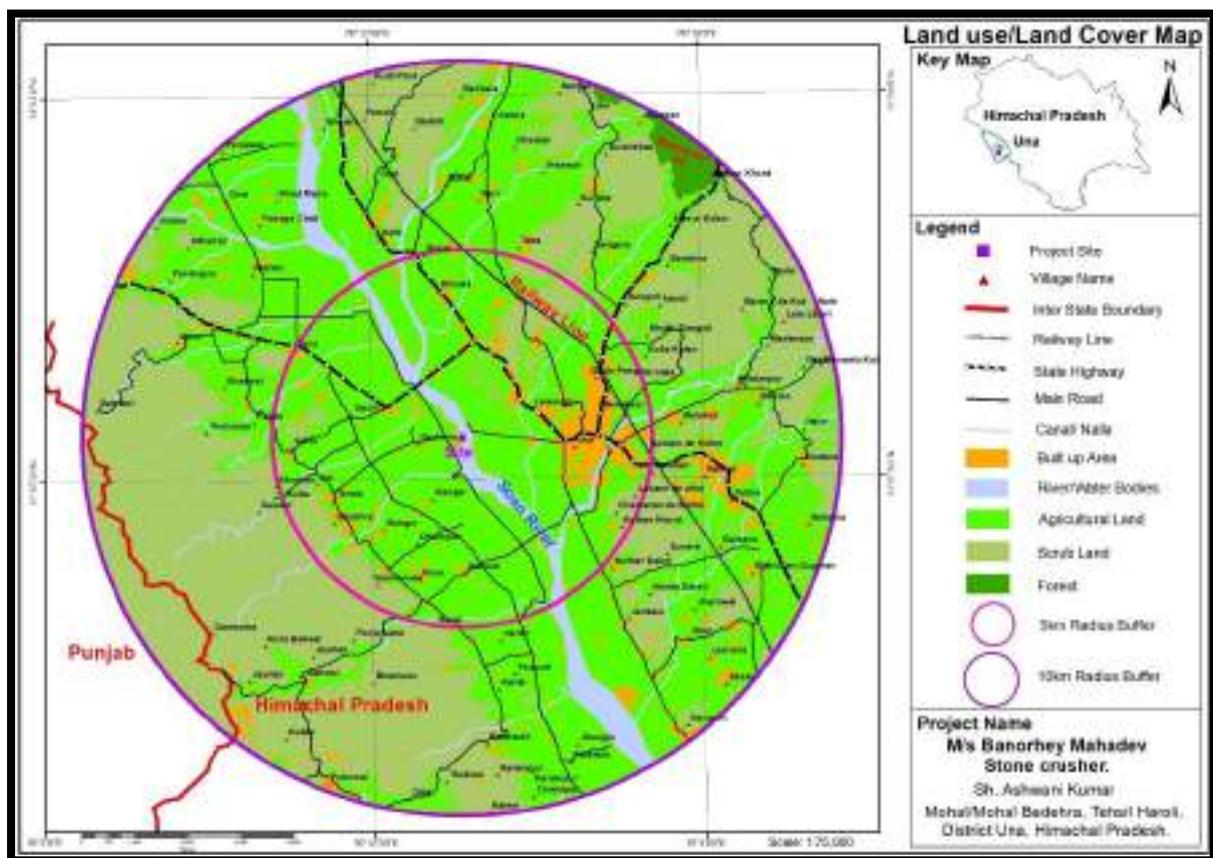


FIGURE 3-6 LAND USE/LAND COVER MAP WITHIN 5 AND 10 KM PERIPHERY FROM THE PROJECT SITE

3.11 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.

3.11.1 Soil Characteristics

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

The fertility of soil depends on the concentration of N, P, K, organic and inorganic materials, and water. Nitrogen is required for growth of plant and is a constituent of chlorophyll, plant protein, and nucleic acids. Phosphorus is most often limiting nutrients remains present in plant cell nuclei and act as energy storage. It helps in transfer of energy. Potassium is found in its mineral form and affect plant cell division, carbohydrate formation, translocation of sugar, various enzyme actions and resistance to certain plant disease, over 60 enzymes are known to require potassium for activation.

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

3.11.2 Protocol for assessment of soil physio-chemical pproperties

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

3.11.2.1 Selection criteria for soil sampling location

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

TABLE 3-2 SOIL SAMPLING LOCATION

Station Code	Station Name	Distance (Km)	Direction	Latitude & Longitude	Type of Land
S1	Project Site 1	.....	.....	31°28'5.75"N 76°14'2.48 E	
S2	Near Shiv Mandir	2.04	NNE	31°28'58.80"N 76°14'34.44°E	Agriculture land
S3	Arya Nagar	2.78	ESE	31°28'10.68"N 76°15'41.60 E	Non-Agriculture land
S4	Sambal village	2.92	S	31°26'28.37"N 76°14'11.64"E	Agriculture land
S5	Near Law college	4.63	SW	31°27'16.43"N 76°11'41.64"E	Forest land
S6	Pandogha uprela	4.09	NW	31°29'12.54" N 76°11'46.54" E	Agriculture land



FIGURE 3-7 SOIL SAMPLING LOCATIONS MAP

3.11.3 Soil reaction classes and critical limits for macro and micronutrients in soil

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

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

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

3.11.4 Soil Quality Analysis

The six samples of soil have been collected from the depth of 5cm to 15cm and representative samples prepared by thoroughly mixing. The homogenized samples were analysed for physico chemical characteristics. The physical and chemical analysis results of the soil samples collected at site during post-monsoon 2022 are presented in **Table 3-5**.

TABLE 3-4 RESULT OF SOIL REPORTS (POST-MONSOON FROM DEC-2025 to FEB-2026)

		Location	Project Site 1	Near Shiv Mandir	Arya Nagar	Sambal Village	Near Law College	Pandogha Uprela
Sr. No.	Parameters	Units	Results	Results	Results	Results	Results	Results
1	pH	-	7.54	7.66	7.60	7.37	7.48	7.64
2	Conductivity	µmhos/cm	388.0	364.0	418.0	391.00	448.0	378.0
3	Sodium (as Na)	mg/kg	288.0	268.0	280.0	258.76	296.0	268.0
4	Water holding capacity	%	30.22	32.04	32.08	36.43	40.02	37.02
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	846.0	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	1.56	1.46	1.87	1.60	1.68
17	Bulk Density	g/cm ³	1450	1230	1304	1540	1167	1426
18	Total Kjeldahl Nitrogen (TKN)	%	0.038	0.030	0.030	0.02	0.032	0.036

3.11.5 Interpretation of Soil Characteristics

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

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

Soil pH: - Soil pH is an important soil property, which affects the availability of several plant nutrients. It is a measure of acidity and alkalinity and reflects the status of base saturation. It measures the -ve logarithm of hydrogen ions activity of soil solution and defines the soil acidity and alkalinity. The soil pH ranges from 7.37 to 7.64, thereby indicating the soils are neutral to moderately alkaline in nature.

Soil EC: - The Soil EC ranges from 364.0 $\mu\text{S}/\text{cm}$ to 448.0 $\mu\text{S}/\text{cm}$, indicating the soils are non-saline and suitable for most crops.

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

Nitrogen: 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 studied soils, the organic nitrogen content of the surface layer ranges from 0.02% to 0.038%, 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 soil's 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 soil's ranges from 74.22 to 92.12 mg/kg, classifying them as low in potassium availability.

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

3.12 AIR ENVIRONMENT

3.12.1 Meteorology data

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

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

Ambient air quality monitoring stations are selected primarily on the basis of surface, demographic and meteorological influence. The study of SO₂, NO₂, PM₁₀ & PM_{2.5} 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.

3.12.2 Climate of the area

The district's climate varies according to elevation, with terrain ranging from valleys and western regions below 300 meters to gradually higher elevations of several hundred meters

in the math astern arcus. While similar to the adjacent Punjab Plain the district experiences milder summer temperatures and greater rainfall. Winters are notably crisp and refreshing.

The annual climate cycle comprises four distinct seasons: -

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

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

TABLE 3-5 TABLE SHOWING CLIMATE AROUND THE APPLIED LEASE AREA

Maximum & Minimum Temperature of District Una (Meteorological Centre-Una)						
MONTH	YEAR	2014	2015	2016	2017	2018
JAN	MAX	19.9	23.7	24.8	27	22.5
	MIN	4	-1.2	0.2	0.6	3.8
FEB	MAX	21.4	27.5	30	32.2	25.3
	MIN	6	1	4.7	5.5	7.9
MAR	MAX	27.2	35.8	35	38.2	31.5
	MIN	9.6	3	9	5.7	16.4
APR	MAX	32.8	39.2	40.6	43	35.8
	MIN	11.9	9.6	13.8	9	16.4
MAY	MAX	37.5	43.6	43.4	43	44.2
	MIN	17.8	11	18	16	20.4
JUN	MAX	40.6	42.2	43.7	44.8	38.2
	MIN	21.7	16	20.7	19.5	24
JUL	MAX	34.7	37.8	37.8	38	33.8
	MIN	22.6	16	22	21.7	24.1
AUG	MAX	34.5	36.4	39	36.2	33.2
	MIN	21.5	12	22.9	21.5	23.1
SEP	MAX	33	37.4	36	37.4	32.1
	MIN	18.8	12.3	19.8	18.7	21
OCT	MAX	30.6	35.2	35.2	36.6	32.1
	MIN	13.6	7	12.2	11.5	14
NOV	MAX	27.6	29.8	32	30.4	26.8
	MIN	6	2.8	6.8	4.8	9
DEC	MAX	20.5	26.3	29.8	28.6	22.9
	MIN	1.6	-3.3	3.6	4.3	3.6

Source: Meteorological Department, Govt. of India

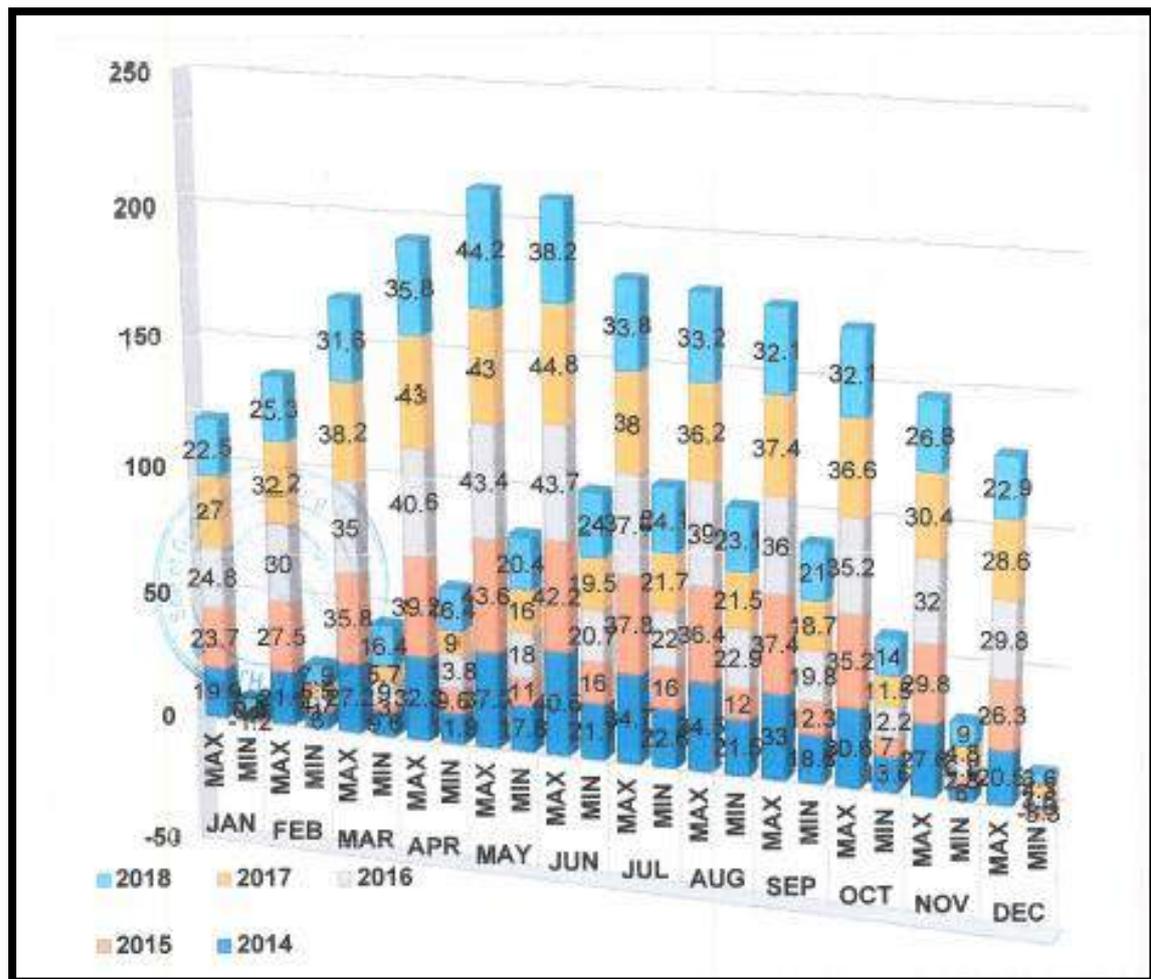


FIGURE 3-8 AVERAGE MONTHLY TEMPRATURE OF DISTRICT UNA

3.12.3 Rainfall

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

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

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

To have an idea about the morphogenetic zone on the basis of rainfall it will not be ideal to classify it on the basis of the annual rainfall because most of the precipitation of the year is

received in the rainy season hence the precipitation of the monsoon season is deciding precipitation for annual replenishment, bank erosion and other factors.

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

YEAR	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	54.4	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	18.7	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	Data No available			

Source: Meteorological Department, Govt. of India

FIGURE 3-9 AVERAGE MONTHLY RAINFALL OF THE DISTRICT UNA

**Source* Mining plan*

3.12.4 Micro-Meteorological Data

Period	Temperature (°C)		Precipitation (mm)	Wind Speed (Km/h r.)	% Relative Humidity	Pressure (mbar)
	Min.	Max.				
Dec' 2025	7	23	15.1	2	73	1016

Jan' 2026	7	20	108.3	2	74	1017-1021
Feb' 2026	12	15	10.7	2	74	1017-1021

3.12.5 Wind Rose

Wind speed of a site plays a vital role in predicting the extent of air pollution. It gives a clear view about the extent to which air pollutants are carried before they touch the ground. Wind rose is a diagrammatic of wind speed in a specified direction with its arms representing sixteen directions; each arm gives a clear percentage frequency distribution of wind speed. During the study period Dec' 2025 to Feb' 2026 for 24 hourly intervals to plot wind rose. Wind Pattern During the Study Period is given below: -

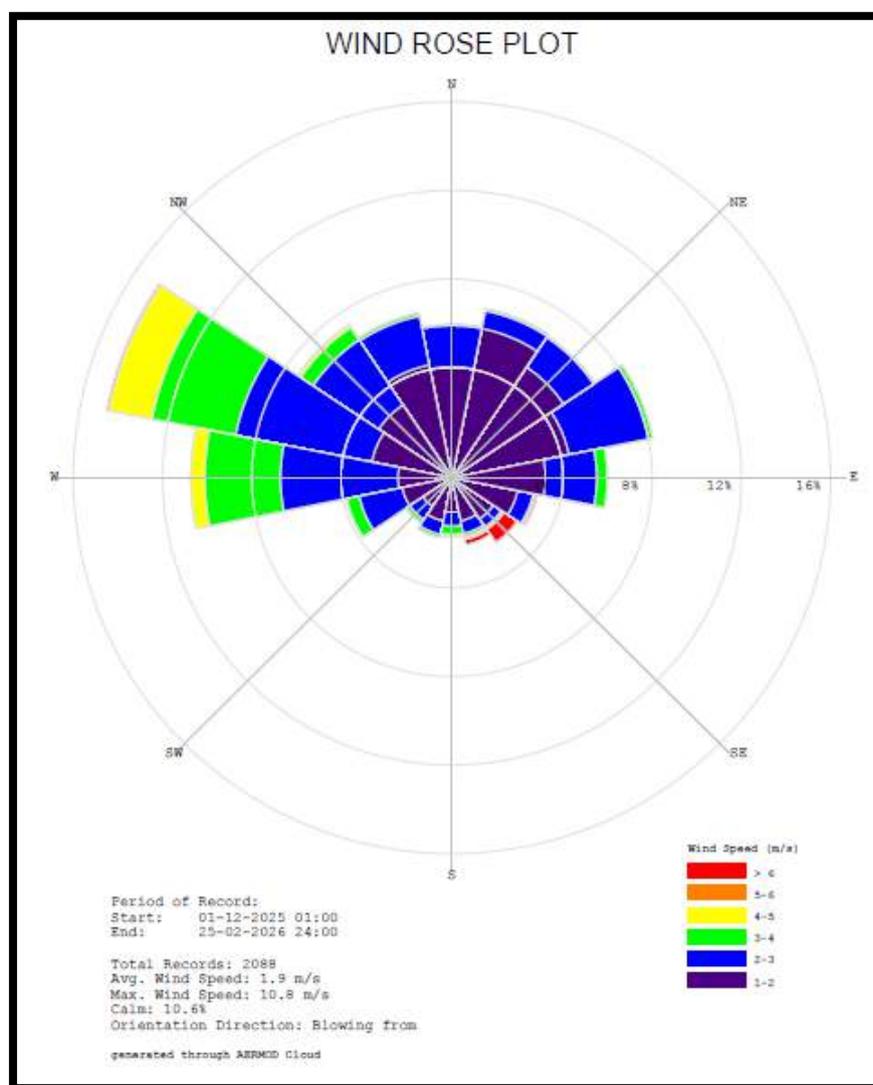


FIGURE 3-10 WIND ROSE OF MONITORING SEASON IN STUDY AREA



FIGURE 3-11 AMBIENT AIR MONITORING LOCATIONS

3.12.6 Method of Monitoring

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

a) Location of Ambient Air sampling Stations

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

TABLE 3-6 LOCATION OF AMBIENT AIR SAMPLING STATIONS

Station Code	Station Name	Distance (Km)	Direction	Latitude & Longitude	Criteria
AA1	Project Site 1	.....	.....	31°28'4.01"N 76°13'58.68'E	.....
AA2	Lal Singhi	1.83	NE	31-2841-15"N 76°14'53.07"E	Upwind direction

AA3	Kapila Farm	2.01	NNW	31°29'0.60"N 76°13'38.02"E	Upwind direction
AA4	Baba balak nath temple	1.83	NNE	31°28'23.66"N 76°12'49.93"E	Upwind direction
AA5	Dera baba	1.93	SSW	31 277.45"N 76°13'10.40 E	Down Wind
AA6	IPH Guest house	4.10	SSE	31°25'57.86"N 76°14'34.69"E	Down Wind
AA7	Ward No 10 una	2.47	ESE	31 2732.21"N 76°15'21.90 E	Cross Wind
AA8	Mount Everest school	4.42	ESE	31°26'24.99"N 76°166.78"E	Cross Wind

b) Sampling Schedule

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

c) Air Quality parameter

The following parameters were analysed for each sample: -

- Particulate matter (PM₁₀)
- Particulate matter (PM_{2.5})
- Sulphur dioxide (SO₂)
- Nitrogen dioxide (NO₂)
- Free Silica in PM₁₀
- Carbon mono-oxide (CO)
- NH₃ (Ammonia)
- O₃ (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 3-7: PROCEDURE FOR DETERMINING VARIOUS AIR QUALITY PARAMETERS

Sr. No.	Parameters	Testing Procedure	NAAQS 2009 Standard (µg/m ³)
1	PM10	Gravimetric method using "Repairable Dust Sampler" (RDS) IS: 5182 (P-23) 2004	100 (µg/m ³)



2	PM2.5	Gravimetric method using fine particulate Sampler (FPS) IS: 5182 (P-23) 2004	60 ($\mu\text{g}/\text{m}^3$)
3	NO2	Absorption in dilute Sodium Arsenic and then estimated calorimetrically with Sulphanilamide and N (I-Nepthayle) Ethylene diamine, Dihydrochloride and Hydrogen Peroxide IS: 5182 (P-6) 2006	80 ($\mu\text{g}/\text{m}^3$)
4	SO2	Absorption in Sodium Tetra Chloro Mercurate followed by Colorimetric estimation using P-Rosaniline hydrochloride and Formaldehyde IS: 51182(p-2)2001	80 ($\mu\text{g}/\text{m}^3$)
5	Free Silica in PM10	FTIR Method	.....
6	Carbon mono-oxide	Detection by handheld CO indicator with least count 0.1 ppm (125 $\mu\text{g}/\text{m}^3$)	2 mg/m^3
7	NH3 (Ammonia)	O3 Liberation of iodine when ozone absorbed in a 1% solution of potassium iodine buffered at pH 6.8 + 0.2. Iodine is determined spectrophotometrically by measuring the absorption of tri-iodide ion at 352 nm. (Guidelines for measurement of ambient air pollutants by CPCB)	400($\mu\text{g}/\text{m}^3$)
8	O3 (Ozone)	NH3 Indophenol Blue Method (Guidelines for measurement of ambient air pollutants by CPCB)	100 ($\mu\text{g}/\text{m}^3$)

TABLE 3-8 AMBIENT AIR QUALITY RESULTS

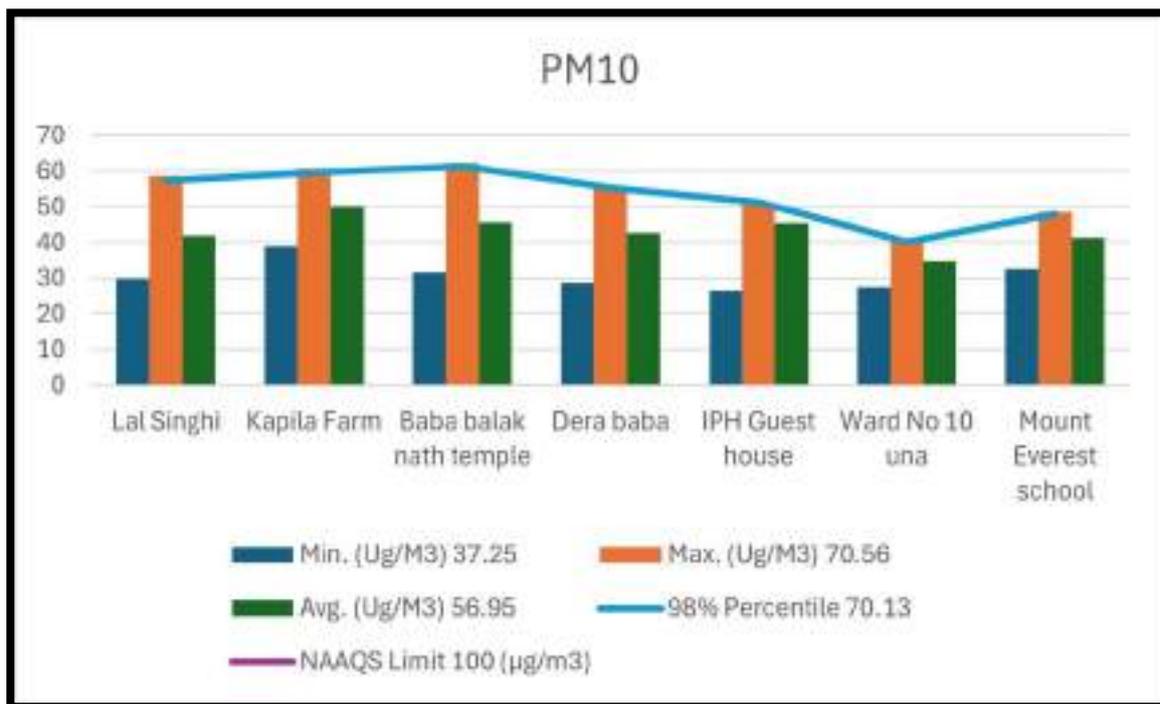
Air Quality Parameters	Location	Min. (Ug/M ³)	Max. (Ug/M ³)	Avg. (Ug/M ³)	98% Percent ile	NAAQS Limit
PM₁₀ ($\mu\text{g}/\text{m}^3$)	Project Site 1	37.25	70.56	56.95	70.13	100 ($\mu\text{g}/\text{m}^3$)
	Lal Singhi	29.93	58.69	41.95	57.28	

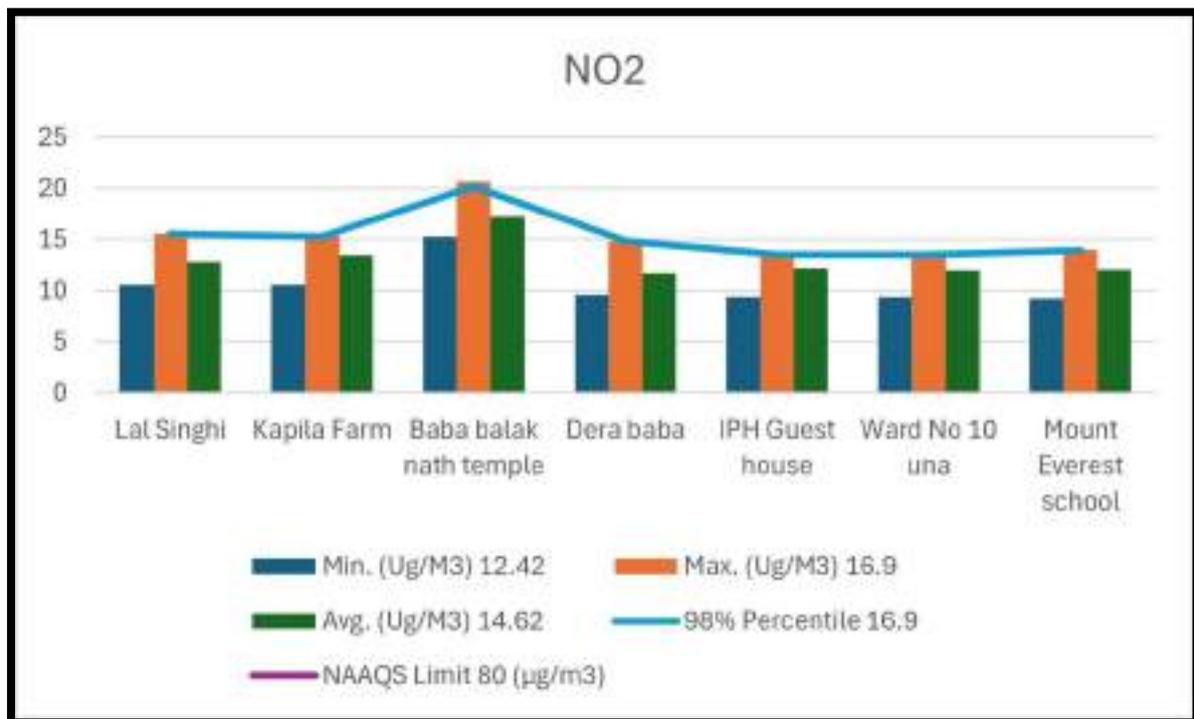
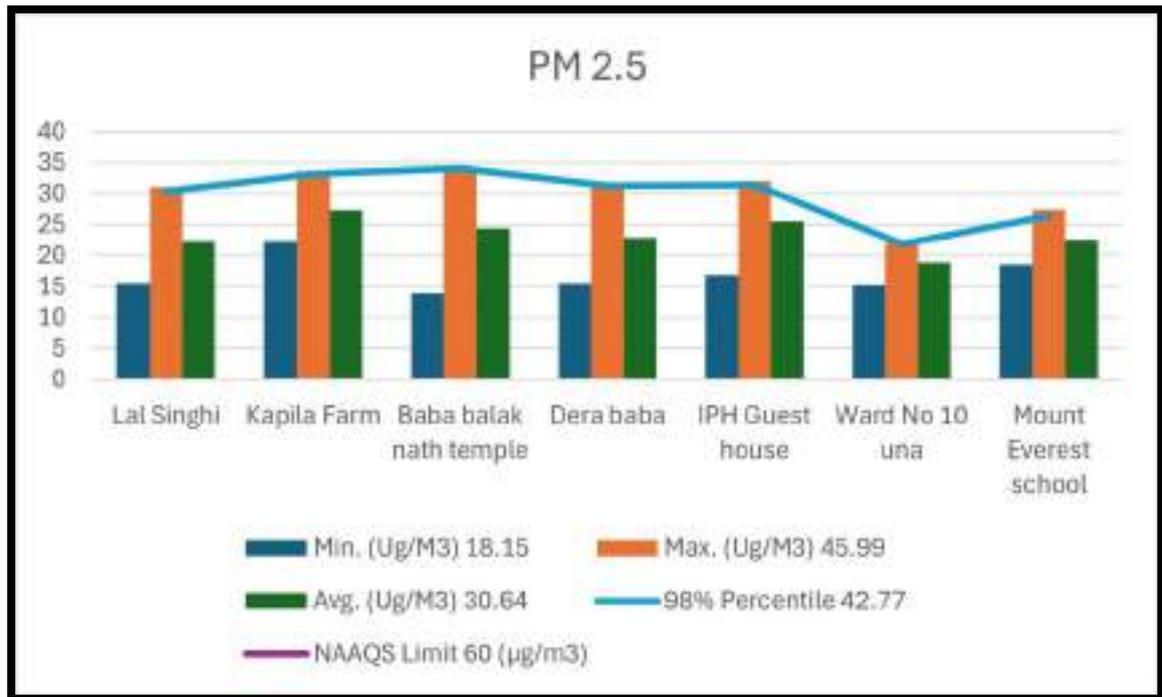


Air Quality Parameters	Location	Min. (Ug/M ³)	Max. (Ug/M ³)	Avg. (Ug/M ³)	98% Percent ile	NAAQS Limit
	Kapila Farm	38.76	60.75	50.10	59.65	
	Baba balak nath temple	31.69	62.36	45.70	61.33	
	Dera baba	28.68	55.42	42.76	55.22	
	IPH Guest house	26.32	51.25	45.47	51.24	
	Ward No 10 una	27.34	40.76	34.72	40.22	
	Mount Everest school	32.52	48.57	41.27	47.96	
PM2.5 (µg/m3)	Project Site 1	18.15	45.99	30.64	42.77	60 (µg/m3)
	Lal Singhi	15.56	31.11	22.30	30.36	
	Kapila Farm	22.3	33.56	27.29	33.22	
	Baba balak nath temple	13.89	34.05	24.41	34.05	
	Dera baba	15.5	31.54	22.89	31.30	
	IPH Guest house	16.84	32.01	25.46	31.39	
	Ward No 10 una	15.31	22.01	18.90	21.85	
	Mount Everest school	18.54	27.41	22.49	26.42	
SO₂(µg/m3)	Project Site 1	8.15	12.85	10.45	12.85	80 (µg/m3)
	Lal Singhi	7.96	13.45	11.32	13.45	
	Kapila Farm	6.85	9.85	8.21	9.77	
	Baba balak nath temple	10.63	17.45	11.95	15.61	
	Dera baba	7.4	13.45	11.05	13.45	
	IPH Guest house	6.85	10.89	9.53	10.89	
	Ward No 10 una	5.46	8.63	7.10	8.61	
	Mount Everest school	6.34	9.52	7.23	8.94	
NO₂ (µg/m3)	Project Site 1	12.42	16.9	14.62	16.90	80 (µg/m3)
	Lal Singhi	10.55	15.55	12.82	15.55	
	Kapila Farm	10.57	15.33	13.50	15.30	
	Baba balak nath temple	15.25	20.65	17.31	20.20	
	Dera baba	9.58	14.85	11.70	14.85	
	IPH Guest house	9.36	13.58	12.13	13.57	
	Ward No 10 una	9.36	13.63	11.93	13.57	
	Mount Everest school	9.27	14.06	12.02	13.96	
CO	Project Site 1	0.2	0.74	0.42	0.64	2mg/m3
	Lal Singhi	0.13	0.48	0.31	0.48	
	Kapila Farm	0.29	0.56	0.43	0.56	
	Baba balak nath temple	0.14	0.47	0.33	0.46	



Air Quality Parameters	Location	Min. (Ug/M ³)	Max. (Ug/M ³)	Avg. (Ug/M ³)	98% Percentile	NAAQS Limit
	Dera baba	0.13	0.44	0.31	0.44	
	IPH Guest house	0.11	0.4	0.29	0.40	
	Ward No 10 una	0.21	0.36	0.29	0.36	
	Mount Everest school	0.24	0.45	0.34	0.44	





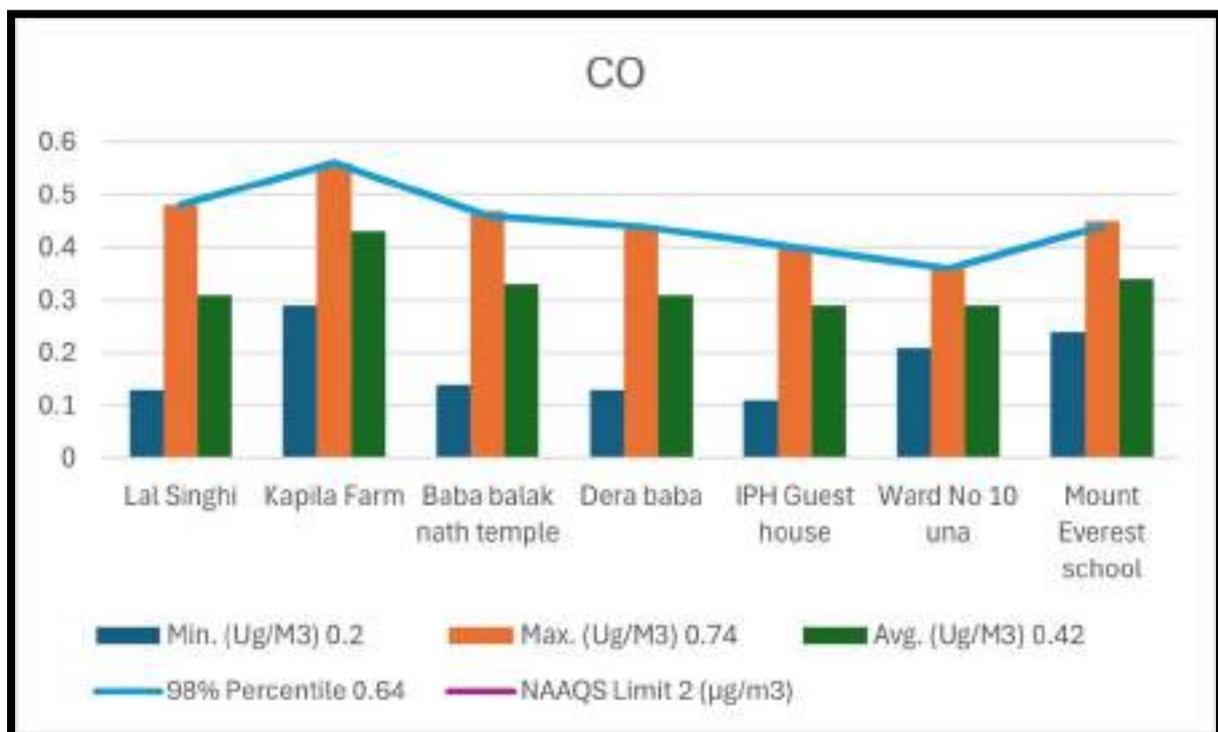
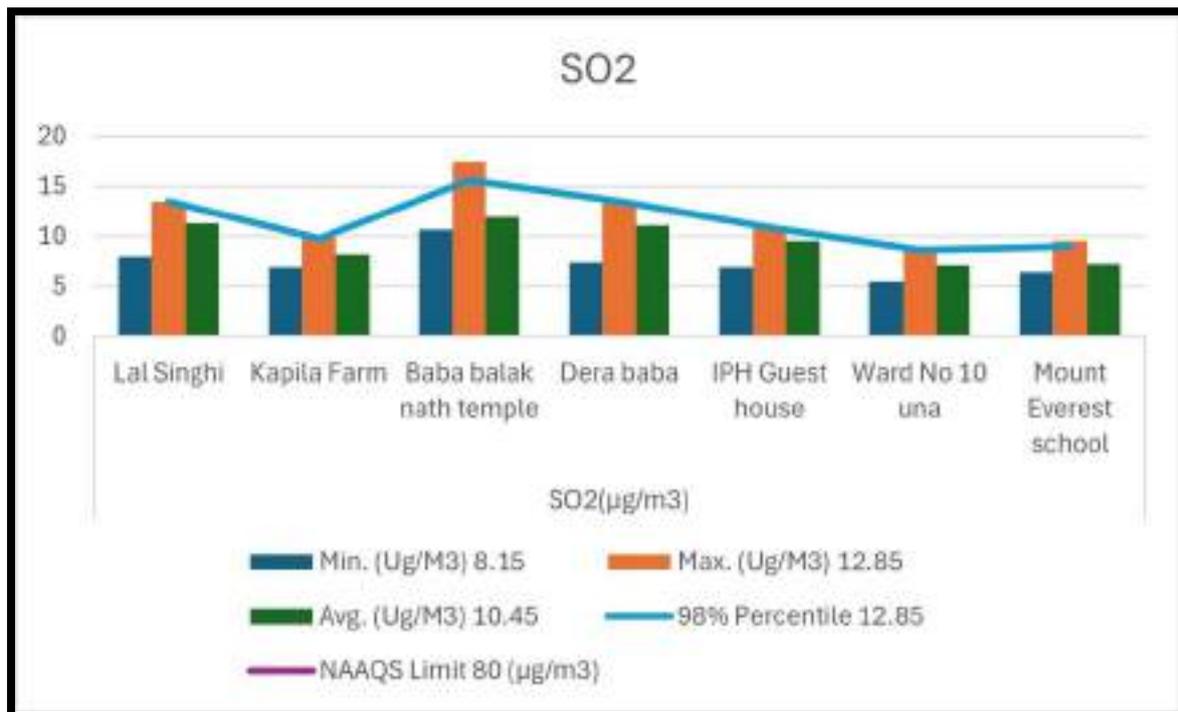


FIGURE 3-12: GRAPHICAL REPRESENTATION OF AMBIENT AIR QUALITY FOR POST MONSOON SEASON Dec' 2025 to Feb' 2026.

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 3-9 COMPARISON WITH AMBIENT AIR QUALITY STANDARDS ($\mu\text{G}/\text{M}^3$)

Pollutants	Standard Laid Down by CPCB (18/11/2009)	Max. Value Monitored in Study Area
	Industrial, Residential, Rural and Other Area	
PM10 $\mu\text{g}/\text{m}^3$	100 (24-hours)	70.56
PM2.5 $\mu\text{g}/\text{m}^3$	60 (24-hours)	45.99
SO2 $\mu\text{g}/\text{m}^3$	80 (24-hours)	17.45
NO2 $\mu\text{g}/\text{m}^3$	80 (24-hours)	20.65
CO mg/m^3	2 (08- hours)	0.74
NH3 $\mu\text{g}/\text{m}^3$	400 (24-hours)	ND (DL 20)
O3 $\mu\text{g}/\text{m}^3$	180 (24-hours)	ND (DL 10)

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

3.12.7 Air Quality Index (AQI)

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

TABLE 3-10 AMBIENT AIR MONITORING STATIONS

Sr. No.	Monitoring Stations	PM10	PM2.5	SO ₂	NO ₂	CO	AQI value	AQI range
1	Project Site 1	56.95	30.64	10.45	14.62	0.42	57	Satisfactory
2	Lal Singhi	41.95	22.30	11.32	12.82	0.31	61	Satisfactory
3	Kapila Farm	50.10	27.29	8.21	13.50	0.43	50	Satisfactory
4	Baba balak nath temple	45.70	24.41	11.95	17.31	0.33	46	Good
5	Dera baba	42.76	22.89	11.05	11.70	0.31	43	Good
6	IPH Guest house	45.47	25.46	9.53	12.13	0.29	45	Good
7	Ward No 10 una	34.72	18.90	7.10	11.93	0.29	35	Good
8	Mount Everest school	41.27	22.49	7.23	12.02	0.34	41	Good

TABLE 3-11: AQI (IN $\mu\text{g}/\text{m}^3$) OF THE 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*

3.12.8 Observations of Results

PM₁₀ :- The maximum and minimum concentrations for PM₁₀ were recorded as 26.32 $\mu\text{g}/\text{m}^3$ and 70.56 $\mu\text{g}/\text{m}^3$ respectively. The maximum concentration was recorded at Project Site-1 and minimum concentration was recorded at IPH Guest house.

PM_{2.5} :-The maximum and minimum concentrations for PM_{2.5} were recorded as 13.89 $\mu\text{g}/\text{m}^3$ and 45.99 $\mu\text{g}/\text{m}^3$ respectively. The maximum concentration was recorded at the Project Site-1, and minimum concentration was recorded at Baba balak nath temple.

SO₂:-The maximum and minimum SO₂ concentrations were recorded as 5.46 $\mu\text{g}/\text{m}^3$ and 17.45 $\mu\text{g}/\text{m}^3$ respectively. The maximum concentrations were recorded at Baba balak nath temple and minimum concentration was recorded at Ward No 10 una.

NO₂ :- The maximum and minimum NO₂ concentrations were recorded as 9.27 $\mu\text{g}/\text{m}^3$ and 20.65 $\mu\text{g}/\text{m}^3$. The maximum concentration was recorded at Baba balak nath temple, and minimum concentration was recorded at Baba balak nath temple.

CO :- The maximum and minimum Carbon mono-oxide (CO) concentrations were recorded as 0.2 mg/m³ and 0.74 2mg/m³ at Project Site-1.

3.13 AMBIENT NOISE

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

3.13.1 Noise level monitoring data

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



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

TABLE 3-12 AMBIENT NOISE MONITORING LOCATION

Station Code	Station Name	Distance (Km)	Direction	Latitude & Longitude	Criteria
N1	Project Site 1	.....	.....	31°28'4.01"N 76°13'58.68'E	.....
N2	Lal Singhi	1.83	NE	31-2841-15"N 76°14'53.07"E	Agricultural land
N3	Kapila Farm	2.01	NNW	31°29'0.60"N 76°13'38.02"E	Agricultural land
N4	Baba balak nath temple	1.83	NNE	31°28'23.66"N 76°12'49.93°E	Silence Zone
N5	Dera baba	1.93	SSW	31 277.45"N 76°13'10.40 E	Residential land
N6	IPH Guest house	4.10	SSE	31°25'57.86"N 76°14'34.69°E	Residential land
N7	Ward No 10 una	2.47	ESE	31 2732.21"N 76°15'21.90 E	Commercial land
N8	Mount Everest school	4.42	ESE	31°26'24.99"N 76°166.78°E	Silence Zone

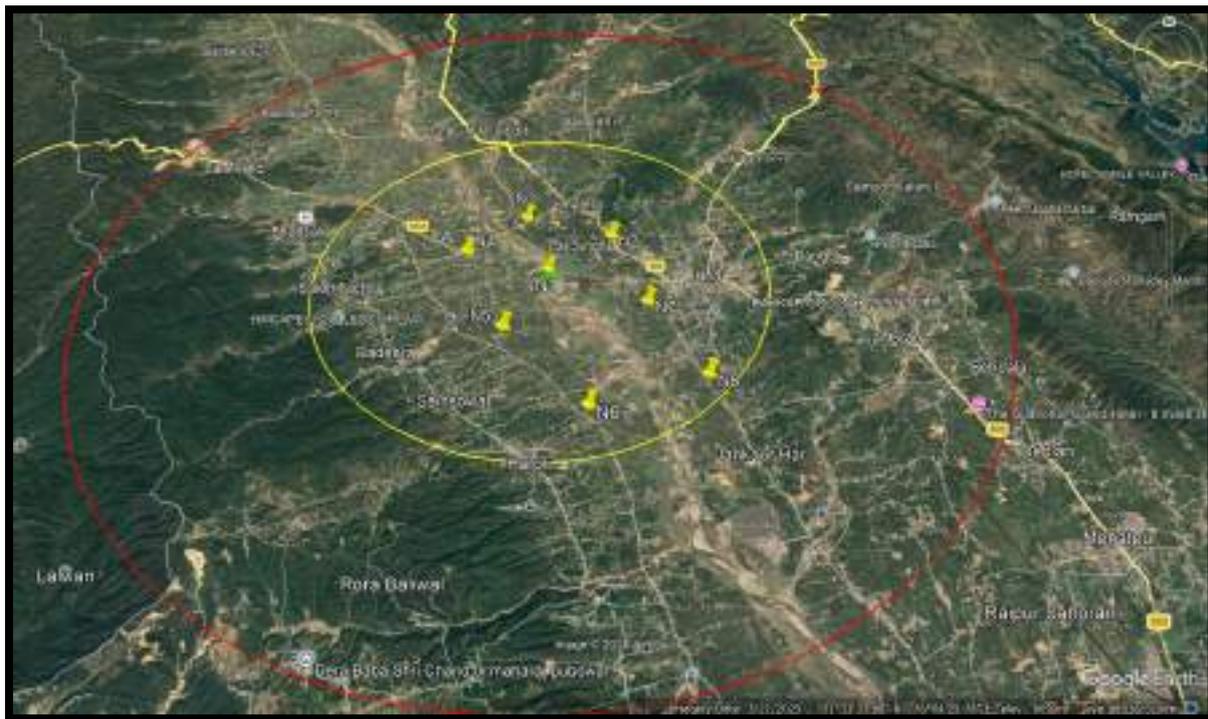


FIGURE 3-13: NOISE MONITORING LOCATIONS

TABLE 3-13 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	58.8	42.6	IS: 9989: 1981R-2002
2.	Lal Singhi	54.2	41.5	
3.	Kapila Farm	57.5	43.0	
4.	Baba balak	47.1	38.8	
5.	Dera baba	48.0	35.4	
6.	IPH Guest	55.4	42.0	
7.	Ward No 10	53.6	41.5	
8.	Mount Everest	47.2	34.6	

TABLE 3-14 AMBIENT NOISE QUALITY STANDARD (CPCB, 2009)

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

3.13.2 Result and Interpretation

Ambient noise levels were measured at 8 locations around the mining site. Noise level varies from 47.1 to 58.8 dB (A) during daytime and during night-time levels ranges from 34.6 to 43.0 dB (A). Thus, ambient noise levels at all locations were observed to be within the prescribed limits and well.

3.14 WATER ENVIRONMENT

3.14.1 Hydrogeology of the area

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

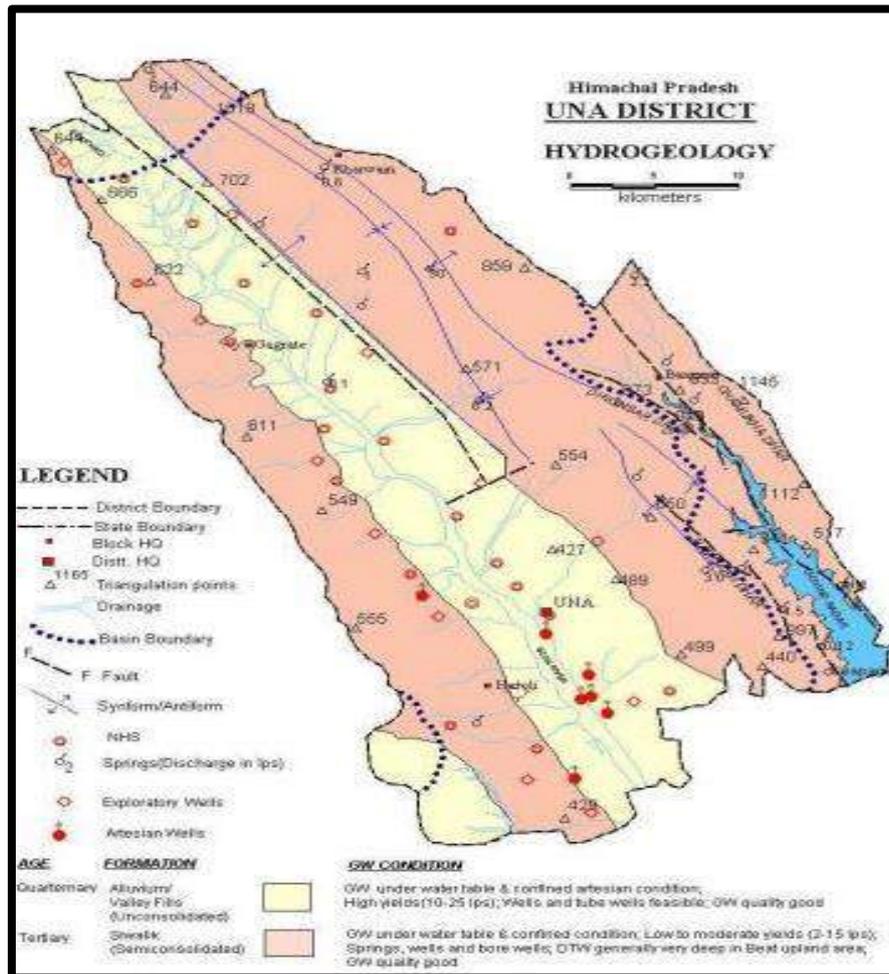


FIGURE 3-14: HYDROGEOLOGICAL MAP OF UNA DISTRICT

*Source: - https://cgwb.gov.in/District_Profile/HP/UNA.pdf

3.14.2 Depth to Ground Water

As on March 2011, the stage of groundwater development in Una and Hum valleys of the

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

3.14.3 Water quality in the study area

Chemical quality data of ground water from shallow as well as deep aquifers in the district, indicates that ground water is generally alkaline in nature and suitable both for domestic and irrigation use. All the parameters analysed are well within the permissible limit of safe

drinking water, set by Bureau of Indian Standard (BIS). Proper monitoring is very much required.

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

3.14.4 Methodology for Ground Water Monitoring

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

3.14.5 Location of Sampling Stations

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

TABLE 3-15 GROUND WATER & SURFACE WATER MONITORING LOCATIONS

GROUND WATER LOCATIONS				
Sr. No.	Station Name	Distance (Km)	Direction	Latitude & Longitude
GW1	Dariyan Wala	0.95	WSW	31.275694°, 76.132905°
GW2	Ghaluwal	2.12	NW	31.283273°, 76.124900°
GW3	Arjunpura	2.18	N	31.29552°, 76.14929°
GW4	Hotel Royal Castle	1.97	E	31.28422°, 76.151159°
GW5	Rampur Village	4.20	SE	31.264703°, 76.163082°
GW5	Saisowal	3.66	SSW	31.261252°, 76.132135°
SURFACE WATER LOCATIONS				
Sr. No.	Station Name	Distance (Km)	Direction	Latitude & Longitude
SW1	Upstream near project site	0.69	NNW	31.282425°, 76.134709°

SW2	Upstream near project site	0.56	S	31.274534°, 76.135702°
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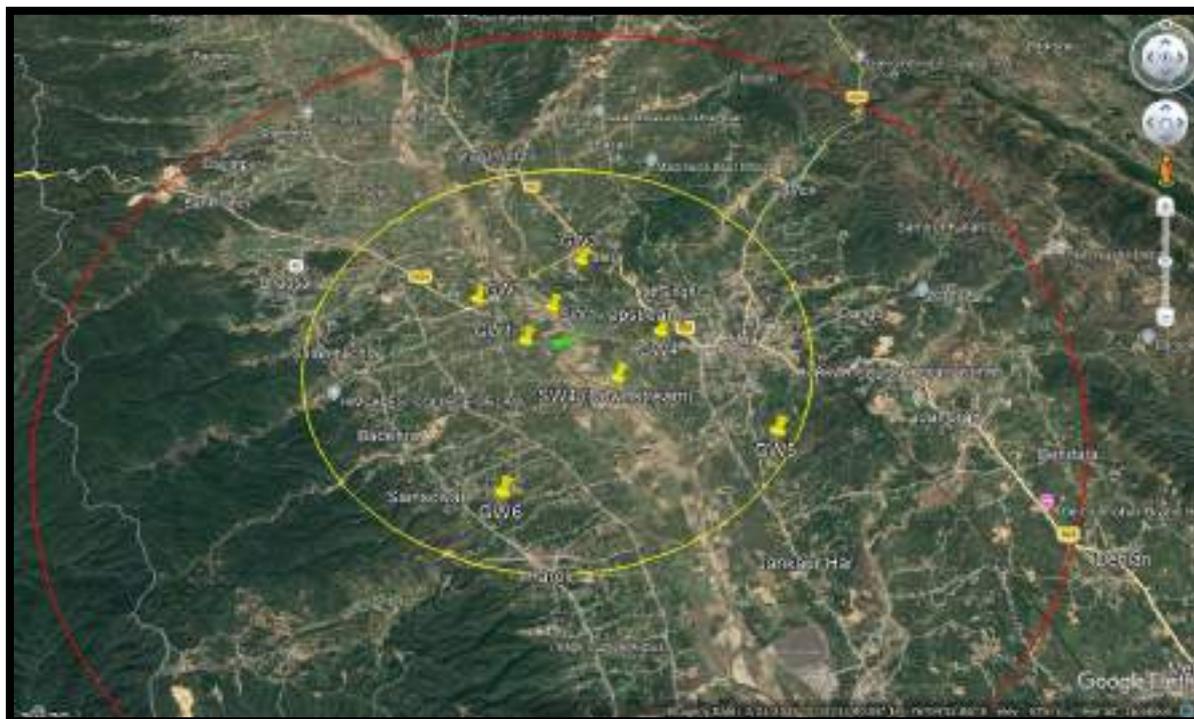


FIGURE 3-15: GROUND WATER & SURFACE WATER MONITORING LOCATIONS

TABLE 3-16: GROUND WATER TEST RESULTS

S. No.	Parameter	Unit	GW1 Dariyan Wala	GW2 Ghaluwal	GW3 Arjunpura	GW4 Hotel Royal Castle	GW5 Rampur Village	GW 6 Saisowal	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	-	7.46	7.29	7.38	7.55	7.29	7.40	6.5-8.5	No Relaxation
6	Total Hardness (as CaCO ₃)	mg/l	178	156	164	148	155	180	200	600
7	Iron (as Fe)	mg/l	0.06	0.05	0.09	0.08	0.05	0.06	1.0	No Relaxation
8	Chlorides (as Cl)	mg/l	14.5	15.8	18.6	10.4	12.5	15.4	250	1000

9	Fluoride (as F)	mg/l	0.32	0.26	0.36	0.30	0.33	0.21	1	1.5
10	Conductivity	µmhos/cm	586.0	590.0	458.0	412.0	550.0	564.0	-	-
11	TDS	mg/l	317.0	348.0	326.0	340.0	342.0	319.0	500	2000
12	Calcium(as Ca ²⁺)	mg/l	64.4	65.8	64.0	66.1	62.0	66.5	75	200
13	Magnesium (as Mg ²⁺)	mg/l	10.5	8.90	6.75	10.2	8.50	9.21	30	100
14	Copper (as Cu)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	1.5
15	Manganese(as Mn)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.3
16	Sulphate (as SO ₄)	mg/l	26.0	25.4	28.0	25.0	24.2	26.6	200	400
17	Nitrate(as NO ₃)	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	0.112	0.125	0.138	0.114	0.124	0.124	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 Cr ⁶⁺)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	No Relaxation
27	Mineral oil	mg/l	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5	No Relaxation
28	Alkalinity as CaCO ₃	mg/l	186.0	172.0	155.0	146.0	158.0	164.0	200	600
29	Aluminium (as Al)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.2
30	Boron (as B)	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.5	2.4
31	Total Coliform	MPN /100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent/100ml	
32	<i>E. coli</i>	E.coli /100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent/100ml	

3.14.6 Observations of Ground water Results

All the parameters are well within the permissible limits as per the IS: 10500:2012 of drinking water standard. pH was found in the range of 7.29-7.46. 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 3-17: SURFACE WATER TEST RESULTS

S. No	Parameter	Test Method	Units	Near Project Site (Upstream)	Near Project Site Downstream)
1.	pH (at 25°C)	IS:3025(Part-11)	---	7.38	7.47
2.	Temperature	IS:3025(Part-9)	°C	20.0	23.0
3.	Turbidity	IS:3025(Part-10)	NTU	1.6	2.4
4.	Electric Conductivity @25°C	IS:3025(Part-14)	µS/cm	318	326
5.	Sulphate (SO ₄)	IS:3025(Part-24)	mg/l	21.0	24.0
6.	Nitrate (NO ₃)	IS:3025(Part-34)	mg/l	1.75	2.06
7.	Total Hardness (as CaCO ₃)	IS:3025(Part-21)	mg/l	142.0	151.0
8.	Chloride (as Cl)	IS:3025(Part-32)	mg/l	48.2	65.4
9.	Fluoride (as F)	APHA 4500F	mg/l	0.23	0.30
10.	COD (as O ₂)	APHA-5220 B	mg/l	12.0	14.0
11.	Iron (as Fe)	IS:3025(Part-53)	mg/l	0.16	0.20
12.	Dissolve Oxygen	IS-3025(Part-38)	mg/l	7.5	6.6
13.	Total Dissolved Solid	IS:3025(Part-16)	mg/l	204	210
14.	BOD (3 days at 27°C)	IS:3025 (P-44)	mg/l	2.2	2.4
15.	Calcium (as Ca)	IS:3025(Part-40)	mg/l	54.8	58.6
16.	Magnesium (as Mg)	IS:3025(Part-46)	mg/l	8.5	10.2
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	21.8	24.5
24.	Potassium (as K)	IS:3025(Part-45)	mg/l	1.54	1.78
25.	Total Alkalinity (as CaCO ₃)	IS:3025(Part-23)	mg/l	162	165
26.	Phosphate (as P)	IS:3025(Part-31)	mg/l	0.23	0.27
27.	Nitrite (as NO ₂)	IS:3025(Part-34)	mg/l	0.18	0.21
28.	Total Suspended Solid	IS:3025(Part-17)	mg/l	7.2	8.5
29.	Faecal Coliform	IS-1622	MPN/100 ml	1.2 × 10 ³	1.4 × 10 ³
30.	Total Coliform	IS-1622	MPN/100 ml	2.6 × 10 ³	2.8 × 10 ³

3.14.7 Result and Interpretation of surface water

The results for surface water samples collected within the study area were compared with standard limits. The pH was found to be in the range of 7.38-7.47, TDS was in the range of 204-210 mg/l, enclosed as ANNEXURE-XI. Remaining all the parameters including trace elements were within the limits or below detectable limits as per standard prescribed under Environment Protection Rule 1986.

The analysis report of the water sample collected from the different surface water sources (River) in study area show that the water is used for the domestic purposes but only after



conventional treatment & disinfection. As per the analysis the class of water is “C” as per the CPCB’s water quality criteria for designated best use.

**Test reports are attached as ANNEXURE-XI.*

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

TABLE 3-18: 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 NH-503 about 1.86 km in NW Direction. The Monitoring was performed during study period. The results of measurements are given in **Table 3-20**.

3.15.1 Methodology

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

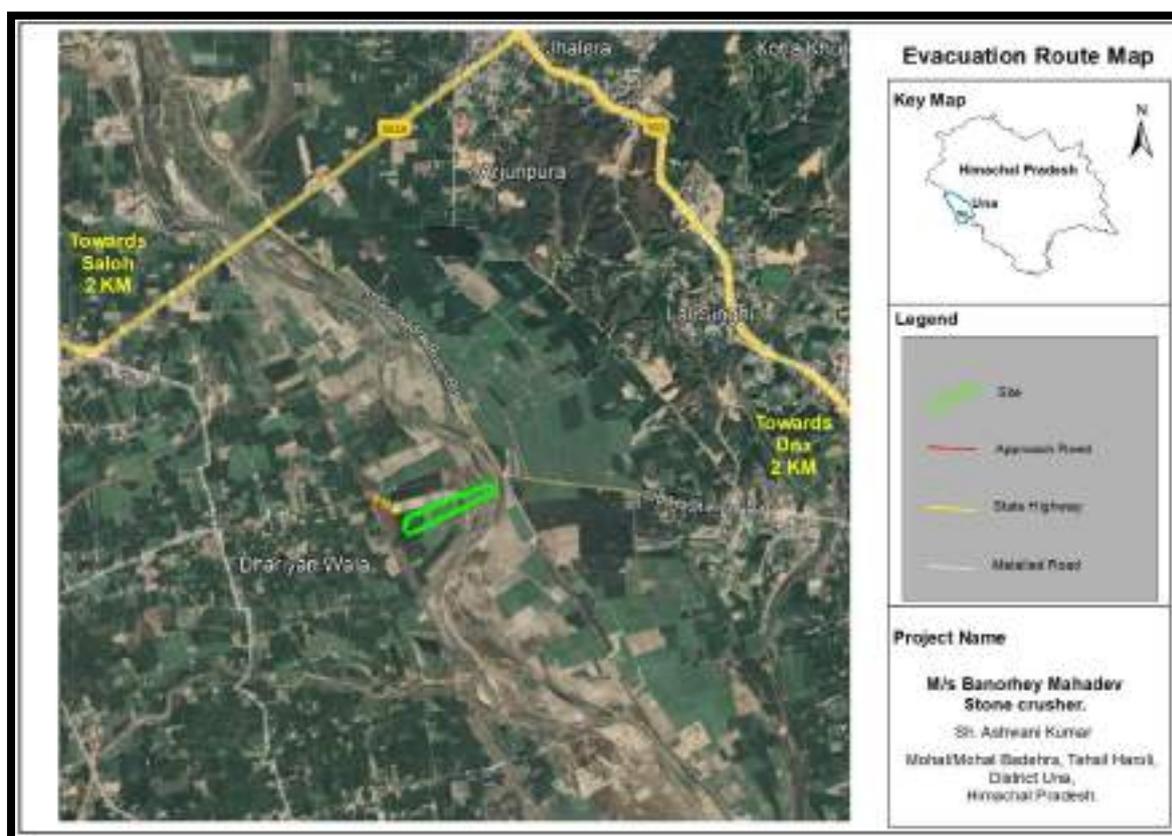


FIGURE 3-16: TRAFFIC STUDY LOCATION

TABLE 3-19: EXISTING TRAFFIC SCENARIO & LOS

Road	V	C	Existing V/C Ratio	LOS
------	---	---	--------------------	-----

NH 503	1400	5800	0.24	B
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***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	: 136080 MTPA
No. of working days	: 270 Days
Per day capacity of mine	: 504 tonnes/day
Trolley/Truck capacity	: 15 tonnes
No. of trip deployed	: 33 trips/day.
Working hours per days	: 8 hours
No. of trucks/Tractor trolley deployed/h	: Approx. 4-5 trucks/tractor Trolley

***Increase in PCU/day will be 26.25 PCUs.**

TABLE 3-20: 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	5	3.7	18.5	2.77
3	Two Wheelers	5	0.75	3.75	0.47
Total		15	.....	26.25	3.74



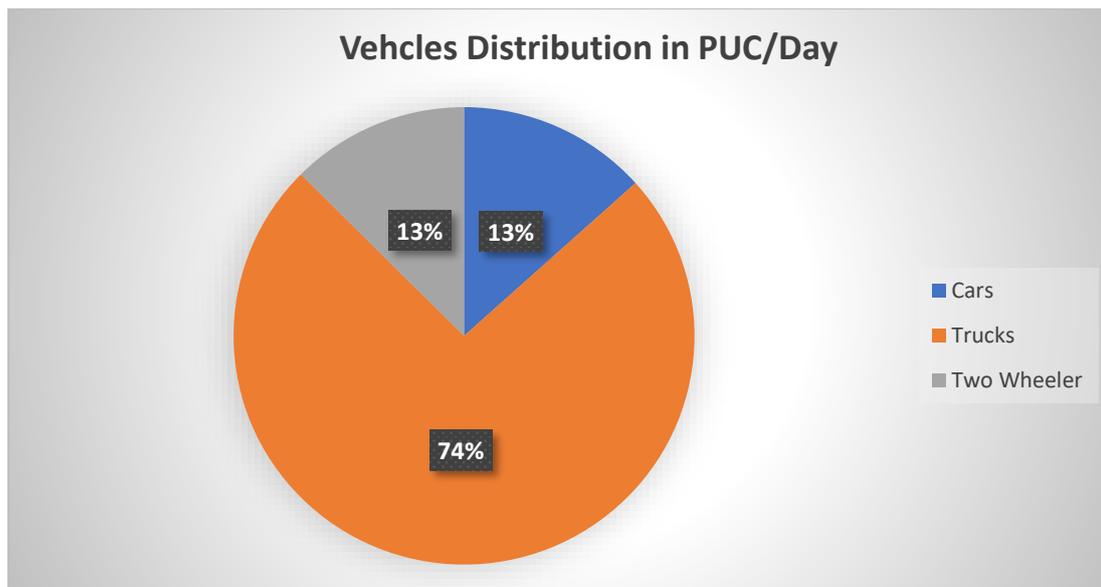


FIGURE 3-17: GRAPHICAL REPRESENTATION OF VEHICLES

TABLE 3-21: MODIFIED TRAFFIC SCENARIO & LOS

Road	V	C	Modified V/C Ratio	LOS
NH 503	1400+30=1430	5800	0.24	B

3.15.2 Result of traffic assessment

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

3.16 BIOLOGICAL ENVIRONMENT

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

The basic purpose to exploring the biological environment under Environmental Impact Assessment (EIA) is to assist in the decision-making process and to ensure that the project options under consideration are bio-environmental-friendly. EIA identifies ways of

improving project environmentally by preventing, minimizing, mitigating, or compensating for adverse impacts before construction and after construction phase. The present study on the floral assessment of the proposed project is based on field survey of the area supported by secondary data from various governmental and non-governmental source.

3.17 EXISTING FORESTS IN THE STUDY AREA

3.17.1 Recorded Forest Area

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

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



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

TABLE 3-22: Forest cover in Himachal Pradesh

District	Calculated Area by Sol	2023 Assessment				% of Calculated Area by Sol	Change w.r.t. 2021 Raster based*	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Bilaspur [†]	1,167	22.65	165.85	185.30	373.80	32.03	2.12	3.30
Chamba [†]	6,522	596.72	1,221.92	657.51	2,456.15	37.66	-1.82	21.27
Hamirpur [†]	1,118	42.41	101.95	217.17	361.53	32.34	0.00	12.40
Kangra [†]	5,739	229.24	1,301.44	869.52	2,400.20	41.82	5.70	12.81
Kinnaur [†]	6,401	84.24	325.72	238.11	648.07	10.12	-0.51	61.34
Kullu [†]	5,503	634.95	852.20	508.21	1,995.36	36.26	0.22	25.02
Lahaul & Spiti [†]	13,841	11.95	34.03	100.03	146.01	1.05	0.17	16.69
Mandi [†]	3,950	412.59	730.22	647.36	1,790.17	45.32	9.11	18.67
Shimla [†]	5,131	778.96	1,150.66	514.97	2,444.59	47.64	4.22	28.29
Sirmaur [†]	2,825	238.40	646.70	530.78	1,415.88	50.12	20.46	49.60
Solan [†]	1,936	45.84	439.72	423.19	908.75	46.94	12.08	46.55
Una [†]	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

3.17.2 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 24°C to 27°C and rainfall ranges from 900mm to 1,500 mm.

Dry Siwalik Sal Forest(5B/C1a)

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

Dry deciduous Scrub (5/DS1)

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

Dry bamboo brakes(5/E9)



In this type only one species, *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.

3.18 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 2025.

3.18.1 Details of Methodology

The primary objective of the survey is to describe the floral and faunal communities within the study area. The knowledge of species, habitats requirement, soil type, terrain, vegetation etc. were used to predict species occurrence. This Rapid biodiversity assessment was undertaken by identifying potentially rich sites from satellite imagery LISS-IV and Google Earth and conducting the field survey in potential habitats. GPS (Garmin e-trex-20) was used for locating field samples as well as gathering positional attributes of flora and faunal species. The methodology adopted for faunal survey involved faunal habitat assessment, random intensive survey, opportunistic observations, diurnal bird observation, active search for reptiles, active search for scats and footprints and review of previous studies. The aim was to set baselines to monitor and identify trends after the commencement of production system activity. Emphasis has been placed on the presence of rare, endemic, migratory, and threatened species, if any present in the study area. Desktop literature review was conducted to identify the representative spectrum of threatened species, population and ecological communities as listed by IUCN and in Indian wildlife Protection act, 1972 amended in 2022. 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:



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

TABLE 3-23: 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 (winter)	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 (winter)	Field studies, Forest/ Wildlife Department, and literature review

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

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

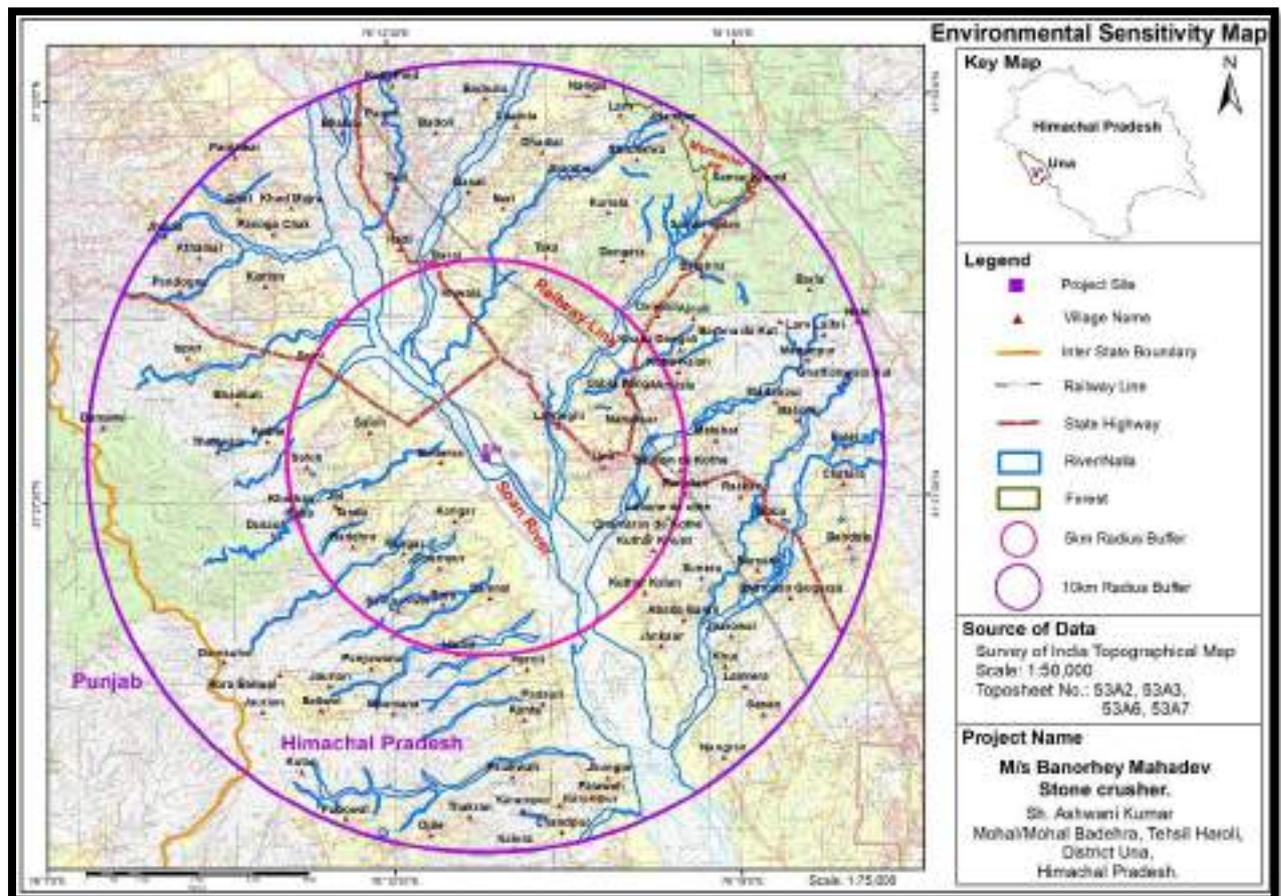


FIGURE 3-18: ENVIRONMENTAL SENSITIVITY MAP WITHIN 5 KM AND 10 KM RADIUS

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.

3.18.2 Diversity Index

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

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

TABLE 3-24: 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 2.69 km in NNE direction.
2.	EB-2	3-7	About 3.01 km in S direction.
3.	EB-3	7-10	About 7.22 km in ESE direction.
4.	EB-4	7-10	About 7.15 km in WNW direction.

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

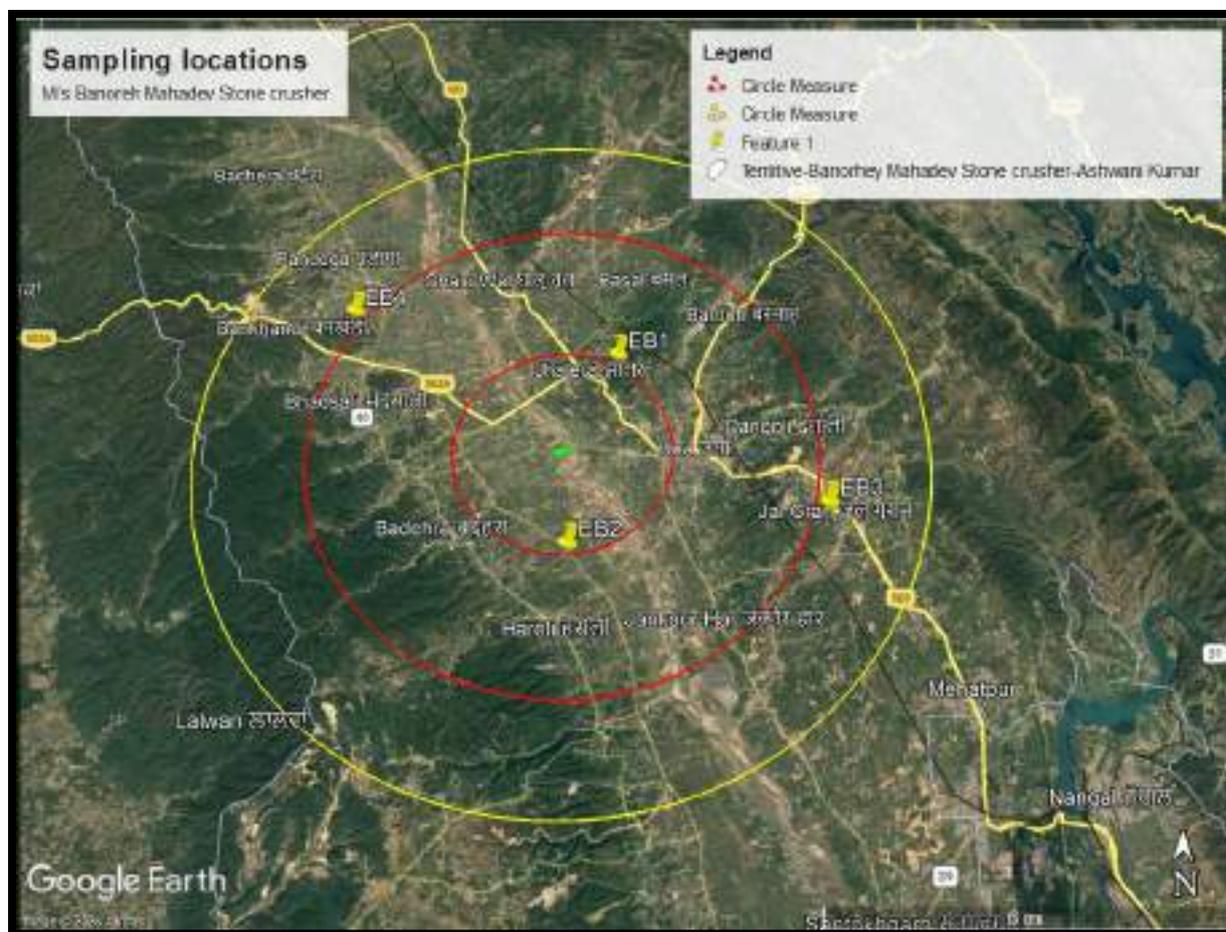


FIGURE 3-19: SAMPLING LOCATIONS FOR FLORAL STUDIES

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

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

TABLE 3-25: Distribution of Species

Sr. No	Species	Frequency	Pi	ln(Pi)	Pi*ln(Pi)
EB-1					
1.	<i>Acacia catechu</i>	40	0.250	-2.079	-0.260
2.	<i>Albizia procera</i>	40	0.250	-1.386	-0.347
3.	<i>Dalbergia sissoo</i>	20	0.125	-2.079	-0.260
4.	<i>Solanum nigrum</i>	40	0.250	-1.386	-0.347
5.	<i>Xanthium stramonium</i>	40	0.250	-1.386	-0.347
		160			-1.560
EB-2					
1.	<i>Acacia nilotica</i>	40	0.182	-2.398	-0.218
2.	<i>Cassia fistula</i>	40	0.182	-1.705	-0.310
3.	<i>Eucalyptus sp.</i>	20	0.091	-2.398	-0.218
4.	<i>Euphorbia royleana</i>	40	0.182	-1.705	-0.310
5.	<i>Ficus religiosa</i>	40	0.182	-1.705	-0.310
6.	<i>Mangifera indica</i>	40	0.182	-1.705	-0.310
7.	<i>Populus deltoides</i>	20	0.091	-1.705	-0.310
8.	<i>Lantana camara</i>	20	0.091	-2.398	-0.218
		220			-2.204
EB-3					
1.	<i>Albizia procera</i>	20	0.100	-1.609	-0.322
2.	<i>Bauhinia variegata</i>	40	0.200	-2.303	-0.230
3.	<i>Mangifera indica</i>	20	0.100	-2.303	-0.230
4.	<i>Malva parviflora</i>	40	0.200	-1.609	-0.322
5.	<i>Datura stramonium</i>	20	0.100	-2.303	-0.230
6.	<i>Lantana camara</i>	20	0.100	-2.303	-0.230

7.	<i>Populus deltoides</i>	40	0.200	-1.609	-0.322
8.	<i>Xanthium stramonium</i>	40	0.200	-1.609	-0.322
		200			-2.209
	EB-4				
1.	<i>Mangifera indica</i>	20	0.167	-1.792	-0.299
2.	<i>Acacia catechu</i>	40	0.167	-1.792	-0.299
3.	<i>Bauhinia variegata</i>	40	0.167	-1.792	-0.299
4.	<i>Ficus religiosa</i>	20	0.083	-2.485	-0.207
5.	<i>Malva parviflora</i>	40	0.167	-1.792	-0.299
6.	<i>Bombax ceiba</i>	40	0.083	-2.485	-0.207
7.	<i>Dalbergia sissoo</i>	40	0.167	-1.792	-0.299
8.	<i>Lantana camara</i>	40	0.167	-1.792	-0.299
		240			-2.206

At location EB1 Diversity Index H is 1.560

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

At location EB2 Diversity Index H is 2.204

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

At location EB3 Diversity Index H is 2.209

The SW index values (H) can range of 0 to ~4.6 using the natural log (ln). A value near 0 would indicate that every species in the sample is the same. A value near 4.6 would indicate that the number of individuals is evenly distributed between all the species. Here, the value of H is **2.053**, that indicates the area is lightly diversified.



At location EB4 Diversity Index H is 2.206

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

TABLE 3-26: FLORA IN THE STUDY AREA (CORE ZONE & BUFFER ZONE)

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

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

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.

3.18.3 Faunal Diversity of The Study Area

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

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

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

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

3.18.4 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 (*Herpestes 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 3-27: 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	<i>Bos indicus</i>	-	NA
2	Buffalo	<i>Bos bubalis</i>	-	DD
3	Goat	<i>Capra aegagrus hircus</i>	-	DD
Wild Animals (Mammals)				
1	Field mouse	<i>Apodemus sylvaticus</i>	-	LC
2	Nilgai	<i>Boselaphus tragocamelus</i>	-	LC
3	Golden Jackal	<i>Canis aureus</i>	-	LC
5	Indian Palm Squirrel	<i>Funambulus palmarum</i>	-	LC
6	Indian Grey	<i>Herpestes edwardsii</i>	-	LC
7	Indian hare	<i>Lepus nigricollis</i>	-	LC
8	Rhesus macaque	<i>Macaca mulatta</i>	-	LC
9	Fruits bat	<i>Pteropus conspicillatus</i>	-	LC
10	Rat	<i>Rattus rattus</i>	-	DD
Avian flora (Birds):				
1	Jungle Myna	<i>Acridotheres fuscus</i>	-	LC
2	Common Myna	<i>Acridotheres tristis</i>	II	LC
3	Pintail (Duck)	<i>Anas acuta</i>	-	LC
4	Common Teal	<i>Anas crecca</i>	II	LC
5	Mallard (wild duck)	<i>Anas platyrhynchos</i>	-	LC
6	Gadwall	<i>Anas strepera</i>	-	LC
7	Pond Heron	<i>Ardeola grayii</i>	-	DD
8	Spotted Owlet	<i>Athene brama</i>	-	LC
9	Cattle Egret	<i>Bubulcus ibis</i>	II	LC
10	Red-rumped Swallow	<i>Cecropis daurica</i>	II	DD
11	Pied kingfisher	<i>Ceryle rudis</i>	II	DD
12	Blue Rock Pigeon	<i>Columba livia</i>	-	LC
13	Oriental Magpie	<i>Copsychus saularis</i>	II	LC

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

Reptiles & Amphibians

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

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

3.19 SOCIO-ECONOMIC REPORT

3.19.1 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 riverbed mining for the extraction of sand, stone, and bajri from the Swan River, undertaken by Sh. Ashwani Kumar, proprietor of M/s Banorhey Mahadev Stone Crusher. The mining area spans 3.6142 hectares, identified under Khasra Nos. 6525/1 and 6526/1. Within 500 meters, it forms a cluster with an existing mining lease of 2.9510 hectares, bringing the total cluster area to 6.5652 hectares. The site is located in Mauza/Mohal Badehra, Tehsil Haroli, District 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 is situated in Tehsil Haroli, District Una, Himachal Pradesh. However, within a 10 km radius of the site, in addition to the villages of Haroli Tehsil, several villages from Garhshankar Tehsil, District Hoshiarpur, Punjab, are also located. The Longitude and Latitude of the site are given below: -

Sr. No.	Latitude	Longitude
1	31° 28' 9.08" N	76° 14' 8.70" E
2	31° 27' 59.56" N	76° 13' 50.48" E

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

3.20 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.

3.21 METHODOLOGY

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

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

For the socio-economic study, a settlement map prepared on a toposheet has been used to delineate the study area. A 10 km radius from the project site has been considered for the assessment and divided into three zones: the immediate impact area (0–3 km), the intermediate impact area (3–7 km), and the extended impact zone (7–10 km). The primary survey focuses on the 0–3 km impact area. 10% of the total villages falling into the study area, are included in the primary survey. In cases where the number of villages in the 0–3 km zone is insufficient or not representative of the overall study area, villages from the 3–7 km intermediate impact area may also be included in the survey.

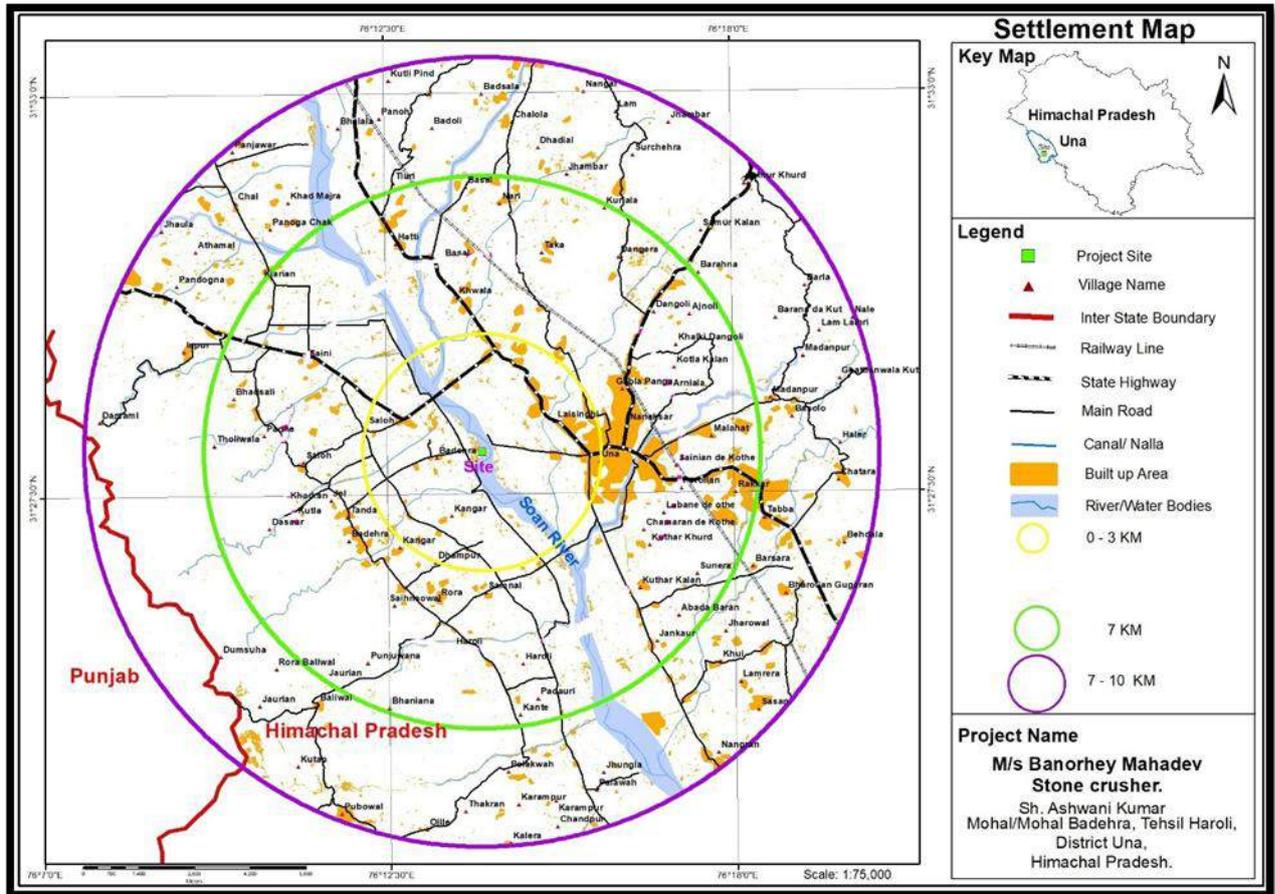


FIGURE 3-20: SHOWING LOCATION OF VILLAGES WITHIN 10 KM RADIUS OF BOUNDARY

3.22 BASELINE DATA

A total number of 69 Villages were found in a radius of 10 km from the project site as per the toposheet. A comprehensive primary survey of the designated impact area has been carried out.

3.22.1 Primary Survey:-

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

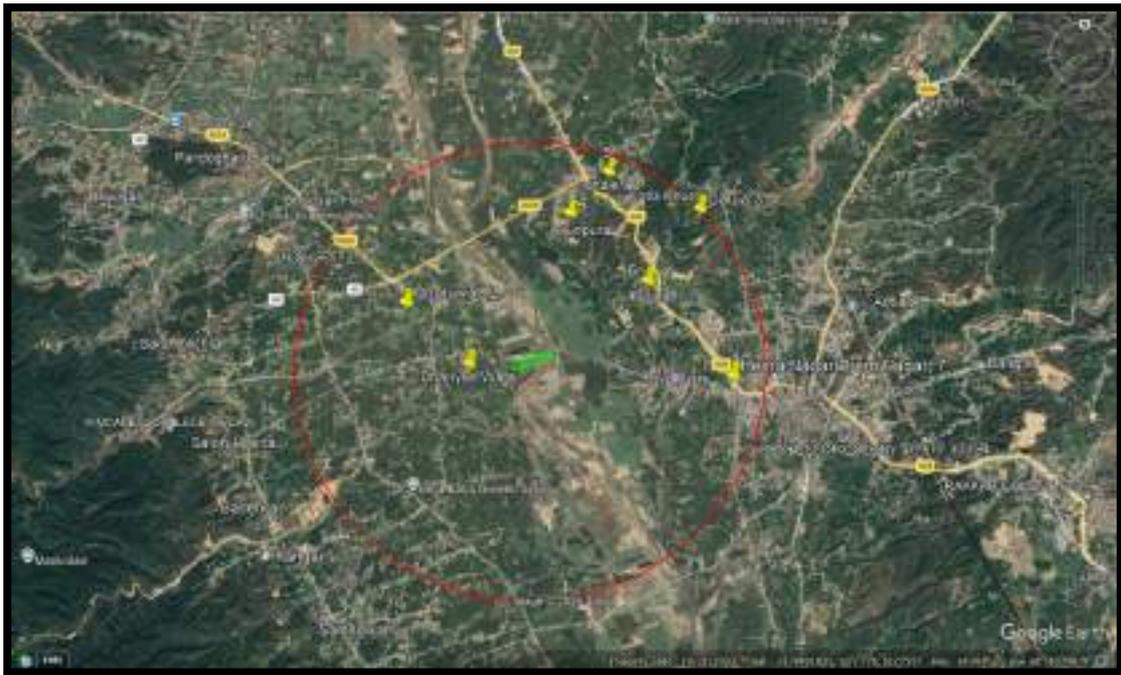


FIGURE 3-21: MAP DEPICTING THE LOCATION OF FIVE VILLAGES WITHIN THE IMPACT AREA

According to the toposheet analysis, a total of 69 villages lie within a 10 km radius of the project site in Himachal Pradesh. Seven villages which are covered under the Impact area (0-3 Km) is considered for the primary survey namely Dhariyan Wala, Ghaluwal, Gaula, Arjunpura, Jhalera, Lal Singhi and Heera Nagar (Prem Nagar-new name). These villages are falling under in two Tehsils namely Una and Haroli. Haroli is the main city within the primary study area.

TABLE 3-28: DEMOGRAPHIC DETAIL OF THE STUDY AREA (10 KM) , AS CENSUS 2011

Sr. No.	Name of Tehsil	Name of the Village	No_H	TO_H	TOT_M	TOT_F	POP_6	POP_15	POP_25	POP_35	TOT_WOR_K_P	MAIN_WOR_K_P	MARGWO_RK_P	NON_WOR_RK_P
1	Una	Bhalola (182)	91	430	247	183	64	0	0	257	264	111	153	166
2		Badoli (440)	187	893	433	460	15	31	0	67	374	232	142	519
3		Panoh-I (185)	216	1024	523	501	14	66	0	85	316	291	25	708
4		Tiuri-I (186)	141	600	305	295	68	23	0	47	182	171	11	418
5		Badsala (187)	162	709	357	352	97	41	0	51	302	217	85	407
6		Nangal-I (447)	70	310	146	164	36	11	0	25	255	108	147	55
7		Chalola-II (448)	157	809	419	390	16	10	0	61	653	302	351	156
8		Dhadial (188)	107	548	261	287	68	17	0	41	348	128	220	200
9		Nari Upperli (189)	165	758	369	389	93	23	0	58	193	187	6	565

10	Lam (449)	46	20 9	10 9	10 0	2 3	0	0	1 6 5	123	50	73	86
11	Jhambar (458)	14 5	74 2	37 1	37 1	8 2	5 7	2 0	5 8 3	220	46	174	522
12	Surjehra (451)	71	35 5	18 6	16 9	4 0	6 1	1 0	2 8 3	161	68	93	194
13	Kuriala (452)	28 6	13 66	68 0	68 6	1 3	6 1 0	0	1 0 1 2	374	315	59	992
14	Samoor Kalan Awal (453)	18 4	96 0	51 2	44 8	1 2	2 7 0	0	7 4 4	583	441	142	377
15	Dangehra (191)	16 5	88 0	43 9	44 1	9 9	2 5	0	6 6 8	299	245	54	581
16	Basal (194)	31 5	16 40	82 7	81 3	9 0	1 6	0	1 2 4 3	526	408	118	1114
17	Thakar Dawara (194)	33 4	15 22	77 5	74 7	3 4	2 8 4	0	1 2 2 0	535	478	57	987
18	Khadunni (194)	89	44 6	25 5	19 1	3 6	1 1	0	3 3 2	219	142	77	227
19	Lal Singhi (200)	51 4	25 11	13 06	12 05	4 9	1 3 5	2	1 2 0 1	1093	948	145	1418

20	Kotla Kalan Nichla (204)	359	1576	768	808	188	75	0	12	639	271	368	937
21	Arniala (205)	1024	4437	2250	2187	46	175	34	347	1835	1418	417	2602
22	Kotla Kalan Upperla (204)	350	1590	781	809	180	538	0	1245	536	397	139	1054
23	Ajnoli (203)	304	1408	740	668	149	22	0	1104	773	321	452	635
24	Dangoli (202)	398	1842	914	928	205	478	0	1388	1015	526	489	827
25	Madan Pur (456)	199	915	481	434	99	88	5	740	298	255	43	617
26	Basoli Nichli (457)	319	1578	802	776	172	236	0	1202	625	536	89	953
27	Chatara Upperla (458)	102	466	226	240	72	11	25	3055	175	162	13	291
28	Tabba (211)	244	1183	592	591	144	396	0	926	400	327	73	783
29	Rakkar Kaloni (211)	584	2385	1209	1176	195	285	32	221	757	751	6	1628

										0 2				
30	Malahat (206)	39 6	17 31	85 9	87 2	8 1	2 1	0	1 1	3 8	640	587	53	1091
31	Kuthar Khurd (210)	18 8	95 3	49 7	45 6	1 4	3 6	0	7 0	9	274	179	95	679
32	Kuthar Kalan (214)	22 0	11 55	59 2	56 3	3 3	0	4	8 6	9	385	349	36	770
33	Jankaur Har (216)	80	40 5	20 0	20 5	4 7	8 8	0	2 6	9	167	163	4	238
34	Abada Barana (215)	17 3	90 3	46 5	43 8	1 6	2 7	0	6 7	3	267	222	45	636
35	Barsara (212)	13 9	65 4	31 3	34 1	9 4	0	0	4 3	5	193	36	157	461
36	Bharolian Kalan (217)	24 4	10 72	53 1	54 1	9 8	1 7	1	8 9	1	282	132	150	790
37	Jhorowal (219)	27 7	13 83	67 2	71 1	0 3	5	0	9 8	3	354	237	117	1029
38	Badehar Upperla (219)	12 2	56 0	30 0	26 0	6 6	9	0	4 4	3	164	155	9	396
39	Lamlehra (220)	15 3	64 6	32 6	32 0	7 0	7 1	0	5 0	4	199	163	36	447

40		Nangran Upperla (222)	38 4	18 78	94 7	93 1	2 0 2	2 4 1	0	1 4 8 5	821	429	392	1057
41		Sasan (221)	24 8	13 14	66 1	65 3	1 6 8 8	2 8 5	0	9 7 8	399	194	205	915
42	Haroli	Lawana Majra (178)	59	29 6	15 6	14 0	4 7	2 1	8 8	1 8 8	163	81	82	133
43		Panjawar (179)	77 5	35 37	17 44	17 93	3 9 8	8 2 0	0	2 8 0 7	1076	740	336	2461
44		Pandogha Nichla (195)	36 9	19 49	10 17	93 2	2 1 1	2 4	0	1 4 2 0	609	552	57	1340
45		Ispur Tanda (196)	50 4	25 13	12 89	12 24	3 0 6	2 8 6	0	1 7 3 0	927	556	371	1586
46		Ispur (196)	21 4	10 91	55 1	54 0	1 2 7	2 5 5	3	7 9 5	422	272	150	669
47		Bhadsali (197)	25 5	11 21	55 4	56 7	1 0 2	1 2 0	0	9 1 7	302	222	80	819
48		Saloh Uperla (198)	42 9	20 14	99 6	10 18	2 6 0	8 2 3	1	5 6 5	570	486	84	1444
49		Badehra (199)	96 7	50 00	24 70	25 30	6 1 5	9 3 5	1 0	3 7 6 4	2275	1512	763	2725



50	Kangar (462)	463	2282	1157	1125	241	335	0	1754	953	506	447	1329
51	Dharampur (463)	464	2311	1150	1161	300	431	0	1666	916	681	235	1395
52	Saihnsawal (464)	273	1425	724	701	199	453	0	1084	656	409	247	769
53	Samnal (466)	217	1098	525	573	1233	435	1	784	505	194	311	593
54	Rora Baliwal (465)	310	1502	783	719	164	326	0	1069	777	416	361	725
55	Rora	227	1254	639	615	149	57	0	943	576	310	266	678
56	Panjuana	112	600	318	282	59	0	0	442	338	57	281	262
57	Haroli (467)	307	1537	773	764	174	433	15	1206	778	515	263	759
58	Bhadauri (468)	264	1264	668	596	143	300	0	894	408	139	269	856
59	Palakwah (469)	401	1854	914	940	235	483	2	1408	545	471	74	1309

60	Kante	15 6	74 0	35 4	38 6	7 5	2 1	0	5 1	5 1	312	291	21	428
61	Thakaran	78	35 3	17 9	17 4	3 1	1 1	0	2 3	4 3	182	170	12	171
62	Karampur	18 9	10 11	52 4	48 7	0 3	5 5	0	7 7	7 0	426	165	261	585
63	Palakwah Nichala	21 2	11 21	57 4	54 7	3 8	3	0	7 9	9 0	651	427	224	470
64	Pubowal (523)	45 7	21 54	11 26	10 28	2 4	8 7	0	1 1	6 1	700	262	438	1454
65	Ojale	32	16 5	95	70	1 7	8	0	1 1	1 2	98	66	32	67
66	Haleran	16 2	73 2	35 6	37 6	7 6	4 1	0	4 9	2	494	353	141	238
67	Kutharbe et (524)	29 4	14 20	70 8	71 2	1 6	4 7	0	1 0	4 6	676	333	343	744
68	Janani	45	27 4	13 5	13 9	4 2	1 2	2 8	1 7	5	72	65	7	202
69	Tibian	22	11 3	62	51	9	0	0	1 0	8 3	44	32	12	69
Total Villages = 69		18 20 9	87 47 7	44 18 7	43 29 0	1 0 0	1 6 3	2 5 1	6 5 7	3466 9	2298 1	1168 8	5280 8	

					6	9		0				
					7	8		7				

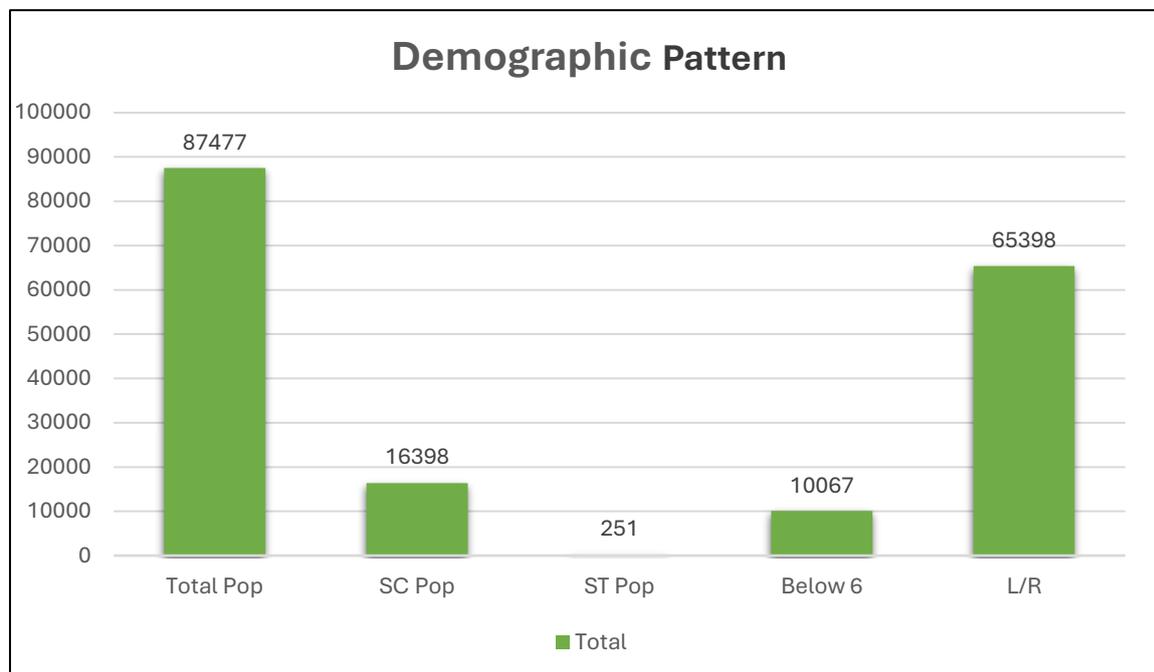


FIGURE 3.1: DEMOGRAPHIC PATTERN OF THE STUDY AREA

3.23 Demographic structure of study area within 10 km radius

The demographic characteristics of the study area covers 69 villages within a 10 km radius, comprising 18209 households and a population of 87,477. Males constitute 50.51% (44,187) and females 49.49% (43,290). The sex ratio in the study area is 979, which is slightly higher than the overall state figure of 972. Children under 6 years total 10067 which is about 11.50%. The literacy rate is 75.11%, which is quite good, but still a little lower than the state average of 82.80%. Scheduled Castes form 18.74% of the population (16,398 individuals), while minimal number of Scheduled Tribe population is present that is 0.29%. Detailed village-wise data is provided below."

TABLE 3.2 OCCUPATIONAL DETAIL OF THE STUDY AREA (10 KM), AS CENSUS 2011

Tehsils	Total No. of villages	Total Working Population		Main Working Population		Marginal Working Population		Non -Working Population	
		M	F	M	F	M	F	M	F
Haroli	69	34669		22981		11688		52808	
		M	F	M	F	M	F	M	F
		23477	11192	18284	4697	5193	6495	20710	32098



Occupational Pattern

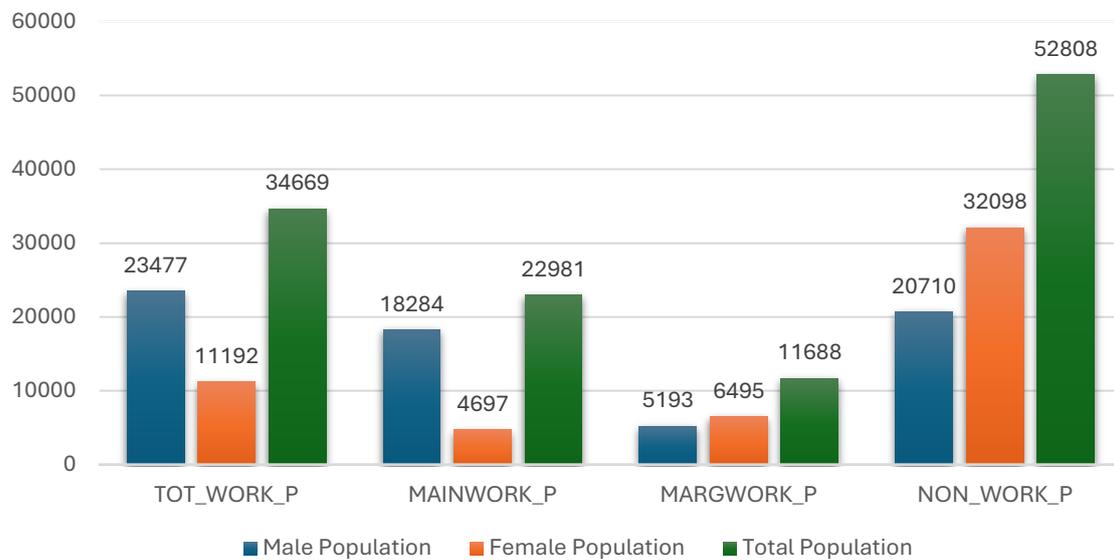


FIGURE 3-22: DEMOGRAPHIC STATISTICS OF THE STUDY AREA

3.24 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 study area, the working population makes up about 39.63% of the total of this, 26.27% are identified as main workers and 13.36% as marginal workers. The remaining 60.36% of the population are classified as non-workers.

This distribution highlights that a significant share of worker is in stable jobs, yet female participation in economic activities is limited. A large portion of the population remains outside the workforce. The data shows both strong regular employment and the challenge of low 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.

3.25 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 Shrivani 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 15 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. Most of the land in the district are used for agricultural purposes. In recent years there has been growth in various light industries including pharmaceuticals and textile manufacturing in Una. This has been mainly because of the town's location and proximity to other state borders. The state government has also provided subsidies on taxes to entrepreneurs and an industrialist to set up their operations in the town. The district has mineral resources such as sand, stone and bajri are available in plenty in various river/stream beds. Una district is well developed in the industrial sector due to close proximity to Punjab. Mehatpur, Gagret, Tahliwal, 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

Una is a nearby town about 3.4 Km in East direction away from the mine site which is well connected with road and railway. The Nearest Railway Station:- Una Railway Station is about 3.87 km in the ENE direction (Aerial Distance). The Nearest Airport:- Gaggle Airport in North direction at 77.15 km (Aerial Distance). The Nearest Highway:- National Highway NH-503 is about 1.86 km in NW 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 3.4 km (arial distance) away from the project site which contains Historical or Archaeological importance. On the border with Punjab, Una is known as the gateway to Himachal Pradesh. This city is set on the banks of the gurgling Swan River. Within the state it has borders with Kangra, Hamirpur and Bilaspur Chintpurni Mata mandir is a famous religious place in Una, Himachal Pradesh. Sunday is a special day for visiting here. People Comes to this place from Neighbouring states like Haryana and Punjab.



3.26 BASIC AMENITIES

i) Educational

The Una has educational facilities at all levels, including schools, colleges, and institutes, located approximately 3.40 km (aerial distance) from the project site. The nearest School is The Areal Public High School at Jaijon village situated about 2.32 km to the west. Govt. Post Graduate Degree College, Una, lies 4.34 km to the east, while ICFAI University, Una, is around 4.40 km to the ESE 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 3.4 km from the project site, Civil Hospital Haroli, Una is situated at the 3.4 Km (Aerial distance) in East 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 3.4 km from the project site.

3.27 BASIC INFRASTRUCTURES AVAILABLE IN 7 SURROUNDING VILLAGES SELECTED FOR PRIMARY SURVEY

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

TABLE 3-29: INFRASTRUCTURE IN 7 SURROUNDING VILLAGES

Sr. No.	Name of Infrastructure	Name of villages													
		Dhariyan Wala		Ghaluwal		Gaula		Arjunpura		Jhalera		Lal Singhi		Prem Nagar	
		2011	2026	2011	2026	2011	2026	2011	2026	2011	2026	2011	2026	2011	2026
1.	Medical Facilities														
	Dispensary	x	x	x	x	x	x	x	x	x	x	x	x	√	√
	PHC	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Hospital	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Veterinary Hospital	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2.	Educational Facilities														
	Primary School	√	x	√	x	√	√	√	√	x	x	√	√	√	√
	Secondary School	x	x	x	√	x	x	x	x	x	x	x	x	x	√
	Sr. Sec. School	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	College	x	x	x	x	x	x	x	x	x	x	x	x	x	√
	ITI	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3.	Transport														
	Kuccha Road (Gravel)	√	√	√	√	√	√	√	√	√	√	√	√	x	√
	Puccha Road (Black Topped)	√	√	√	√	√	√	√	√	√	√	√	√	x	√
	Bus Services (within 5 km)	√	√	√	√	√	√	√	√	√	√	√	√	√	√
4.	Communication														
	Post Office	x	x	x	√	x	x	x	x	x	x	x	x	√	√
	Telephone	√	√	√	√	√	√	√	√	x	√	√	√	√	√
5.	Civic Amenities														
	Water	√	√	√	√	√	√	√	√	√	√	√	√	√	√

	Electricity (Power Supply)	√	√	√	√	√	√	√	√	√	√	√	√	√	√
6.	Social/ Cultural Facilities														
	Community Center	×	×	×	×	×	√	×	×	√	×	×	×	×	√
	Banks	×	×	×	√	×	×	√	√	√	√	√	√	√	√
	Sports Field (Playground within 5 Km)	√	×	√	×	×		√		×		√		√	

3.28 DATA INTERPRETATION

The comparative analysis of seven villages in Himachal Pradesh highlights notable progress in basic infrastructure such as water supply, electricity, roads, and communication facilities. Almost all villages now have reliable access to power and drinking water, along with improved road connectivity and bus services within 3 km. However, healthcare infrastructure remains underdeveloped, dispensaries are limited to just two villages, while no Primary Health Centers (PHCs) or hospitals exist, and veterinary services are absent.

Education shows mixed progress: primary schools are present in most villages, but access to secondary and senior secondary education is uneven, with only a few villages offering these facilities. Higher education opportunities are scarce, with just one college available across all villages, and no ITIs established. Social and cultural infrastructure is also inadequate, community centers are rare, banks are concentrated in select villages, and sports fields are inconsistently available. These gaps underline the need for focused interventions in healthcare, education, and social amenities to ensure balanced rural development.

3.29 NEED IDENTIFICATION

The villages need better healthcare with more dispensaries, PHCs, hospitals, and veterinary services. Education must be improved by adding secondary schools, senior secondary institutions, colleges, and ITIs. Sanitation, clean drinking water, and transport facilities should be upgraded for better living conditions. Community Centers, sports grounds, and banking services must be expanded to all villages. Awareness programs on health, literacy, and gender equality can help people participate more actively. Skill training and vocational courses are needed to empower the youth. Job creation schemes will strengthen rural economies and reduce migration.

13.8 RECOMMENDATIONS

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

- Prioritize local workforce participation.
- Provide skill training for youth, women, and marginalized groups.
- Support ancillary businesses such as dhabas, shops, and transport.



- Strengthen healthcare outreach and vocational initiatives.
- Integrate sustainable mining practices for long-term community and environmental benefits.
- Upgrade healthcare facilities including dispensaries, PHCs, hospitals, and veterinary services to provide proper medical care,
- Expand education with more schools, colleges, and ITIs; improve sanitation, clean water, and transport for better living.
- Increase community centers, sports grounds, and banking services to strengthen social and economic support.
- Integrate sustainable mining practices for long-term community and environmental benefits.

3.30 CONCLUSION

The proposed riverbed mining project will contribute to regional socio-economic growth by diversifying income sources, generating state revenue, creating jobs, and supporting local enterprises. By reducing dependence on agriculture and stimulating ancillary businesses, it fosters income stability and enables communities to invest in education, healthcare, and better living standards, ensuring balanced and sustainable development.

The proposed project is expected to bring socio-economic benefits through job diversification, income stability, improved infrastructure and healthcare, environmental safeguards, and empowerment of women and youth.

3.30 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 6525/1 and 6526/1 measuring 3.6142 ha. (Private Land/ Riverbed) falling in village Badehra Tehsil Haroli, District Una, Himachal Pradesh as described in Chapter 2, it is attempted to assess the likely impact and its extent on various environmental parameters in this Chapter. The parameters, which are relevant within the context, are as detailed below.

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



- Geology (GEO)
- Occupational health, community health and safety (OH/CH &S/ RH)

4.3 IMPACT ASSESSMENT METHODOLOGY

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

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

4.4 IMPACT ASSESSMENT METHODOLOGY

Applicable components of the environment on which the environmental aspects can cause an impact were identified. Environmental impacts have been identified based on an assessment of environmental aspects associated with the proposed project of riverbed 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	S W	G W	S	EB	SE	RH	
1	Operational Phase										

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

4.3	Intersect ground water level due to mining activity Mining activity	N	N	N	N	-	N	N	N	N	GW: Ground water may Intersect ground water level if restrictions in evacuation is not followed (up to 1 meter)
4	Contamination in air quality,	N	-	N	N	N	N	N	N	N	AQ: Fugitive dust emission due transportati

4.5 IMPCAT PREDICTION/EVALUATION AND ITS MITIGATION MEASURES

For prediction of environmental impacts arising from activities associated with riverbed 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 riverbed 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 riverbed. 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 riverbed 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 4×4-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 (October-December 2022)
- ✓ Predicated fugitive emission rate after taking of pollution control measures.

OUTPUT OF ISCST-3:-

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

Output of the simulation is as under:-

- ✓ Maximum Ground Level Concentration (GLC),
- ✓ Isoleths 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. 10 to 15 excavators will be used for loading total 504 MT/Day of material during the working of 8 hours/day. The PM10 emission rate due to loading activity is calculated.

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

Where,

E = Emission Factor, kg/ton

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

u = Mean wind speed, m/s

4.9.5 Emission of PM10 due to Transportation

The hauling of sand from the mine lease area to the end users via haul road (unpaved road) will cause emission of particulate matters. This emission will be limited to the extent of unpaved haul road starting from mining pit to nearest paved road connectivity. As per the mining plan the material will be transported during the working only. Each day maximum 15 to 20 trucks tripper/ tractor trolley to ply in an hour for transportation of materials and capacity 9 tonnes each will make 56 trips/day for transporting Sand, Stone and Bajri from mine to end user. The loaded tractor trolleys/trucks would carry the material (Stone) will be transported to the stone crusher and after that it will be transported to market for sale along with Sand and Bajri. The following empirical expressions is used to estimate the quantity in pounds (lb) of size-specific particulate emissions from an unpaved road in industrial sites, per vehicle mile traveled. (VMT).

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

Where,

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

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

s = surface material silt content (%)

W = mean vehicle weight (tons)

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

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

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

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

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

Source of Emission

Area of mine- PM₁₀, CO & Nox

Assumptions

The dispersion modelling assumptions considered are as follows:-

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

TABLE 4-2: EMISSIONS RATES

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

Incremental Increase and resultant Concentration

For the impact assessment, the more relevant determination for anticipated pollutants is the incremental increase in the background concentration rather than the determination of maximum GLC values. In the present study, an attempt has been made to determine the increase in the concentration of PM10, CO & NOx for receptors where the ambient air quality stations were established through a substitution of relevant data in the model.

The resultant concentration thus obtained along with the background December 2025 to February 2026 levels is present in the table below.

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 2.

Summary of Area/Line Area Source Modeling

Sl. N	Pollutants	1st Maxm. Incremental Levels ($\mu\text{g}/\text{m}^3$)	Distance (m)	Direction	Land use area of deposition
1	PM10- <i>max</i>	8.87	200	South [180°]	Near project area
	PM10- <i>control</i>	4.43	200	South [180°]	Near project area
2	NOx	1.97	200	South [180°]	Near project area
3	CO	2.86	200	South [180°]	Near project area

Resultant Concentration after Implementations of the proposed establishment of the plant:

The cumulative impact on baseline ambient air quality, after the implementation of the proposed plant has been arrived at by superimposing the present baseline maximum air quality levels of each pollutant. The resultant ambient air quality after the implementation of the proposed plant is given in Table- 3.

Table 3: Predicted Maximum Cumulative Short-Term Ground Level Concentration

Pollutants	1 st Max ^m Incremental Concentration (µg / m ³)	Location		Max AAQ Concentration Recorded within project area during study period (µg / m ³)	Resultant Concentration (µg / m ³)	NAAQS Standard (µg / m ³)
		Distance in Meter	Direction			
PM ₁₀ -worst	8.87	200	South	70.56	79.43	100.00
PM ₁₀ - control	4.43	200	South	70.56	74.99	100.00
NO _x	1.97	200	South	20.65	22.62	80.00
CO	2.86	200	South	780	782.86	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 NO_x are likely to be well within the AAQ standards. However, the baseline concentrations of PM₁₀ were also within the AAQ standard. The incremental concentration of the PM₁₀ is not as much due to the proposed project.

The maximum incremental concentration of PM₁₀ is 8.87 µg/m³ in worst-condition and is 4.43 µg/m³ in control-condition, NO_x 1.97 µg/m³ and CO 2.86 µg/m³ at a distance of 200 m towards the South direction near the project area, it will decrease with the increase in distance. Thus the impact of the proposed project on air quality is not much significant. The resultant concentration of contour map are shown in Figure below.

Hence, it can be concluded that the impact on Ambient Air Quality of the nearby areas by the proposed project will be insignificant.

However, proper and effective air pollution control measures will be adopted to minimize and control the adverse impact due to proposed project.

Wind Rose Diagram

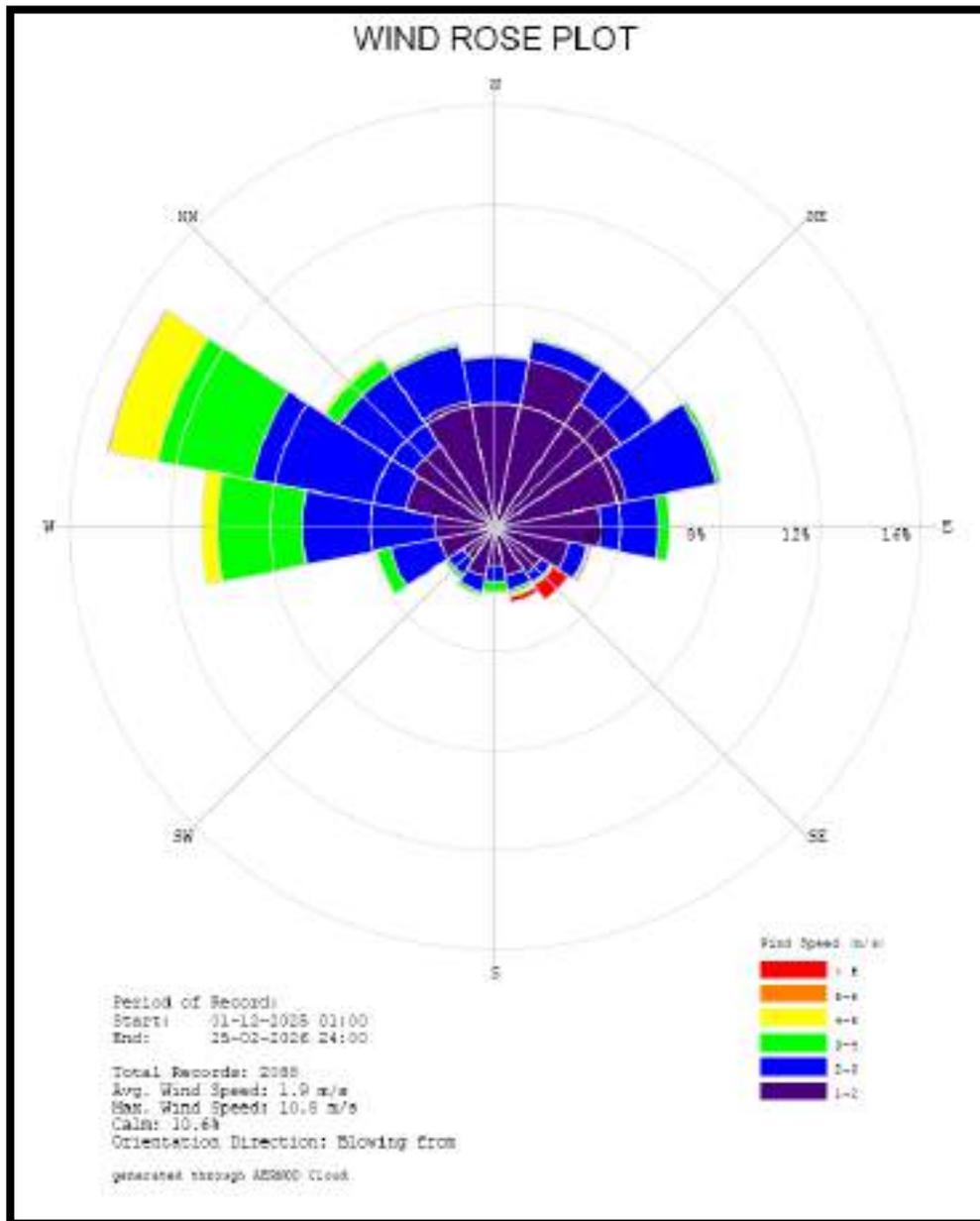


FIGURE 4: WIND-ROSE DIAGRAM
(December 2025 to February 2026)

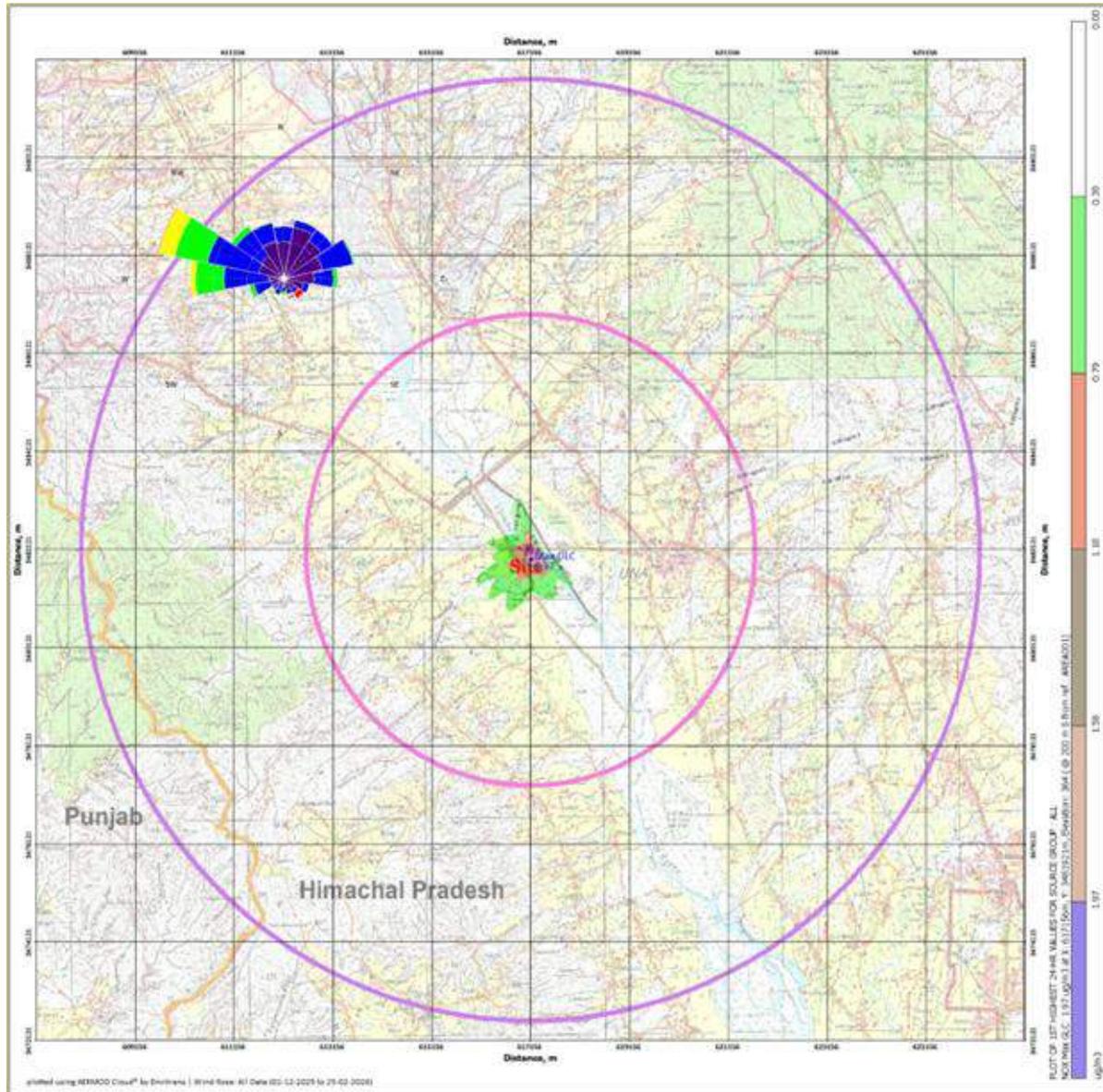


FIGURE 4-3: SPATIAL DISTRIBUTION OF PREDICTED GLC₅ OF NO_x DUE TO MINING

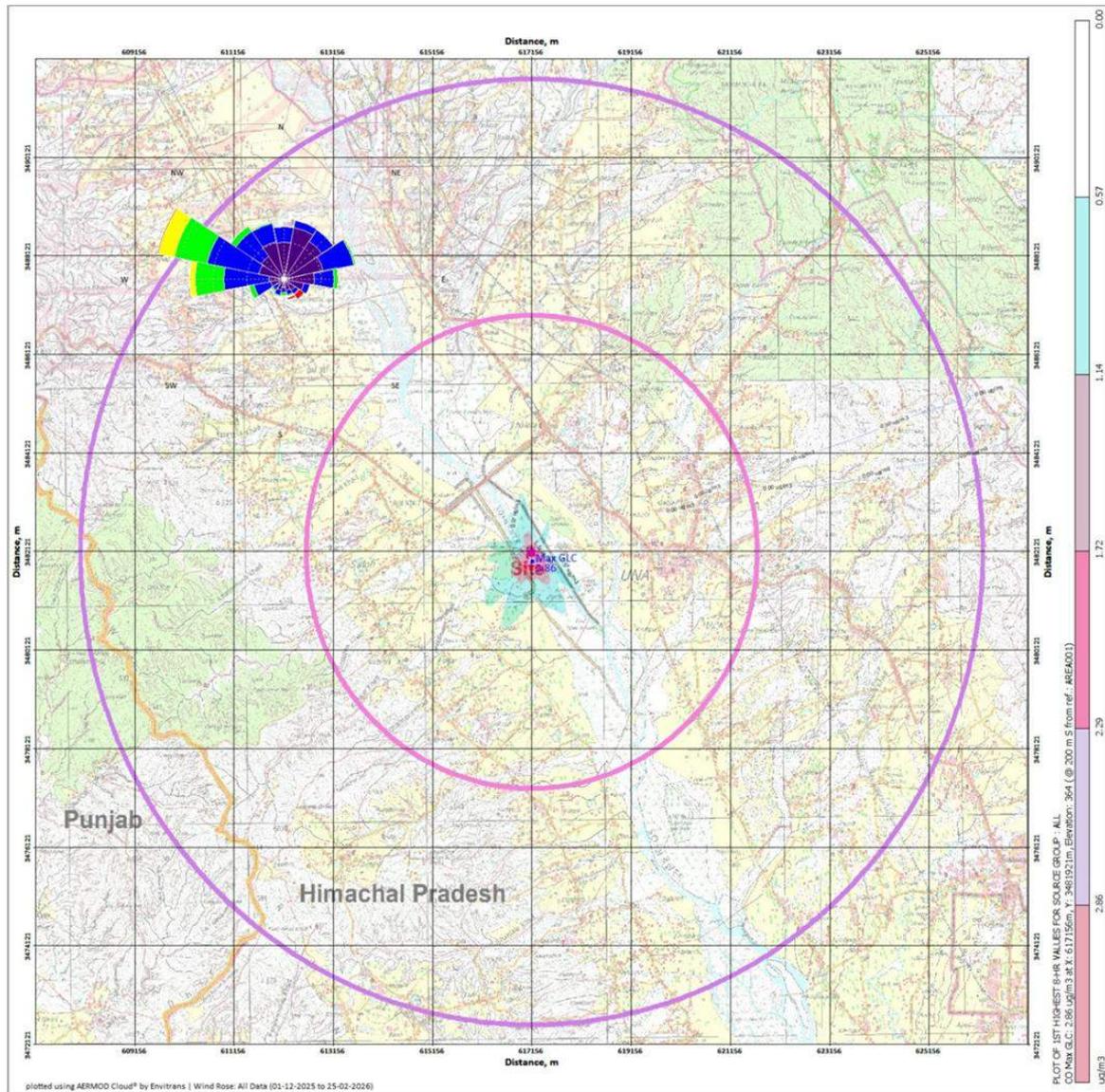


FIGURE 4-4: SPATIAL DISTRIBUTION OF PREDICTED GLCS OF CO DUE TO MINING ACTIVITY

4.9.7 Prediction of Incremental GLC of Pollutants on Air Environment

The incremental increase in GLC of PM₁₀ due to mining operation (Area/Line Area source) presented in **Table below**.

Hourly highest incremental increase in GLC

.No.	ithin project area	ollutant	98th Percentile Baseline Concentration ($\mu\text{g}/\text{m}^3$)	Incremental GLC ($\mu\text{g}/\text{m}^3$)	Total Predictive GLC ($\mu\text{g}/\text{m}^3$)	NAAQS Concentration Limit ($\mu\text{g}/\text{m}^3$)
	ithin project area	M ₁₀ -worst	70.13	8.87	79.00	100
	ithin project area	M ₁₀ -control	70.13	4.43	74.56	100
	ithin project area	O _x	16.90	1.97	18.87	80
	ithin project area	O	640	2.86	642.86	200

Conclusion

It is noted that the maximum impact zone is within 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 ~504 TPD or 136080 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 PM₁₀ is 8.87 $\mu\text{g}/\text{m}^3$ in worst-condition and is 4.43 $\mu\text{g}/\text{m}^3$ in control-condition, NO_x 1.97 $\mu\text{g}/\text{m}^3$ and CO 2.86 $\mu\text{g}/\text{m}^3$ at a distance of 200 m towards the South direction near the project area, it will decrease with the increase in distance.

SO₂ –

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.

- 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 PM₁₀ and will not go beyond the threshold limit of NAAQS.
- The concentration NO_x 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 SO₂ 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.
- Alternatively, planning transportation routes so as to reach the nearest paved roads by shortest route. (minimize transportation over unpaved road).
- Plantation of trees along haul roads, and near settlements, to help to reduce the impact of dust on the nearby villages.
- Transportation of material shall be carried out during day time only.
- Covering of material during transportation on trucks to prevent spillage from the trucks. The trucks shall be covered by tarpaulin.

4.9.8 AIR QUALITY INDEX

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

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

There are six AQI categories, namely Good, Satisfactory, moderately polluted, Poor, Very Poor, and Severe. The proposed AQI will consider five pollutants (PM₁₀, PM_{2.5}, NO_x, SO_x,



and Free Silica) for which short-term (**up to 24-hourly averaging period**) National Ambient Air Quality Standards are prescribed. Based on the measured ambient concentrations, corresponding standards and likely health impact, a sub-index is calculated for each of these pollutants. The worst sub-index reflects overall AQI.

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

$$I_p = \frac{I_{HI} - I_{LO}}{BP_{HI} - BP_{LO}} (C_p - BP_{LO}) + I_{LO}$$

Where,

I_p = the index for pollutant p

C_p = the rounded concentration of pollutant p

BP_{HI} = the breakpoint that is greater than or equal to

C_p BP_{LO} = the breakpoint that is less than or equal to

C_p BP_{HI} = the breakpoint that is greater than or equal

to C_p I_{HI} = the AQI value corresponding to BP_{HI}

I_{LO} = the AQI value corresponding to BP_{LO}

TABLE 4-3 SUMMARY OF RESULTS HOURLY AQI IS DEVIDED INTO SIX CATEGORIES

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

301 - 500	Severe	Respiratory effects even on healthy people.	Brown
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***Source:-** Central Pollution control board series CUPS/8z/2014-15

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

Sr.No.	Locations					AQI Value
		PM10	PM2.5	SO2	NOx	
1.	Project site Boundary Point 1	66.3	29.44	7.09	18.55	66
2.	Project site Boundary Point 2	65.74	30.54	6.98	18.58	66
3.	Loharli Upparli	52.36	33.02	6.54	15.54	52
4.	Baheri	59.24	38.86	6.5	18.21	59
5.	Loharli	51.32	25.52	6.12	14.65	51
6.	Chruru	54.45	28.55	6.22	16.55	54
7.	Koeri	67.28	30.11	6.85	22.5	67
8.	Baruhi	58.6	30.44	6.51	19.75	59

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

4.10 NOISE ENVIRONMENT

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

4.10.1 Anticipated Impacts:-

The exposures to excessive noise levels can lead to:-

- Disturbed sleep, insomnia, and fatigue.
- Decrease in speech reception, communication.
- Distraction and diminished concentration thus adversely affecting the performance efficiency.

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

4.10.2 Mitigation Measures: -

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

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

TABLE 4-5: 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 noise environment of the region. The only impact will be due to transportation of sand and stone by trucks to the stone crushing unit located at distance of approx. 3 Km in North west direction though State Highway. The noise levels for different transport equipment in this mine are given in Table.

TABLE 4-6: NOISE GENERATED BY DIFFERENT MACHINERY

S. No.	Equipment	Noise level (dBA)
1.	Tractor trolley	65-75
2.	Trucks	65-80

The movement of trucks and tractor trolley through village road generating noise of 65-80 dBA will result into momentary rise in noise level up to 40-50 dBA at receptor location i.e. habitations in village during daytime. These shall be well within the prescribed standards as shown in the table below.

With the resultant value being less than the prescribed ambient noise levels, there is no likelihood of adverse impact of noise, from the transportation activity, on the surrounding background noise level.

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

Mitigation measures

The following measures have been envisaged to reduce the impact from the transportation of minerals:

- i. The vehicles will be maintained in good running condition so that noise will be reduced to minimum possible level.
- ii. In addition, truck drivers will be instructed to make minimum use of horns in the village area and sensitive zones.

- iii. No such machinery is used for mining which will create noise to have ill effects.
- iv. Awareness will be imparted to the workers about the permissible noise levels & maximum exposure to those levels.

4.11 Biological environment

Mining which leads to the removal of channel substrate, re-suspension of streambed sediment and stockpiling on the streambed, will have ecological impacts. These impacts may have an effect on the direct loss of stream reserve habitat, disturbances of species attached to streambed deposits, reduced light penetration, reduced primary production, and reduced feeding opportunities:

4.11.1 Anticipated Impacts

- ❖ Access roads crossing the riparian areas will have impact on the species disturbing the ecosystem.
- ❖ Mining may drive away the wild life from their habitat, and significantly affect wildlife and nearby residents.
- ❖ Diminution of the quality and quantity of habitat essential for aquatic and riparian species.
- ❖ Reduction in the yield of agriculture due to deposition of dust on the leaves, etc. of the crops.
- ❖ Mining on the streambed, braided flow or subsurface inter-sand flow may hinder the movement of fishes between pools.

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:

- ❖ It will be ensured that no mining activity will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season for many of the species.
- ❖ As the mining site has no vegetation, no clearance of vegetation will be done.
- ❖ Prior to closure of mining operations / during the rainy season the eroded bank will be restored / reclaimed to minimize negative impacts on aquatic habitats.
- ❖ Sprinkling will be done on the haul roads with water to avoid the dust emission, thus avoiding damage to the crops.
- ❖ Mining will be carried out on the dry part of the lease area to avoid disturbance to the aquatic habitat and movement of fish species.
- ❖ No discard of food, polythene waste etc. will be allowed in the lease area which would distract/attract the wildlife.
- ❖ No night time mining will be allowed which may catch the attention of wildlife.
- ❖ 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 passerby.

4.11.2 Green Belt Plantation

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: -

TABLE 4-7: List of plant species suggested for Greenbelt development.

S. No	Botanical name	Local name
1.	<i>Bauhinia variegata</i>	Kachnar
2.	<i>Berberis spp.</i>	Kashmal
3.	<i>Bombax ceiba</i>	Simbal

S. No	Botanical name	Local name
4.	<i>Celtis australis</i>	Khirak
5.	<i>Cynodon dactylon</i>	Dhoob
6.	<i>Dodonaea viscosa</i>	Hop bush
7.	<i>Olea ferruginea</i>	Kahu
8.	<i>Prinsepia utilis</i>	Bhekal
9.	<i>Pyrus pashia</i>	Kainth
10.	<i>Zanthoxylum armatum</i>	Tirmira

4.11.3 Management & Conservation Measures for Biodiversity

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

- Green belt will be developed according to CPCB guidelines. Plants of various species will be developed in the plant and peripheral areas. The Mine waste will be used for Plantation by planting local trees and bushes. Plantation shall be done in 2 ha area, and 2400 trees shall be planted (1200 trees/hectare) along with grass. The improvement in the agricultural production will also increase the vegetal cover in the surrounding area. This when coupled with Greenbelt development/ plantation is a favourable and eco-friendly measures to reduce the impact of the proposed mining activity on the biodiversity of the area.
- Adequate measures will be adopted as a part of the Environmental Management Plan (EMP) to prevent entrainment of fugitive dust emissions. Thus, adverse impacts due to fugitive emissions are not expected to be significant.
- This requires sensitization of stakeholders at various level involved in the process of development to realize the importance of biodiversity and the role biodiversity in maintaining the ecological balance. Practically this can be achieved by:
 - Scaling up the Green Belt development in and around the site.
 - Controlling the fugitive emissions and other airborne pollutants by appropriate technology at point source.

- Adherence to the strategies outlined in the EMP.
- Using paved roads for transportation to minimize fugitive emissions.
- Emission of particulate matter during operation phase will be controlled at source by using appropriate pollution control devices as per the CPCB guidelines.
- Maintain the preferred routes of animal's movement.
- Signboards in fluorescent ink should be placed along the major animal's route to make them readable in night-time.
- Built a clause in contract document for the contractor that would not permit the labours, workers, supervisors, contractors, and other employees to collect and utilize forest produce, including firewood. Frequent visits to the forest habitats for collection of resources might scare the wildlife and may also result in human - wildlife conflict.
- Creating a live hedge of sturdy woody shrubs along the periphery of treatment facility to restrict the wildlife to enter treatment facility. Closely packed Azadirachta indica, Cassia fistula, Delonix regia, Opuntia, Ziziphus can be used for the purpose.
- Educational and awareness drive in the labour camps to ensure traps are not laid by the labours for trapping small animals.
- Weed control method should be conformed to the ecological conservator officer to prevent any undesirable secondary impact.
- Removal or picking of any protected or unprotected plants shall not be permitted.
- The grass mix should consist of indigenous grasses adapted to the local environment conditions.
- In the event of animals present and pose a risk to human safety, a suitable animal handler must be requested to catch the animal in a friendly and responsible manner. This specifically refers to the snakes and scorpions.

CONCLUSION

- Before detailing the study area, a cursory understanding of the state scenario was prudent. The biodiversity of this region is largely related to the tropical moist sub deciduous.
- The entire study area (Terrestrial and Aquatic) was covered in the best possible manner. To enlist the flora, fauna, and avifauna (terrestrial and aquatic), nocturnal and insect study was carried out as per objective of visit.
- The Vegetation in study area is sparsely located and moderately rich. The air borne emission will not affect forest growth due to enough distance and wind direction as per result of air pollutant dispersion modelling.
- Raising of plantation with suitable indigenous species will improve the environment.
- Agriculture is very less as entire study area is located on top of the hillock and surrounded by forest.
- Design & Development of greenbelt needs to be done with spreading and round canopy, Fruit bearing, local and resilient plant species like Ficus spp., Gulmohar,

Amaltas, Neem, Arjun, Mango, Jamun, 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.

4.12 SOLID & HAZARDOUS WASTE:-

During riverbed 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. Silt/Clay will be generated during the mining of sand, stone & bajri which will be further use for back-filling purpose and also plantation purpose along the road-sides & crusher site.

4.13 TRAFFIC ANALYSIS

Transportation Route:-

The excavated minerals will be loaded directly into trucks and transported to the concerned market/end users. For the transportation of minerals one evacuation routes has been proposed, distributing the traffic load to reduce the traffic congestion. Evacuation Route: The mine lease area is connected to the nearest metaled road by a kuccha road via village to the crusher site, from where material will be transported to the market/end users.

Traffic Management:-

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

Traffic density measurements were performed at two locations for NH503 about 1.86 Km in NW Direction. The Monitoring was performed during study period. The results of measurements are given in **Table 4-3 & 4-4**.

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.



TABLE 4-8: EXISTING TRAFFIC SCENARIO & LOS

Road	V	C	Existing V/C Ratio	LOS
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.

Total capacity of mine : 136080TPA including waste

No. of working days : 270 Days

Per day capacity of mine : 504 tonnes/day

Truck capacity : 15 tonnes

No. of trip deployed : 33 trips/day

Working hours per day : 8 hours

*No. of tipper trucks/tractor trolley deployed/h: = 4-5 tractor trolley approx.

TABLE 4-9: 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	5	3.7	18.5	2.77
3	Two Wheelers	5	0.75	3.75	0.47
Total		15	.....	26.25	3.74

Road	V	C	Modified V/C Ratio	LOS
NH 503	1400+109	5800	0.26	B

Result of traffic assessment

From the traffic study it is observed that there is minimal increase of vehicles on the existing highways. Therefore, the additional load on the carrying capacity of the concerned roads is not likely to have any adverse effect on the LOS. The value of LOS will remain same i.e. “very good” due to proposed project activity.

4.6 SOCIO-ECONOMIC ENVIRONMENT

Human settlement

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

There is no inhabitation within the lease area being on riverbed. 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 stone, boulder, bajri and sand. 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 in a position to utilize this money for purchase of tractors, trucks, jeeps, etc. which may be put into use for business purposes. Part of money has also been utilized in starting of some business as per person’s skills.

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

4.7 RAINWATER HARVESTING

Rainwater harvesting pits will be constructed to recharge the rainwater to the ground with consultation of Panchayat

4.8 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 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 MoEFCC 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 analysed for all the parameters as per EPA, 1986 ground water samples will be analysed 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 two 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 project site to assess the occupational noise exposure levels for studying the impact due to higher noise levels for taking necessary control measures at the source.

TABLE 6-1: MONITORING SCHEDULE AND PARAMETERS

S. No.	Aspect	Parameters to be monitored	Frequency
1	Air Quality monitoring	PM10, PM2.5, SO2, NO2, Free Silica	As per CPCB/ SPCB requirement on six 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 (mbgl) and Surfacewater quality as per IS 2296:1991	Six monthly during operation phase as per SPCB/ CPCB guidelines
4	Soil	Organic matter, Texture, pH, EC, Permeability, Water holding capacity, porosity etc	Six monthly during operation phase as per SPCB/ CPCB guidelines
5	Plantation	Plants and shrubs in the Green belt area and their mortality status	Six monthly during operation phase as per SPCB/CPCB compliance requirements

6	Erosion and Bank Stability	Conditions of pit slope	Before monsoon and post monsoon every year
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7 ADDITIONAL STUDIES

7.1 GENERAL

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

7.2 PUBLIC CONSULTATION

In compliance to provision of the EIA notification dated 14.9.2006, the copy of Draft EIA report and Executive summary in English & Hindi is being submitted to Himachal Pollution Control Board 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 manually so there will not be any major risk hazard associated with the process. The possible scenarios selected for this project are as below:-

- Inundation / Flooding.
- 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

- Being on riverbed there should not be any mining operation during monsoon or rainy days.
- Formation of deep pits should not be allowed.
- Check dams will be constructed & maintained.

7.4.2 Measures to Prevent Accidents during Loading

- The truck should be brought to a lower level so that the loading operation suits to

the ergonomic condition of the workers.

- The loading should be done from one side of the trucker trolley only.
- The workers should be provided with gloves and safety shoes during loading.
- Operations during daylight (9 a.m. to 5 p.m.) only.
- Stockpiling of harvested material on the riverbank should be avoided.
- Necessary first aid kit will be always kept in the mine site.

7.4.3 Measures to Prevent Accidents during Transportation

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

7.4.4 Preventive and Corrective Measures for Occupational Injuries

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

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

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

7.5 SOCIAL IMPACT ASSESSMENT

Socio- Economic Impact Assessment (SEIA) refers to systematic analysis of various social and economic characteristics of human beings 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 village Badehra Tehsil Haroli, District Una, Himachal Pradesh will hardly make any difference in the demographic composition of the study area as the additional employment it envisages to create will be met locally to the maximum extent. Hence, the chances of immigration of people from outside the study area are not expected. Accordingly, there will be no variation in the total population of the study area including that of sex ratio, when the mine starts operating.

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 15 people will get direct employment in this mining project. It is a positive impact of the project since it is providing employment opportunities to the local people. The project will not affect the 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 stone, boulder, bajri & sand is ever increasing with the growth of the infrastructure development in our country. The requirement for the 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 stone, boulder, bajri & sand 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 will start. The existing roads connecting the quarry with the national highways are connected by metaled and unmetalled roads. Hence, there is need for road maintenance and repairing regularly in the mining area. Further, there are risks of accidents during loading of extracted minerals into tractors-trolleys and transportation to markets for sells. However, accidents can be avoided by taking due care and precautions.

7.6.5 Impact on health

There are no chances of diseases occurring due to manual mining of sand. However, sand-using activities require precautions since it create respiratory problems among mine workers. Excessive inhalation of sand is a serious health concern. To avoid respiratory problem 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 stone, boulder, bajri & sand in Mauza & Mohal Badehra Tehsil Haroli, District Una, Himachal Pradesh will provide employment to local people who are in search of the same. With the implementation of the project there will be increase in the employment opportunities for the local villagers and it will generate revenue for the state. The study area is still lacking in health and educational facilities. It is expected that same will improve to a great extent with 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 stone, boulder, bajri and sand from the riverbed, which has no major impact on surrounding environment. The proposed activity shall provide raw material to Stone crusher there by boosting production of construction material. This will bring overall improvement in infrastructure development and economic growth of the area.

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

8.2 EMPLOYMENT POTENTIAL

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

8.3 IMPROVEMENTS IN THE PHYSICAL INFRASTRUCTURE

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

8.4 IMPROVEMENTS IN THE SOCIAL INFRASTRUCTURE

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

8.5 OTHER TANGIBLE BENEFITS

Stone, Boulder, Bajri and Sand 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 stone, bajri and sand 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 will be taken by project proponent who helps in further improvement of locality.

8.6 CORPORATE ENVIRONMENT RESPONSIBILITY

Corporate Environment Responsibility (CER) refers to the responsibility of corporate or company or the proponent of any project towards environment and society. Corporate environment responsibilities (CER) will be as per issues raised during the public hearing/SEAC Recommendation.



9 ENVIRONMENTAL COSTS BENEFIT ANALYSIS

9.1 GENERAL

Various benefits are envisaged while planning for the mining of stone, boulders, bajri & sand from Swan river. Stone, boulders, 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. The natural available materials in shoal deposits of Swan river quarry site have been found suitable from techno-economic consideration.

9.2 SOCIAL INFRASTRUCTURE

- Project will help to channelize the river course.
- 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 surrounding area after consultation with forest department.

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 riverbed mining project is designed to achieve the following objectives:-

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

10.2 ENVIRONMENTAL MANAGEMENT CELL (EMC)

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

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

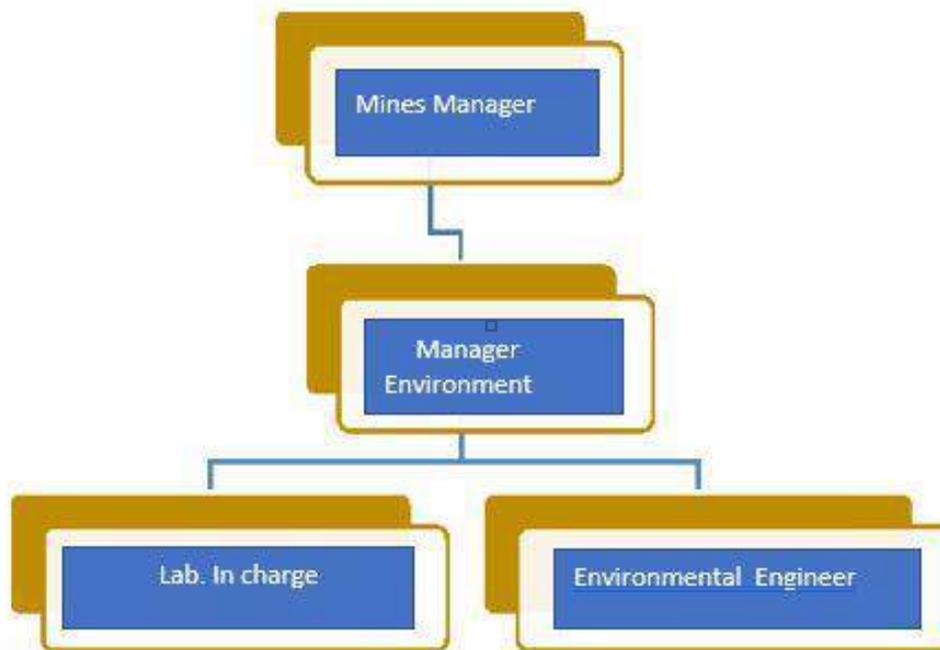


FIGURE 10-1: HIERARCHY OF ENVIRONMENTAL MANAGEMENT CELL (EMC)

10.2.1 Duties of EMC

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

10.3 LAND ENVIRONMENT MANAGEMENT

Degradation of land is not a very significant adverse impact of riverbed 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 sufficient no mining zone of 1/5th of the total width of the river from both side of the bank for bank stability.
- In this activity, the work is proposed to be done manually which will avoid adverse effects associated with heavy machinery and their functioning.
- The mining is planned in non-monsoon seasons only, so that the excavated area gets replenished during the monsoon each year.
- Restoration of bank will be ensured at the end of mine closure every year.
- Operations during daylight only.
- No foreign material shall be allowed to remain/spill in riverbed and catchment area, or no pits/pockets will be allowed to be filled with such material,
- Stockpiling of harvested sand and stone on the riverbed or riverbank shall be avoided.

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

There will be minimum numbers of access roads to riverbed, as cutting river banks should be avoided and ramps are to be maintained. Access points to the riverbed are to be decided based on the following-

- Least steepness of riverbank.
- Less damage to riverside vegetation and least human activity.
- Where steepness cannot be avoided access ramps should be constructed.
- Haulage roads parallel to the riverbank and roads connecting access (ramps) to the riverbed shall be away from bank, preferably a minimum of 100m away.
- Access roads from the public roads and up to the riverbank should be aligned in such a way that it would cause least environmental damage.

There is no soil over mineralized area; however, the receding floods in the monsoon season deposit some clay /soil carried down by river water. Soil Quality will be monitored on yearly basis in the area surrounding the core zone used for agricultural activity to check for any negative impacts on the soil quality.

Since mining lease area is a riverbed so plantation cannot be carried out 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 after discussion with the Panchayat Pradhan, in demarcated and suggested area. It is suggested to carry out plantation for five years with suitable species from the date of operation.

Post mining land use

As the mining lease area is part of active river course and suffer floods every monsoon season, the land degradation impact due to the excavation of stone, boulders, bajri & sand undertaken during dry period of the year will get replenished by fresh material and there shall not be any change in land use pattern in core zone i.e. mining lease area.

In view of the above, the mining lease area would remain active river course during and post mining operation.

10.4 WATER POLLUTION CONTROL MEASURES

10.4.1 Surface water

The major source of surface water pollution due to sand mining is insignificant, however the following measures shall be undertaken to prevent water pollution.

- Utmost care will be taken to minimize spillage of sand.
- Drains and their Catchments will be constructed just beside the access roads so that the storm water gets settled before flowing to the river/Nallah.
- The washing of trucks and tractor trolleys in the mining lease will be avoided.
- Plantation will be done along the road-sides and also at the crusher site after consultation with local villagers/authority.

10.4.2 Ground water

There would not be any adverse effect on the ground water quality. The mineral formation does not contain any harmful element, which could percolate into the ground and pollute the ground water.

Hence, no control measures are required.

- However, regular monitoring of quality in the existing hand pumps/tube wells in the vicinity would be carried out both with reference to area and times intervals to study the hydrodynamics of the strata.

10.5 AIR POLLUTION CONTROL MEASURES

The proposed mining operations are not anticipated to raise the concentration of the pollutants beyond prescribed limits. However, the following measures would be adopted to mitigate the PM¹⁰ level in the ambient air. Dust particles generated during various mining activities when becoming airborne lead to an increase in PM¹⁰ level in the ambient air. The major source of dust generation is the transport of material by trucks and tractor trolleys. Adequate control measures shall be taken during mining operations as well as transportation of minerals.

The following steps shall be adopted to prevent air pollution due to airborne dust.



- Plantation will be done along the road-sides after consultation with local villagers/authority.
- Dust mask provided to the workers engaged at dust generation points like excavations, loading and unloading points.
- The only air pollution sources are the road transport network of the trucks. The dust suppression measures like water spraying will be done on the roads.
- Utmost care will be taken to prevent spillage of sand and stone from the trucks.
- 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.
- Plantation activities in consultation with with local villagers/authority along the roads will also reduce the impact of dust in the nearby villages.

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. The mining of mineral from riverbed shall help in channelizing



the water flow during monsoon and prevent damage to riverbanks. 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 to minimize impact on aquatic life which is mainly breeding season for many of the species.
2. As the mining site has no vegetation, no clearance of vegetation will be done.
3. Prior to closure of mining operations/during the rainy season the eroded bank will be restored/reclaimed to minimize negative impacts on aquatic habitats.
4. Sprinkling will be done on the haul roads with water to avoid the dust emission, thus avoiding damage to the crops.
5. Mining will be carried out on the dry part of the lease area to avoid disturbance to the aquatic habitat and movement of fish species.
6. No discard of food, polythene waste etc. will be allowed in the lease area which would distract/attract the wildlife.
7. No nighttime mining will be allowed which may catch the attention of wild.
8. Corridor for the movement of wild mammals (If exists) will be avoided for mining/travelling purposes.
9. 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 passerby.

10.8 SOCIO-ECONOMIC ENVIRONMENT

This project operation will provide livelihood to the poorest section of society. The overall impact of riverbed mining of sand, stone and bajri on the social economics of the area shall be a very positive one, as not only will it 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 15 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 disposed to common disposal site of village. No waste will be disposed of in open.



The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

10.9 OCCUPATIONAL HEALTH MANAGEMENT

There will be routine observation of health as certain sufferings are likely to appear as result of exposure by the workers during operations of various facilities. All the employees shall be required to undergo a medical checkup before joining the facility. Medical checkup will be conducted on regular basis, and the health conditions will be monitored. First aid facilities required to attend immediately for meeting emergency situations shall be made available at the facility.

10.10 ENVIRONMENTAL MONITORING PROGRAM

The following monitoring program is proposed for the project to undertaken on commencement of mining activity. The monitoring of liked project i.e., Stone Crusher shall be carried out as per the norms of State Pollution Control Board to meet the prescribed standards under EPA Act 1986.

10.10.1 Methodology of environment management

The proponent shall follow the standard methods for half yearly monitoring of various environmental parameters i.e., Air Water and Soil. The estimated cost of EMP is given in Table below: -

TABLE 10-1: ESTIMATED EXPENDITURE ON ENVIRONMENTAL MEASURES

SER. NO.	TITLE	CAPITAL COST RS IN LAKHS	RECURRING COST/YR RS IN LAKHS	RECURRING COST RS IN LAKHS FOR 5 YRS	TIMELINE
1.	Monitoring of Air, Water, Soil, etc. twice a year.	----	1.0	5.0	Once in a six month (As per CPCB guideline).
2.	Air Pollution Control- Management of Haulage Roads 250m & mine road including Sprinkling. Tractor trolley with sprinkler	--	1.35	6.75	Twice a day & as per requirement.
3.	Land outside the mine lease for Plantation. Area for Plantation= 2.00 Ha. Green Belt Development ☑ No. of plants- 2400 plants ☑ Plantation is proposed @* 1200 plants per Hect.	2.43	0.24	1.21	Within one month after grant of EC

	*Cost is as per the *No.Ft.1790-71(D)2011-12/Vol-VIII(Norms), Himachal Pradesh Forest Department, Shimla Dated 07 June 2019.				
4	Septic tank	0.20	0.06	0.30	Constructed before the mining operation started.
6	Occupational Health Measures Provision of PPE, First Aid and other miscellaneous expenditure.	0.34	0.17	0.85	As per requirement.
Total		2.97	2.82	14.11	-----

Corporate Environment Responsibilities i.e., 2% of the total project cost.

NOTE: It is suggested to construct a Gabion Structure inside of the riverbank adjoining to the mining leases. This structure will help in bank stabilization and stop erosion.

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 project is the riverbed mining of stone, boulder, bajri and sand from Swan River located near Mauza/Mohal Badehra, Tehsil Haroli, Distt. Una, Himachal Pradesh by Sh. Ashwani Kumar, Proprietor of M/s Banorhey Mahadev Stone Crusher. The total lease area for the project is 3.6142 Hectare.

As per the Ministry of Environment and Forests (MoEF), Government of India, Gazette Notification S.O. 1533(E) dated 14th September 2006 and its subsequent amendments, the proposed mining project for the extraction of Sand, Stone, and Bajri from the Swan River by Sh. Ashwani Kumar, Proprietor of M/s Banorhey Mahadev 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. TO25B0107HP5748610N 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 Riverbed 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	Mining of Stone, Bajri and sand from Swan River Proposed by Sh. Ashwani Kumar.
2	Mining Lease Area	3.6142 Hectare
3	Location of mine	Khasra 6525/1 and 6526/1 village Badehra, Tehsil Haroli, District Una, Himachal Pradesh.
4	Latitude	31° 28' 9.08" N to 76° 14' 8.70" E
5	Longitude	31° 27' 59.56" N to 76° 13' 50.48" E



6	Toposheet number	H43E2
7	Minerals of mine	Sand, Stone and Bajri
8	Proposed production of mine	136080 TPA
9	Method of mining	Manual
10	Waste Generation	Max. 15120 TPA mine waste will be generated as waste & will be used for maintenance of road & plantation purposes.
11	No of working days	270 days
12	Cost of the Project	10 Lakhs
13	Water demand	0.67 (Domestic) + 1.5 (Dust Suppression) = 1.97 KLD
14	Sources of water	Water from proponent's own borewell will be used for drinking purposes and for Sprinkling purposes. permission for borewell has been applied. Online application form is attached to Annexure-VIII.

11.3 BASELINE MONITORING STATUS

Air, water, soil, and noise levels were monitored during the post-monsoon season (0 December 2025 – 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 analysed for physical and chemical characteristics. Overall, all the ground water samples collected from the study area were found to be fit for human consumption as per IS 10500 drinking water standards.
- There is no notified/protected ecologically sensitive area including forest, national park, sanctuary, Elephant/Tiger reserves existing in the study area.

11.4 LAND ENVIRONMENT

Degradation of land is not a very significant adverse impact of riverbed mining due to the creation of access roads, mining operations, or 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 1/10th from the riverbanks or five meters, whichever is higher. The width of river Swan at the place of mining is 70 m to 200 m.

- The total minable area is 36142 sq. m.
- The boulders from the effective catchment are brought down in the river only during monsoons.
- With the replenishment of the pits and trenches during the floods, the process of controlled mining can continue year after year. The erosion and weathering of Shivalik boulders in catchments have inexhaustible supply of required minerals.
- Thus, no mining will be undertaken during monsoon period. It will be undertaken only during dry seasons and dry part of the river.

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.

Plantation And Soil Conservation

There is no soil over mineralized area; however, the receding floods in the monsoon season deposit some clay /soil carried down by river water. It is hardly a few millimetres thick and of not much consequence.

Even in the areas of no mining activity the process of deposition in one season and transportation of previously deposited material in the next season takes place along with deposition of fresh material by receding floods.

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. Plantation activity shall be undertaken in the village Badehra, Tehsil Haroli, District Una, Himachal Pradesh with permission and consent of landowners to improve the land quality, aesthetics and reduce soil erosion.

Post mining land use

As the mining lease area is part of active river course and suffer floods every monsoon season, the land degradation impact due to the excavation of stone, bajri and sand undertaken during dry period of the year will get replenished by fresh material and there shall not be any change in land use pattern in core zone i.e. mining lease area.



In view of the above, the mining lease area would remain active river course during and post mining operation.

11.5 WATER POLLUTION CONTROL MEASURES

11.5.1 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 stone and 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.
- The washing of trucks and tractor trolleys in the river will be avoided.
- Plantation will be done along the roadsides and also at the crusher site after consultation with local villagers/authority.

11.5.2 Ground water

There would not be any adverse effect on the ground water quality. The mineral formation does not contain any harmful element, which could percolate into the ground and pollute the ground water. Hence, no control measures are required.

However, regular monitoring of quality in the existing hand pumps/tube wells in the vicinity would be carried out both with reference to area and times intervals to study the hydrodynamics of the strata.

11.6 AIR POLLUTION CONTROL MEASURES

The proposed mining operations are not anticipated to raise the concentration of the pollutants beyond prescribed limits. However, the following measures would be adopted to mitigate the PM¹⁰ levels in ambient air.

Dust particles generated during various mining activities when become airborne lead to increase in PM¹⁰ level in the ambient air. The major source of dust generation is the transportation of material by trucks and tractor trolleys. Adequate control measures shall be taken during mining operations as well as transportation of minerals.

The following steps shall be adopted to prevent air pollution due to airborne dust.

- Green belts shall be developed on Exhausted benched in mined out area.
- Dust mask provided to the workers engaged at dust generation points like excavations, loading and unloading points.
- The only air pollution sources are the road transport network of the trucks/Tractor Trolley. The dust suppression measures like water spraying will be done on the roads.

- Utmost care will be taken to prevent spillage of sand and stone from the trucks.
- Water sprinkling will be done to reduce the emission of dust due to transportation of mineral.
- Overloading will be prevented. The trucks/tractor trolley will be covered by tarpaulin covers.
- Plantation activities in consultation with additional land at village Badehra along the roads will also reduce the impact of dust in the nearby villages.

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 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 techniques are 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 and stone 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 badoh along the road networks.
- 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. The mining of mineral from riverbed shall help in channelizing the water flow during monsoon and prevent damage to riverbanks. It was found that the sand and stone mining activity will not have any significant impact on the biological environment of the region.

Mitigation measures of impacts on biological environment

1. It will be ensured that no mining activity will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season for many of the species.
2. As the mining site has no vegetation, no clearance of vegetation will be done.
3. Prior to closure of mining operations / during the rainy season the eroded bank will be restored / reclaimed to minimize negative impacts on aquatic habitats.
4. Sprinkling will be done on the haul roads with water to avoid the dust emission, thus avoiding damage to the crops.
5. Mining will be carried out on the dry part of the lease area to avoid disturbance to the aquatic habitat and movement of fish species.
6. No discard of food, polythene waste etc. will be allowed in the lease area which would distract/attract the wildlife.
7. No nighttime mining will be allowed which may catch the attention of wildlife.
8. 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 passerby.

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.

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 very high proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

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. 39.01 lakhs, a recurring annual expenditure of Rs. 4.9lakhs, and an additional recurring



investment for five years of Rs. 28.57lakhs 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. Ashwani Kumar Prop. M/s Banorhey Mahadev Stone Crusher to conduct Environmental Impact Assessment study of the Proposed riverbed mining project situated at Mauza/Mohal Bادهhra, Tehsil Haroli, District Una, Himachal Pradesh. The brief about the consultant is given below in **Table 12-1**.

TABLE 12-1: BRIEF DETAILS OF CONSULTANT

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, 1 st 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 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.

IMETA
 Theuns Kotze, Managing Director Assurance - IMETA

Original Registration Date: 2012-09-05 Effective Date: 2024-08-20
 Latest Revision Date: 2024-06-20 Expiry Date: 2027-08-19

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Information and Contact: BSI, Kilnbank Court, Davy Avenue, Knowlton, Milton Keynes MK5 8JF, UK. Tel: +44 345 080 9000
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 A Member of the BSI Group of Companies.




Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that: **Shivalik Solid Waste Management Limited**
 Village: Majra
 P.O.: Dabhota
 Teh.: Nalagarh
 Dist: Solan 174 101
 Himachal Pradesh
 India

Holds Certificate No: **EMS 589718**
 and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

I. Collection, Treatment, Storage and Disposal of Hazardous Waste; and
 II. Providing Environmental Related Analytical and Monitoring Services and Environmental Consultancy.

IMETA
 Theuns Kotze, Managing Director Assurance - IMETA

Original Registration Date: 2012-09-05 Effective Date: 2024-08-20
 Latest Revision Date: 2024-06-20 Expiry Date: 2027-08-19

Page: 1 of 1





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This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract. An electronic certificate can be authenticated online. Printed copies can be submitted at www.bsi.com/bsi/industry or telephone +44 11 202 9000. Further clarifications regarding the scope of this certificate and the applicability of ISO 14001:2015 requirements may be obtained by consulting the organization. This certificate is valid only if provided original copies are in complete set.

Information and Contact: BSI, Kilnbank Court, Davy Avenue, Knowlton, Milton Keynes MK5 8JF, UK. Tel: +44 345 080 9000
 BSI Assurance UK Limited, registered in England under number 285327 at 389 Chiswick High Road, London W4 4AL, UK.
 A Member of the BSI Group of Companies.




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]

IMETA
 Theuns Kotze, Managing Director Assurance - IMETA

Original Registration Date: 2018-06-29 Effective Date: 2024-08-20
 Latest Revision Date: 2024-06-20 Expiry Date: 2027-08-19

Page: 1 of 1





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Information and Contact: BSI, Kilnbank Court, Davy Avenue, Knowlton, Milton Keynes MK5 8JF, UK. Tel: +44 345 080 9000
 BSI Assurance UK Limited, registered in England under number 285327 at 389 Chiswick High Road, London W4 4AL, UK.
 A Member of the BSI Group of Companies.





  **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




Quality Council of India
Creating an Excellence for Quality

National Accreditation Board for Education and Training

Certificate of Accreditation

Shivalik Solid Waste Management Limited, Zirakpur

SCO 20-21, 1st Floor, Near Hotel Dolphin, Dhakoli, Zirakpur - 140604, Punjab

The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA/EMP reports in the following Sectors

S.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including open cast and underground mining	1	1 (a) (i)	A
2.	River Valley projects	3	1 (c)	A
3.	Metallurgical Industries (ferrous & non-ferrous)	8	3 (a)	B
4.	Cement plants	9	3 (b)	B
5.	Pesticides industry and pesticide specific intermediates	17	5 (b)	A
6.	Synthetic organic chemicals industry	21	5 (f)	B
7.	Industrial estates/ parks/ complexes/ Areas, export processing zones (EPZs), Special economic zones (SEZs), Biotech parks, Leather complexes	31	7 (c)	B
8.	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	32	7 (d)	A
9.	Bio-medical waste treatment facilities	32A	7 (d a)	B
10.	Common Effluent Treatment Plants (CETPs)	36	7 (h)	B
11.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
12.	Building and construction projects	38	8 (a)	B
13.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAC minutes dated October 27, 2023 posted on QCI-NABET website.

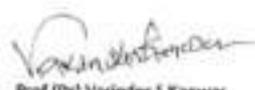
The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENW/ACQ/23/2061 dated Dec. 13, 2023. The accreditation needs to be renewed before the expiry date by Shivalik Solid Waste Management Limited, Soan 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.





File No: HP SEIAA/2025/1353
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,

ASHWANI KUMAR
 S/O Bahal Singh V.P.O Chattara ward no. 6 tehsil Una, Chat Una, Himachal Pradesh, 174306., UNA,
 HIMACHAL PRADESH, 174306
 banorheymahadev123@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 Stone, boulder, Bajri and sand from Khasra no. 6525/1 and 6526/1 Mauza/Mohal Badehra, tehsil Haroli, distt. Una Himachal Pradesh by Sh. Ashwani Kumar, M/s Banorhey Mahadev Stone Crusher. submitted to Ministry vide proposal number SIA/HP/MIN/555266/2025 dated 17/10/2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0107HP5748610N
(ii) File No.	HP SEIAA/2025/1353
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals Mining of Stone, boulder, Bajri and sand from Khasra no. 6525/1 and 6526/1 Mauza/Mohal Badehra, tehsil Haroli, distt. Una Himachal Pradesh by Sh. Ashwani Kumar, M/s Banorhey Mahadev Stone Crusher.
(vii) Name of Project	
(viii) Name of Company/Organization	ASHWANI 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/ 555266/2025, TOR's

b)	Processing fee	UTR reference no. 390678439373 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 6525/1 and 6526/1 falling in Mauza/Mohal Bادهhra, Tehsil Haroli, District Una, Himachal Pradesh.
e)	Jamabandi	Jamabandi for the year 2019-2020
f)	Land Status	Private land
g)	Capacity	1,36,080 MT/year
h)	Mining Area	03-61-42 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 01.08.2025, valid for two years.
k)	EMP Cost	-
l)	CER cost	-

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the Ministry for an appraisal by the State Environment Impact Assessment Authority (SEIAA) Appraisal Committee (SEIAA) in the Ministry under the provision of EIA notification 2006 and its subsequent amendments.
4. The above-mentioned proposal has been considered by State Environment Impact Assessment Authority (SEIAA) Appraisal Committee of SEIAA in the meeting held on 18/11/2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B, Part C EIA, EMP)] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
5. The brief about configuration of plant/equipment, products and byproducts and salient features of the project along with environment settings, as submitted by the Project proponent in Form-1 (Part A, B and C)/EIA & EMP Reports/presented during SEIAA are annexed to this EC as Annexure (1).
6. The SEIAA, in its meeting held on 18/11/2025, based on information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to stipulation of specific and general conditions as detailed in Annexure (2).
7. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the State Environment Impact Assessment Authority(SEIAA) Appraisal Committee hereby decided to grant Terms of Reference for instant proposal of M/s. ASHWANI 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

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

S. No	Terms of Reference
	State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
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

S. No	Terms of Reference
	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
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

S. No	Terms of Reference
	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 Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc
1.44	<p>Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&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</p>
1.45	<ol style="list-style-type: none"> 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.

S. No	Terms of Reference
	<p>5) Hard copy of the application along with the relevant document shall be ink signed & submitted in the office of SEIAA Secretariat.</p> <p>6) The project proponent shall submit compliance report to the issue raised during public hearing.</p> <p>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.</p> <p>8) The project proponent must ensure that environmental samples are analyzed at laboratories located in close proximity to the project site to maintain the accuracy and integrity of results. During each sampling activity, videography and geo-tagged photographs must be captured to provide transparent evidence of proper sampling locations, methods, and handling practices.</p>

Additional Terms of Reference

N/A

Annexure 2

Details of Products & By-products

Name of the product /By-product	Product / By-product	Quantity	Unit	Mode of Transport / Transmission	Remarks (eg. CAS number)
Mining of Stone, boulder, Bajri and sand	Mining of Stone, boulder, Bajri and sand	136080	Tons per Annum (TPA)	Road	

Signature Not Verified

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

Date: 04/12/2025

No. Udyog-Bhu(Khank-4)Laghu-610/2025
Government of Himachal Pradesh,
Department of Industries
Geological Wing

Dated: Shimla-17/001, the

2025

LETTER OF INTENT

Sh Ashwani Kumar, Prop. M/s Banarhey Mahadev Stone Crusher, Village & P.O. Lower Basal, Tehsil & Distt. Una has applied for grant of mining lease over an area measuring 03-73-67 hecls., bearing khasra Nos. 6525 & 6526 (Private land) falling in Mohal/Mauza Bادهرا, Tehsil Haroli, District Una, H.P. for the extraction of sand, stone & bairi for use in proposed stone crusher unit, 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 wherein only the area comprising Kh Nos. 6525/1 & 6526/1, measuring 03-61-42 hecls. was recommended, the matter was referred to the Government for approval. The Government vide letter No. Ind-II(F)6-19/2025 dated 16.07.2025 conveyed the approval for the issuance of Letter of Intent for the grant of mining lease for extraction of sand, stone and bajri, for proposed stone crusher in favour of Sh. Ashwani Kumar, Prop. M/s Banarhey Mahadev Stone Crusher, Village & P.O. Lower Basal, Tehsil & Distt. Una over an area measuring 03-61-42 hecls. (Private land, river bed) bearing khasra Nos. 6525/1 & 6526/1, falling in Mohal/Mauza Bادهرا of Tehsil Haroli, District Una, H.P. Accordingly, 'Letter of Intent' is hereby issued subject to the following terms & 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. Further as per the recommendation of Joint Inspection Committee mining activities shall be planned by keeping a buffer zone of 5-7.5 mts. to avoid any damage to the adjoining land.

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. 6525/1 & 6526/1, falling in Mohal/Mauza Badehra of Tehsil Haroli, District Una, 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.

This 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 fulfilment of the above-said documents. The Party shall not resort to any mining activities till the execution of mining lease.

Sh. Ashwani Kumar,
Prop. M/s Banorhey Mahadev Stone Crusher,
Village & P.O. Lower Basal,
Tehsil & Distt. Una, (H.P).
Endst. No. As above.

Copy to the following for information and necessary action: - 3-2-8

1. The Additional Chief Secretary (Industries) to the Govt. of Himachal Pradesh w.r.t. their letter No Ind-II(F)6-19/2025, dated 16.07 2025
2. The Mining Officer, Una, Distt. Una, H.P.
3. Guard file.

Geologist Zone-II,
Himachal Pradesh

Dated 01/08/25

Geologist Zone-II,
Himachal Pradesh

No. Udyog-Bhu(Khari-4)Laghu-610/2025
 Government of Himachal Pradesh
 Department of Industries
 "Geological Wing"
 Dated, Shimla- 17/08/2025

62PP

09/09/2025

To

✓ Sh. Ashwani Kumar,
 Prop. M/s Banorhey Mahadev Stone Crusher
 Village & P.O. Lower Basal,
 Tehsil & 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. 6525/1 & 6526/1, measuring 03-61-42 hectrs (Pvt. land, river bed) falling in Mauza/Mohal Baderha, Tehsil Haroli, Distt. Una, for which Letter of Intent has been issued on 01.08.2025.

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 01.08.2025. 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, Environmental Protection Act 1986 and the rules made there under and other relevant statutes, orders and guidelines as may be applicable to lease area from time to time.
3. That the Mining Plan is approved without prejudice to any orders or directions from any court of competent jurisdiction.
4. That in case State Geologist/Geologist or any other inspecting officer/official of Geological Wing Department of Industries, after field inspection notices that proposals made and workings shown in the mining lease by the RQP need certain corrections/amendments due to change in conditions either natural or manmade, the inspecting officer can recommend necessary amendments in the said Mining Plan at any point of time in the interest of environment and mineral conservation.
5. That the lease holder shall procure/renew Environment clearance from the Competent Authority as per Environmental Impact Assessment Notification, 2006 and amendments/notifications issued time to time in this regard.
6. That the approval of proposed mining operations is restricted to the mining lease area only.

- 7 That in case additional conditions are imposed by the Ministry of Environment & Forests, Govt. of India while according clearance under EIA notification dated 14.9.2006 and any condition imposed by the State Govt. while granting mining lease the same shall have to be incorporated by making necessary amendments in the Mining Plan by the lessee through R. Q. P.
- 8 That in case Mining lease is not granted or is terminated or working is suspended before the expiry of the lease period due to any reason, the approval of Mining Plan shall stand automatically cancelled.
- 9 That the lease holder shall carry out production of mineral in accordance to the production shown in Mining Plan and Environment Clearance whichever is less.
10. That no person shall undertake mining operations in any mining lease area, except in accordance with a Mining Plan approved under sub rule (2) of Rule 39 of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015.
- 11 That the lease holder shall carry out working in the mining lease area as per Mining Plan only after obtaining permission to work in the mining lease area from the Competent Authority.
- 12 That if the mining operations are not carried out in accordance with the approved Mining Plan, the State Geologist, Geologist, Assistant Geologist and the Mining Officer made order suspension of all or any of the mining operations and permit continuation of only such operations as may be necessary to restore the conditions in the mine as envisaged under the said Mining Plan.
13. That anything is found to be concealed as required under various Rules and guidelines pertaining to mining in the context of the Mining Plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
- 14 That in case of any violation of terms and conditions of the approved Mining Plan, the financial assurance deposited by the said lessee shall be liable to forfeited.

Enclosed:- Copy of approved Mining Plan

Yours faithfully

Geologist Zone-II
Himachal Pradesh
Dated: 2025

Endst. No. As above.

Copy for kind information to:-

- 1 The Mining Officer Una, District Una, H. P. alongwith a copy of Mining Plan for further necessary action. He is further directed to report any discrepancies if observed in the mining plan so that the same could be rectified accordingly.
- 2 Sh. Arun Dhiman, Village & P.O. Ohaloon (Panchpuli), Tehsil Nagrota Bagwan, Distt Kangra H.P. 176056

Geologist Zone-II
Himachal Pradesh

**PERFORMA FOR THE JOINT INSPECTION OF THE AREA
APPLIED FOR GRANT OF FRESH MINING LEASE.**

1. General**1.1 Name of the applicant**

Sh. Ashwani Kumar Prop. M/s Banorley Mahadev Stone Crusher, Village & PO Lower Basal Tehsil & District Una H.P.

1.2 Address of the applicant**Father's Name**

Sh. Bahal Singh

Village

Ward No. 6 Chattara

P.O.

Chattara

Tehsil

Una

District

Una

Pin No

374306

1.3 Approach and location of the area

The site applied for mining lease is located in Mauza/Mohal Badehra Tehsil Haroli District Una HP and is approachable from diverting LHS from Una-Old Hoshiarpur Road.

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 applied Stone crusher under name & Style M/s Banorley Mahadev Stone Crusher, Village & PO Lower Basal Tehsil & District Una H.P.

1.5 Date of Joint Inspection

15-10-2024

1.6 Members present during joint inspection

Sr. No	Name & Designation	Particulars
1.	<i>Sh. Vishal Sharma HAS S.D.O. (Civil) Haroli, District Una</i>	<i>Chairman</i>
2.	<i>Sh. Gurpreet Singh Junior Environmental Engineer, HPSPCB Una</i>	<i>Representative of AEE HPSPCB Una</i>
3.	<i>Sh. Nitin Choudhary, AE HPPWD Haroli</i>	<i>Representative of Executive Engineer HPPWD</i>
4.	<i>Sh. Puneet Sharma, Executive Engineer JSV Haroli</i>	<i>Member</i>
5.	<i>Sh. Rajesh Kumar JE Flood protection Department Gagret</i>	<i>Representative of AE Flood Protection Division Gagret</i>
6.	<i>Sh. Parvesh Kumar JE, Soil Conservation Section Una</i>	<i>Representative Sub divisional soil conservation officer, Una</i>
7.	<i>Sh. Rajnd Thakur, Range Forest Officer Una</i>	<i>Representative of Divisional Forest Officer Una</i>
8.	<i>Sh. Vimal Parkash</i>	<i>Field Kamungo</i>
9.	<i>Sh. Bhanu Prakash</i>	<i>Hulqa Patwari</i>
10.	<i>Sh. Neeraj Kant Mining Officer Una</i>	<i>Member Secretary</i>

JR of Sh. Ashwani Kumar Prop. M/s Banorley Mahadev Stone Crusher, Village & PO Lower Basal Tehsil & District Una H.P. of mining lease for collection/extraction of Sand, Stone & Brn over Khata No 8525/1 & 6926/1 measuring 03-01 42 Hectares (Private Land/River Bed) siting in Mauza & Mohal Badehra Tehsil Haroli District Una H.P., for use in stone crusher unit conducted on 15.10.2024.

2. Revenue Department

2.1 Status w.r.t. Demarcation of Applied for area: *The area was demarcated on 27.06.2024*

2.2 Detail of area applied

Kh. No	Area (In Kanal)	Owner Govt. / private	Kisat	Mahal	Mauza	Panchayat	Any other
6525	01-87-40	Private	Gairman kis Swan	Badehra	Badehra	Lower Badehra	
6526	01-86-27	Private	Gairman kis Swan				
	01-73-67						

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. No habitation is present near the applied area. No village footpath, road, school, hospital, cattle shed, charitable building, cemetery/cremation ground exists near the applied area.

2.3 Consent of Gram Panchayat: Resolution No. 46 dated 01.09.2015

2.4 Whether marked on the location plan attached with application, if not then please mark No

[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 viewed physically by Halqa Patwari, along with the concerned staff. As per entries of Revenue Records, the land applied for a mining lease is a private land River Bed & kisan of the land is Gairmankis swan.

Recommendations:-

Since the area applied for the mining lease for collection/extraction of Stone, Sand & bary to be used as Stone crusher unit, applied by Sri. Ashram Kumar Prop. M/s Bansari Mahadeo Stone Crusher, Village & PO Lower Basai Tehsil & District Una H.P. is a private land River Bed, Revenue department has no objection in the grant of this mining lease over Khasra No. 6525/1 & 6526/1 measuring 95-61-42 Hectares (Private Land/River Bed) falling in Mauza & Mahal Badaha Tehsil Haral District Una H.P.

Bhimrao
 पत्तवारी कु-असया
 महल. बडेहा. तहसील. हराल
 जिला. उना. दिनांक.....

[Signature]
 Village Revenue Officer (Subdivision)
 Mahal Badaha
 Revenue Circle
 Dist. Una

NP of M. Ashram Kumar Prop. M/s Bansari Mahadeo Stone Crusher, Village & PO Lower Basai Tehsil & District Una H.P. is mining lease for collection/extraction of Stone, Sand & bary over Khasra No. 6525/1 & 6526/1 measuring 95-61-42 Hectares (Private Land/River Bed) falling in Mauza & Mahal Badaha Tehsil Haral District Una H.P. for use in stone crusher unit concluded on 15.10.2024.

3. Forest Department

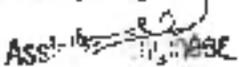
3.1 Types of land i.e. Reserve Forest/Protected Forest/Demarcated Forest/ Non Forest Government Land/ Private Land etc.	Private land	
3.2 Whether attract FCA, 1980		No
If yes, then specify Kh. Nos., which attract FCA		
3.3 Whether there is any activity of the forest department in the area such as soil conservation works, nursery plantation, check dams, taming of nulls/stream etc, if yes please specify and mark on location plan and what precautions are required: <i>No soil conservation works, nursery plantation, check dams, taming of nulls/stream etc. exists near the applied area for mining lease.</i>		
3.4 Whether there is any property of Forest Department nearby which may have direct effect if mining is allowed <i>No</i>		
3.5 Any other observation/condition		

Recommendations:-

Since the area applied for the mining lease for collection/extraction of Stone, Sand & baji to be used in Stone crusher unit, applied by Sh. Ashwan Kumar Prop. M/s Banarhey Mahadev Stone Crusher, Village & PO Lower Basal Tehsil & District Una H.P. is a private land River Bed, Forest department has no objection in grant of this mining lease over Kh. Nos. 6525/1 & 6526/1 measuring 03-61-42 Hectares (Private Land/River Bed) falling in Mauza & Mohal Baidhera Tehsil Haroli District Una H.P.


Range Officer
Forest Range
Una H.P.-174303

GR of Sh. Ashwan Kumar Prop. M/s Banarhey Mahadev Stone Crusher, Village & PO Lower Basal Tehsil & District Una H.P. of mining lease for collection/extraction of Stone, Sand & baji over Kh. Nos. 6525/1 & 6526/1 measuring 03-61-42 Hectares (Private Land/River Bed) falling in Mauza & Mohal Baidhera Tehsil Haroli District Una H.P. for use in stone crusher unit conducted on 15.12.2014.

4. PWD Department					
4.1 Whether any road exist near area				Yes	✓ No
If Yes then	Type of road	Distance from area	Marked on location plan as	Minimum safe distance required for mining	
	NH	N.A.		75 m	
	State highway			75 m	
	Link road			30 m	
	Village road			20 m	
4.2 Whether any road exist within area				Yes	✓ No
	Type of road	Distance from area	Marked on location plan as	Minimum safe distance required for mining	
	NH		N.A.		
	State highway		N.A.		
	Link road	75m	N.A.		
	Village road		N.A.		
4.3 Whether there exist 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	PWD Bridge exists at a distance of 1800 m from 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 the lease is granted, if not, whether to allow with conditions The project proponent will not ply heavy vehicles carrying finished product/machinery through village roads & will at all times maintain the intake point from the PWD roads (if any).					
Recommendations: -					
PWD Bridge over Sauri river at Giplurval exist at a distance of 1500m U/s from applied mining lease area & PWD road (along LHS of Sauri River) exist at distance of 75m from applied mining lease area. No other public property/utility or structure belonging to the PWD department exists near the area applied for the mining lease for collection/extraction of Sand, Stone & bari to be used in Stone crusher unit, applied by Sh. Ashwanti Kumar Prop. M/s Banaraj Malviya Stone Crusher, Village & PO Lower Basai Tehsil & District Una H.P., PWD department has no objection in grant of this mining lease over Khasra No. 6523/1 & 6526/2 measuring 03-61-42 Hectares (Private Land, River Bed) falling in Mauza & Mahal Buleha Tehsil Harwi District Una H.P.					
				Ass:  S. J. Singh (BSR) P.O. No. 1177220	

DR of M/s Ashwanti Kumar Prop. M/s Banaraj Malviya Stone Crusher, Village & PO Lower Basai Tehsil & District Una is P of mining lease for collection/extraction of Sand, Stone & Bari over Khasra No 6523/1 & 6526/2 measuring 03-61-42 Hectares (Private Land/River Bed) falling in Mauza & Mahal Buleha Tehsil Harwi District Una H.P. for use in mining lease contract no 13.16.2024

5. JAL SHAKTI VIBHAG				
5.1 Whether there exists any water supply scheme within/near the area			✓ No	
Type of Scheme	Scheme	Minimum safe distance required		
		U/S		D/S
	Water supply tank	200 mts	220 mts	200 mts
	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 JSV, if yes. Please mark on the location plan. Whether any special precaution is required, please specify				
5.3 Any other observation/condition				
<u>Recommendations:</u>				
<p>No public property/facility like tube well, bore well, water supply scheme (irrigation/drinking), pipeline or structure belonging to the JAL SHAKTI VIBHAG department exists near the area applied for the mining lease for collection/extraction of Sand, Stone & bgrs to be used in Stone crusher unit, applied by Sh. Ashwani Kumar Prop. M/s Brahmajy Malades Stone Crusher, Village & PO Lower Basal Tehsil & District Una H.P., Jal Shakti Vibhag has no objection in grant of this mining lease over Khata No 6575/1 & 6526/1 measuring 93-61-42 Hectares (Private Land/River Bed) falling in Muzra & Mohai Bakhra Tehsil Haroli District Una H.P.</p>				
<p>UN Executive Engineer, Jal Shakti Division Haroli</p>		<p>Singh JSV Sub Division Haroli</p>		

UN H.P., Ashwani Kumar Prop. M/s Brahmajy Malades Stone Crusher, Village & PO Lower Basal Tehsil & District Una H.P. of mining lease for collection/extraction of Sand, Stone & bgrs No 6575/1 & 6526/1 measuring 93-61-42 Hectares (Private Land/River Bed) falling in Muzra & Mohai Bakhra Tehsil Haroli District Una H.P. for use in Stone crusher unit conducted on 15.10.2024.

Environment Protection & Pollution Control Board

(Summary of method for environment Protection)

The site of the applied mining lease was inspected jointly on dated 15/10/2024. HP State Pollution Control Board has no objection from a pollution point of view and the mining lease may be granted subject to the following conditions.

1. The Mining lease area (03-61-42 Hect.) in a River Bed area (Pvt. Land) at Mayza & Mohal Badelhra Tehsil Haroli District Una HP, so the mining shall be carried out scientifically and as per the policy of the Mining Department
2. No blasting shall be carried out.
3. Natural course of the river/nalla shall not be disturbed and special steps shall be taken to control soil erosion.
4. The proponent shall obtain/renew the consent to operate from the State Pollution Control Board and Environmental Clearance (EC) from the competent authority as per the orders of the Hon'ble Supreme Court dated 27/12/2012 and the Hon'ble High Court dated 15/06/2012 and 14/09/2012. The proponent shall not carry out any mining activity without obtaining consent from the State Board and EC from the 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. The mining lease holders shall, after ceasing mining operations, undertake 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 that is fit for the growth of fodder, flora, fauna etc.

[Signature]
 Jr. Env. Engg.
 HPSPCB, Una
 Distt. Una (H.P.)

[Signature]

[Signature]

Site of Sh. Ashwani Kumar Prop. M/s. Hasmat Mahesh Stone Crusher, Village & PO Lower Barel Tehsil & District Una of P. of mining lease for re-construction of Sand, Stone & Boulders Khare No 6125/1 & 6126/1 measuring 03-61-42 Hectares (Private Land/Owner Well) falling in Mayza & Mohal Badelhra Tehsil Haroli District Una H.P., for an. in stone crusher cum. submitted on 15/10/2024.

6. Industries Department	
6.1 Location of applied for area (nearest village/important features)	The site applied for a mining lease is located in Masza & Mohai Badhera Tehsil Haroli District Una H.P.
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	
1.4 Location of the nearest mining area/quarry: M/s A & N Stone Crusher, VPO Lal Singi Tehsil & District Una HP (Khasra No. 6521/2, 6523/2 & 6524/2 measuring 02-25-47 juling in Masza & Mohai Badhera Tehsil Haroli & District Una HP)	
6.5 Average daily production anticipated in Metric Tons	150-200 tons 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 river bed & is mostly comprised of river borne material suitable to be used in a Crusher.

MR. Sd/- Anand Kumar Prap 468 Bannu Badhera Stone Crusher, Village & PO Lower Bannu Tehsil & District Una H.P. a mining lease for collection/transportation of sand, stone & boulders over Khasra No 6521/2 & 6523/2 measuring 02-25-47 Haroli (Private Land/river bed) falling in Masza & Mohai Badhera Tehsil Haroli District Una H.P., for use in stone crusher and submitted on 15.10.2024.

6.7 Feasibility of Mining

(i) Name of Mineral: Sand, Stone & Bgrs;
 (ii) Type of mining (Hill Slope/River Bed): River Bed

(A) Hill Slope NA

(i) Average angle of slope:

(iii) Scientific mine ability considering the orientation of revenue record:

(iv) Availability of mineral w.r.t anticipated production:

(vii) Whether areas is prone to landslide if yes

(i) Name of river/ stream: Swan River

(ii) Width of river bed: 600-700 m

(iii) Approximate length of applied for area: 500m

(iv) Availability of mineral w.r.t anticipated Production: The applied area comprises of fluvio-glacial deposits of river Swan River predominantly comprising of sand along with boulders, cobbles, pebbles, covered with thick soil cover & is suitable to be used in crusher.

(v) Availability of area for disposal of waste: The waste so generated will be backfilled the road patches.

(vi) Approach to Mining Area: The crusher site is located 4.5 km away from the area applied for the mining lease. For transporting loaded trucks and tractors to the crusher site, the vehicles will traverse both private and Government land. The project proponent will make the necessary arrangements with landowners and address any related issues independently to ensure smooth mineral transportation to the nearest road. Furthermore, the project proponent will indemnify the Government against claims made by third parties

(vii) Location of Habitation along the banks: Scattered habitation is present beyond the overbank.

Agriculture field along the banks: Physically the applied area exists within HFL of Swan River & agriculture fields are developed at the river bed i.e. within HFL.

Any other structure like Transmission Lines, Telephone Lines etc: No

(iii) Disposal of waste: The details will be mentioned in the mining plan.

(ix) Area proposed for Plantation: The details will be mentioned in the mining plan.

(v) Addition of information on case of Grant of Mining Lease

(i) Request under Rule 19(2) of Mineral Act

Pradesh Mineral rule:

Investment for developing the area

Investment on machinery & equipment

Laborers Employed :

(ii) Production of mineral for the last tenure: NA

(iii) Violation of condition mining noticed in the tenure: NA

(iv) Detailed note on scientific mining w.r.t working cum

Environment Management Plan in the last tenure: NA

DIR of SD - 47, Swan River Prop. M/s Bancher Mahesh Kumar Crusher, Village & PO Lyner Masu (old) & Qdga, Distt. of P. of mining lease for collection/transport of sand, Stone & Bgrs over Katcha No 65221 & 65222 measuring 03-61-42 Hectares (Private Land/Other Reg) siting in Masu & Mahesh Enkeha Tehsil Huzar District Distt. of P. for use in sand crusher and crushing of gr. (5.10.2024)

6.8 Whether mining can pose threat to existing object of Public Utility or private property? If any, Give detail and precaution required

PWD Bridge over Swan river at Ghahwal exist at a distance of 1800m U/s from applied mining lease area & PWD road (along JMS of Swan River) exist at distance of 75m from applied mining lease area. & No other public utility structure of Jal Shakti Vibhag, or Forest departments exists near the area applied for the mining lease.

If yes, 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 & bays to be used in stone crusher unit is a River bed private land comprising Khassra No 6525/1 & 6526/1 measuring 03-61 42 Hectares falling in Manza & Mohai Badehra Tehsil Haroti District Una H.P.
2. The rocks mainly belong to Neogene period to quaternary period forming rocks of Simalk group and Newer Alluvium.
3. The Swan river is a primary tributary of River Satluj with skin-catchment area of 2222 SqKm. The total river bed area of Swan River is 3700.00-40 Hectares and total mineral potential as per survey document is 64540000 MT.
4. The annual mineral deposits in Swan river catchment is 7325000MT.
5. The project proponent will plan the mining operation as per the mineral policy 2024.
6. The co-ord. coordinates of area are 52°27'58" N, 76°13'54" E & is a compact block.
7. During the course of the inspection it was observed by the Committee that the area applied for the mining lease is covered with RBLD comprising boulders, cobbles, pebbles, river burre bays, sand, silt and clay deposits suitable for use in stone crusher.
8. The proposed area falls under Gram Panchayat Lower Badhwa.
9. As per the revenue record book of the applied area for the mining lease is Gurmitakin stuan & the applied area was demarcated on 27.06 2024.
10. The applicant will plan the mining activities keeping 7.5 m as a buffer zone so that the adjoining lands will not be disturbed/damaged.
11. The applied mining lease is located 4.5 Km from the stone crusher unit. For transporting loaded trucks and trailers to the crusher site, the vehicles will traverse both private and Government land. The project proponent will make the necessary arrangements with landowners and address any related issues and coordinate to ensure smooth mineral transportation to the nearest road. Furthermore, the project proponent will indemnify the government against claims made by third parties.
12. Project proponent will obtain separate NOC from the Flood protection department for using the embankment structure as an approach road for mining vehicles to crusher site and nearest approach road.
13. Flood Protection division Govt. order letter No. JS FE-PTD-CBWA/PHDC file-2023-9277-78 dated 13-11-2023 has issued NOC for grant of Mining Lease on Khassra No 6525/1 & 6526/1 measuring 03-61-42 Hectares falling in Manza & Mohai Badehra Tehsil Haroti District Una H.P.
14. The activities in the mining lease area will be strictly as per the Himachal Pradesh Mineral policy 2024 for the purposes of The Himachal Pradesh Manu. Minerals (Production) and Mineral (Protection of the gas mining, Transportation and Storage) Rules, 2017 & stipulations of SEJAA.
15. The applicant will start mining operations after obtaining EIA clearance from the competent authority.
16. The land being private (River Bed) Forest Department has no objection to granting a mining lease.
17. The structure of public utility of PWD & JSV exists within the prescribed limit hence PWD & JSV has no objection to granting a mining lease.
18. No extent of the Soil conservation are present in the vicinity of the applied area. Subdivisional Soil Conservation Officer has no objection to grant of this lease. Agriculture Department has no objection to granting of mining lease subject to the condition of proper treatment of water & covered track during transportation of mineral.

68 of 68 - Area of 03-61 42 Hectares situated in Lower Badhwa Village & PWD Road of Tehsil A. Badhwa Una H.P. of Swan river for collection/extraction of Sand, Stone & bays on Khassra No 6525/1 & 6526/1 measuring 03-61 42 Hectares (P.O. No. 1000/2023) falling in Manza & Mohai Badehra Tehsil Haroti District Una H.P. for use in stone crusher unit covering 15.10.2024.

Additional Information in light of observation made by the Govt vide letter no Govt Ind-II(F)-1/2014 dated 6.2.2014/ Udyog-Bhu(Khant-4)Langhu-350/13-12531 12.02.2014

S.N	Information	Reply
1	Status of applied area in Survey Document	Swan river (a tributary of river Satluj) running from an altitude of 986 RL near village Dharmaul to 328m, RL at H.P/Punjab border (downstream Santokhgark bridge) runs roughly from NW to SE for a distance of about 63 km, in the district. It meets river Satluj near village Aigark bridge (in Punjab), about 10 km d/s from HP/PB border at about 311m, RL. It covers an area of about 509 hectares and its catchment area from about 51 mappable tributaries (23 on right banks, and 18 on left bank) and is around 1220 Sq. Km. These tributaries/Khads mostly join Swan river at right angles to it. A number of ephemeral streams join these tributaries, crize-crossing the Simlik ranges.
2	Mineral potential of the area	The Swan river is a primary tributary of River satluj with sub-catchment area of 1220 Sq.Km. The total river bed area of Swan River is 3700-00-00 Hectares and total mineral potential as per survey document is 63540000 MT. The annual mineral deposition in Swan river catchment is 7325000MT.
	Mineral analysis & Source of replenishment	The area applied for the mining lease is covered with RBM comprising boulders, cobbles, pebbles, river borne bgrs, sand, silt and clay deposits suitable for use in stone crusher. The 50% of the total applied area may get replenished during flash floods.
3	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 are.	Swan river (a tributary of river Satluj) running from an altitude of 986m, RL near village Dharmaul to 328m, RL at H.P/Punjab border (downstream Santokhgark bridge) runs roughly from NW to SE for a distance of about 63 km, in the district. It meets river Satluj near village Aigark bridge (in Punjab), about 10 km d/s from HP/PB border at about 311m. M/s A & N Stone Crusher, MPO Lal Singhji Tehsil & District Una HP (Khavra No. 63232, 63232 & 6324/2 measuring 62 25-47 falling in Mauza Mahal Badhera Tehsil Haroli & District Una HP)

MR of SD, Anwar Hussain Prop. 058 Badhera Mahul Stone Crusher, Village A PO Lower Haroli Tehsil & District Una J.P. of mining lease for collection/transportation of Sand, Stone & Gravel over license No 6323/1 & 6324/1 measuring 62.41 & 62 Hectares (Private Land/River Bed) falling in Mauza & Mahal Badhera Tehsil Haroli District Una H.P., for use in stone crusher was cancelled on 15.10.2014.

8. Recommendations

8.1 Whether whole of the area is being recommended for mining

No

If no, please specify the Kh. Nos. being recommended

After leaving 75 m distance from both Embankment Structure Flood Protection division Gogret vide letter No. JS-EE-FPDG-CBANA/NOC file/2025-9277-78 dated 25.02.2025 has issued NOC for grant of Mining Lease over Khasra No. 6525/1 & 6526/1 measuring 03-61-42 Hectares, falling in Mauza & Mohal Badehra Tehsil Haroli District Una H.P.

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, River Bed) for collection/extraction of Sand, Stone & Bajri for use in the stone crusher unit applied by Sh. Ashwari Kumar Prop. M/s Bannorhey Mahadeo Stone Crusher, Village & PO Lower Basal Tehsil & District Una H.P over Khasra No. 6525/1 & 6526/1 measuring 03-61-42 hectares falling in Mauza & Mohal Badehra 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 (H.P.)

Executive Engineer P.W.D.

Assistant Engineer Executive Engineer P.W.D. Haroli (B&R) Distt. Una (H.P.)

Executive Engineer

Executive Engineer, Jal Shakti Division Haroli

Environmental Engineer

H.P. EP&PCB
Sr. Env. Engrg. HPSPCB, Una Distt. Una (H.P.)

Subdivisional Soil Conservation Officer

Una

Mining Officer Una

Mining Officer, UNA, Distt. Una (H.P.)

Regional Officer H.P. State Pollution Control Board Phase-IV, Rakkar Colony Distt. Una (H.P.)-174303

Subdivisional Soil Cons. Office Una, District Una (H.P.)-174303

Section Incharge Soil Conservation Section Haroli Tehsil Haroli, District Una (H.P.)

On of Sh. Ashwari Kumar Prop. M/s Bannorhey Mahadeo Stone Crusher, Village & PO Lower Basal Tehsil & District Una H.P. of mining lease for collection/extraction of Sand, Stone & Bajri over Khasra No. 6525/1 & 6526/1 measuring 03-61-42 Hectares, falling in Mauza & Mohal Badehra Tehsil Haroli District Una H.P. for use in stone crusher unit conducted on 13.10.2024

फील्ड बुक मॉडल

महल बहेड़ा

तहसील बहेड़ा

जिला कन्नड़ (R.O.)

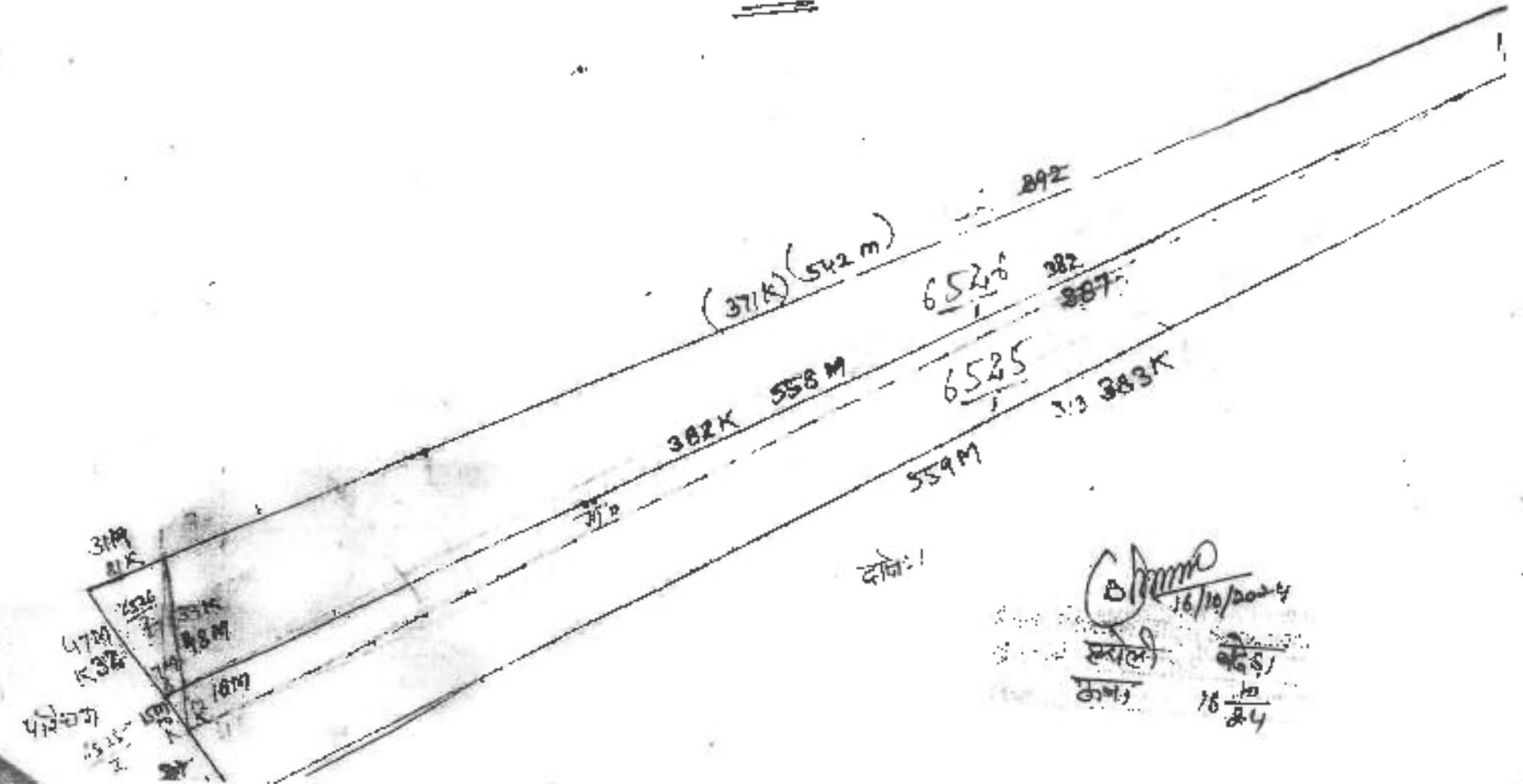
नाम 1	नम्बर खेत		नम्बर खतौनी 4	इतरेखतज रकबा 5	रकबा व फिस जमीन 6	वसायत आवपाजी 7	विवरण 8
	साबिका 2	हाल 3					
रजनीश कुमार आदि	6526 मिन	6526 1		30 द० पू० प० 21 332 15 33 $\frac{385(13+30)}{2} = 8278$	46-0 मि० सु० स्वां		
	6526 मिन	6528 2		30 द० पू० प० 21 5 33 32 $\frac{36(4+20)}{2} = 432$	2-8 मि० सु० स्वां		
संजीव जहावाल आदि	6525 मिन	6525 1		30 द० पू० प० 382 383 18 21 $\frac{386(14+20)}{2} = 6562$	48-12 मि० सु० स्वां		
	6525 मिन	6525 2		$\frac{385 \times 11}{2} = 2175$ $\frac{8737}{2}$	6-3 मि० सु० स्वां		


 16/10/2024
 बहेड़ा म. व्यवस्था
 महल बहेड़ा, तहसील बहेड़ा
 जिला कन्नड़, दिनांक 16/10/24

अनसूया बाजार इकातमाल वर्ष 1983-84 माल व मजि बंदी टापील एलीन
 तिल ठका (वि.पू.)

पैसा व टिकाव 40 वरि

उत्तर



दालः

(Signature)
 16/10/2024
 एली बंदी
 ठका 16/10/24

राजस्व विभाग, हिमाचल प्रदेश - नकल जमाबंदी

एस.सी.ए रसीद संख्या: 6233133024124844

जिला : ऊना
 तहसील/उप-तहसील: हरोली
 कानूनगोवत : हरोली
 पटवार वृत : बडेझ घणम
 हटबस्त न. : 199

नाम : A
 पिता/पति : A
 सेवा शुल्क : ₹ 20.00
 नकल शुल्क : ₹ 1.00
 कुल शुल्क : ₹ 21.00

राजस्व गांव : बडेझ

जमाबंदी वर्ष: 2019-2020

संजफन ईकाई: कनाल-मरवा

1	2	3	4	5	6	7	8	9
1408 मिन 1324 ग बराह खवट न. (1407) 0.60 मर 0.60 खाई 0.60	1689 मिन 1494 म	सजीव जसवाल, रोहित जसवाल पुत्र रघुवीर सिंह पुत्र श्रीमती लखन देवी भग बागवर स्थानिय वाली	कैरेशी व कनाल 2.00		6525	48-15 7 मुक्का	राजस्व गांव का कानूनी मरवा तथा भूमि की कानूनगोवत प्रति हक के मु-नकल न	टिप्पणी/टिंकित 10779 13772
		<p>नोट - ई.नं. 10659 घणम रोहित जसवाल पुत्र रघुवीर सिंह पुत्र श्रीमती लखन देवी कानूनी मुक्का देवी यलनी रघुवीर सिंह पुत्र श्रीमती लखन देवी बागवर बराह दिनांक 27-06-2024 को जमीन के मुक्का देवी</p> <p>नोट - ई.नं. 10659</p> <p><i>(Signature)</i> 27/08/2024 फतवा महल.. बडेझ.. तहसील.. हरोली जिला.. (ऊना).. दिनांक.. 27/08/24</p>				<p>VLE: VIRENDER KUMAR Ward No 9, UNA (H.P.) Mobile: 98176-82391</p>		कनाल व गड्डा बराह खवट 2 (1) न.ई. 1546 ग्रामभित्त 1558 भाउ खन नोट- कनाल 2.00 8558 भाउ खन द्वारा खवट खन के नकल खला 44:1 - 8525 पिता 2 रका लखी 50 कनाल 03 मरवे भागम भित्त-पिठ संगीत अन्वाम रोहित जसवाल पुत्र रघुवीर सिंह समान वक HDPC Bank Branch Una के पत्र 22/08 मुक्ति 18,50,000/- अन्वाम नाथ पदवाल हारा, लखी से दिन एक 10 28-2019 को मरु ही दुना है। 8782 नोट ई.नं. 9292 के द्वारा खवट

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								एन.क. प्रपत्र क्रमा 6842 खण्ड हिमाचल प्रदेश सरकार, प्रदेश सरकार एवं एन.क. प्रपत्र शीतल जलसंधारण एवं पानी पानी सार 24.1400 शीतल सारणी एन.क. प्रपत्र 1/14 भाग दिनांक 23.02.2021 को स्थिति P1


 SLE. HEMENDR KUMAR
 (SLE) (H.C.)
 (M) (H.C.) (2025)

Certified that this copy has been generated from the database of Revenue Department at Central
 Server- HP as accessed by the Lok Mitra Kendra 345575230013 on 21-August-2025

To Verify; enter the Copy No above Bar Code at
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 For Validity Refer : Notific. No:Rev-C(FY16-1/2009 Dated 14-Feb-2011)

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राजस्व विभाग, हिमाचल प्रदेश - नकल जमाबंदी

एस.सी.ए रसीद संख्या: 5233133024120981

जिला : उना
 तहसील/उप-तहसील: हरोली
 कानूनसूचना : हरोली
 पटवार वृत्त : बडेड़ा प्रथम
 हटबस्त नं. : 199

नाम : a
 पितापति : a
 सेवा शुल्क : ₹ 30.00
 नकल शुल्क : ₹ 1.00
 कुल शुल्क : ₹ 31.00

राजस्व गांव : बडेड़ा

जमाबंदी वर्ष: 2019-2020

सेवकन ईकाई: कजाल-मरदा

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1406 मिम	1687 मिम	राजनीश कुमार, अशोक सिंह, अशफ़ी कुमार पुत्र काल सिंह पुन शीमति कस्त डेगी भाग बरबर स्थानिय जाली	कस्त व कजाल स्वयं		8526	48-48 र मुस्व	कजाल व पतल बहारु केट न. (1)	नई कि.ड. 8953 308 (4-4) 8954 108 (4-4) 8324 108 (4-4) मोर - 8 नवें 5 न 8337 आठ रोज़ द्वारा खेत हरा के नक्का प्रसरन 2441, 4228, 4229, 1960-438-1, 5526 , पैना 5 रकबा लोदी 101- 1340 न 103 भाग मिजालाड प्रविशित सिंह पुत्र काल सिंह बाला H.D.F.C. मैक शख़ उना के पास बदले मुकाम 1A.00, 000- न न दिनांक 25-11-2019 सं मन्तु हो मुस ई नोट : कस्त डे. न 8448 भाग पैना द्वारा न ख. 484 487.
1323	1493							

(Signature)
 29/08/25
 पटवारा
 मसाल... बडेड़ा, तहसील...
 जिला उना दिनांक 29/08/25

(Signature)
 VLE: VIRENDER KUMAR
 Ward No. 8, UNA (H.P.)
 Mobile: 98176-82391

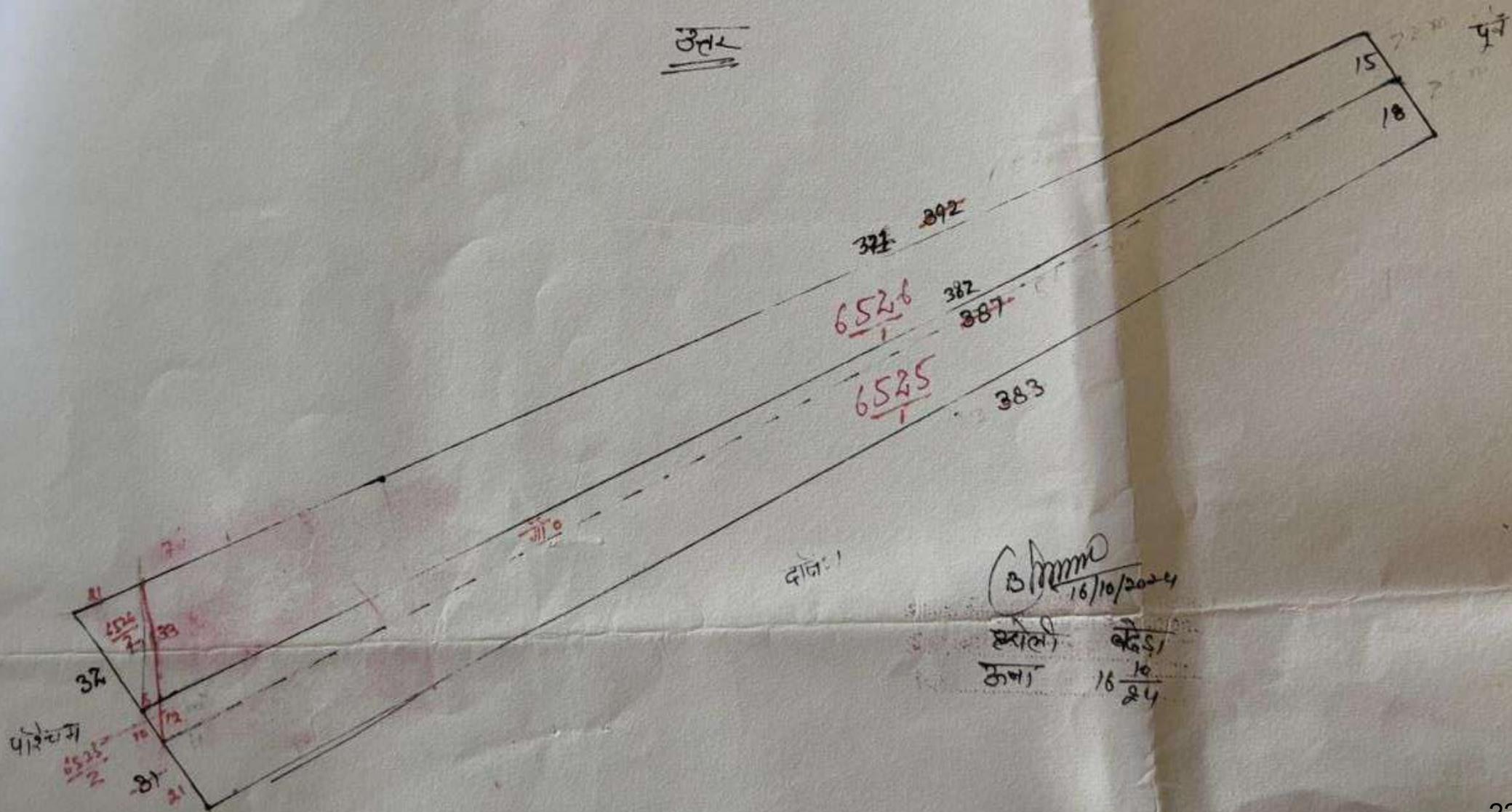
1	2	3	4	5	6	7	8	9
								1E17 1808 1812 2441 2443 2445 फिला B 3केच नउयटी 55-7 न 1.73 अण मिन्मजिठ रउकीण तुम्नर पुत्र वणन मिन् पुत्र वीमलि वणन टीवी वक KCC केक शाखा मैडनपुर के वणन वणन मुगलिया 1000000- ६. ५ दिनांक 12-05-2014 को संवत् हो पुन हो मोट - कण्ट ई न 8950 अड रैनन वणन न घ 66. 102. 117. 491.492, 494.497, 1G17, 1808, 1812. 1826, 2441, 2443, 2445, 4380, 4383, 4384, 7660+4387, 7851+4387, 4387. 7660+4413 फिल 21 रकण नउयटी 309-19 न 12826 199 अण मिन्मजिठ अउकी तुम्नर पुत्र वणन मिन् वक KCC केक आख अण के वण वणन मुगलिया 28,00, 000-1-अउहल वण 1 * स दिनांक 25- 10-2016 को संवत् हो

V.E. ANDESHWAR KUMAR
Date: 21-08-2025

अस राजरा इवतमाल वर्ष 1983-84 महाल व गौजा बंदी जखील शील
 जिल्ला ठाना (दि-पुं)

पैसा व हिसाव 40 र्का प्ररी र्का

उत्तर



No. Udyog-Bhu(Khari-4)Laghu-610/2025
 Government of Himachal Pradesh
 Department of Industries
 "Geological Wing"
 Dated, Shimla- 171009.

63PP

09/09/2025

To

✓ Sh. Ashwani Kumar,
 Prop. M/s Banorhey Mahadev Stone Crusher
 Village & P.O. Lower Basal,
 Tehsil & 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. 6525/1 & 6526/1, measuring 03-61-42 hectrs (Pvt. land, river bed) falling in Mauza/Mohal Baderha, Tehsil Haroli, Distt. Una, for which Letter of Intent has been issued on 01.08.2025.

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 01.08.2025. 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, Environmental Protection Act 1986 and the rules made there under and other relevant statutes, orders and guidelines as may be applicable to lease area from time to time.
3. That the Mining Plan is approved without prejudice to any orders or directions from any court of competent jurisdiction.
4. That in case State Geologist/Geologist or any other inspecting officer/official of Geological Wing Department of Industries, after field inspection notices that proposals made and workings shown in the mining lease by the RQP need certain corrections/amendments due to change in conditions either natural or manmade, the inspecting officer can recommend necessary amendments in the said Mining Plan at any point of time in the interest of environment and mineral conservation.
5. That the lease holder shall procure/renew Environment clearance from the Competent Authority as per Environmental Impact Assessment Notification, 2006 and amendments/notifications issued time to time in this regard.
6. That the approval of proposed mining operations is restricted to the mining lease area only.

- 7 That in case additional conditions are imposed by the Ministry of Environment & Forests, Govt. of India while according clearance under EIA notification dated 14.9.2006 and any condition imposed by the State Govt. while granting mining lease the same shall have to be incorporated by making necessary amendments in the Mining Plan by the lessee through R. Q. P.
- 8 That in case Mining lease is not granted or is terminated or working is suspended before the expiry of the lease period due to any reason, the approval of Mining Plan shall stand automatically cancelled.
- 9 That the lease holder shall carry out production of mineral in accordance to the production shown in Mining Plan and Environment Clearance whichever is less.
10. That no person shall undertake mining operations in any mining lease area, except in accordance with a Mining Plan approved under sub rule (2) of Rule 39 of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015.
- 11 That the lease holder shall carry out working in the mining lease area as per Mining Plan only after obtaining permission to work in the mining lease area from the Competent Authority.
- 12 That if the mining operations are not carried out in accordance with the approved Mining Plan, the State Geologist, Geologist, Assistant Geologist and the Mining Officer made order suspension of all or any of the mining operations and permit continuation of only such operations as may be necessary to restore the conditions in the mine as envisaged under the said Mining Plan.
13. That anything is found to be concealed as required under various Rules and guidelines pertaining to mining in the context of the Mining Plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
- 14 That in case of any violation of terms and conditions of the approved Mining Plan, the financial assurance deposited by the said lessee shall be liable to forfeited.

Enclosed:- Copy of approved Mining Plan

Yours faithfully

Geologist Zone-II
Himachal Pradesh
Dated: 2025

Endst. No. As above.

Copy for kind information to:-

- 1 The Mining Officer Una, District Una, H. P. alongwith a copy of Mining Plan for further necessary action. He is further directed to report any discrepancies if observed in the mining plan so that the same could be rectified accordingly.
- 2 Sh. Arun Dhiman, Village & P.O. Ohaloon (Panchpuli), Tehsil Nagrota Bagwan, Distt Kangra H.P. 176056

Geologist Zone-II
Himachal Pradesh

MINING PLAN

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

MINERAL

SAND, STONE AND BAJRI

KHASRA NOS.

6525/1 and 6526/1 (PRIVATE LAND)

AREA

03 61-42 HECTARES (RIVER BED)

LOCATION

MOHAUMAUZA BADFHRA, TEHSIL HAROLI,
DISTRICT UNA, HIMACHAL PRADESH

APPLICANT

SH. ASHWANI KUMAR,
PROP. M/s BANURHEY MAHADEV STONE CRUSHER,
VILLAGE & P.O. LOWER BASAL, TEHSIL & DISTT. UNA,
HIMACHAL PRADESH

PREPARED BY

ARUN DHIMAN

S/o SH. JAGAN NATH

VILLAGE & P.O. DHALOXON (PANCHPULI)
TEHSIL NAGROTA BAGWAN, DISTRICT KANGRA
HIMACHAL PRADESH - 176056
ROP NO. H.P./KUN/25/2/2019



91 989 65 79485



arundhiman77@yahoo.com

INDEX TITLE

**Page
No.**

SALIENT FEATURES OF THE AREA

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1 DESCRIPTION OF GEOMORPHOLOGY AND MINE DEVELOPMENT

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

1	Project	Area applied for mining lease	
2	Name of Mineral	Stone Bajri and Sand	
3	Application No.	Online mode	
4	Letter of Intent for Modification of Mining Plan	Udyog-Bhu(Khani-1) Laghu-610/2023-5028 dated 01.08.2025	
5	Applicant Address	Sh. Ashwani Kumar, Prop. M/s Banorhey Mahadev Stone Crusher, Village & P.O. Lower Basal, Tehsil & Distt. Una, Himachal Pradesh	
6	Location of Mine	Village	Badehra
		Mauza & Mohal	Badehra
		Khasra Nos.	6525/1 & 6526/1
		Land Type	Private land
		Panchayat	Lower Badehra
		District	Una
		State	Himachal Pradesh
7	Name of Stream/River	Swan River	
8	Total Area	03-67-42 Hectares (36142 SQ.M)	
9	Total Movable area	3-36-00 Hectares (33600 SQM)	
10	Total Mineable Quantity	151200 MTPA (Including Silt/Clay)	
11	Coordinates of Area	31°28'0.08"N 76°14'8.70"E (U/s)	
		31°27'59.56"N 76°13'50.48"E (D/s)	
	Elevations	Highest	382
12		Lowest	381
13	Average width of River at Lease area	700-730 m	
14	Period of mining Lease Area	As per Grant orders	
15	Ultimate Pit Limit	Two(2) meters From the Surface Level	
16	Method of Mining	Manual/Mechanical	
17	No. of Working Days	270	
18	End-use of mineral	For manufacturing Grit and stone dust	
19	Manpower requirement	20-25 persons	
20	Distance (In Kms)	Badehra	8.0 Kms
		Huruli	10.0 Kms
		Una	3.4 Kms
		Hoshiarpur	36.0 Kms
		Chandigarh	125.0 Kms
		Shimla	150.0 Kms



भूमिकीय आरक्ष
उद्योग विभाग सिवला
Geological wing
Dept of industries
Shimla

APPROVED
with conditions

जहाँ क साथ अनुबंधित

Vide letter No.

दिनांक

Dated

09/09/25


Geological Wing
Dept. of Industries Shimla-1

Vidya Bhau (Khan) Lughu-610/2025 = 6399

INTRODUCTION:-

Sh. Ashwani Kumar, Prop. M/s Banorhey Mahadev Stone Crusher, Village & P.O. Lower Basal, Tehsil & Distt. Una, Himachal Pradesh has applied for the grant of mining lease for the extraction of Stone, Bajri and Sand over a comprising of Khasra nos. 6525 & 6526 (Pvt. Land) measuring 03-73-67 Hectares(River Bed) falling in Mohal/Mauza Bادهhra, Tehsil Haroli, District Una, Himachal Pradesh to be used in the proposed stone crusher unit to be established in the name and style ***M/s Banorhey Mahadev Stone Crusher*** for the Manufacturing of Grit and Stone Dust.

The case was referred to the Joint Inspection Committee for site inspection of the area applied for the grant of a mining lease. After evaluating the area, the Committee recommended Khasra nos. 6525/1 & 6526/1 (Pvt. Land) measuring 03-61-42 Hectares(River Bed) for the grant of the mining lease in favour of the applicant. Subsequently, the matter was referred to the Government for approval. The Government, vide Letter No. Ind-II(F)6-19/2025 dated 16.07.2025 has conveyed approval for the issuance of a Letter of Intent (LoI) for the grant of the mining lease.

In accordance with the Joint Inspection Committee's recommendations and the Government's approval, the Letter of Intent vide letter No. Udyog-Bhu(Khasra-4)Jaghu-610/2025-5028 dated 01.08.2025 has been issued by the department for the provisional grant of mining lease in favour of Sh. Ashwani Kumar(Applicant) comprising Khasra nos. 6525/1 & 6526/1 (Pvt. Land) measuring 03-61-42 hectares (River Bed) falling in Mohal/Mauza Bادهhra, Tehsil Haroli, District Una, Himachal Pradesh for the grant of mining lease to be used in the proposed stone crusher unit established in the name and style ***M/s Banorhey Mahadev Stone Crusher*** for the Manufacturing of Grit and Stone Dust with the following conditions:-

1. The party shall get the area demarcated from the revenue authorities and shall erect permanent boundary pillars to the satisfaction of the Mining Officer so as to clearly depict the provisional applied area. A copy of the demarcation report shall also be submitted to the Mining Officer.
2. ***The party shall have to submit the approved Mining Plan under Rule 35 of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of illegal Mining, Transportation and Storage) Rules, 2015.***
3. The party shall have to obtain environmental clearance under the provisions of the Environment Impact Assessment Notification, 2006 and amendments issued from time to time in this regard from the competent authority and Forest Clearance in the case of Forest land.
4. The party shall submit a certificate from the revenue authority to the effect that Khasra no. 6525/1 & 6526/1 falling in Mohal/Mauza Bادهhra, Tehsil Haroli, District Una, Himachal Pradesh are free from all encumbrance and all the co-sharers of the above-said land have given their consents.

5. The party shall settle the dispute, if arises between him and land owners/co-sharers/right holders at his own level and shall indemnify the Govt. in this behalf.

The Letter of Intent is further subject to any orders passed by the Hon'ble Supreme Court of India/High Court of Himachal Pradesh or other concerned departments from time to time in this regard. The Letter of Intent is valid only for obtaining EIA Clearance from the Competent Authority, as mandated by the Hon'ble Supreme Court in its order dated 27.2.2012.

To comply with Condition No. 2 of the Letter of Intent, the applicant engaged the undersigned (R.Q.P. No. H.P./R.Q.P/25/2/2019) for the preparation of the Mining Plan. The plan has been prepared in Form-M, as prescribed by the State Geologist, Himachal Pradesh, in accordance with the provisions of the Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2015. The lease area, located in the Swan River bed, was mapped to record topographical, lithological, and other relevant features. The Mining Plan ensures systematic and scientific extraction of minor minerals with phased afforestation and public utility measures.

I. GENERAL

1.1 Name and address of the applicant

1.1.a Name of the Applicant

Sh. Ashwani Kumar.

Prop. M/s Banorhey Mahadev Stone Crusher

1.1.b Address of the Applicant

Village & P.O. Lower Basal, Tehsil & Distt. Una,
Himachal Pradesh

1.2 Status of the Applicant

Private Individual

1.3 Mineral which the Applicant intends to Mine

The Applicants intend to mine Stone, Bajri and Sand from the lease area. The extracted stone shall be used in the proposed stone crusher unit in the name and style of "*M/s Banorhey Mahadev Stone Crusher*" for manufacturing grit and sand to be sold in the open market as per the demand.

1.4 Period for which the mining lease is to be granted

The mining lease has been already as per the provisions of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015.

1.5 Name and Address of R.Q.P. preparing the working Plan

Arun Dhiman (RQP)

REG.NO. – H.P./R.Q.P/25/2/2019

Vill. & P.O. Dhaloon, (Panchpuli)

Tehsil Nagrota Bagwan, Distt Kangra(HP)

Surveyed By:

Sh. C P Negi (Retired Surveyor)

Geological Wing (Department of Industries)

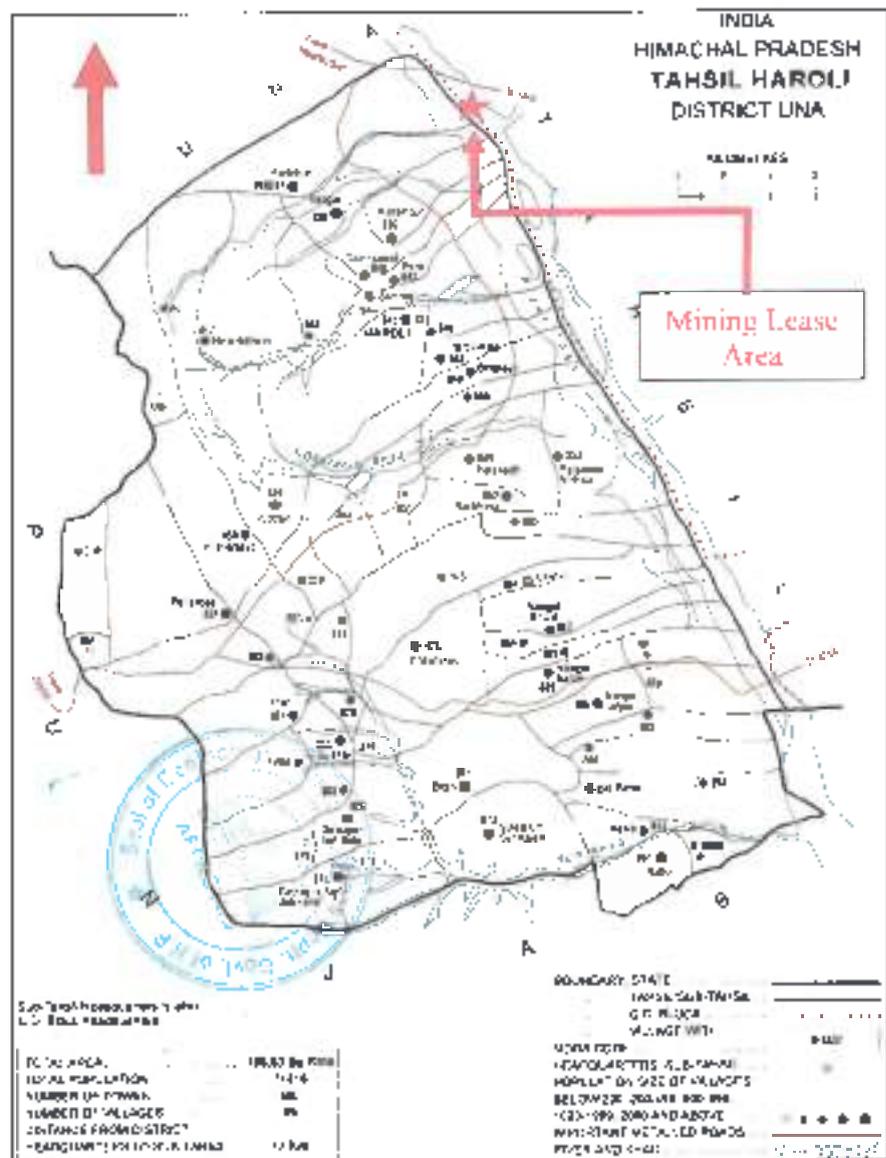
1.6 Name of Prospecting Agency.

The area has been discovered by the applicant and further investigated by the R.Q.P. The site was visited along with the project proponent for identification of the site based on the demarcation in the presence of the project proponent. The surface mapping of the area has been conducted by the surveyor using survey instruments and for carrying out prospecting of the mineral deposit, the preliminary information regarding the Geological set-up and occurrence of minerals in the area applied for mining lease and in its surroundings has been gathered from the previous work done by the Geological Survey of India and State Government agencies from time to time

2. LOCATION AND APPROACH TO THE AREA (PLATE -I).

2.1 Location

The mining lease area is located in the river bed of the River Swan beside the village Badehra. The geographical location of the mine lease area is covered under the Survey of India Toposheet No. H43E2. The index Location Map of the mine site falling in *Tehsil Haroli* is enclosed as a Figure shown. The location of the applied mine area is marked in the toposheet and the high-resolution satellite image is shown in the Figures on pages 4 and 5 respectively. The pictorial view of the mine site is shown as an image on page 5.



Index Map of Block showing Mining Lease area

(Detailed Location Map enclosed as Plate No. - 9)

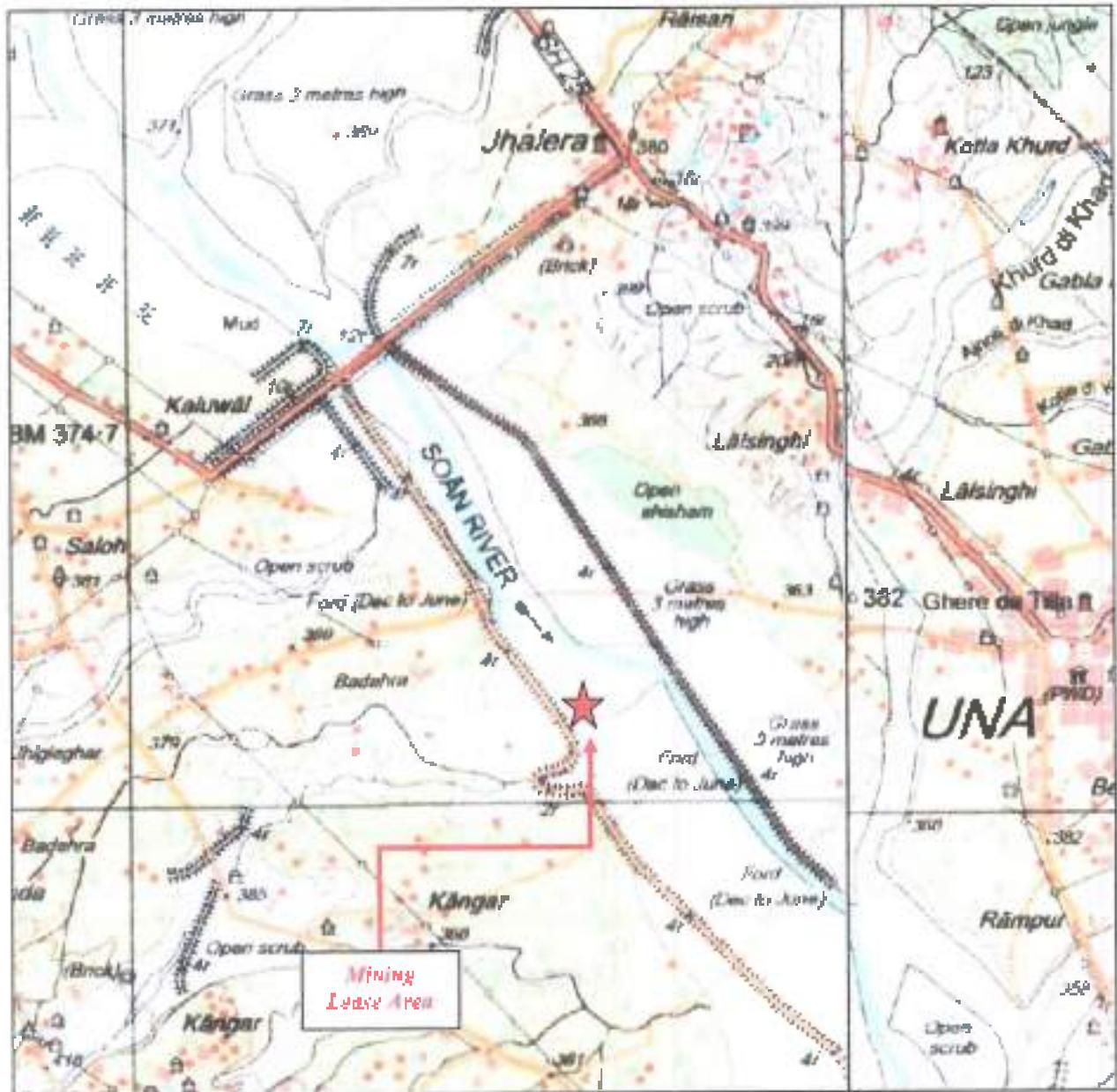
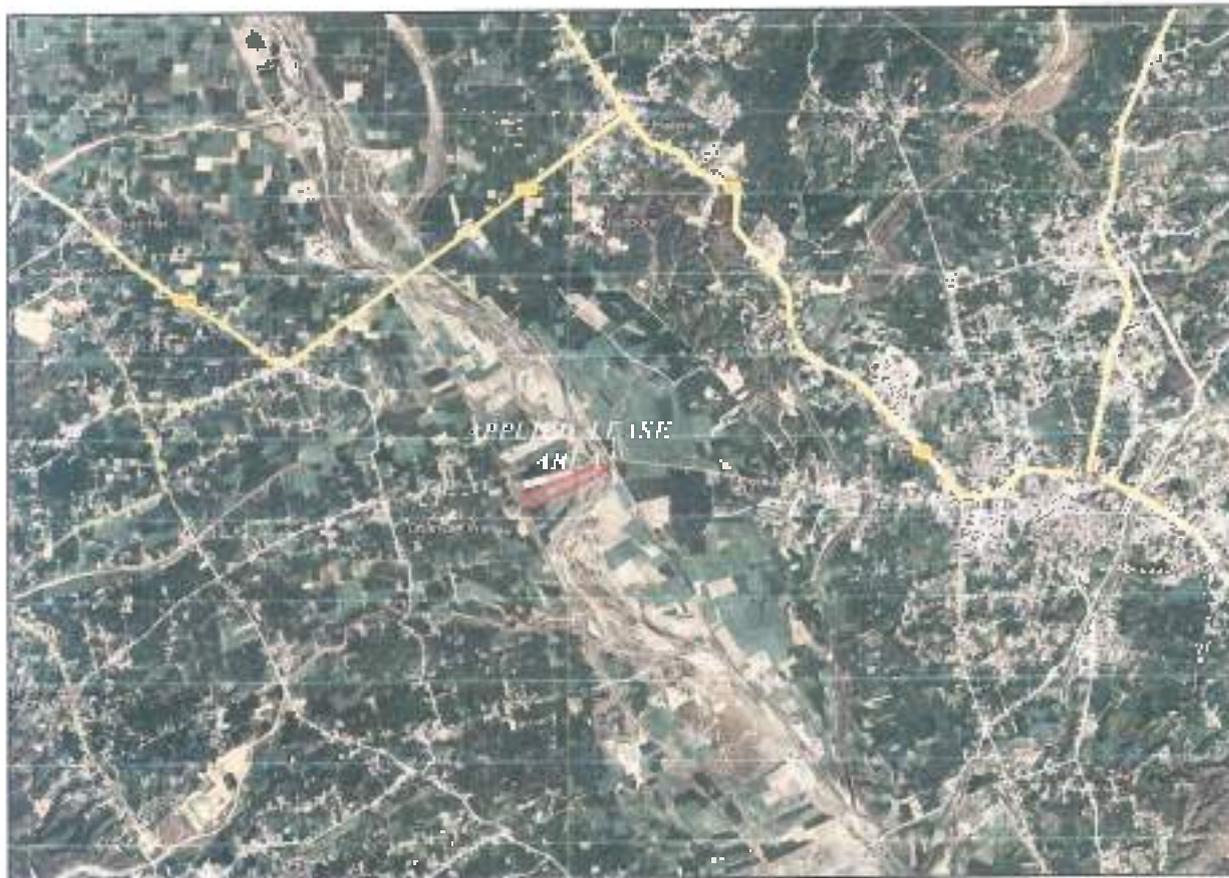


Image showing the Location of the mine area
 Topo-sheet number H43F2

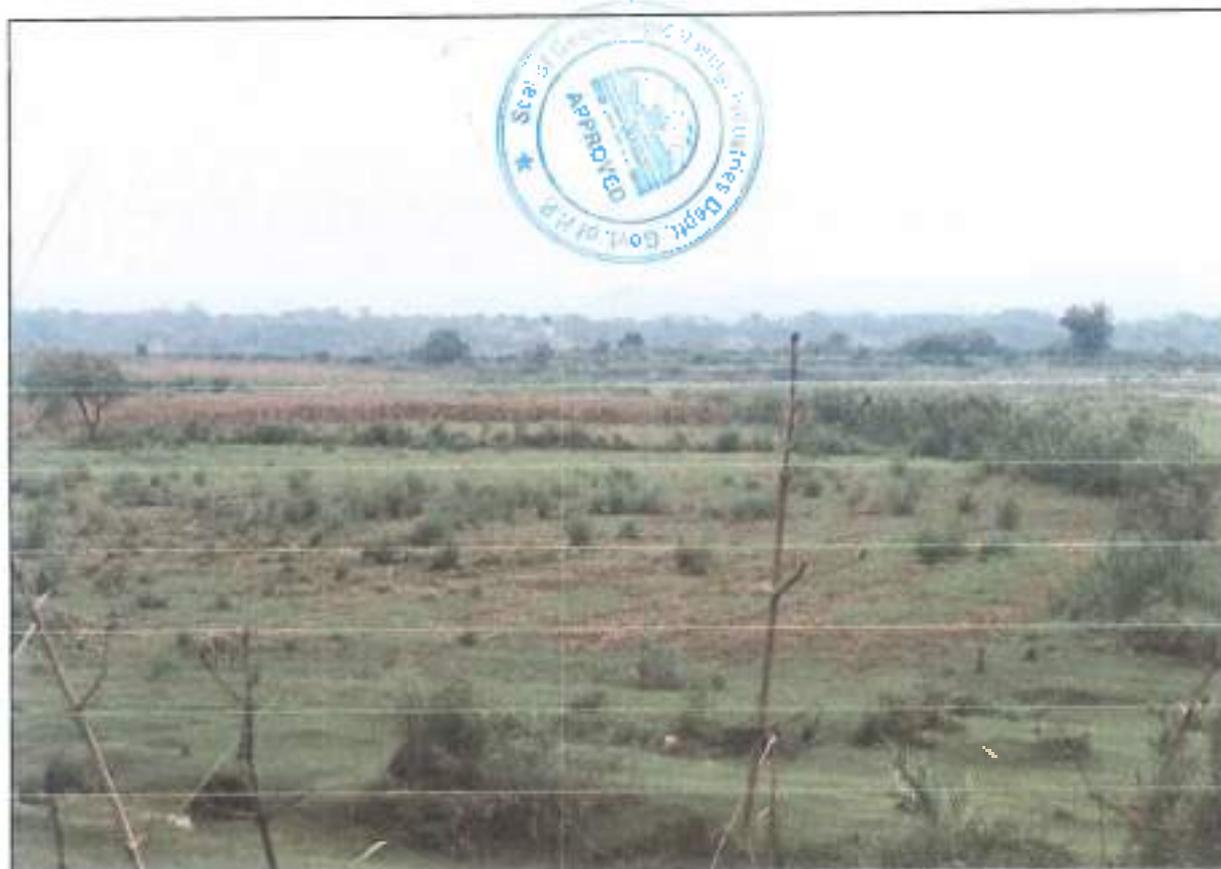
(Source: SOI)

Table showing approximate boundary pillar coordinates

Pillars	Latitude	Longitude
P1	31°28'9.08"N	76°14'8.70"E
P2	31°28'2.80"N	76°13'49.79"E
P3	31°28'0.57"N	76°13'49.82"E
P4	31°28'7.70"N	76°14'9.65"E
P5	31°27'59.56"N	76°13'50.48"E



Google Earth Image (20) Showing Satellite view topography around the Lease area



Pictorial view of the mine lease area

2.2 DETAIL OF THE AREA: -

2.2 (a) Revenue Details of the Area

Table Showing Revenue Details of the Area

Khasra Nos.	Area (In Hectares)	Owner	Kism	Mohal	Mauza	Name of the Panchayat
6525/1 & 6526/1	03-61-42	Private	Gair Mumkin Swan	Badehra	Badehra	Lower Badehra
TOTAL	03-61-42 Hectares (36142 SQ.M.)					

2.2(b) Address Details

Village	Badehra
Patwar Circle	Badehra
Post Office	Badehra
Tehsil	Haroli
District	Una

2.3 Nearest Departments

Sub-Divisional Officer (Civil)	Haroli
Divisional Forest Officer	Haroli
Sub-Division (JSV)	Haroli
Sub-Division (PWD)	Haroli
Forest Range Officer	Una
Mining Officer	Una

2.4 Distance from important places in Kilometers

Badehra	8.0 Kms
Haroli	10.0 Kms
Una	3.4 Kms
Hoshiarpur	36.0 Kms.
Chandigarh	125.0 Kms.
Shimla	150.0 Kms

2.5 Approach of the Area: -

The project site is conveniently accessible by road, connecting it to major towns in both Himachal Pradesh and Punjab, including Una, Hoshiarpur, Nangal, Chandigarh, and Shimla.

The mining lease is situated within the riverbed of the Swan River, near the village of Badehra. The site is approachable via the left bank of the river by taking a left-hand side road off the Old Hoshiarpur-Una Road. Furthermore, the mining location is only 3.4 kilometres from the town of Una.



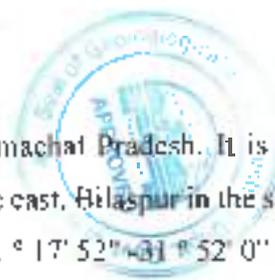
Google Map view showing the Approach to the applied area

3. PHYSIOGRAPHIC ASPECTS OF THE AREA

3.1 General

Una district lies in the south-western part 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 $31^{\circ} 17' 52''$ - $31^{\circ} 52' 0''$ north longitudes and $75^{\circ} 58' 0''$ - $76^{\circ} 28' 25''$ east longitudes.

Una district covers an area of 1,550 sq. kilometers. The Himalayan foothill zone is bounded by the plains of Punjab in the west and Salasinghi Dhar in the east. In the western part also there is a 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 valleys of the Swan River. The altitudes of the area vary from 350 meters to 1,200 meters on the Salasinghi Dhar. Shiwalik range experiences heavy rainfall. The Swan River is itself a tributary of the Satluj River and the confluence is just south of Santokgarh. The hill ranges are covered by scanty vegetation comprising mostly shrubs. The breadth of Jaswan Dun Valley ranges from 7 kilometres to 14 kilometres and the town of Una which is not in the middle of the Dun is on an elevation of 427 above sea level.



The Sub-Himalayan hills, commonly known as Solasinghi or Jaswan Dhar range, commence near Talwara on the Beas where the river touches the district running south-east. Its culminating ridge forms the border between this district and Kangra. Passing southwards, it increases steadily in width and elevation until its highest point reaches Bharwain which is 1182 meters above sea level. Here, the regular formations, central range sloping in the series of the undulating valley to the Satluj on one side and the Swan on the other side and change its character. The range still runs toward Satluj, its north side submerging gradually into Satluj valley, but on the south, it has an abrupt fall of 61 meters and 41 meters and between the main range and the plains, Jaswan Dun is a wide tableland thickly wooded revealing to divide into natural blocks by numerous deep ravines. This area is nearly 24 kilometres in length and 21 kilometres in width is thickly forested. At a short distance south of Amb, the Solasinghi ranges and Jaswan Dhar range recede eastward, ceasing to form the boundary of the district and the plains at this point form of kind of bay in the hills which is shut in by Solasinghi to the northeast and on the south by another range commencing a few kilometres north of Una. The latter runs southwards in a series of undulating hills low in height with an even front towards Jaswan Dun. Across the Satluj, the range breaks into a series of parallel ranges of no more height, but rocky and precipitous, through whose slopes are well covered with grass and brushwood. This range is separated from Solasinghi Dhar by the Satluj which is for more than 48 Kilometers and runs northwards until it turns westwards into Jaswan Dun.

Una is bounded by the river Satluj on the north and the river Satluj on the east, the Swan River which is a Perennial river, flows right across the Jaswan valley towards the 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 the right and right, thereby abounding in quicksands and is risky to cross when in spade.

Una district nestles between the Siwalik ranges and forms part of the lesser Himalayas. It has a diverse landscape made of hills, valleys with a piedmont zone, and terraces. The elevations of the land surface in the district vary from 340 m in the southeastern part to 1041 m above sea level (ASL) in the eastern part of the district. There are three hill ranges i.e. Chamukhal Dhar with a maximum elevation of 1041m AMSL which borders with district Hamirpur, Dhionsar Dhar with a maximum elevation of 950m AMSL and Ramgarh Dhar with a maximum elevation of 997m AMSL. On the southwest border with Punjab, the Siwalik [ill ranges from a hilly upland or plateau area with an elevation up to 666 m above mean sea level. The vast area between the northwesterly & southeasterly hill ranges, on both sides of the river Soan, is the UNA valley. The undulating to plain fertile Una valley has an area of about 455 sq km and it extends from Daulatpur in the north-west to Santukgarh in the south-east

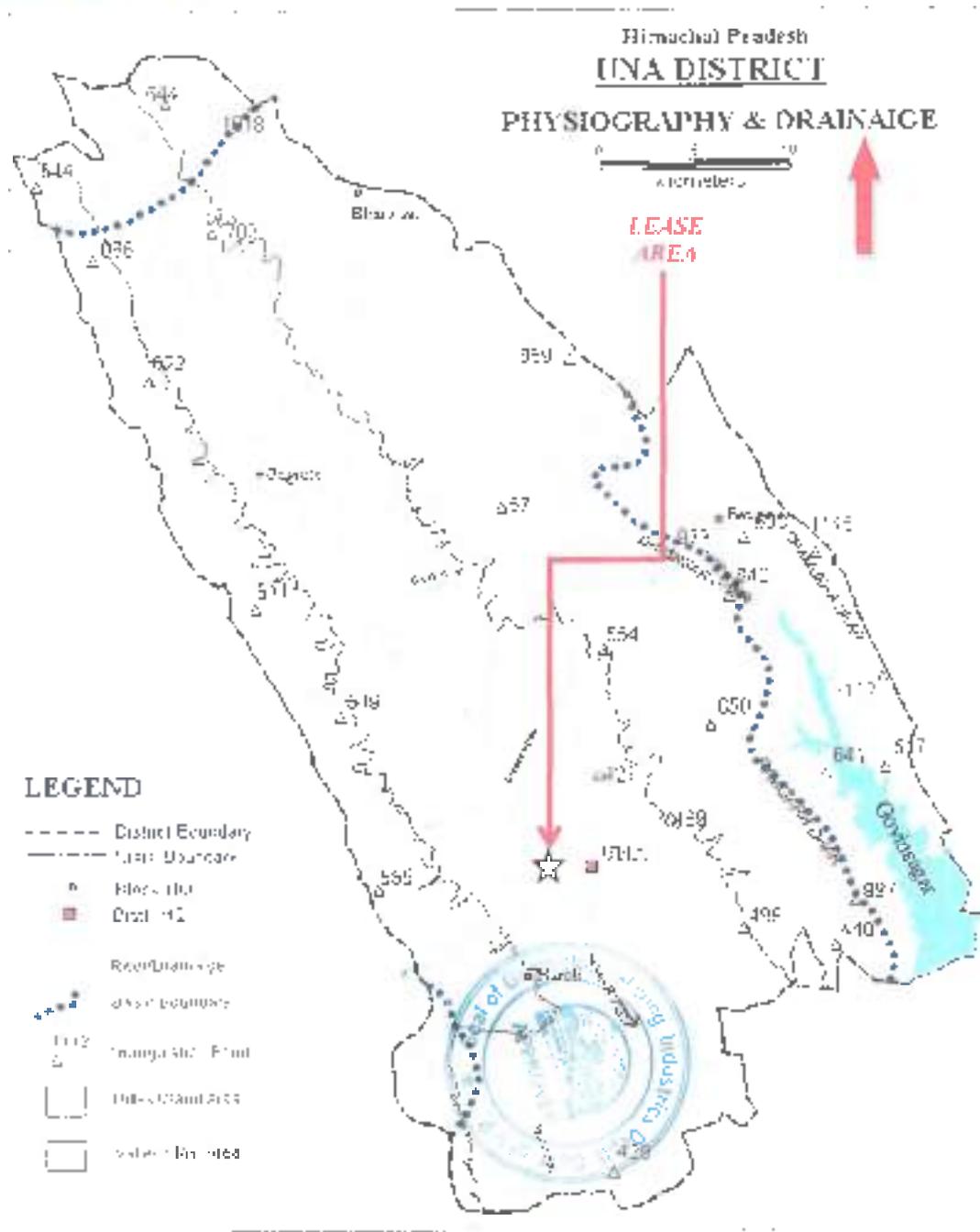


Image showing the physiography and drainage of the District

The Soan or Swan River, a tributary of the Satluj River, drains the major part (80%) of the Una district. Soan is an intermittent river and maintains a base flow in the lower reaches. The Soan River has about 80% catchment area in Una district and divides the district into two parts. The Soan river flows in a southeastern direction and has a wide channel and exhibits a braided nature. It originates near Dharamsal(Daulatpur) in the northeastern part and leaves the district near Santokhgarh and subsequently joins the river Satluj. A number of local streams (about 73 khads) join the river within the district. During the monsoon, the Soan River gets flooded due to shallow bank heights & large areas on both sides get affected. The G&IP has initiated riverbank protection cum flood control measures and the work is in progress.

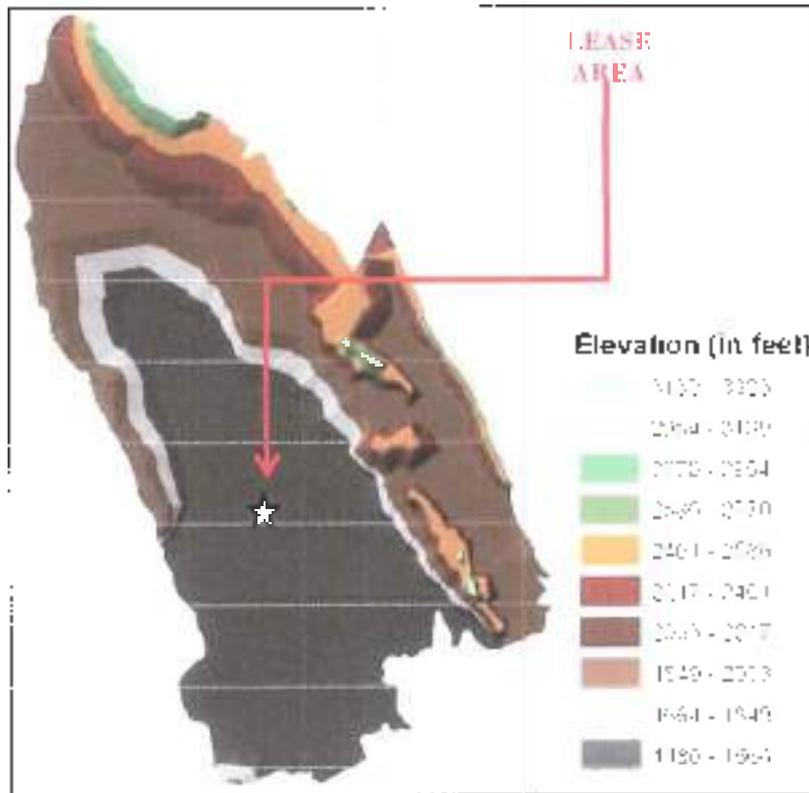


Image showing the Elevation profile of District Una

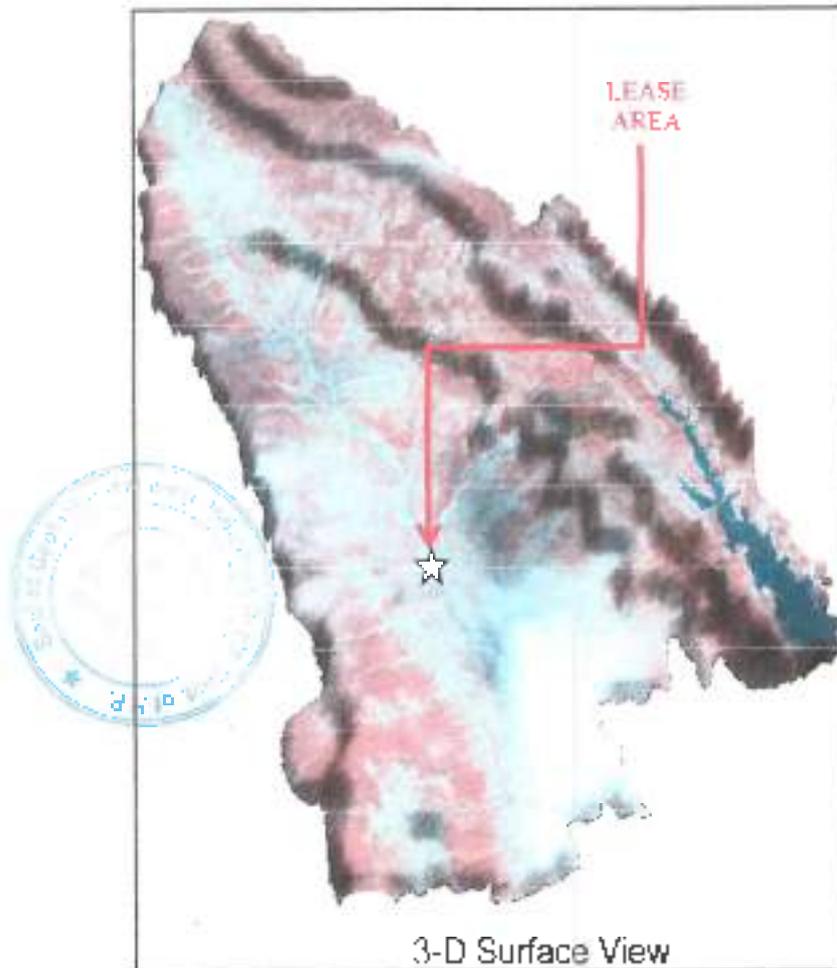


Image showing 3-D Surface View of District Una

The mining lease area lies in the Swan River which is a major tributary of the Satluj River. The total length of the Swan River is 80 km, out of which about 60 kilometres falls in Himachal Pradesh. The total catchment area of the Swan River is about 1400 sq. km, out of which 1200 sq. kilometres falls in the Una District and the rest in Punjab, where it joins Sutlej. The lease is submerged during the monsoon period when the Swan River is in a flood situation.

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

The applied mining lease area was mapped on a 1:2000 scale with a one-meter contour interval. (annexed as Plate No III). The Swan River originates at a height of about 1036 Mts. near Dhamsal village and joins the Satluj River after travelling a distance of about 97.1 Kms. in Punjab. The total length of the Swan River is 80 km, out of which about 60 kilometres fall in Himachal Pradesh. The total catchment area of the Swan River is about 1400 sq. km, out of which 1200 sq. kilometres fall in the Una District and the rest in Punjab, where it joins the Sutlej. The highest point of the lease area is 382 meters above MSL. and the lowest point is 381 meters above MSL..

3.3 Climate of the Area

The climate of different parts of the district depends to some extent on the elevation. The terrain is hilly with an elevation below 300 metres in the valleys and the western region and the elevation gently increases by a few hundred metres over the northeastern region of the district. The climate of the district is somewhat like that of the adjoining plains of Punjab, except for a milder hot season and higher rainfall. The cold season is quite bracing. The year may be divided into four seasons. The period from November to March is the winter season. The next three months, April to June, form the summer season. The following period, lasting up to about the middle of September, is the southwest monsoon season. The latter half of September and October forms the post-monsoon or transition period. The average minimum and maximum temperatures are 3°C and 45°C

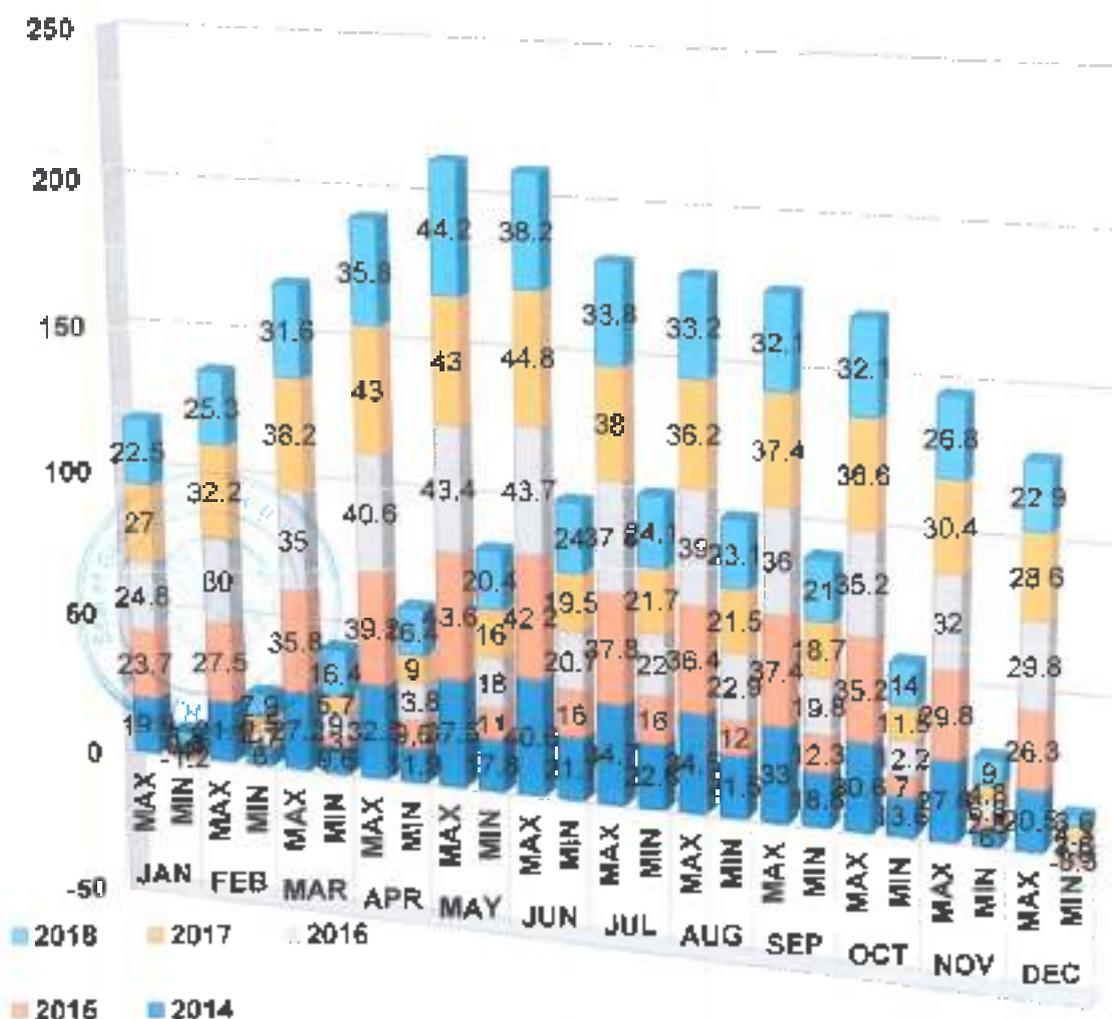
Table Showing the Climate around the applied mining lease area

Maximum & Minimum Temperature of District Una (Meteorological Centre-Una)						
MONTH	YEAR	2014	2015	2016	2017	2018
JAN	MAX	19.9	23.7	24.8	27	23.5
	MIN	4	-1.2	0.2	0.6	3.8
FEB	MAX	21.4	27.5	30	32.2	25.3
	MIN	6	1	4.7	5.5	7.9
MAR	MAX	37.2	35.8	35	38.2	31.6
	MIN	9.6	3	9	5.7	16.4
APR	MAX	32.8	39.2	40.6	43	35.8
	MIN	11.9	9.6	13.8	9	16.4
MAY	MAX	37.5	43.6	43.4	43	44.2

"RIVER RED" Mining Plan

	MIN	17.8	11	18	16	20.4
JAN	MAX	40.6	42.2	43.7	44.8	38.2
	MIN	21.7	16	20.7	19.5	24
FEB	MAX	34.7	37.8	37.8	38	33.8
	MIN	22.6	16	22	21.7	24.1
MARCH	MAX	34.5	36.4	39	36.2	33.2
	MIN	21.5	12	22.9	21.5	23.1
APRIL	MAX	33	37.4	36	37.4	32.1
	MIN	18.8	12.3	19.8	18.7	21
MAY	MAX	30.6	35.2	35.2	36.6	32.1
	MIN	13.6	7	12.2	11.5	14
JUNE	MAX	27.6	29.8	32	30.4	26.8
	MIN	6	2.8	6.8	4.8	9
JULY	MAX	20.5	26.3	29.8	28.6	22.9
	MIN	1.6	-3.3	3.6	4.3	3.6

Source: Meteorological Department, Govt. of India



Graph showing the Average monthly temperature of the district Una from the year 2014 to 2018

3.4 Rainfall of the Area

The Una district can be divided into three rainfall zones as

High	above 1400 mm
Medium	between 1400 and 1200 mm
Low	less than 1200 mm

The average annual rainfall in the district is 1209.0 mm. About 70 per cent of the annual rainfall in the district is received during the short monsoon season from July to September. July is the month with the heaviest rainfall. Rainfall amounting to about 14 per cent 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 to the northeast.

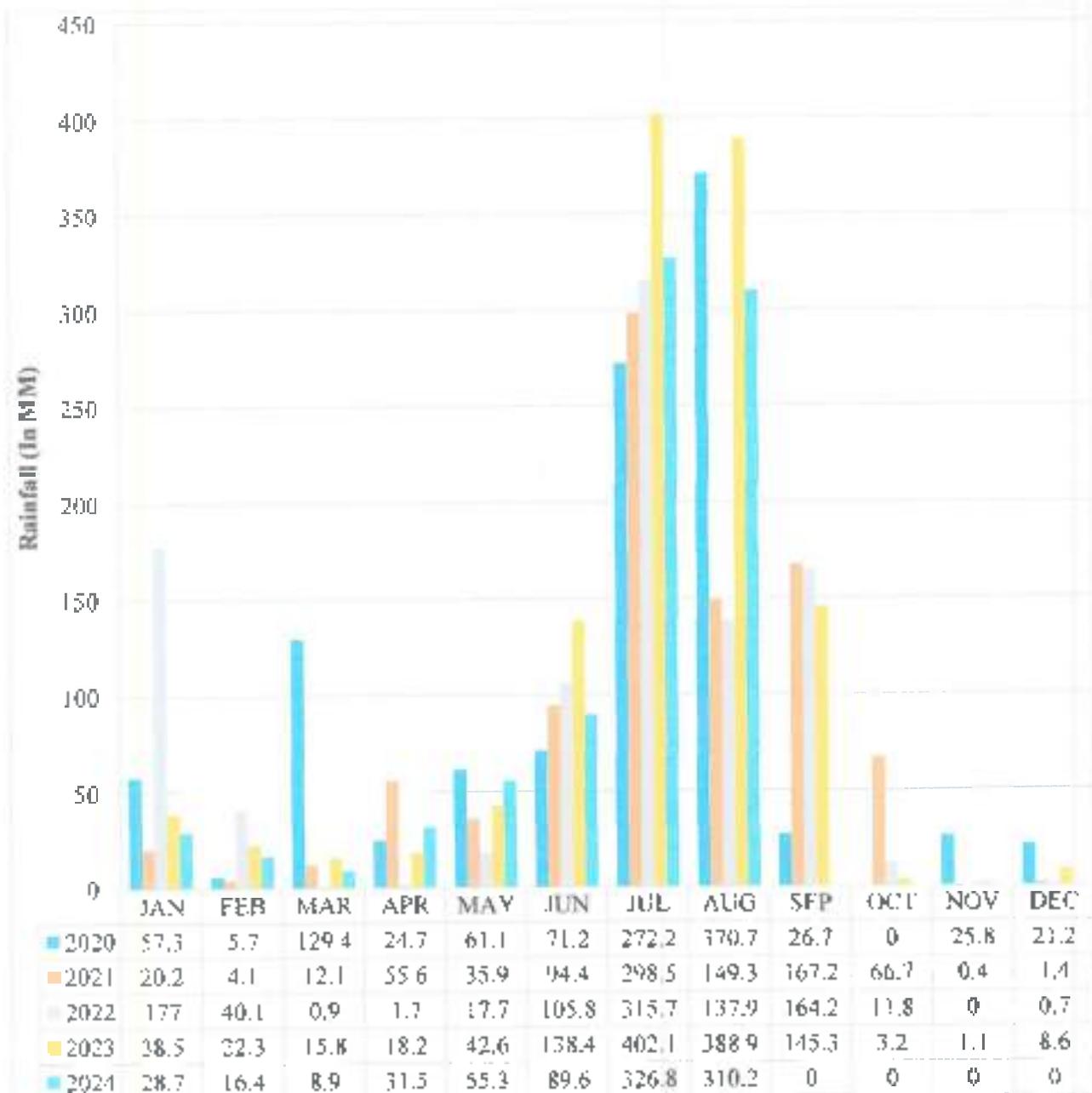
To have an idea about the morphogenetic zone on the basis of rainfall it will not be ideal to classify it on the basis of the annual rainfall because most of the precipitation of the year is received in the rainy season hence the precipitation of the monsoon season is deciding precipitation for annual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

Rainfall varies significantly with the altitude of the area. The catchment area receives rainfall due to western disturbances that pass over the northwestern 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 the 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
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	Data No available			

Source: Meteorological Department, Govt. of India



Graph showing the monthly rainfall data of the district

3.5 Any Other Important Feature

Una district came into existence on 1 September 1972 and is situated in the south-western part of the State of Himachal Pradesh. The district, with its headquarters at Una town, has a geographical area of 1542 sq. km and covers 2.8 % area of the State. It lies between North latitude 31°18'00" & 31°55'00" and East longitude 75°55'00" & 76°28'00" and is covered in a survey of India degree sheet No.53A & 44M. Towards the north, it is bounded by Kangra district, towards the north & east by Hamirpur & Bilaspur districts and towards the southwest by the State of Punjab.

Agriculture is the major occupation of the people of the district with more than 70% population engaged in the agriculture and allied sector. Major crops like maize, wheat, rice, sugarcane and pulses are grown apart from the vegetables in the district. The total cultivable area is 443 sq. km

"RIVER BED" Mining Plan

and the net area sown is 388 sq. km. The net area irrigated in the district is about 85 sq. km. Groundwater is the major source of water in the district for irrigation and domestic use. There are large numbers of water supply wells & tube wells, springs, kulhs (water channels) and lift irrigation schemes implemented exclusively for irrigation purposes. The irrigated command area under the Bhabaur Sahib Lift irrigation scheme, Phase I and Phase II, are 923 hectares and 2640 hectares respectively.

The present site comprises the riverbed deposits of the River Swan. The area in question is in the riverbed of the Swan River near village Badehra approximately 3.4 kilometres from Una.

3.6. Description of the Area in which the lease is situated: -

The mining lease area is situated near the Badehra Village and lies between embankments of the Swan River, a major tributary of the Satluj River. The Swan River is the major river flowing in the district, having good mineral potential. It has a length of about 63 km, a catchment area of about 1222 sq. km. The river has a total of 33 tributaries on its right bank and 17 tributaries on its left bank. It ultimately forms a part of the Sutlej River. The general flow of the Swan River in this section is from north to south. The general altitudes of the area vary from 382 meters to 381 meters.



PART- I DESCRIPTION OF GEOMORPHOLOGY AND MINE DEVELOPMENT

1.1 General

The lease area is situated in the Swan River a primary tributary of the Satluj. The mining lease area lies in the riverbed of the Swan River. The Khad is a rain-fed stream and originates from the village of Dharamsal in Una District. The Swan River is the major river flowing in the district, having good mineral potential. It has a length of about 63 km, a catchment area of about 1222 sq. km. The river has a total of 33 tributaries on its right bank and 17 tributaries on its left bank. It ultimately forms a part of the Sutlej River. The Swan River originates from Dharamsal at an elevation of 972 MRL.

The stream is perennial in nature and water flows in it throughout the year. The riverbed of Stream is occupied with recent deposits comprising predominantly of boulders, Sand and river-borne bajri. The boulder beds are considered the prominent source of river-borne deposits and during the monsoon season, the stream carries a heavy sediment load and deposits it over the riverbed annually. The highest point of the mining lease area is 382 meters above MSL and the lowest point is 381 meters above MSL and the average width of the river is 700-730 Mtrs

1.2 Name of the River/Stream Bed on which the mining lease is situated

The mining lease area lies in the Swan River which is the main tributary of the Satluj River.

1.3 Drainage System

The drainage pattern of the Swan River is a dendritic to sub-dendritic type and ultimately it forms a part of the Satluj drainage system.

1.4 Type of Drainage

The River Swan forms a dendritic to the sub-dendritic type of drainage pattern.

1.5 Origin of river/stream

The Swan River originates from Dharamsal at an elevation of 1036 MRL.

1.6. Altitude at the origin.

About 1036 meters above mean sea level. The highest point of the mining lease area is 382 meters above MSL and the lowest point is 381 meters above MSL and the average width of the river is 700-730 Mtrs.

1.7 Geometry of the Catchment of the River impacting the Replenishment of Deposits.

The geometry of the Swan River

Total Area of Catchment	=	1222 Sq. Kilometers
Area of catchment up to mining site	=	209.17 Sq. Km

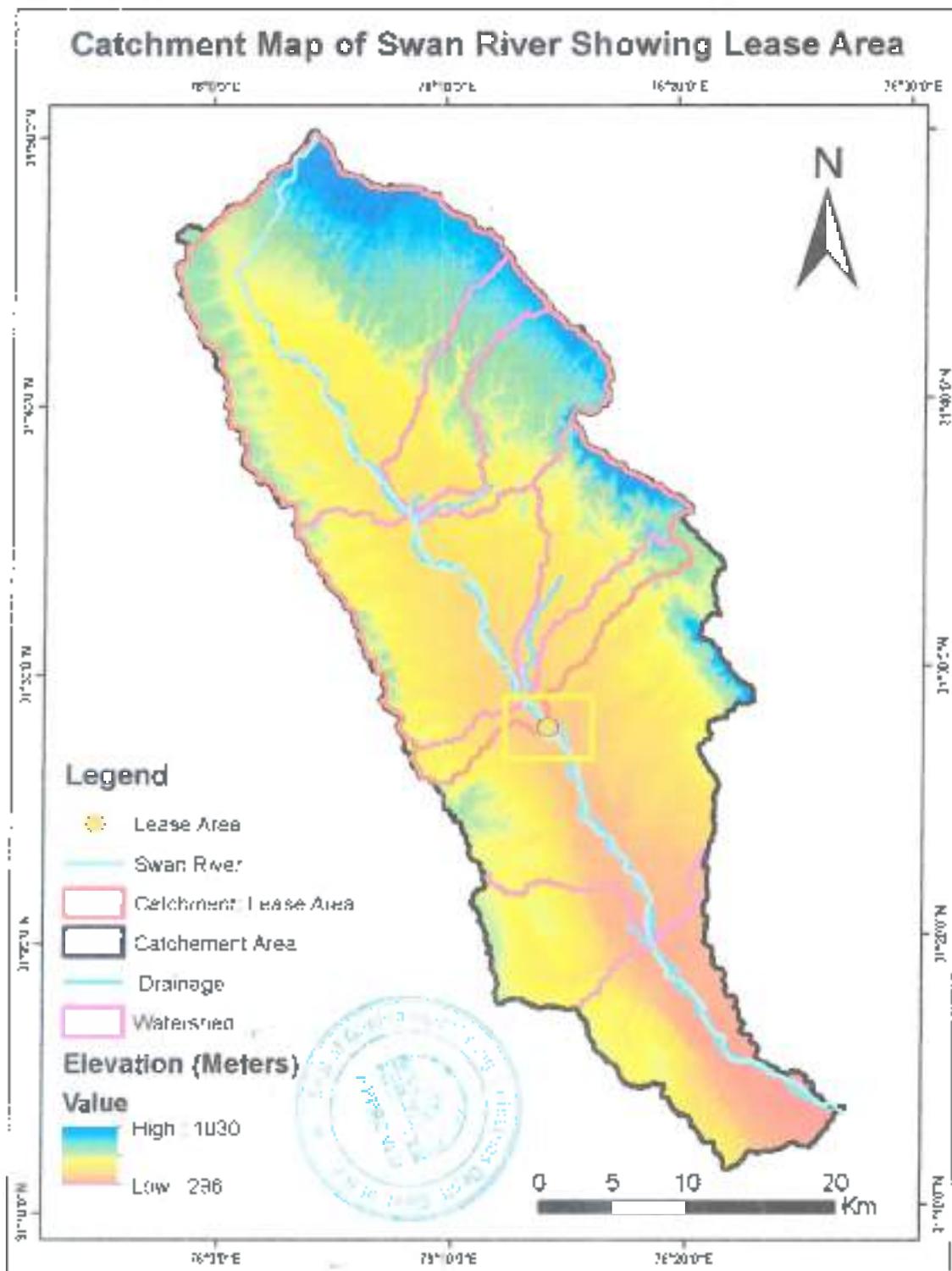


Image showing the Geometry of the Catchment of the River

The following are the different ingredients of the Swan River

Number of tributaries on the right bank	=	23
Number of tributaries on the left bank	=	8
Stream order up to the Mining Area	=	5
Maximum length of watershed	=	75 Km
Maximum breadth of watershed	=	25 Km

Length breadth ratio 3:1

The higher the ratio, the higher is the asymmetry of the watershed.

The cycle of erosion at the applied Area is old.

Profile of River Bed

Elevation at origin 1036 meters near Dharamsal
 Elevation at applied Area = 382m-381m
 The total length of Khad up to the Lease area = 63.22 Km
 Cumulative Elevation Loss = 673 meters
 Average Slope = 9.36 % i.e. about 5.35
 Slope angle at lease area = 3.00 % i.e. about 1.71°

The cycle of erosion at the lease area is old.



Image showing Profile of the River/Khad

The applied lease area has reached the 'Mature Stage' which is a zone of deposition during floods and deposition otherwise. The mining area gets all the deposition, which otherwise would have spread all over the flood plain of the Khad, now accumulates within the confined area of Bunds.

Table showing the Catchment area of the various rivers in the District Una

MAJOR CATCHMENT	AREA IN Km ²
TOTAL AREA OF THE DISTRICT	1540
Swan River Catchment	1337
Lunkhar River Catchment	71.3
Govind Sagar	32.3
Catchment draining in Govind Sagar	85.0
River flowing into Satluj between Bahkra Dam & Nangal	25.7

SATLUI RIVER CATCHMENT	<i>Pajolewala River Catchment (Jajon Khad)</i>	16.3
	<i>Other Rivers flowing towards Punjab</i>	7.0
	TOTAL	1452.6
BEAS RIVER CATCHMENT	<i>SohanNadi Catchment</i>	74.3
	<i>Mou Khad Catchment</i>	5.7
	<i>Maseh Khad Catchment</i>	4.6
	<i>Tipri, Bai di Khad and Suana Catchment</i>	2.7
	TOTAL	87.4

As per the studies, the physiographic and morphometric parameters like relief ratio, drainage density, drainage texture, bifurcation ratio and sediment delivery ratio (SDR) depict that the catchments of the Swan River fall under severe erosion. The Replenishment of river bed material will be very much dependent on rainfall and run-off from the surrounding watershed area. In contrast to surface erosion, mass movements have always been common on steep slopes. Therefore, minerals excavated in a year shall be replenished during the monsoon season and hence, the whole block shall be exploited on a yearly basis.

1.8 Annual Deposition of River/ Stream Bed: -

The rate of erosion in the watershed area and the ability of the various streams to transport the eroded material in the River have a direct relation with the quantity of sediment transported in the downstream areas. The degree, as well as the length of the slope, are going to influence the process of sediment erosion. A large part of the sediment load brought from the watershed area/catchment area of this Khad was deposited due to a decrease in the water velocity. The annual deposition of the River at the place of mining is about 3 to 5cm per annum. The river has sufficient capacity to replenish almost equivalent to the stress on the lease area/material excavated.

The boulders, cobbles and pebbles are hard in nature for manufacturing grit and suitable sand deposits are available for manufacturing of Grit in the Crusher unit.

1.9 The Competency of River/ Stream at the Mining Site:-

The competency of a river is a measure of the maximum size of the river-borne material a river is capable of transporting and it is directly dependent upon the velocity of the flow of the river. The competence of a river increases as the square of its velocity. The maximum load of solid particles a river can transport is termed its capacity. The greater the discharge in the river, the greater shall be the capacity for hauling the sediments. The higher velocities are developed when the rivers are in a high stage. The general competency of the river in the mining area is shown in the figure below. Generally, it is 4 to 6 kg approximately. The largest boulder varies from 9cm to 14cm X 8 cm to 12 cm X 7 cm to 12 cm (length x breadth x height). The river in the mining lease area has reached the

mature stage with an elevation loss of 3 m for every 1000 m, a slope angle of 11' (eleven minutes) thus carries minor minerals to a considerable length.



A photograph showing the competency of the River

1.10 Meandering Pattern of the River near mining site:-

The major river in the study area is antecedent in nature. The sinuosity, braiding and meandering in the river course are generally noticed, although, in some places, they are straight and narrow. Due to the increase in the drainage area and the discharge, the river valley becomes wider on the downstream side with a generally flattened gradient.

The river is mildly meandering near upstream and downstream at the applied area. During the monsoons, the flood water level rises about 2.50 mts. to 4.00 meters for a short spell of time and the river is perennial in nature. The landform being depositional, the meandering thread constantly changes during the rains depending upon the water level. The highest flood level is the maximum rise level and the lowest flood level is the riverbed level.

1.11 Altitude of the Mining Area

The highest point of the mining lease area is 382 meters above MSL and the lowest point is 381 meters above MSL, and the average width of the mining lease is 550-570 meters. However, the total width of the river in this part is approximately 700-730 meters.

J.12 Description of the Groundwater table in the Mining Area, before and post-monsoon.

The riverbed level in the mine lease area varies between 382 AMSL and 381 AMSL and the average bed level is 381.50 m AMSL as is evident from the surface area map. The mine shall be worked up to two meters depth below the natural surface level of the ground at any section.

The area is located in the Siwalik system, which consists of a boulders bed and has a minimum water retention capacity. The area is a part of the Perennial River, therefore, the water table is the water table of the river at a particular point in time near the course of the river. The mine shall be worked up in 2 meters below the natural surface level of the ground at any section.

The area is located in the Siwalik system, which consists of a boulder bed and has a minimum water retention capacity. The area is a hilly terrain as such cannot have any regular water table but the percolated water comes out in the shape of a spring at those places where there is a non-pervious formation is available to stop the water from further percolation. After the monsoon period, the springs can be seen functional in a number of places but the intensity of discharge starts reducing after September and most of the springs go dry after November the major source of water remains the course of the Swan River where the water is available along the course of a river, where the wells are developed. As per information gathered as well as based on the previous and ongoing development works like the construction of Bridges and Bore wells by the HPPWD and I&PEI departments respectively, the average depth of the water table is more than five meters. Thus, the groundwater table shall not intersect with the bottom of mining pits.

(2). GEOLOGY

2.1 Regional Geology of the Area

Himachal Pradesh can be broadly divided into two major geo-tectonic zones viz. the lesser Himalayan tectogen in the south and the Tethys Himalayan Tectogen in the north. These two tectonic breaks are collectively designated as the main Central Thrust in the sense defined by Srikantia (1988). Mandi District lying with the lesser Himalaya and the Shiwalik Foothill comprises rocks ranging in age from Proterozoic to Quaternary. The oldest rocks are of undifferentiated Proterozoic age, comprising carbonaceous phyllite, schist, gneiss, quartzite and marble. The Ghoghar Diar (undifferentiated Proterozoic age) occurs as an intrusive body within the Chail group of rock. This granite body is well-foliated and composed of gneisses, granite with minor aplite and basic veinlets. The Sundarnagar group of rocks of the Meso Proterozoic age is represented by quartzite with basic flows. The Shali group of rocks (Meso Proterozoic) comprises limestone, dolomite (at places stromatolitic) slate and quartzite. The Subathu consists mainly, of olive green shales and grey shales. At the top, a band of white quartzite is exposed: this band of white quartzite has been taken as the marker, defining the top of the Subathu sequence. The thick sequence of brackish and freshwater

sediments immediately succeeding the fossiliferous marine Subathu are classified as the Dharamshala formation. The Dharamshala formation is widely exposed in the Mandi parautochthon, further west in the autochthon, these rocks are exposed, in the core of the Sarkaghat anticline. The Shiwalik group of the Middle Miocene of the Early Pleistocene age comprises coarse elastic fluvial deposits of sandstone, clay and conglomerates. The quaternary sediments (older Alluvium and new Alluvium) along prominent channels consisting of sand silt, clay, pebbles and cobbles occurring along present channels of Middle to late Pleistocene and Holocene age.

The stratigraphical sequence in the catchment area is tabled as under:-

Table showing Litho-stratigraphy of the area

GROUP		LITHOLOGY	AGE
Newer Alluvium	Channel Alluvium	Boulders, cobbles, pebbles, Grey micaceous, fine to coarse-grained sand, silt and clay	Quaternary
	Terrace Alluvium	Cyclic sequence of Boulders, cobbles, pebbles, grey micaceous sand, silt and clay	
	Fan Alluvium	Brownish grey clay, sand and gravel with boulders	
Older Alluvium	Duo Gravels	Multicyclic sequence of brown to grey silt, clay with kankar and reddish brown to grey micaceous sand with pebbles	
Shiwalik Group	Upper Shiwalik	B. Predominantly massive conglomerate with red and orange clay as matrix and minor sandstone and earthy buff and brown claystone A. Sandstone, clay and conglomerate alternation	Neogene
	Middle Shiwalik	B. Massive Sandstone with minor conglomerate and local variegated claystone A. Predominantly medium to coarse-grained sandstone and red clay alternation, soft pebbly with subordinate claystone, locally thick prism of conglomerate	
	Lower Shiwalik	B. Alternation of fine to medium-grained sporadically pebbly sandstone, calcareous cement and prominent chocolate and medium maroon claystone in the middle part A. Red and mauve claystone with thin intercalations of medium to fine-grained sandstone	

(Source: Geological Survey of India, Publication 5)

Older Alluvium

The older Alluvium is composed of a multi-cyclic sequence of brown to grey silt, clay with kankar and reddish brown to grey micaceous sand with pebbles.

Newer Alluvium

The New Alluvium is composed of a terrace and channel alluvium of fine to coarse-grained greyish/brownish sand and grit with pebbles of sandstone/quartzite and fine to coarse, micaceous sand with little silt and clay.

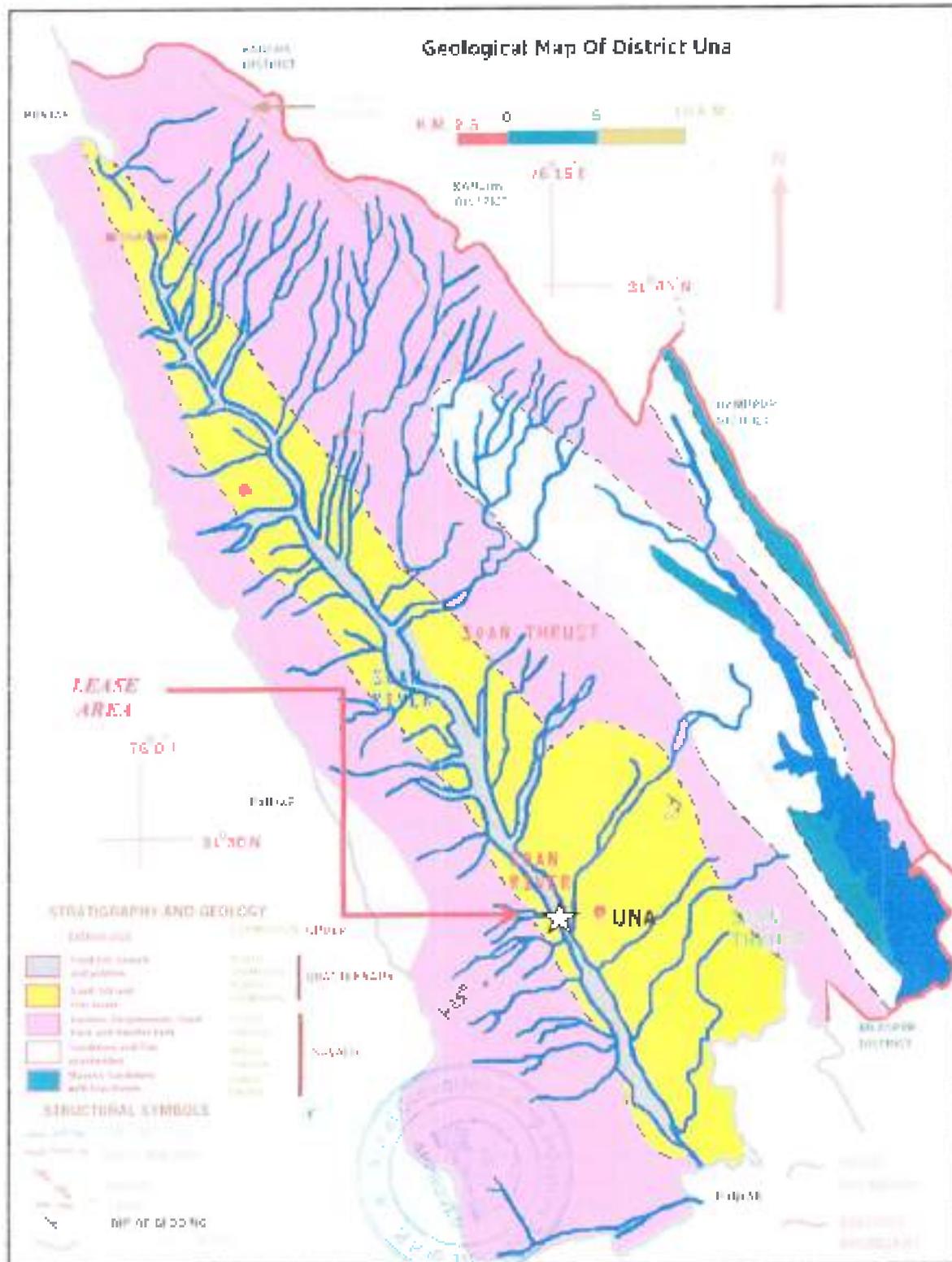


Image showing the Geological map of District Una

2.2 Geology of the Area

The study of rocks in and around the applied area shows that these are formations of the Middle Siwalik. The Geological Survey of India has carried out a systematic mapping of the area and as per the Geological map prepared by the said agency, the rocks mainly belong to the pre-Cambrian

to the Siwalik group, terrace deposits and channel deposits. The proposed area is situated in the river bed of the Swan covered with boulders, cobbles, pebbles, river-borne bajri, sand and clay deposits. The rocks along the banks are forming terrace deposits comprising boulders, cobbles, pebbles, river-borne bajri, sand and clay deposits.

The lease area forms a part of the stream bed covered with boulders, cobble, pebbles, river-born bajri sand and minor silt/clay deposits of channel alluvium. The rocks along the banks are Terrace alluvium and Fan Alluvium and in the higher reaches of catchments is Middle Siwalik Formation. The boulders, cobbles and pebbles are hard in nature and suitable sand deposits are available. The river-borne material also consists of clay and silt which is non-separable. The area is flat and is occupied with silt/clay which is formed due to weathering of the upper hill slopes. The thickness of this river-borne material is at least 5.0 mts as gathered in discussion with P.W.D. authorities as they have noticed in the past while digging for bridge abutments as well as from the IPH department while digging bore wells.

2.3 The Nature of boulders, cobbles, sand etc.

The lease area lies within the regular course of the Swan River; it gets flooded in the rainy season. The deposits consist of river-borne deposits which comprise Sand & Pebbles and Silt/clay deposits forming channel deposits of annual deposition. The upper surface of the terrace area is covered with sandy soil where agricultural fields are developed. In the catchment area, rocks of the Siwaliks formation are exposed which comprises an alternate sequence of sandstone and clay/siltstone. In order to demarcate different litho units, a Geological plan on a 1:2000 scale with a 100-meter contour interval is proposed.

2.4 The nature of the rocks of the banks and their attitude

The area is part of the Swan River bed which contains boulders, sand, bajri and silt/clay. Siwalik rocks are present upstream as well as in and around the lease area and sediments of quartzite, granite and sandstone are noticeable which are rounded to sub-rounded.

In this part, the river passes through the area with a comparatively gentle slope having a wider river width. There will be no change in the river course due to mining as the river course is mainly guided by the hydraulic gradient of surface water and the geological conditions of the bank as it passes through a well-cemented conglomeratic formation of the Upper Siwalik group of rocks. In the Applied mining lease area, the river section is well-defined and is confined between both flanks.



Pictureal view of the riverbed near the Applied lease Area

2.5 Description of Annual Deposition with Respect to the Geology of the Catchment Area

The particles deposited in the river bed depend upon the energy of the river. The River traverses through the Siwalik rocks comprising of Siwalik rocks of the Middle and Lower Siwaliks. The middle and lower Siwalik contain medium to coarse-grained sandstone and red clay alternation, soft pebbly with subordinate claystone, and locally thick prism of conglomerate of the middle Siwaliks. These rocks are soft to moderately hard in nature. The deposition of river-borne material mostly takes place during the monsoon season when the river is in full spate and brings lots of sediments/materials as they move downstream. The River flows in rapids in its initial reaches which results in erosion of boulders, sand etc. and is deposited/scattered in the bed of the river in the downstream areas. The tributaries of this stream have carved a wide flood plain as the banks are comprised of soft rock. The annual deposition is around six cms to 10 cms in general depending upon the location.

From field experience and data collected during monsoon, it has been observed that the river Swan River travels through the Siwalik formations which comprise Channel and Terrace deposits, the material excavated from the mining lease area shall be fully replenished every year. Due to the

excavation of minor minerals from the applied area up to the depth of two meters only. this section of a stream creates conditions conducive for deposition and the area gets fully replenished by sediment transport during periods of higher flows, i.e. during the monsoon/rainy seasons. Hence it has been observed that in this type of stream, the area excavated gets fully replenished with sediments during the rainy/monsoon season every year.

(3) RESERVES ESTIMATE

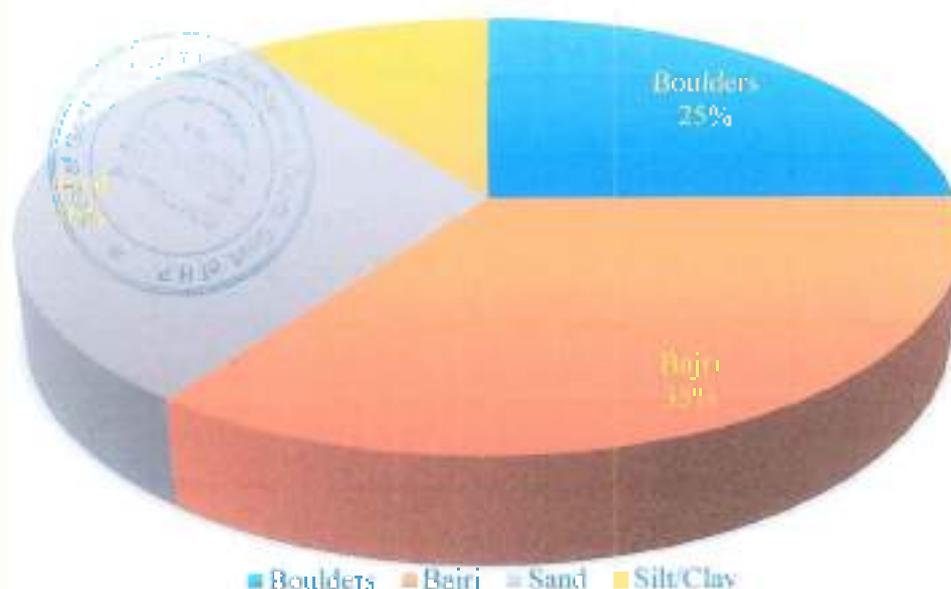
3.1 Percentage-wise Distribution of stone, gravel, sand, etc.

The different constituents of river-borne deposits such as boulder, bajri, sand and silt based on size classification were considered for reserve calculation. Although it is not possible to mark these units separately on the geological map as such two pits at different locations of 1x1x1 meters were dug in the mining lease area and the material so excavated was separated into different sizes and their percentage was worked out and this percentage was taken into account during the calculation of reserves. The results of the test pit dug are given in the following table:

Table showing the percentage of minor mineral constituents

Availability of minerals (In Percentage)		
Mineral	Percentage	Size
Boulders	25%	40 mm. to 60 cms
Bajri	35%	5 mm to 40mm
Sand	30%	2 mm to 5 mm
Silt/Clay	10%	2 mm to 5 mm

Availability of mineral (In Percentage)



Pie chart showing Availability of minerals (In Percentage)

3.2 Estimate of Geological Reserves of Each Mineral

An average specific gravity i.e. 2.25 is taken into consideration for the calculation of mineral potential in the mining lease area. The mining lease area is situated in the middle of the Swan River and is restricted to a distance of 75 meters from the dam (embankment structure) constructed by the Flood Protection Department however, a buffer zone of 2.00 meters has also been left from the mining lease boundary during mineral calculation to avoid any overexploitation or overlapping of the adjacent lands. The entire area measuring 36142 sq. m is available for mining purposes, however, 33600 sq. m area is available for mining purposes. As per information gathered on previous and ongoing development works like the construction of Bridges and Bore wells by the PWD and I&PH departments respectively, the average depth of sediments in and around the mining lease area is more than 5 meters. Based on this information following are the geological reserves calculated up to five meters depth in the Mining Lease Area -

Table showing geological reserves of minor mineral constituents

Estimation of mineable geological reserves up to five meters (in mt) in a mineable area	
Total Applied Mining Lease Area	36142 Sq. m
Area considered for estimation of mineable geological reserves	33600 Sq. m
Depth	5 Mtr.
Specific Gravity	2.25
Mineral Potential	406598 MT

However, as the mineral replenishes every year, the reserves are always renewable and shall not be exhausted as such geological reserves in river beds have no relevance to the production.

3.3 Estimated Mineable Reserves of Sand, Stone and Bajri

The average depth of sediments in the lease area is expected to be more than Five meters in total Lease Area; however, considering the amendment notified on 26.09.2024 in Rule 34, Clause (iv) of the Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation, and Storage) Rules, 2015 the Mineable reserves in the Quarry area were computed up to the two-meter depth. As the area applied for the mining lease lies within the bund (embankment structure) raised by the flood protection Department, the whole area measuring 36142 sq.m. is available for mining purposes, however, only 33600 Sq.m.(93%) area shall be considered for mining after leaving no mining zone and 2.00-meter buffer zone from the mining lease boundary. Based on this information, the Mineable reserves up to a depth of two meters depth in the total mineable area, i.e. 33600 sq.m. are given below:

Table showing estimated mineable reserves of minor mineral constituents

Estimation of mineable Reserves up to two meters (in mt) in a mineable area		
Total Mining Lease Area	36142	Sq. m
Area considered for the Mining	33600	Sq. m
Depth	2	Mtr.
Specific Gravity	2.25	
Mineral Potential	151200	MT

3.4 Estimated deposition of different constituents of mineral of mineable reserves of the boulder, bajri (gravels) and sand (with Wastage)

The applied area forms a part of a stream bed covered with stone boulders, bajri and sand deposits of channel alluvium. The maximum annual extraction of RBM from the applied area is 151200 metric tonnes per annum. Due to the excavation of minor minerals from the applied area up to a depth of 2 meters only, this section of a stream creates conditions conducive for deposition and the area gets fully replenished by sediment transport during periods of higher flows i.e. during the monsoon/rainy seasons. It has been observed that in this type of stream, the area excavated gets fully replenished with sediments during the rainy/monsoon season every year (i.e., Non-working Season). As the mineral replenishes every year, the reserves are always renewable and shall not be exhausted as such geological reserves in riverbeds have no relevance to the production size. Thus, it is feasible to extract 151200 metric tonnes of RBM/year.

(4) MINE DEVELOPMENT AND PLAN OF PROGRESSIVE MINING

4.1 Development and production Programme for the First Five years

The river-borne material containing boulders and pebbles, admix with the river sand shall be brought to the stone crusher unit and after screening/washing the stone and bajri shall be used for the manufacturing of grit and M-Sand and the sand shall be sold in the open market. The river-borne material contains boulders, bajri, and sand mixed with silt. Silt does not have any market value and this material will be used for rehabilitation work. To calculate the mineable reserves, the following points are taken into consideration.

- 1 A Geological map was prepared (Scale 1:2000) and the main Litho-units were marked on the plan to know the surface spread of each unit.
- 2 The different constituents of river-borne deposits such as boulder, bajri, sand and silt/clay based on size classification were considered for reserve calculation. Although, it is not possible to mark these units separately on the geological map hence, some pits at different locations in and around the mining lease area of 1x1x1 meter were dug and the material so excavated was

separated into different sizes and their percentage was worked out and this percentage was taken into account during the calculation of reserves.



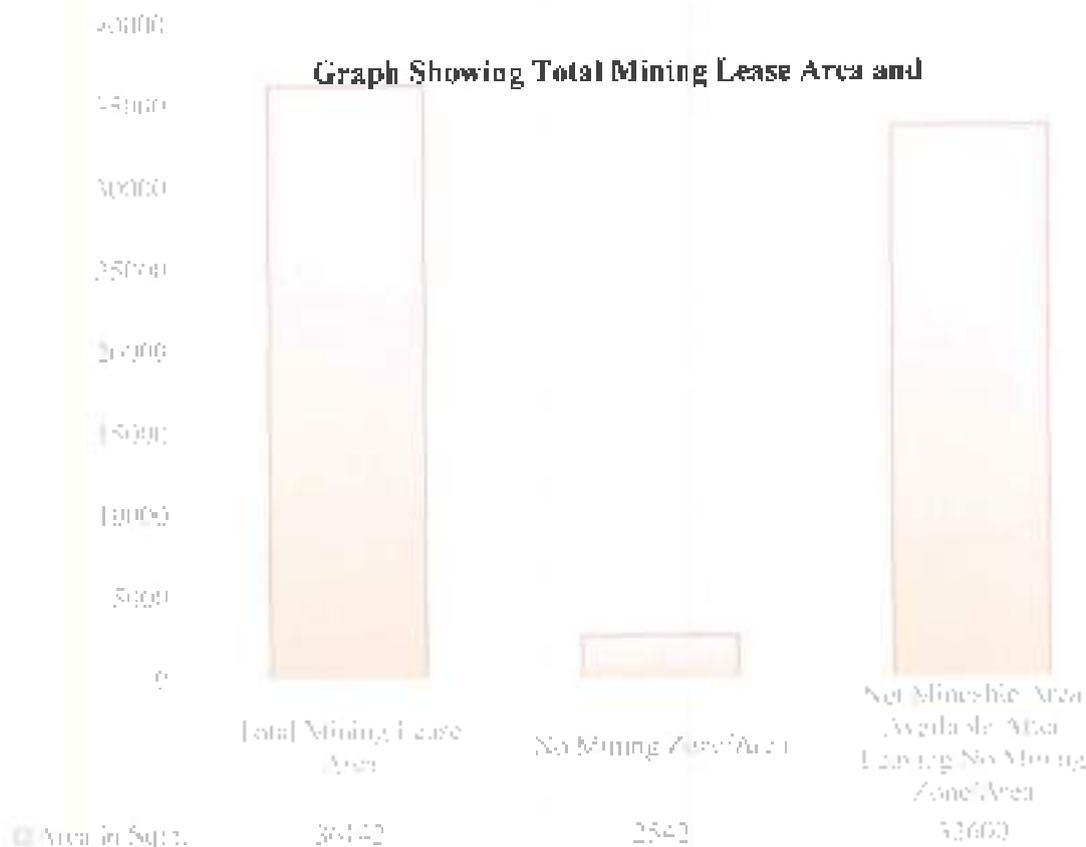
Image showing different constituents of river-borne deposits excavated from Pit

- 3 The mining shall be undertaken manually and mechanical mining may be undertaken if permitted by the competent authority.
- 4 The area proposed for a mining lease is located in the middle of the Swan River, but its operations are carefully restricted to a distance of at least 75 meters from the river's embankment structures, which were built by the Flood Protection Department. Furthermore, out of the total mining lease area, only a 33,600 square-meter section is considered mineable. This reduced area accounts for a mandatory 2-meter buffer zone along the entire perimeter of the lease boundary. As a result, the total available mineable area constitutes approximately 93% of the overall mining lease area.

Table showing mineable Area and the total mineable area available after leaving the No Mining Area

Total Mining Lease Area	36142	Sqm.
No Mining Zone/Area	2542	Sqm.
Net Mineable Area Available After Leaving No Mining Zone/Area	33600	Sqm.

"RIVER BED" Mining Plan



Graph Showing Total Mining Lease Area and Mineable Area

- 5 Keeping in view the replenishment factor, the whole block shall be explored every year.
- 6 The average specific gravity of the minor mineral has been taken as 2.25 for the calculation of reserves and a two-meter depth is taken for the calculation of reserves.
- 7 The total amount of mineable reserves has been calculated based on the available reserves within the entire mining lease area. This calculation, however, accounts for a 2-meter buffer that has been left unmined along the entire perimeter of the lease. This buffer ensures that mining operations do not extend to the very edge of the designated area.
- 8 The entire Mining lease area is situated within the Swan embankments and during heavy rains in the catchment area, the Swan River experiences heavy floods

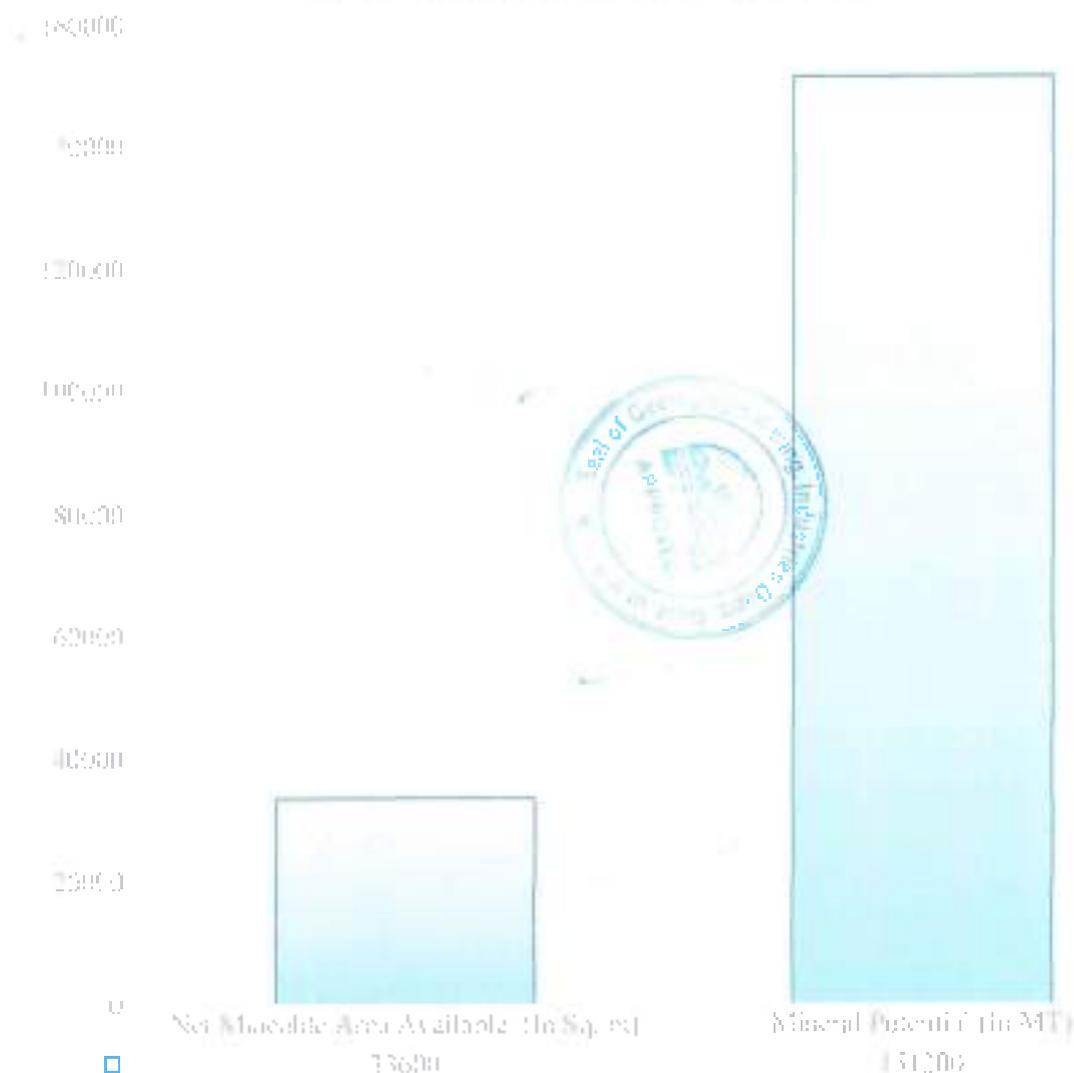
Table showing the total available mineable area and Potential in mineable area

ESTIMATION OF MINEABLE RESERVES UPTO TWO METERS	
Net Mineable Area Available	33600 Sq. m
Depth	2 Mtr.
Specific Gravity	2.25
Availability of Mineral (In MT)	151200 MT

Table showing five years mineral potential in the mineable area

YEAR	Net Mineable Area Available (In Sq. m)	Mineral Potential (In MT)
1st Year	33600	151200
2nd Year	33600	151200
3rd Year	33600	151200
4th Year	33600	151200
5th Year	33600	151200
TOTAL		756000

Mineable Area and Total Mineral Potential

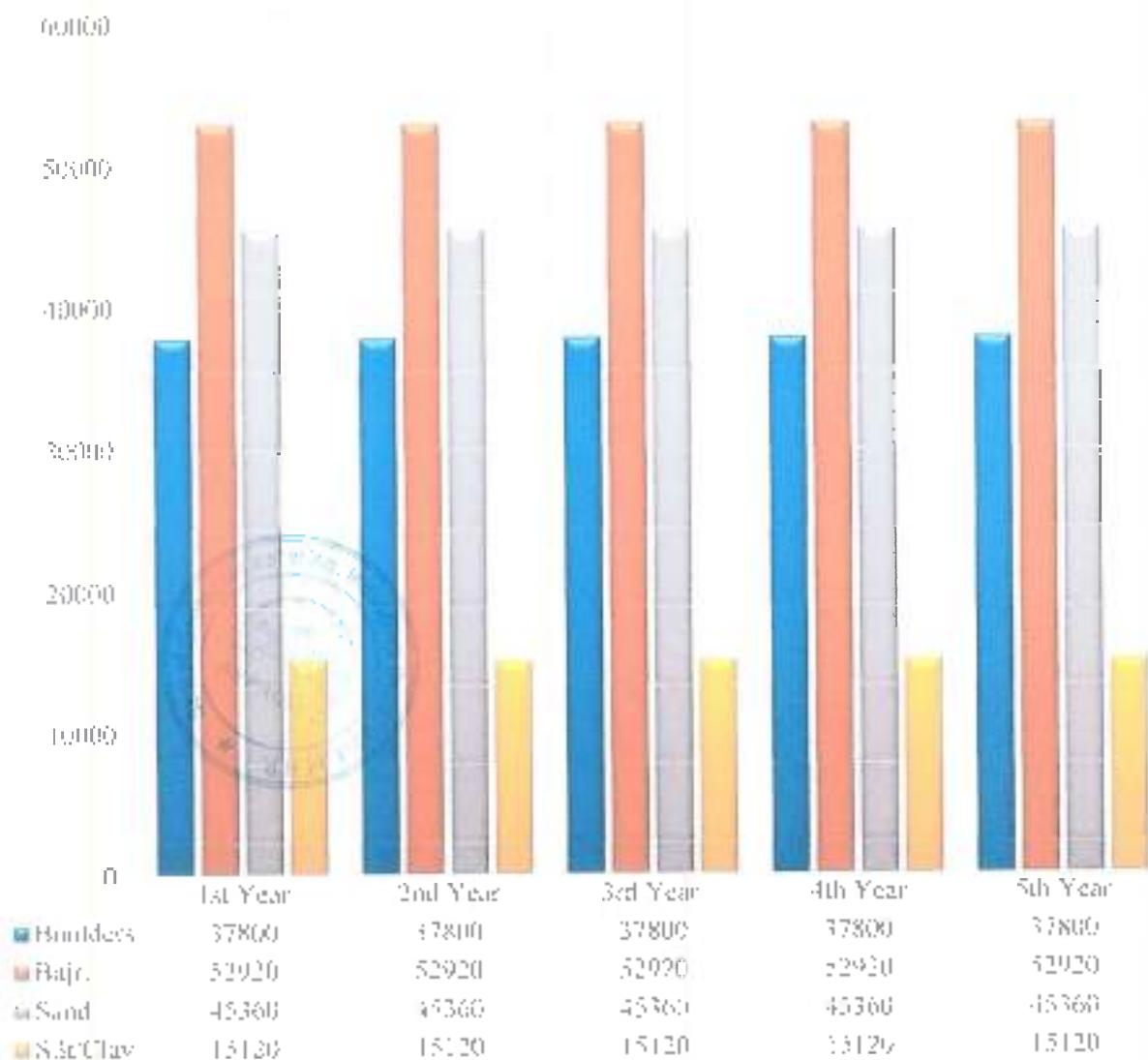


Graph Showing Mineable area and total potential

Table showing year-wise mineral potential in the Mineable area

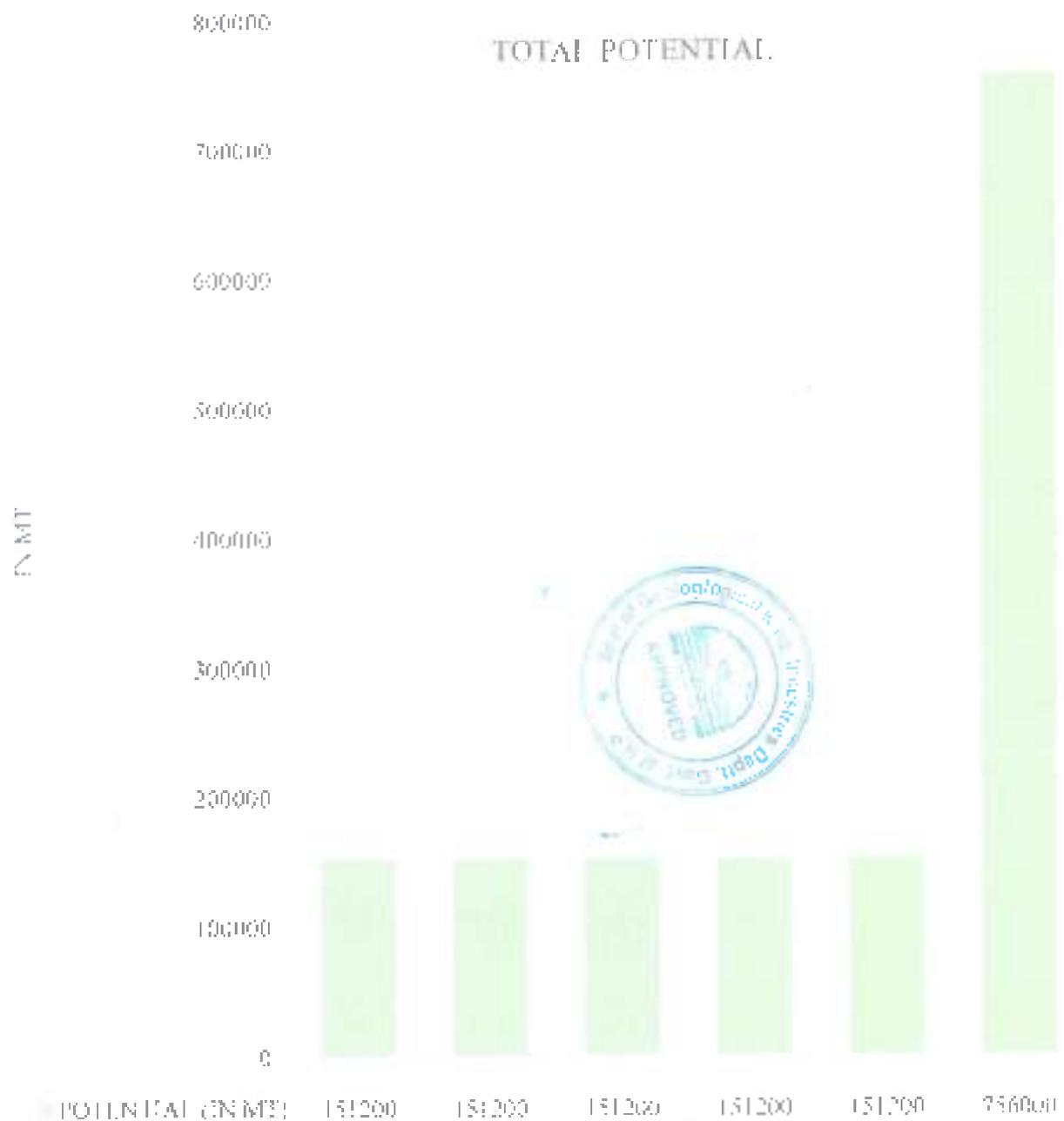
YEAR	Boulders	Bajri	Sand	Silt/Clay	Mineral Potential
	25%	35%	30%	10%	
(In MT)					
1st Year	37800	52920	45360	15120	151200
2nd Year	37800	52920	45360	15120	151200
3rd Year	37800	52920	45360	15120	151200
4th Year	37800	52920	45360	15120	151200
5th Year	37800	52920	45360	15120	151200
TOTAL	189000	264600	226800	75600	756000

YEARWISE MINERAL PRODUCTION



Graph showing year-wise mineral potential in the Mineable area

"RIVER BED" Mining Plan



Graph showing five years of mineral potential in the Mineable area

4.2 Year-Wise Production Detail

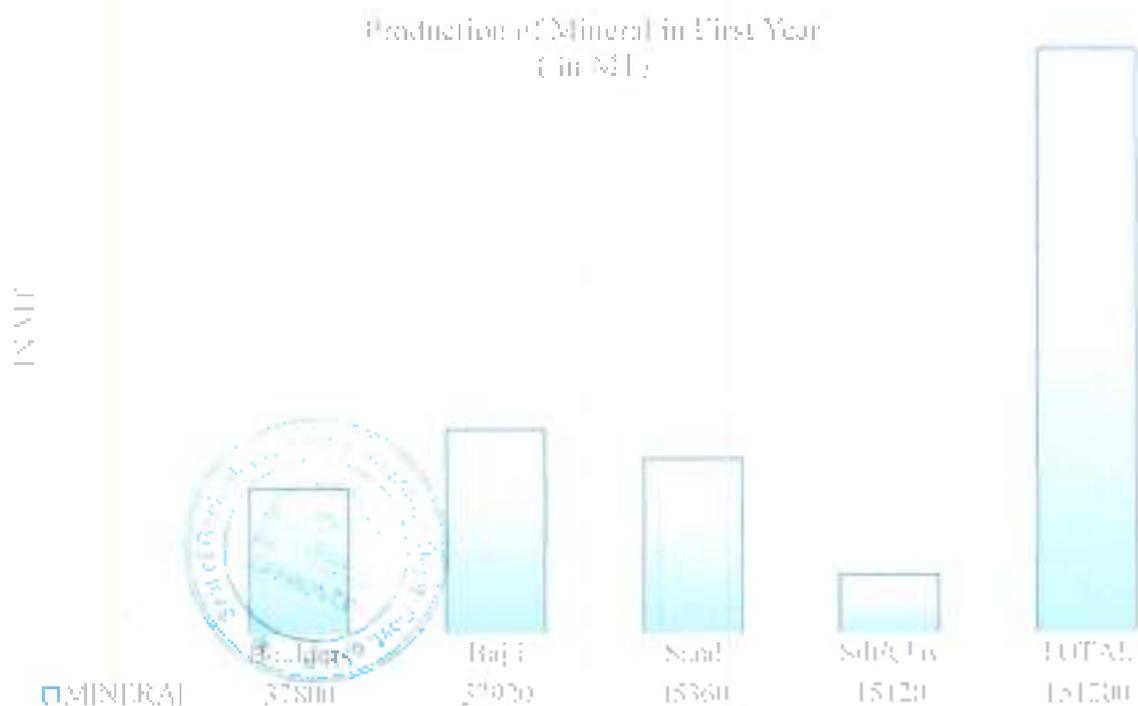
The Mining lease area lies in the riverbed of the Swan River and gets adequately replenished during monsoon rains when the Stream gets a heavy load for a short period. The river level is raised up to 2-4 metres during monsoon rains/rainy season. The mining has been planned in the full block up to a depth of 2.00 meters to give a better chance for replenishment. The worked-out block shall get replenishment during monsoon and winter rains and shall be fully replenished. Keeping quantity allowed as per environmental clearance, a total of 33600 square meters of the area shall be available for work every year

4.2 (a) Development and Production in the First Year (Plate No.- IV):-

During 1st Year of the development and production programme, mining is proposed in the 33600 square meters only. The production of each mineral Constituent will be as under:-

Production of Each Mineral in the First Year

Production Of Each Mineral in the First Year (In MT)	
Boulders	37800
Bajri	52920
Sand	45360
Silt/Clay	15120
TOTAL	151200



Graph Showing Production of Each Mineral in the First Year

Afforestation – The entire mining lease area falls within the High Flood Level (HFL) and lies between the channelization embankments; therefore, plantation within the lease area is not feasible. To ensure ecological balance and compliance with statutory requirements, the leaseholder shall identify suitable land in consultation with the concerned Gram Panchayat near the lease area and undertake the plantation of native/local species.

Protection of banks – As the applied mining area lies between the channelization embankments of the River Swan, there is no requirement for additional retaining structures for bank protection.

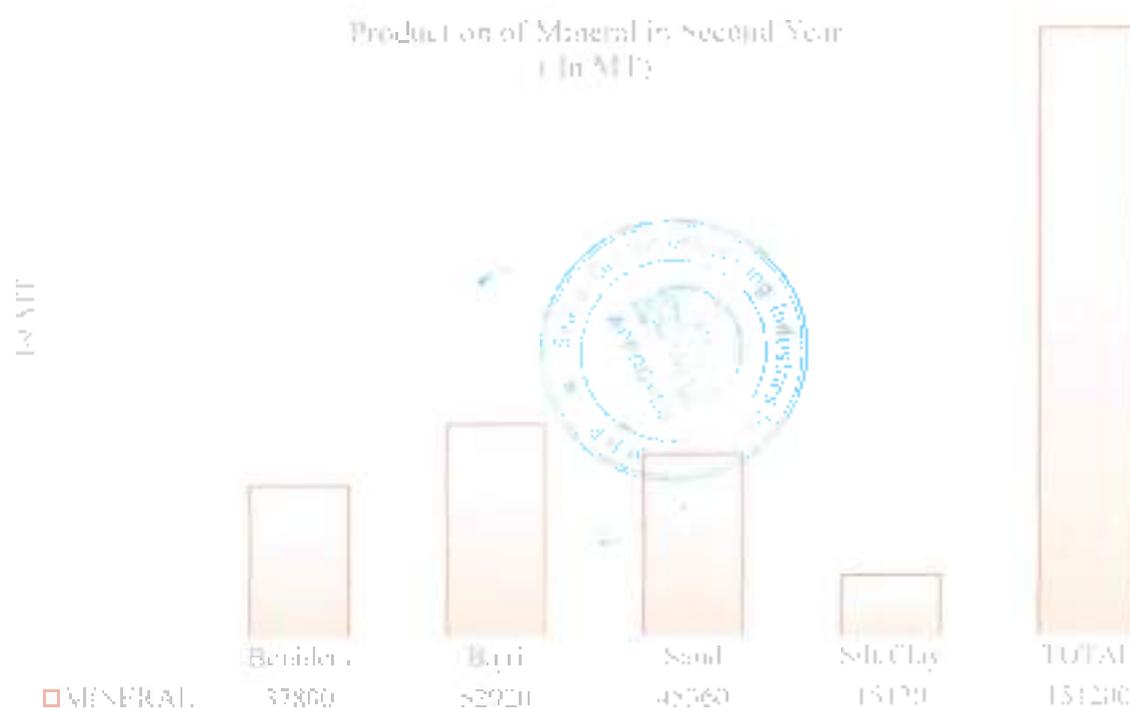
Soil dump - The waste material generated during mining operations is primarily silt and clay. After screening and washing, this material will be dumped on private land near the stone crusher site owned by the leaseholder. Additionally, efforts will be made to utilize this material constructively, such as for road filling, Granular Sub-Base (GSB) in road works, and plantation works wherever feasible.

4.2(b) Development and Production in the 2nd Year (Plate No. - IV):-

During the 2nd year of the development and production programme, mining is proposed in 13600 square meters only. The production of each mineral Constituent will be as under:-

Production of Each Mineral in the Second Year

Production Of Each Mineral in the Second Year (In MT)	
Boulders	37800
Bajri	52920
Sand	45360
Silt/Clay	15120
TOTAL	151200



Graph Showing Production of Each Mineral in the Second Year

Afforestation – The entire mining lease area falls within the High Flood Level (HFL) and lies between the channelization embankments; therefore, plantation within the lease area is not feasible. To ensure ecological balance and compliance with statutory requirements, the leaseholder shall identify suitable land in consultation with the concerned Gram Panchayat near the lease area and undertake the plantation of native/local species.

Protection of banks – As the applied mining area lies between the channelization embankments of the River Swan, there is no requirement for additional retaining structures for bank protection.

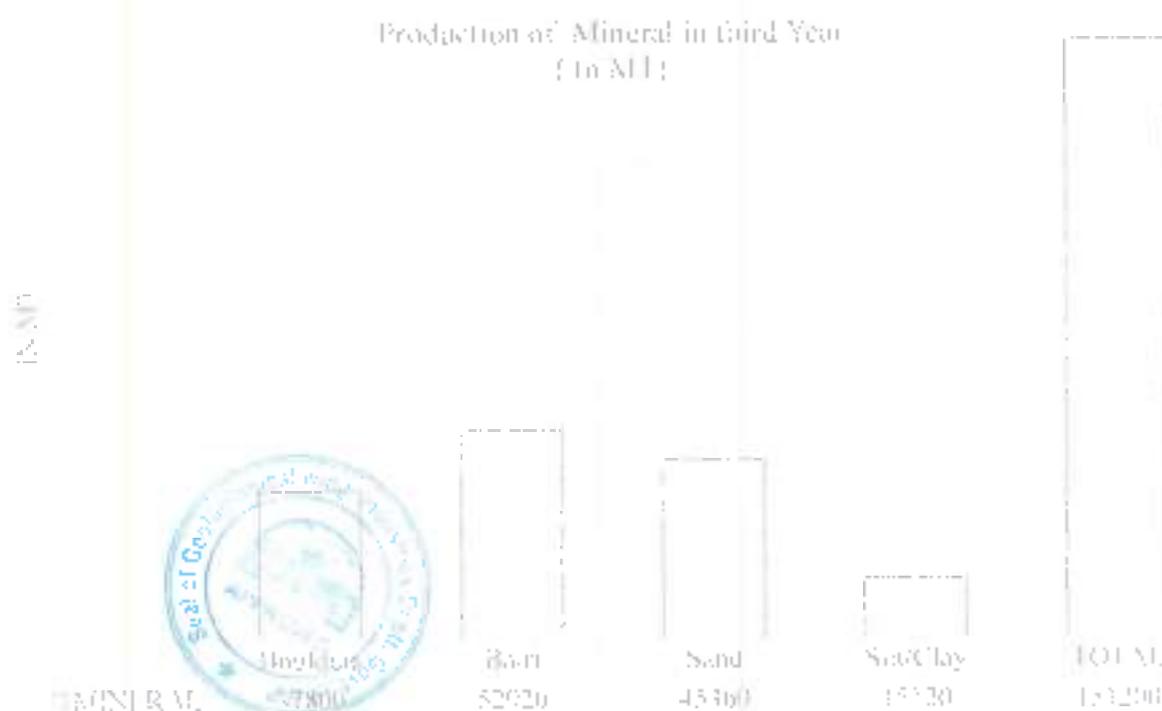
Soil dump – The waste material generated during mining operations is primarily silt and clay. After screening and washing, this material will be dumped on private land near the stone crusher site owned by the leaseholder. Additionally, efforts will be made to utilize this material constructively, such as for road filling, Granular Sub-Base (GSB) in road works, and plantation works wherever feasible.

4.2(c) Development and Production in the 3rd Year (Plate No. IV):-

During the **Third year** of the development and production programme, mining is proposed in 3.3600 square meters only. The production of each mineral constituent will be as under:-

Production of Each Mineral in 3rd Year

Production Of Each Mineral in the Third Year (In MT)	
Boulders	37800
Bajri	52920
Sand	45360
Silt/Clay	15120
TOTAL	151200



Graph Showing Production of Each Mineral in the Third Year

Afforestation – The entire mining lease area falls within the High Flood Level (HFL) and lies between the channelization embankments; therefore, plantation within the lease area is not feasible. To ensure ecological balance and compliance with statutory requirements, the leaseholder shall identify suitable land in consultation with the concerned Gram Panchayat near the lease area and undertake the plantation of native/local species.

Protection of banks – As the applied mining area lies between the channelization embankments of the River Swan, there is no requirement for additional retaining structures for bank protection.

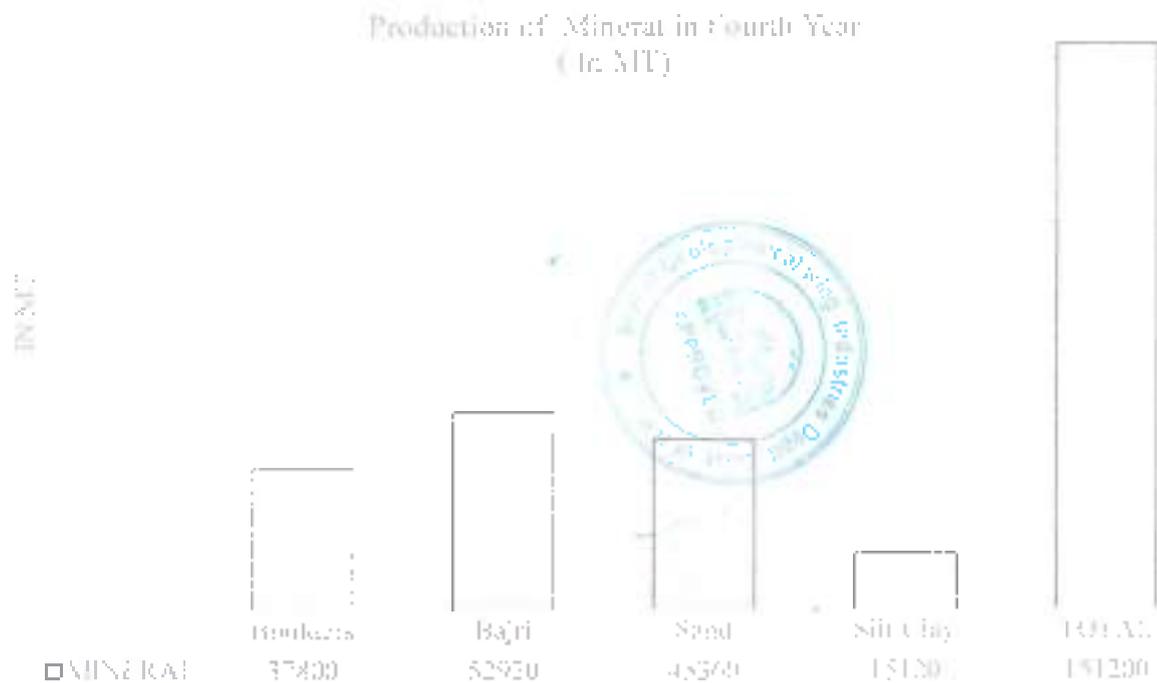
Soil dump – The waste material generated during mining operations is primarily silt and clay. After screening and washing, this material will be dumped on private land near the stone crusher site owned by the leaseholder. Additionally, efforts will be made to utilize this material constructively, such as for road filling, Granular Sub-Base (GSB) in road works, and plantation works wherever feasible.

4.2(d) Development and Production in the 4th Year (Plate No.- IV):-

During the Fourth year of the development and production programme, mining is proposed in 33600 square meters only. The production of each mineral Constituent will be as under:-

Production of Each Mineral in 4th Year

Production Of Each Mineral in the Fourth Year (In MT)	
Boulders	37800
Bajri	52920
Sand	45360
Silt/Clay	15120
TOTAL	151200



Graph Showing Production of Each Mineral in the Fourth Year

Afforestation – The entire mining lease area falls within the High Flood Level (HFL) and lies between the channelization embankments; therefore, plantation within the lease area is not feasible. To ensure ecological balance and compliance with statutory requirements, the leaseholder shall identify suitable land in consultation with the concerned Gram Panchayat near the lease area and undertake the plantation of native/local species.

Protection of banks – As the applied mining area lies between the channelization embankments of the River Swan, there is no requirement for additional retaining structures for bank protection.

Soil dump – The waste material generated during mining operations is primarily silt and clay. After screening and washing, this material will be dumped on private land near the stone crusher site owned by the leaseholder. Additionally, efforts will be made to utilize this material constructively, such as for road filling, Granular Sub-Base (GSB) in road works, and plantation works wherever feasible.

4.2 (c) Development and Production in the 5th Year (Plate No-IV):-

During the 5th year of the development and production programme, mining is proposed in 33600 square meters only. The production of each mineral Constituent will be as under:-

Production of Each Mineral in the 5th Year

Production Of Each Mineral in the Fifth Year (In MT)	
Boulders	37800
Bajri	52920
Sand	45360
Silt/Clay	15120
TOTAL	151200

*Production of Mineral in Fifth Year
(In MT)*

MINERAL	Boulders	Bajri	Sand	Silt/Clay	TOTAL
	37800	52920	45360	15120	151200

Graph Showing Production of Each Mineral in the Fifth Year

Afforestation – The entire mining lease area falls within the High Flood Level (HFL) and lies between the channelization embankments; therefore, plantation within the lease area is not feasible. To ensure ecological balance and compliance with statutory requirements, the leaseholder shall identify suitable land in consultation with the concerned Gram Panchayat near the lease area and undertake the plantation of native/local species.

Protection of banks – As the applied mining area lies between the channelization embankments of the River Swan, there is no requirement for additional retaining structures for bank protection.

Soil dump – The waste material generated during mining operations is primarily silt and clay. After screening and washing, this material will be dumped on private land near the stone crusher site owned by the leaseholder. Additionally, efforts will be made to utilize this material constructively, such as for road filling, Granular Sub-Base (GSB) in road works, and plantation works wherever feasible.

4.3 End use of mineral

The boulders and pebbles mixed with river sand extracted from the lease area will be transported to the to be established in the name and style stone crusher unit. "M/s Banorhey Mahadev Stone Crusher." After screening and washing, the stone and bajri will be utilized for the manufacturing of grit and M-Sand, while the sand fraction will be sold in the open market to cater to local construction requirements.

The major portion of the waste material generated during processing will be reused within the applied mining lease areas and for approach road construction and maintenance works. In the event that any residual waste material remains unutilized, it will be safely dumped on adjoining private land owned by the mining leaseholder, ensuring proper stabilization and preventing any environmental degradation.

4.4 Detail of Road Transport.-

The mining lease area is located within the river bed of the River Swan near Village Badhra and is accessible via the left bank of the River Swan by diverting from the LHS road of the Old Hoshiarpur–Una Road.

Accessibility of transport up to the mining lease area

The lease area lies within the riverbed and presently experiences minimal traffic movement between the mining site and the stone crusher unit. For transportation of minerals to the nearest approach road, loaded vehicles may traverse both private and government lands the project proponent shall make necessary arrangements with the concerned landowners (private and government) and address any related issues to facilitate mineral transportation. The existing approach road is in good condition and is capable of handling the additional truck movements generated by the mining and crushing operations.

As per the production plan, approximately 1,51,200 metric tonnes of material will be transported annually from the mining lease area to the stone crusher unit. After screening, washing, and crushing, around 1,36,080 metric tonnes of usable material, comprising grit and sand, will be produced. Considering an average of 270 working days per year, the daily transportation requirement will be approximately 504 metric tonnes per day. This quantity will be handled by an estimated 30 to 35 trips per day, using trucks or tractors with a carrying capacity of 15 metric tonnes each. The existing road network is in adequate condition to accommodate this transportation volume without causing congestion or overloading issues.



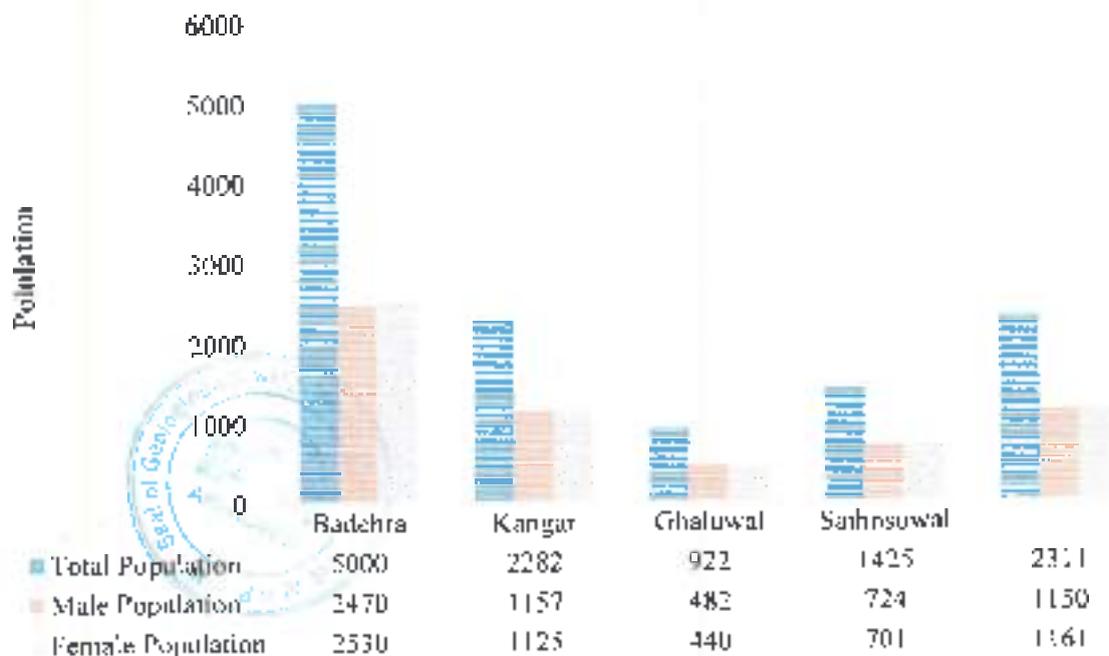
PART -II ENVIRONMENT MANAGEMENT PLAN

(I) BASE LINE DATA

1.1. Detail of Population Distribution

Table Showing Details of Population Distribution

Sr. No.	Name of Villages	Total Population	Male Population	Female Population
1	Badehra	5000	2470	2530
2	Kangar	2282	1157	1125
3	Ghaluwal	922	482	440
4	Saihsowal	1425	724	701
5	Dharampur	2311	1150	1161
6	Saloh	2014	996	1018



Graph Showing Details of Population Distribution

1.2 Socio-Economy of the Village

The general economy of the village is primarily agriculture and animal husbandry-based, with limited employment opportunities available locally. In the absence of nearby industrial establishments, many residents seek job opportunities in distant industrial areas outside Himachal Pradesh. Therefore, even modest employment generation within the locality by entrepreneurial activities such as mining and crushing operations will contribute positively to the village economy. The workforce engaged in mining and stone crushing will predominantly comprise local residents, enabling them to earn a livelihood without migrating elsewhere. Additionally, such employment will

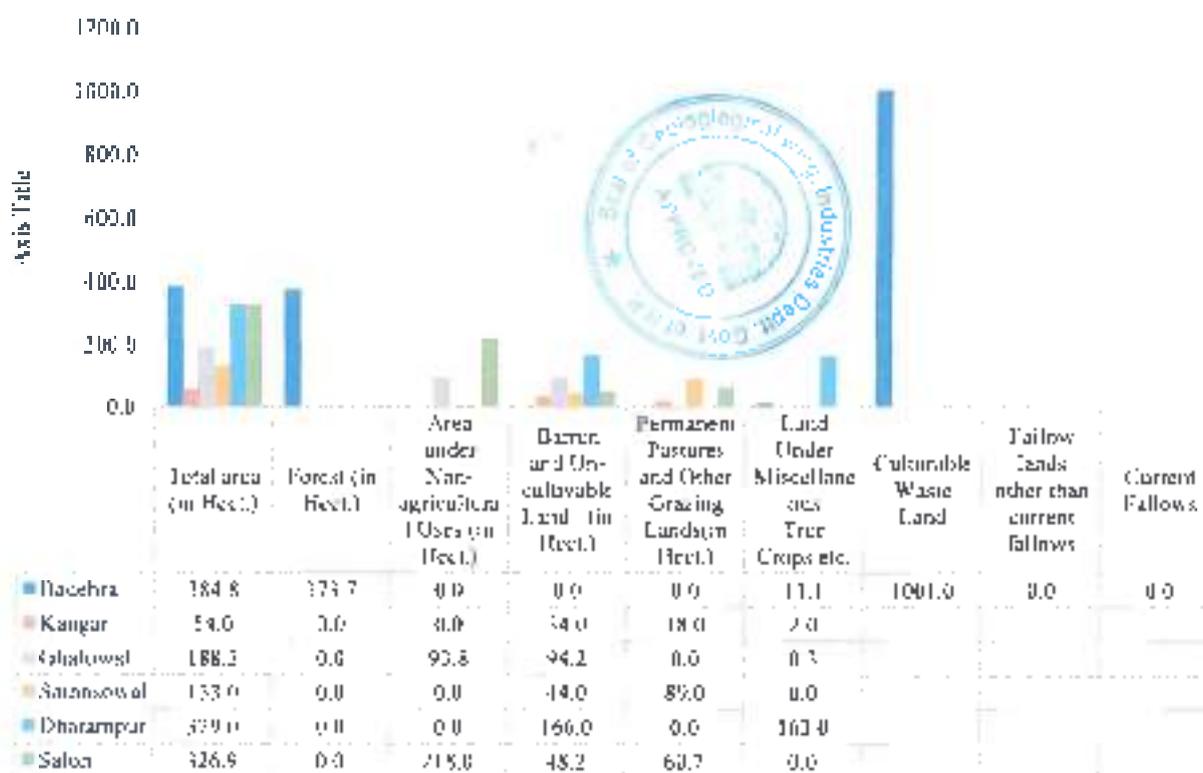
allow workers to continue managing their agricultural activities and livestock during off-hours, thereby supporting both their primary and supplementary sources of income.

1.3 Land Use Detail of Villages near applied mining lease area:-

Land use and Land cover details of the 5.00 km buffer map around the Mining lease area are also attached as (Plate no 2.)

Table Showing Details of area under different types of land use of Surrounding Villages

Sr. No.	Name of Villages	Total area (in Hect.)	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
1	Badehra	184.8	373.7	0.0	0.0	0.0	11.1	1001.0	0.0	0.0
2	Kangar	54.0	0.0	0.0	34.0	18.0	2.0	36.0	114.0	0.0
3	Ghalawal	188.3	0.0	93.8	94.2	0.0	0.3	31.9	0.0	17.0
4	Sainisowal	133.0	0.0	0.0	44.0	89.0	0.0	0.0	0.0	0.0
5	Dharampur	329.0	0.0	0.0	166.0	0.0	163.0	0.0	0.0	0.0
6	Saloh	326.9	0.0	218.0	48.2	60.7	0.0	24.6	0.0	2.5



Graph Showing General Land Use Pattern of Surrounding Villages

1.4 AGRICULTURE

Agriculture is the main occupation of the people of the district. It provides direct employment to the major chunk of the working population. The Department of Agriculture continued its endeavours to bring more area under high-yielding varieties of major cereals. Keeping in view the requirement of disease-free and quality seeds, a seed mortification farm at Pekhabela was started in the district during the year 1974 since then seeds such as wheat, maize, pulses, soya bean, barley, turia 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. I.I.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- Turia-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, Sesamum and Sugarcane are also grown in the district. Peas, Carrots, Cabbage, Ladyfinger, Tomato, Brinjal, Capsicum, Cauliflower, Cucumber, Pumpkin etc. Vegetables are also grown. About 95% of the total cultivable area in the district is rain-fed. Hence the production of the district mainly depends upon rain.

Table showing various agriculture crops in District Una

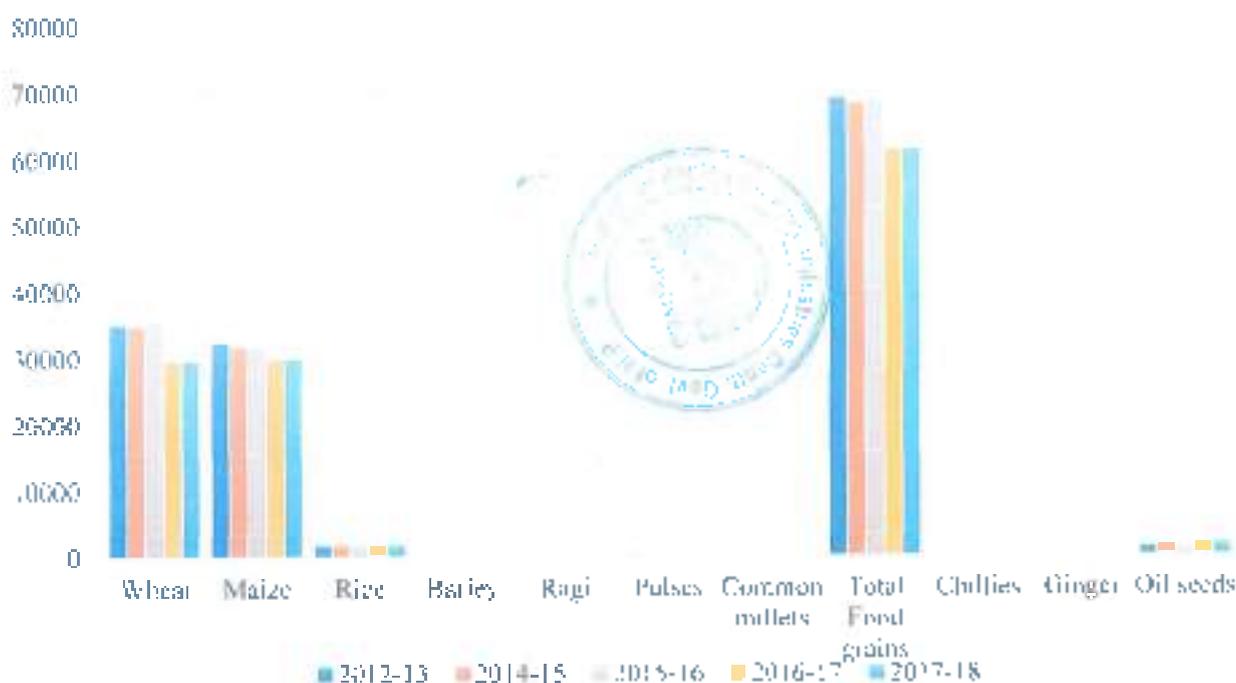
June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Maize	Wheat				Maize						
Maize	Toria			Wheat			Maize				
Maize	Potato			Wheat			Maize				
Maize	Potato			Potato			Maize				
Bhindi	Cauliflower			French bean/			Tomato/		brinjal/		
				Capsicum			Cucubits				

Sesame		Sarson/Raya/G. Sarson	
Ginger/Caucasia/Turmeric	Potato	Wheat	Ginger
Paddy		Wheat	
Paddy		Barseem	
Paddy		Potato	
Kulhi Mash	B. Sarson/Raya/G. Sarson/Taramira(Eruca Sativa)		
Mash	Wheat		
Maize + Mash	Wheat		
Arhar			

Table showing area under Different Crops in Hectares

Year	Wheat	Maize	Rice	Barley	Ragi	Pulses	Common millets	Total Foodgrains	Chillies	Ginger	Oil seeds
2012-13	34836	32157	1587	...	...	192	...	68772	8	1	1113
2014-15	34587	31548	1663	2	...	155	...	67955	8	2	1343
2015-16	35497	31279	1685	...	...	151	...	68612	2	2	888
2016-17	29476	29716	1600	...	...	172	...	60964	3	3	1706
2017-18	29476	29716	1600	...	...	172	...	60964	3	3	1706

Source: Directorate of Land Records, HP

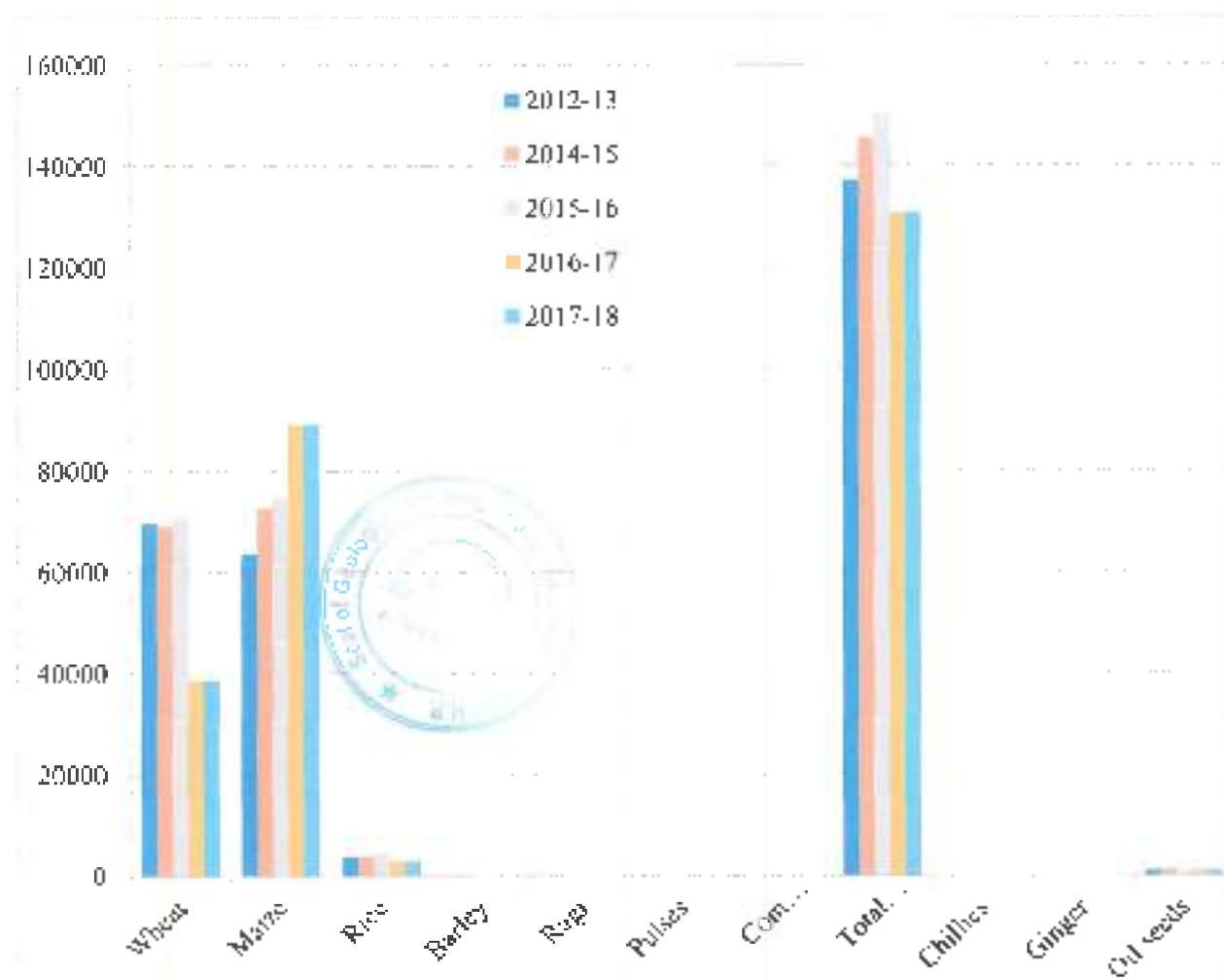


Graph Showing Area under Different Crops in Hectares

Table showing Production of Different Crops in MT

Table showing Production of Different Crops in MT at Una District											
Year	Wheat	Maize	Rice	Barley	Ragi	Pulses	Common millets	Total Foodgrains	Chillies	Ginger	Oil seeds
2012-13	69667	63630	3720	...	...	122	...	137139	4	7	963
2014-15	69039	72673	3838	3	...	97	..	145650	4	14	1281
2015-16	70855	74789	4346	...	...	125	..	150115	1	14	870
2016-17	38603	89057	2985	...	...	147	...	130792	1	15	1039
2017-18	38603	89057	2985	...	...	148	..	130792	1	15	1039

Source: Directorate of Land Records, HP

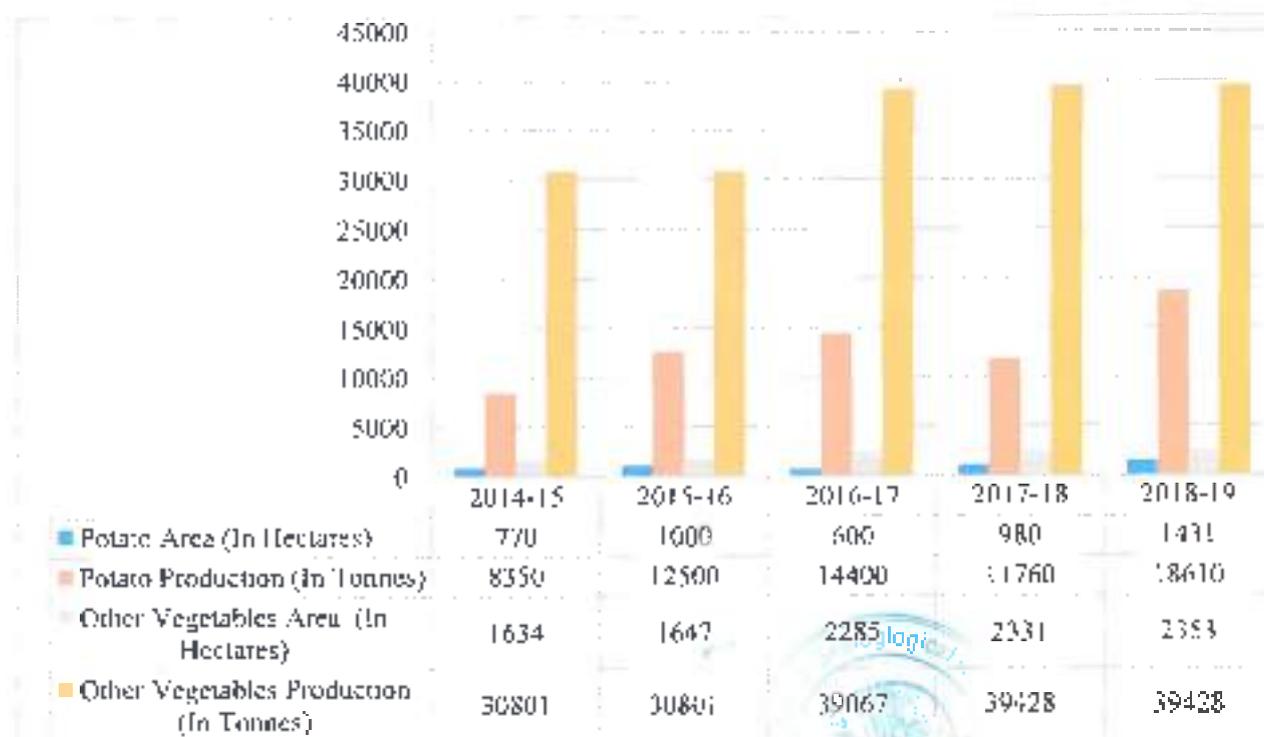


Graph Showing Production of Different Crops in MT

Table showing Area & Production of Vegetables in Tonnes

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

Source: Directorate of Land Records, HP

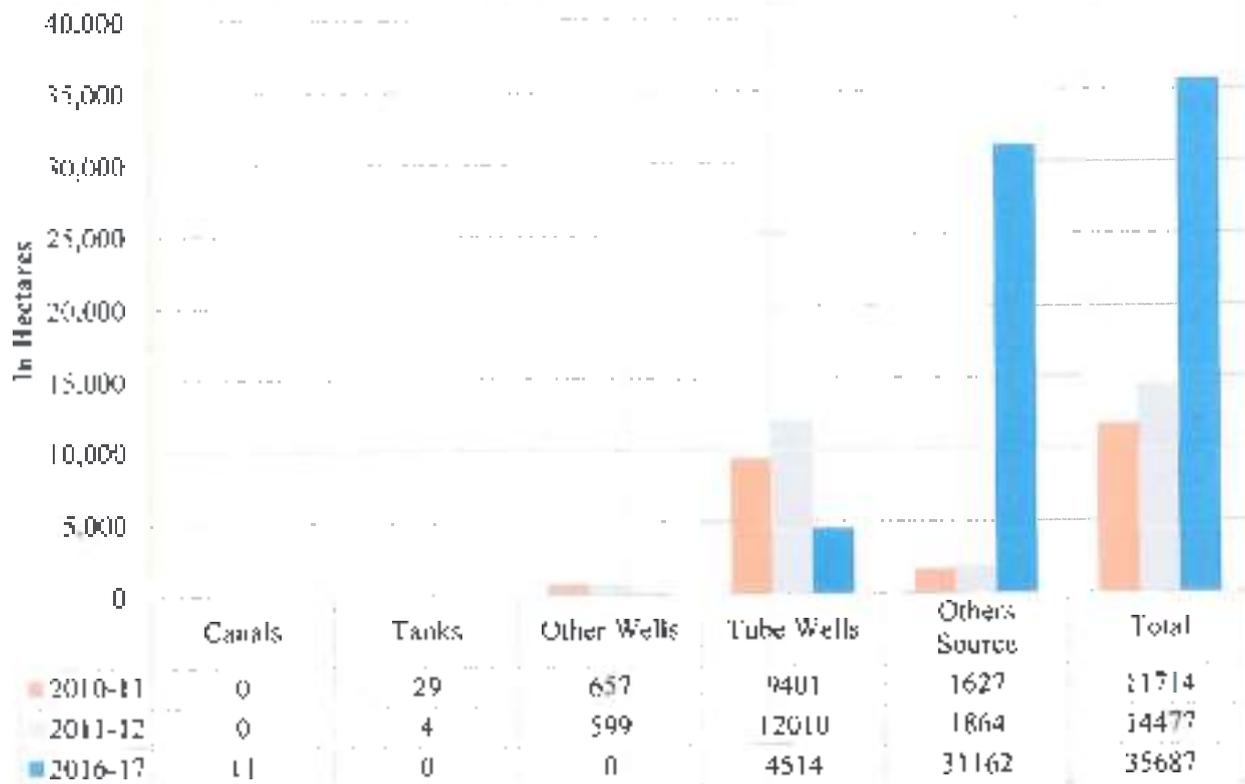


Graph showing the production of vegetables in District Una

Table showing Net Irrigated Area of Una District by source in Hectares

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	9400	1627	11714
2011-12	...	4	599	12010	1864	14477
2016-17	11	...	...	4514	31162	35687

Source: Directorate of Land Records, HP



Showing the Net Irrigated Area of the District Una from 2010 to 2017

1.5 HORTICULTURE

In the Una district, there is a vast scope in the field of development of horticulture activity and the department of horticulture is engaged to popularise horticulture in the district. During 1980-81, 1,335 hectares of land was under horticulture which rose to 3,468 hectares in 1988-89. 113,730 fruit plants of various varieties were distributed on subsidized rates to farmers in 1988-89. This number was much higher in comparison to 69,394 plants distributed in 1980-81. During the years 1985-86, the Horticulture Department recorded 766 tonnes of production in various fruit crops which went up to 2220 tonnes in 1988-89.

The main fruit crops which are grown in the district are citrus, Mango, guava and pear besides other subtropical fruits. The department provides technical guidance to the farmers at the block level. Pesticides and fertilizers are being supplied by the Agriculture Department through cooperative societies. In the district, there is only one Progeny-cum-demonstration orchard at Saloh which has an area of 34.29 hectares.

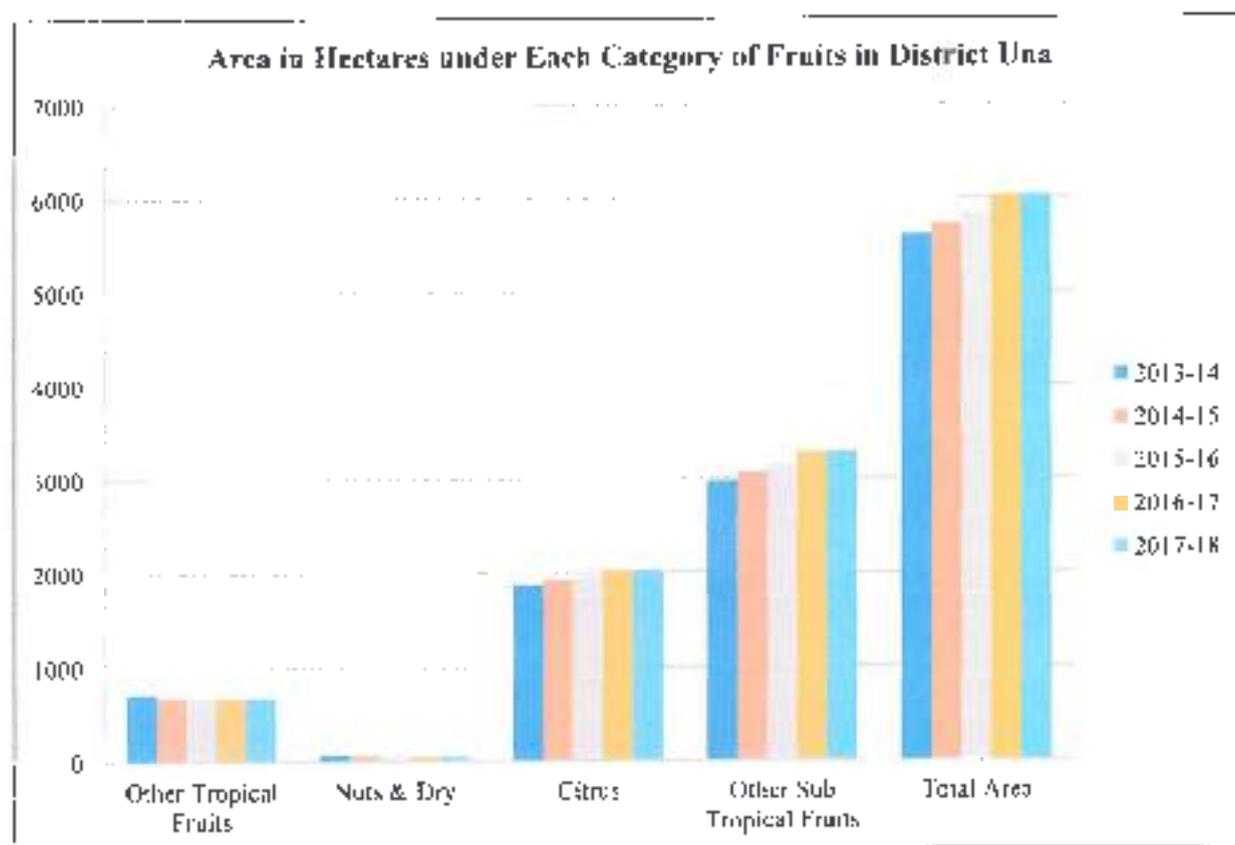
The following important fruits are grown in the district:

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

Table showing area under Each Category of Fruits in District Una

Table showing Area (In Hectares) under Each Category of Fruits in Una					
Year	Other Tropical Fruits	Nuts & Dry	Citrus	Other Sub Tropical Fruits	Total Area
2013-14	707	66	1860	2973	5606
2014-15	673	57	1921	3066	5717
2015-16	671	53	1950	3145	5819
2016-17	671	48	2020	3281	6020
2017-18	671	48	2020	3281	6020

Source: Directorate of Horticulture, HP



Graph Showing Area under Each Category of Fruits in District Una

1.6 ANIMAL HUSBANDRY

The economy of the district is predominantly agrarian but the role of Animal Husbandry is equally important as the farmers have to keep the cattle for the purpose of ploughing manure for maintaining the fertility of the fields and to meet the daily need for milk of their family. Livestock rearing forms the backbone of the agriculturists of this District. A major chunk of the population of the District depends wholly on Agriculture and animal husbandry.

The Department of Animal Husbandry is putting its best efforts into improving the potential of livestock and poultry in the district through treatment, management feeding and artificial insemination, and distribution of improved breeds. To provide the farmers with veterinary facilities the department has established 13 veterinary hospitals, 27 veterinary dispensaries, 3 sub-centres, 4 veterinary check posts, one mobile dispensary and 2 sub-centres. Veterinary check posts to undertake vaccination of all the livestock entering the State against Rinderpest which is a highly fatal disease for cattle. To improve the existing breeds of cattle particularly buffaloes 31 veterinary institutions provide artificial insemination services. The scarcity of fodder in the District is the main hindrance to the farmers in rearing the animals. To solve this problem the farmer have been educated to utilize the edges of their fields for fodder to increase the production of fodder oats, maize, and barseem seeds have been distributed free of cost to the respective seasons.

The poultry farm at Ajouli, which prior to 1969 was managed by the Panchayat Samiti is under the control of the Department of Animal Husbandry. To make the poultry more popular at Ajouli- Farm, which is about 16 kilometres from the district headquarters distributed 5,780 layers and 8,096 broilers to the farmers during the year 1989-90. This farm not only has trained 62 young farmers in poultry production, and management but has also provided regular vaccination against common diseases and spraying with insecticides to control ectoparasites in private poultry farms through the staff. Milk production in the State has increased manifolds in recent years. As per the livestock Census Himachal Pradesh during 1987, 1992 and 1997 given the

Following livestock in the district:

- | | |
|--------------|------------|
| I. Cow | II. Ox |
| III. Buffalo | IV. Sheep |
| V. Goat | VI. Ponies |

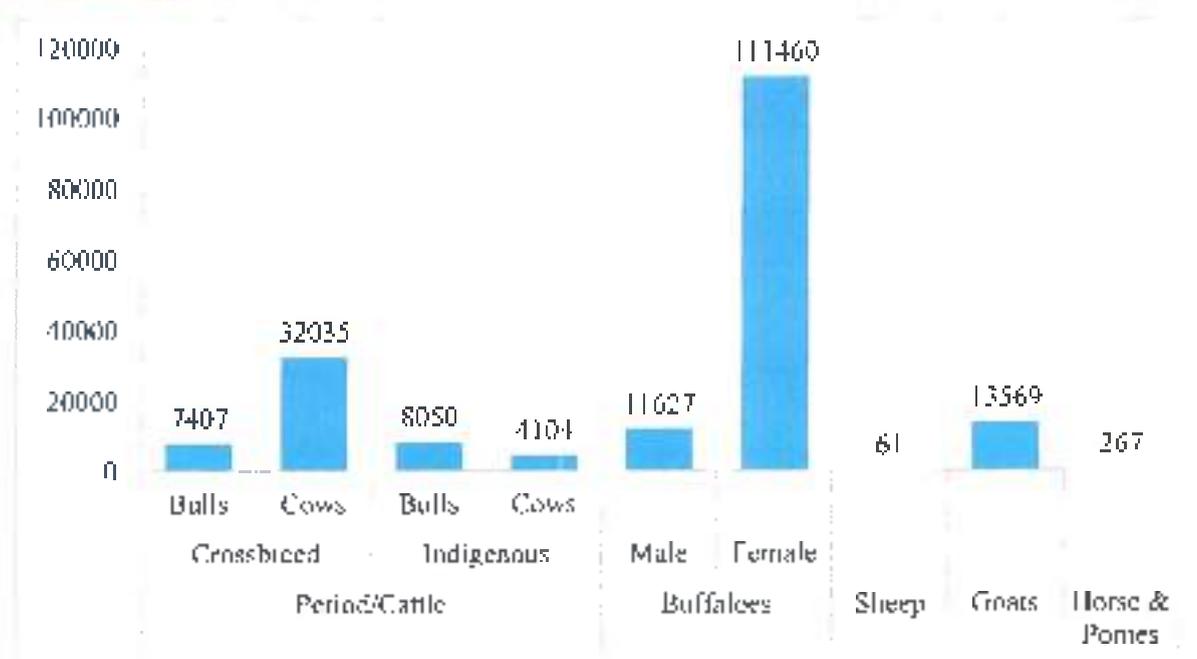
The following are important poultry birds

- | | |
|---------|------------------|
| I. Fowl | II. Ducks (Rare) |
|---------|------------------|

Table showing Livestock census of District Una

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

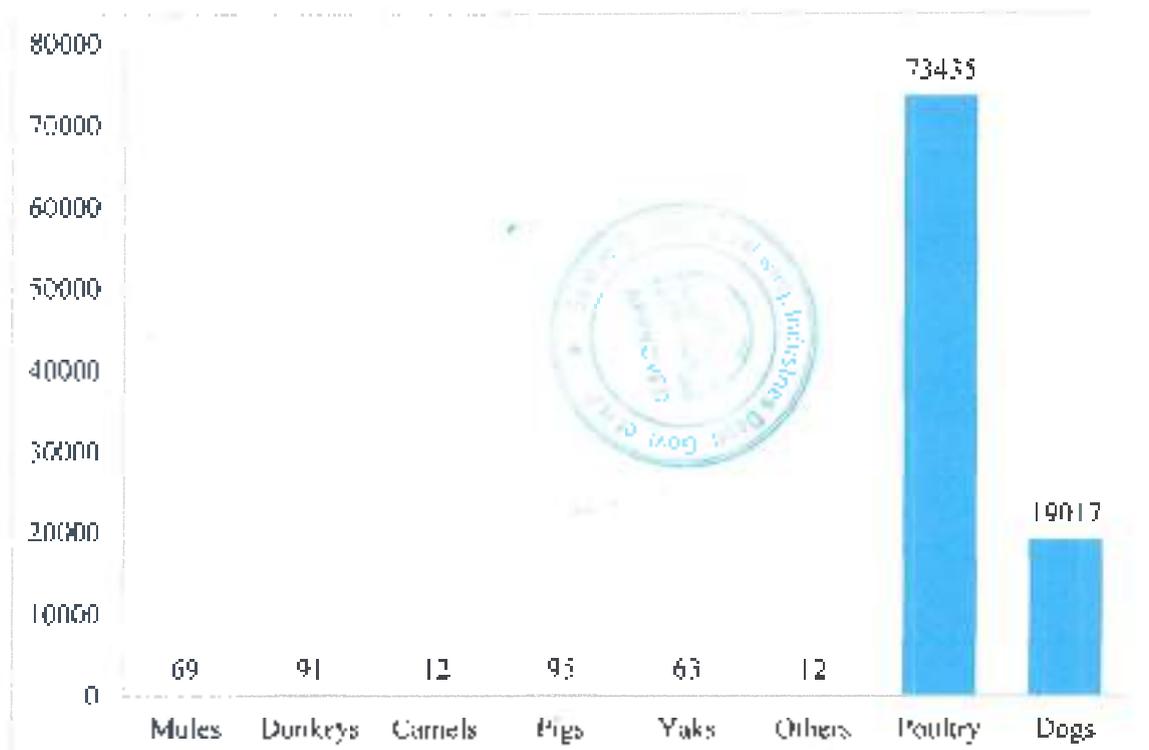


Graph Showing Livestock Census of the Una District

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 Durukhar 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.

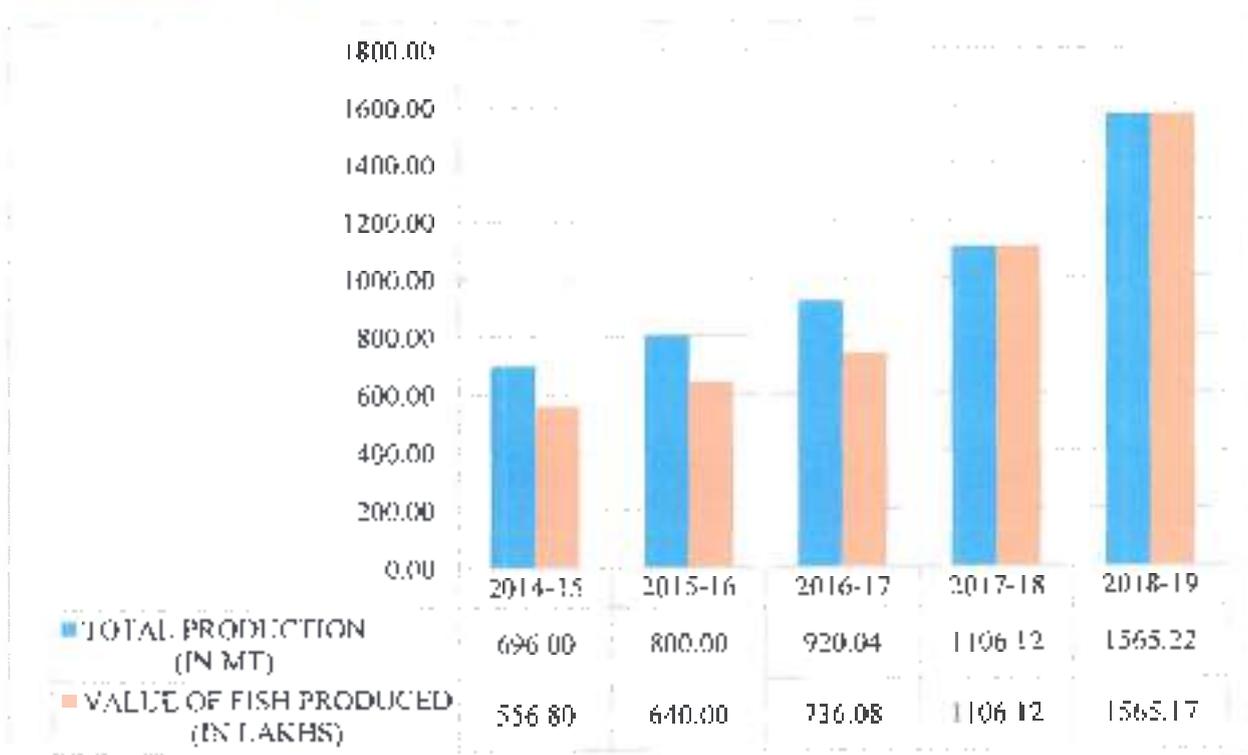
For the development of ponds/tanks, three programmes were launched by the Department i.e. (i) the Special Scheduled Caste Component plan programme (ii) the Low-income group assistance programme for other castes and (iii) the Fish Farmers Development Agency (FFDA) Programme.

A major chunk of the most productive area of Gobind Sagar reservoir-LathianiKhad spread from Durukhar 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



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 Solasingh/DharHamirpur 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 Kutlehar/Jagir 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	(Magnifera indica)
2	Tali	(Dalbergiasisoo)
3	Pipal	(Ficus religiosa)
4	Behul	(Grewia oppositifolia)
5	Chil	(Pinus Rose burghii)
6	Simhal	(Bombacemalabaricum)
7	Tuni	(Cedrelatoana)
8	Jamun	(Engeniajambolana)

9	Bamboo	
10	Brah	
11	Tus	

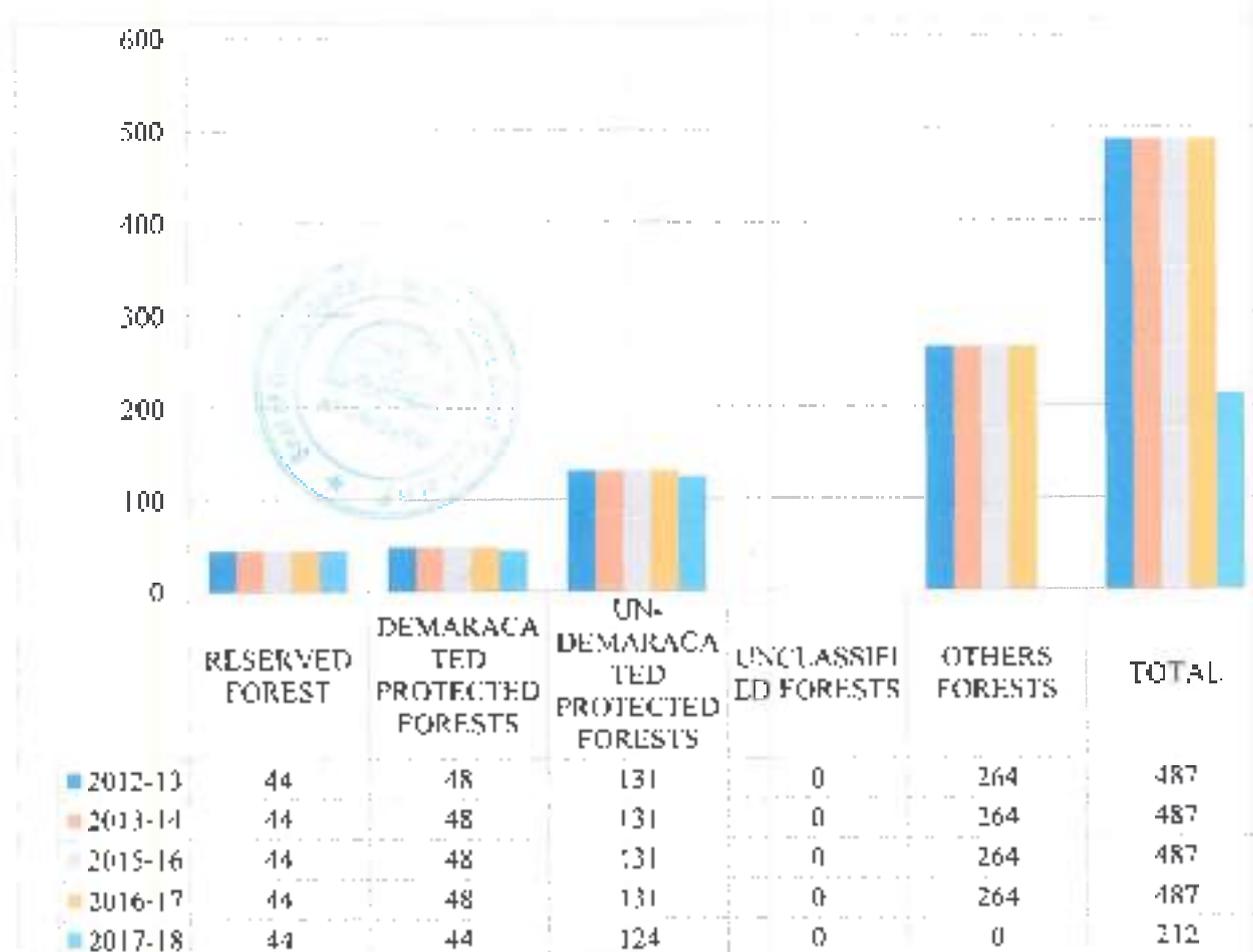
Broadleaf species

Her and other bushes

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

CLASSIFICATION OF FOREST AREA (IN SQ.KILOMETERS) 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

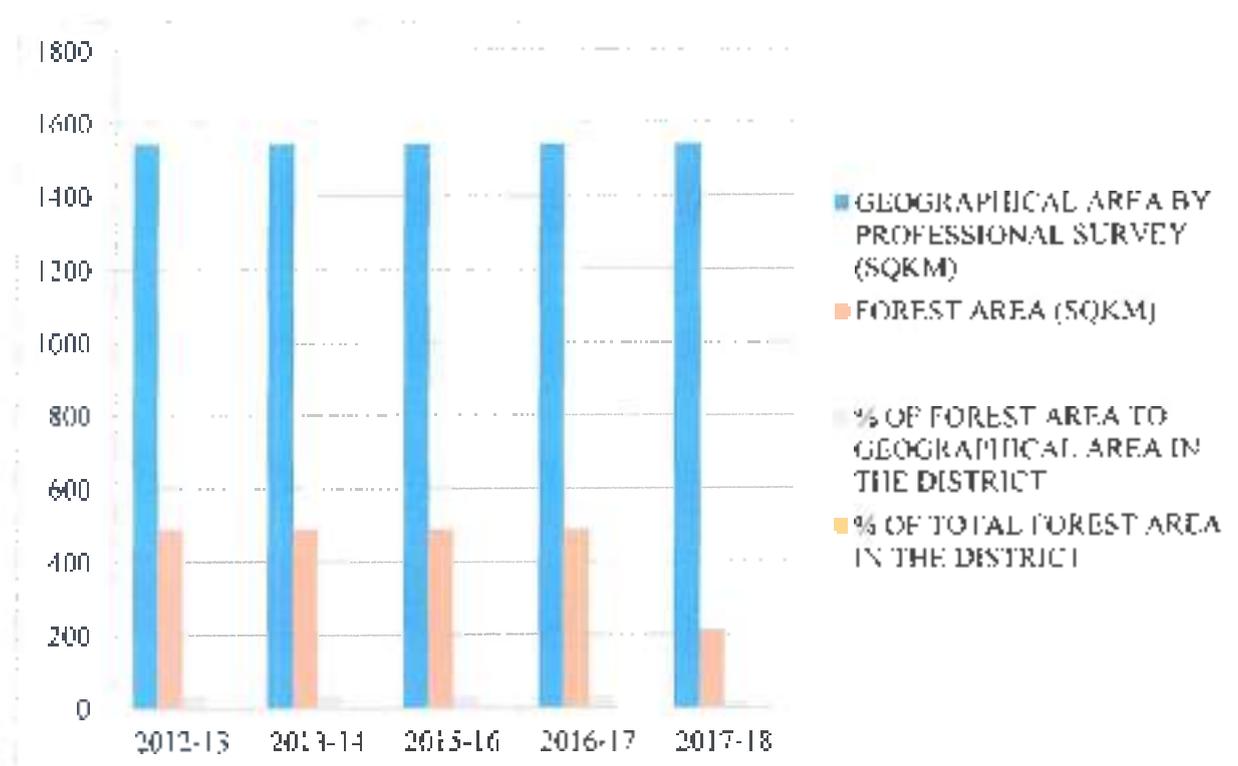


Graph showing the classification of forest area (in sq. kilometers) of district Una

Table showing forest area of District Una

FOREST AREA OF UNA DISTRICT				
YEAR	GEOGRAPHICAL AREA BY PROFESSIONAL SURVEY (SQKM)	FOREST AREA (SQKM)	% OF FOREST AREA TO GEOGRAPHICAL AREA IN THE DISTRICT	% OF TOTAL FOREST AREA IN THE DISTRICT
2012-13	1540	487	31.6	1.3
2013-14	1540	487	31.6	1.3
2015-16	1540	487	31.6	1.3
2016-17	1540	487	31.6	1.3
2017-18	1540	212	13.77	0.56

Source: Forest Department, HP



Graph showing forest area (in sq. kilometers) of district Una

Fauna

The wildlife in an area is directly related to characteristics of the habitat i.e. availability of food and water, nature and density of flora prevalent in the area along with other factors like slope, Climate, prevalent anthropogenic activities etc. Variation of altitude and slope in the study area has resulted in the proliferation of fauna which adopts the ruggedness and hard climatic conditions. Due to diverse flora, climate and altitude, the area possesses a well unique variety of Himalayan wildlife species. Due to wide variations in the altitude, a large variety of fauna is available in the forest of the district. The thick forest and climate of the district are the best for the survival of many animals and birds. The following common animals and birds are found in the Una district:

Table showing Fauna in Una district

Sambar	(Cervus unicolor)
Leopard	(Felis bengalensis)
Hare	(Lepus nigricollis)
Fox	(Vulpes bengalensis)
Langoor	(Presbytis entellus)
Flying squirrel	(Hylopetes fimbriatus)
Bat	(Hippisideros armiger)
Monkey	(Macaca mulatta)
Barking deer	(Muntiacus muntiacus)
Pigeon	(Columba livia)
Mor	(Pycrocorax indicus)
Crow	(Corvus splendens)
Parrot	(Psittacula krameri)
House sparrow	(Passer domesticus)
Cranes	(Grus species)
Woodpecker	(Picoides major)

1.9 CLIMATE OF THE AREA

The Climate of the Una District can be classified into the following three categories.

1. Winter
2. Summer
3. Rainy

The general temperature, rainfall and humidity corresponding to each type are given below in

Table and month-wise detail of temperature is shown in Graph

Table showing Climate in Una district

Climate of Una District, Himachal Pradesh				
Climate		Winter	Summer	Rainy
Period		Oct.-Mid March	Mid. March-June	July-September
Weather		Cool	Hot	Humid
Humidity		84%	55%	98%
Temperature	Max.	33.0 C	45.5 C	35.0 C
	Min	-3.5.0 C	8.0 C	14.0 C
Rainfall	Max.	82.0 mm	69.0 mm	175. 0 mm
	Min	1.0 mm	1.0 mm	1.0 mm

The terrain in general has a profound influence on the temperatures of a region. The temperature generally rises from the beginning of March till June, which is the hottest month of the year with mean minimum and maximum temperatures of 25.6°C to 44°C respectively. With the onset of monsoons by the end of June temperature begins to fall. The drop in day temperature is much more than the drop in night temperature. The night temperature falls rapidly after the withdrawal of monsoons by mid-September. The month of January is the cooler month with the mean maximum and minimum temperature being 24°C and 1 °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

In reverbed manual mining operations, dust emissions may arise during material excavation, handling, and transportation, primarily due to the movement of trucks within the mining lease area and along haul roads. However, the scale of mining is relatively low and restricted to a limited area; therefore, the overall environmental impact of dust generation is minimal. The primary source of dust emissions is vehicular movement, which can be mitigated effectively through controlled vehicle speed, restricted movement, and proper haul road management.

To further minimize air pollution, idle running of transport vehicles at the mine site will be avoided, and regular water sprinkling will be carried out along haul roads and over silt/clay disposal areas, particularly near plantation zones. These measures, though forming a major cost component of the environmental management works, will ensure compliance with air quality standards and reduce

dust nuisance to nearby habitations. Periodic ambient air quality and noise level monitoring will be conducted at designated locations to ensure compliance with prescribed environmental standards.

2.2 Impact on Water

The primary potential impact of riverbed surface mining is increased siltation, arising from sediment particles being mobilized by river currents and toe erosion of riverbanks within the mining lease area. Care shall be taken to avoid spillage of stone and sand into the flowing water during excavation and transportation activities to minimize sediment load in the river.

The entire lease area lies within the embankments of the Swan River, which experiences heavy floods during the monsoon season due to its large catchment area. As a result, construction of retaining or engineering structures is neither feasible nor required for bank protection. However, plantation activities under the green belt programme in nearby suitable areas will aid in stabilizing the soil and reducing bank erosion over time.

There are no water sources such as wells or springs within or near the applied lease area, and no mining operations will be undertaken below the flowing water level. Therefore, the mining activity will not adversely affect the flow of the river. Additionally, there is no intake of Kuhl (irrigation channel) within or downstream of the lease area that could be impacted by the proposed operations.

2.3 Impact on Noise Level

The mining lease area is located away from human habitation, and the only significant source of noise will be from the movement of tractors, tippers, and trucks transporting minerals to the stone crusher site. Noise levels will be minimized by ensuring proper maintenance and lubrication of vehicles and restricting operations to daytime hours, thereby maintaining levels within the permissible limits.

No blasting operations are proposed, as the mining activity will involve manual lifting and loading of material into transportation vehicles. Hence, the overall noise impact from the operations is expected to remain negligible and well within regulatory standards.

In addition, a green belt will be developed along the haul roads and in designated plantation areas to act as a natural noise barrier. Workers will be provided with personal protective equipment (PPE) such as earplugs or earmuffs, and periodic noise level monitoring will be carried out as part of the Occupational Health and Safety Plan and Environmental Monitoring Plan to ensure compliance.

2.4 Waste Disposal Arrangement, if Any

The waste material generated during mining operations will primarily consist of silt and clay fractions. This material will be utilized for maintenance and strengthening of the approach road leading to the mining lease area, the proposed stone crusher unit, and the connecting road from the stone crusher to the main State Highway.

In the event that additional waste material remains, it will be safely dumped on the private land owned by the mining leaseholder near the stone crusher site. This stored material may subsequently be reused for constructive purposes such as road filling, Granular Sub-Base (GSB) preparation for road works, and plantation-related activities, ensuring minimal wastage and sustainable resource utilization.

2.5 Socio-Economic benefits

The proposed mining activity will provide employment to approximately 20–25 local people, primarily unskilled workers who seek additional income opportunities during periods when they are not engaged in agricultural activities. This employment will support their livelihoods and contribute to improving the socio-economic conditions of the local community.

Furthermore, the mining operations will ensure the availability of raw materials for local infrastructure development at comparatively lower costs, thereby facilitating affordable construction and contributing to regional development.

2.6 Transport of Mineral

The mining lease area is primarily connected through the Ghalluwal-Una road, which further links to major towns of Himachal Pradesh and Punjab such as Una, Nangal, Hoshiarpur, and Chandigarh. This connectivity ensures efficient transportation of mined materials to both local and regional markets.

There is high and growing demand for crushed minerals (grit) and sand due to rapid population growth and infrastructure development in these areas. The minerals produced from the mining operations will be supplied to local markets as well as major nearby towns and cities, based on demand.

The existing road infrastructure is in good condition and is capable of withstanding the additional truck movement generated by the mining activities. As the route is already connected to key urban centers such as Una, Nangal, Panchkula, and Chandigarh, no additional road improvement or upgradation is required to handle the anticipated traffic load.



PART-III PROGRESSIVE MINE CLOSURE PLAN/ RECLAMATION PLAN

I.1 MINE WASTE DISPOSAL

a) Year-wise generation of mine waste (Five Years)

Table showing year-wise generation of mine waste

Year-wise generation of mine waste					
1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
15120	15120	15120	15120	15120	75600

PRODUCTION OF SILT/CLAY (IN MT)



Graph showing year-wise generation of mine waste

b) Year-wise disposal of waste and soil cover

The leaseholder already has a stone crusher unit which has an inbuilt facility for screening and washing. The Silt/clay which shall be excavated along with the Sand, Stone and Bajri shall be processed in the stone crusher unit to make Grit and Sand. The waste material present in the applied Area in the form of silt shall be dumped by the Leaseholder near the stone crusher site.

Further, the waste material (Silt/clay) shall be used for the maintenance of the approach road to the applied Area. The Leaseholder should also find out the possibility of using the material in road filling, Granular sub-base for road works and plantation works etc.

c) Cost of Mine Waste Disposal

The waste material generated during the mining operations will be transported to the designated dump site using trucks. The additional cost incurred for transporting and dumping this waste is estimated at approximately ₹10 per tonne. Based on projected figures, the total waste generation over a 5-year period is expected to be about 75,600 tonnes, resulting in a total dumping cost of approximately ₹7,56,000 over 5 years. This cost has been factored into the overall mining operation and environmental management expenditure.

1.2 Top Soil Arrangement

There is no topsoil present within the riverbed mining lease area, as the lease area consists primarily of sand, gravel, pebbles, and boulders deposited by riverine processes. Hence, no topsoil removal, storage, or management measures are required for the proposed mining operations.

1.3 Preventive Retaining Structures

The entire mining lease area is situated between the channelization embankments of the Swan River, with a buffer of over 75 meters from both banks. Because of this, no additional retaining or protective structures are necessary for bank stabilization. The existing embankments already provide ample protection against erosion and flooding during all mining operations.

1.4 Plantation Work (Plantation and Re-grassing of the area)

- a) The area lies within the channelization of the regular course of the Swan River. As the maximum part of the area lies within the channelization of the river and is flooded during the rainy season it is not suitable land for the growth of any Plantation or grassing etc. However, in consultation with the experts and based on the characteristics of soil, topography and climatic conditions of the area, plantation of grasses/bushes and other tree species will be done in some other land owned by the applicant which will fit for the growth of fodder, flora, fauna, etc."
- b) In the present case of riverbed mining, the mine waste material is silt and clay which have been proposed to be disposed of in the area designated for plantation and shall be properly dressed and levelled for the creation of the green belt/plantation.
- c) Suitable private land is available with the applicant situated near the mining area for plantation. Some parts of the land will be used for the re-grassing and other vegetation, including trees that are fit for the growth of fodder, flora, fauna, etc. in a phased manner. The estimated year-wise area proposed for plantation and re-grassing of fodder etc. is as under: -

Table showing Year wise area proposed for the plantation

Sr. No	Year	Area in Sq. Mts.	No Of Plants
1	1 st Year	200	20
2	2 nd year	200	20
3	3 rd year	200	20
4	4 th Year	200	20
5	5 th Year	200	20
	Total	1000	100

- d) 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.
- e) 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.
- f) Plantation before the onset of the monsoon season will be done progressively until the final closure of the mine.
- g) Green Belt shall be properly designed in consultation with the forest department. Plantation shall be carried out as per the periodical plantation programme
- h) 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.
- i) A green belt area along the haul roads, riverbanks, and dumping sites shall be developed.
- j) Besides this, only local labourers shall be engaged for watch and ward and plantation activity with proper maintenance.
- k) 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.
- l) The estimated survival rate proposed to be achieved shall be 80%

(2) Strategy for the protection of point of public utility. Etc.:-

There are no points of public utility or structures of public interest located within or in the immediate vicinity of the mining lease area that require protection during the course of mining operations. Consequently, the proposed mining activities will not pose any risk or cause disruption to public infrastructure or community facilities

(3) Manpower development:-

Approximately 20-25 unskilled workers will be employed to carry out the mining and associated activities, with 100% preference given to local residents for these positions.

Additionally, the project proponent will seek periodic consultation with qualified geologists and mining engineers to ensure scientific and safe mining practices. Subject to the financial viability of the project, the possibility of engaging technical experts on a contractual or part-time basis will also be explored.

(4) Use of Mineral: -

The extracted minor minerals from the lease area will be utilized in the proposed stone crusher unit operating under the name and style of *"M/s Banorhey Mahadev Stone Crusher"* for the production of grit and sand (M-Sand). The processed material will be marketed and sold in the open market based on prevailing construction demand in the region.

(5) Any Other Relevant Information: -

The mining lease area is located within the river bed of the Swan River, which undergoes natural replenishment during the monsoon season due to sediment deposition. This ensures a sustainable supply of minor minerals. Considering the ongoing construction activities in both private and government sectors, there is a continuous demand for basic construction materials such as sand, stone, and bajri. The proposed mining operations will assist in meeting this local demand and thereby support regional infrastructure development. In anticipation of potential hazard risks, the following safety measures will be strictly implemented:

Statutory Compliance: All provisions of the Mines Act, 1952, Metalliferous Mines Regulations, 1961, Mineral Conservation and Development Rules, and other applicable mining laws will be adhered to in full.

Dust Control & Worker Safety: Personnel working in dusty areas will be provided with protective respiratory equipment to minimize health risks.

Qualified Drivers: Only experienced drivers with valid licenses will be engaged for mineral transportation.

Occupational Health Monitoring: Periodic medical check-ups (annually) will be conducted for all workers to monitor health impacts of dust exposure, and corrective actions will be taken as required.

Emergency Preparedness: A list of emergency contact numbers (hospitals, police, fire services) will be displayed at the site. First aid kits will be readily available, and workers will be informed about the nearest health facilities.

Communication Facilities: Adequate communication facilities will be provided to all supervisory staff to ensure quick response in case of emergencies.

Road Safety: Appropriate road signage will be installed and maintained at key stretches after site assessment to ensure safe transportation.

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 an area applied for the grant of mining lease for the extraction of Sand, Stone and Bajri comprising of Khasra nos 6525 & 6526 ; (Pvt. Land) measuring 63-73-67 Hectares(River Bed) falling in Muhal/Mauza Bادهرا, Tehsil Haroli, District Una, Himachal Pradesh for the grant of mining lease to be used in proposed stone crusher unit to be established in the name and style **M/s Banorhey Mahadev Stone Crusher for Manufacturing of Grit and Stone Dust** in favour of Sh Ashwani Kumar, Prop. M/s Banorhey Mahadev Stone Crusher, Village & P.O. Lower Busal, Tehsil & Distt. Una, Himachal Pradesh.*

While preparing the modified 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 Modified Mining Plan are correct to the best of my knowledge.


Arun Dhiman

S/o Sh Jagan Nath,

Village & PO Dhaloon (Panchpuli),

Tehsil Nagrotu 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 the area comprising Khasra nos 6525 & 6526 (Pvt. Land) measuring 63-73-67 Hectares(River Bed) falling in Mohal/Mauza Bادهru, Tehsil Haroli District Una, Himachal Pradesh for the grant of mining lease to be used in proposed stone crusher unit to be established in the name and style **M/s Banorhey Mahadev Stone Crusher for Manufacturing of Grit and Stone Dust** has been prepared with my consent and approval and that we'll shall abide by all commitment thereunder.

"The modified 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 that have been taken into consideration and wherever specific permission is required, shall be obtained.

We undertake to implement all the measures proposed in this modified 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 the financial assurance of the same. In case of default on my/our part, the approval of the modified mining plan may be withdrawn and the aforesaid sum assured may be forfeited.



Applicant **Ashwani Kumar**
Sh. Ashwani Kumar.

Prop. M/s Banorhey Mahadev Stone Crusher,

Address

Village & P.O. Lower Basal, Tehsil &
Distt. Una, Himachal Pradesh,

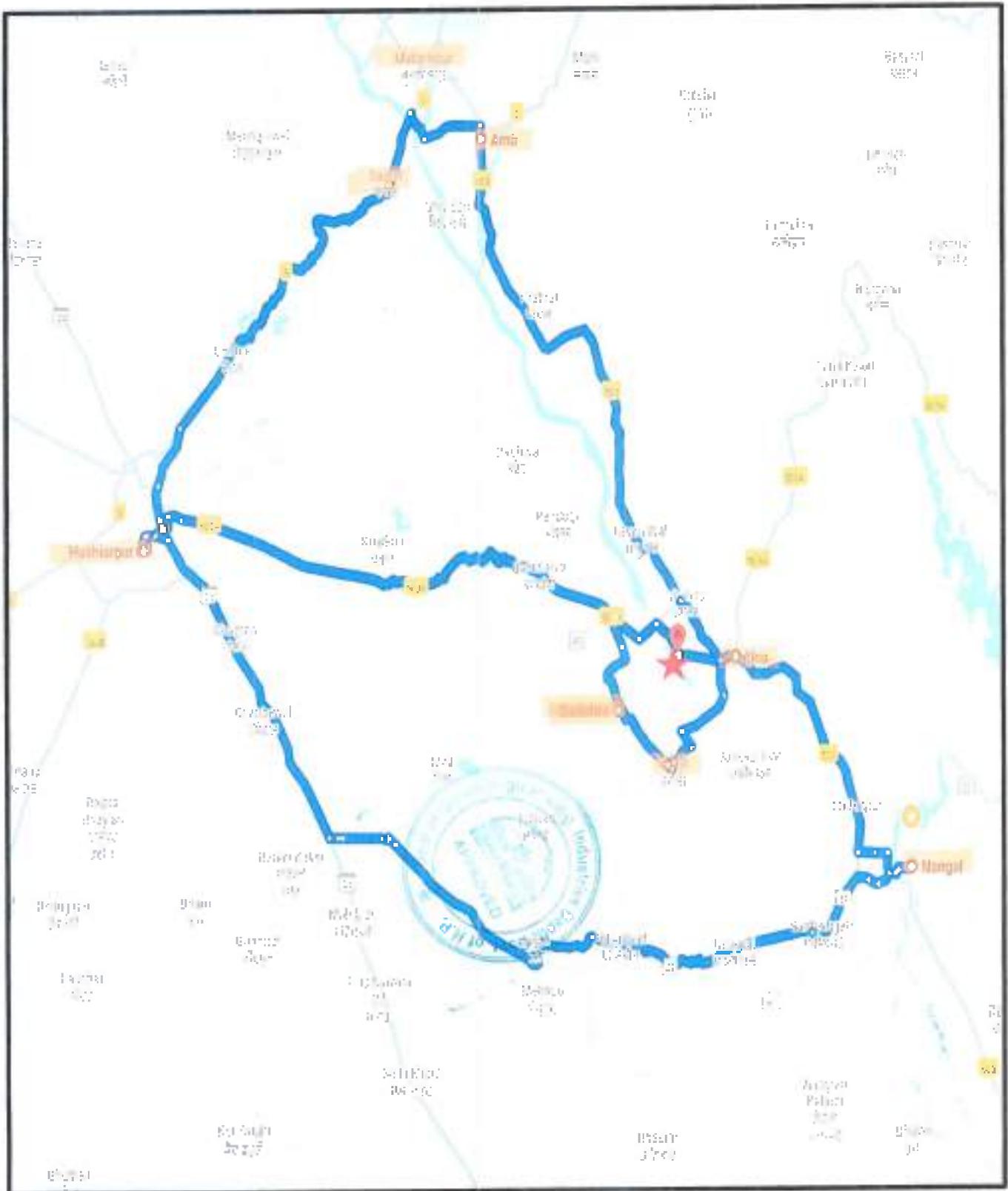
Photographs of the Applied lease Area



Photographs of the Applied lease Area



LOCATION AND APPROACH



कार्यालय

ग्राम पंचायत लोअर बढेडा विकास खंड हरोली, जिला ऊना. हि०प्र०

इस्ताब स०-४

दिनांक 21/10/2024

अध्यक्षता-श्री अजय कुमार

कोरम-पूर्ण

विषय:- श्री अश्वनी कुमार पुत्र श्री बहाल सिंह वासी चत्ताड़ा को खसरा नं 6525, 6526 वाहत खनन पट्टा (mining lease) M/S BANORHEY MAHADEV STONE CRUSHER हेतु एन्फोर्सी जारी करने वारे :-

हाजिर ग्राम सभा के समक्ष अध्यक्ष महोदय ने प्रस्ताव रखा की ग्राम पंचायत लोअर बढेडा के महल बढेडा के खेवट नं 1408 मिन खतोनी 1689 मिन खसरा नं 6525 ,6526 मालिक संजीव जसवाल, रोहित जसवाल पुत्र रघुवीर सिंह पुत्र तरसेम देवी (सुनीता देवी) पत्नी रघुवीर सिंह वासी बढेडा तहसील हरोली जिला ऊना व राजनीश कुमार अरविन्द सिंह अश्वनी कुमार पुत्र बहाल सिंह अपनी निजी भूमि खनन पट्टा हेतु M/S BANORHEY MAHADEV STONE CRUSHER को देना चाहते है यह इनकी निजी भूमि है जिसपर ग्राम सभा को कोई भी आपत्ति नहीं है परंतु ग्राम यह हिदायत करती है की खनन केवल इन्ही खसरा नं पर मान्य होगा व खनन करते समय पर्यावरण व पेड़ पौधों को नुकसान न हो व खनन विभाग के दिशानिर्देशों अनुसार किया जाए व आगामी कार्यवाही अमल में लाई जाए । पास हुआ ।

स्वीकार है ।

प्रमाणित किया जाता है कि उपरोक्त भकल मुताबिक अभिलेख असल है।


 Pardhan
 Gram Panchayat, Bahara (Lower)
 Tal. Haroli, Dist. Una (H.P.)


 पंचायत सचिव
 ग्राम पंचायत लोअर बढेडा
 तहसील हरोली, जिला ऊना (हि.प्र.)

कार्यवाही रजिस्टर (PROCEEDING BOOK)

(नियम 10 और 34-दखे)

ग्राम पंचायत विकास खण्ड जिला

दिनांक	सम्मिलित सदस्यों का नाम	निष्पादित कार्य का विवरण	Signature of the Panchayat Prasad पंचायत प्रसाद
		<p>मंडी (पंचायत) की बैठक में व वहाँ बैठकर (विशेष) व पंचायत के कार्य को अंजित न हो पड़ेगा पंचायत को निम्न कार्य है कि आवक करवाए जाते हैं एवं मालिक व लान कर निम्न सुधारों व पंचायत को लान कर न हो व लान-पंचायत के (सुधार) काम (पंच व करवाए जाते हैं करवाए जाते हैं)</p>	
		 पंचायत प्रसाद ग्राम पंचायत लोधा बंधा सि.ख. सोती, वि. गडवा (दि. 10)	

**HP FOREST DEPARTMENT
UNA FOREST DIVISION, UNA (HP)**

To whom it may concern

As requested by Shri Ashwani Kumar Prop. M/S Banohrey Mahadev Stone Crusher, VPO Lower Basal, Tehsil & Distt. Una (HP), the following information is hereby authenticated in respect of Khasra No. 6525/1, 6526/1 Kita 02, area measuring 03-61-42ha. falling in Mohal Badhera, Tehsil Haroli, Distt. 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 36°46'94.52"N & 76°13'59.68"E and the aerial distance of proposed site is 13KM 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/ 4044-45 Dated Una, the 4-9-2025

Copy is forwarded to:-

1. Sh. Ashwani Kumar Prop. M/S Banohrey Mahadev Stone Crusher, VPO Lower Basal, Tehsil & Distt. Una (HP) w.r.t. his application.

2. R.F.O. Una for information & necessary action w.r.t. his office letter No. 872 dated 03.09.2025.

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

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

Atkinson 1911
The Eastern Himalayas

Atkinson
1911

(1)

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

Working Plan for Vana Forest Division

Chhonespp
J. B. Bhatnagar

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

Working Plan for Una Forest Division

Chandra
11/11/1958

A. Sharma
12/11/58

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XI

Local Name	English Name	Botanical Name
Kahi	Asian fodder case	<i>Suaeda frutescens</i>
Kainth	Wild Himalayan pear	<i>Pyrus pashia</i>
Kakal Ber	Jackal jujube	<i>Zizyphus venaylia</i>
Kakraun	Zebra-wood	<i>Pistacia integerrima</i>
Kala Akha	Rough fruit-berry	<i>Rubus lasiocarpus</i>
Kala Dhao, hira harkmu	Mottled ebony	<i>Diospyros cordifolia</i>
Kalan	Kaim	<i>Mitragyna parvifolia</i>
Kali basuti	Patchouli	<i>Pogostemon plectranthoides</i>
Kamal	Monkey face tree	<i>Mallotus philippinensis</i>
Kandrai	Drooping fig	<i>Ficus semicordata</i> (syn. <i>Ficus curia</i>)
Kangu	Batoko's plum	<i>Flacourtia ramontchi</i>
Kante bans	Giant thorny bamboo	<i>Bambusa arundinacea</i>
Kao	Wild olive, iron tree, Indian oil	<i>Olea ferruginea</i>
Kapur mingar		<i>Strobilanthes auriculata</i>
Karanda		<i>Ficus clavata</i>
Kararoi Tia pati		<i>Raylea cinerea</i>
Karmaru	black siris, fragrant albizia, Ceylon rosewood	<i>Albizzia odoratissima</i>
Karun	Himalayan mulberry	<i>Morus serrata</i>
Kesakuri		<i>Trema politoria</i>
Kethaman		<i>Eugenia jambolana</i> Var <i>caryophyllifolia</i>
Kathi	Cassia indigo	<i>Indigofera hesua</i> (syn. <i>Indigofera pulchella</i> , <i>Indigofera leptostachya</i>)
Kehmal ✓	Indian ash tree ✓	<i>Lannea coromandelica</i>
Kendu	Mountain persimmon	<i>Diospyros montana</i>
Keor	Bitter oleander	<i>Holarhena antidysenterica</i>
Khair	Cutch tree	<i>Acacia catechu</i>
Khajoor	Date-sugar palm, Indian winepalm, sugar palm, wild date palm	<i>Phoenix sylvestris</i>
Khalawa	Woolly dyeing rosebay	<i>Wrightia tomentosa</i>
Kikkar	Indian gum-arabic tree	<i>Acacia Nilotica</i> spp <i>indica</i>
Kinnu	Persimmon tree	<i>Diospyros chloroxylon</i>
Kumbhi		<i>Cordia vestita</i>
Kuri, HarShingar	Coral Jasmine, Tree of Sorrow,	<i>Nyctanthus arbor tristis</i>

Working Paper for Ume Forest Division

(Signature)
The Forest Officer

(Signature)

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XII

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

Working Plan for Una Forest Division

Shankar Singh
12/6/52

Admiral
6/5

XIII

5

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

Printing Press for the Forest Division

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XIV

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

Ajmer-1884
U. Bajwa-1884

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

Working Plan for Una Forest Division

W. S. S. S.
J. K. S. S. S.

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XV

Local Name	English Name	Scientific Name
Kirā (Girgī)	The Indian Chameleon	<i>Chameleon varcarthus</i>
Kirā	The Common House Lizard	<i>Hemidactylus glendovii</i>
Lal Bandar	Rhesus monkey	<i>Macaca mulatta</i>
Langoor	Langoor common	<i>Presbytis entellus</i>
Lomari	Lomari	<i>Vulpia bengalensis Fox</i>
Nag	The King Cobra	<i>Naja hannah</i>
Nūgai	Blue bull	<i>Boselaphus tragocamelus</i>
Para	Para	Hog deer
Phaniar	The Common Cobra	<i>Naja tripudians</i>
Sambhar	The Sambhar	<i>Cervus unicolor</i>
Saup	The Common Warm Snake	<i>Typhlops braminus</i>
Seh	Porcupine	<i>Hystrix indica</i>
Suar	Wild boar	<i>Sus scrofa</i>
BIRDS		
Bagla	The grey Heron	<i>Ardea cinera</i>
Bagla	The little Egret	<i>Egretta garzotta</i>
Batair	The common quail	<i>Coturnix coturnix</i>
Bhojanga or Hojanga	The King Crow	<i>Dicrurus macrocercus</i>
Bulbul	The redvented bulbul	<i>Molpustar cafer</i>
Chhota Falta	The Indian Spotted Dove	<i>Streptopelia shinenensis</i>
Falta	The Indian ring dove	<i>Streptopelia decaocto</i>
Hudhud	The Hooper	<i>Upupa epops</i>
Jangli Murga	The Jungle fowl	<i>Gallus gonnerathi</i>
Jangli Murghi	The red jungle fowl	<i>Gallus gallus</i>
Kabutar	The blue rock pigeon	<i>Columba livia</i>
Kaikal	The common king fisher	<i>Aleedo atthis</i>
Kala Titar	The black partridge	<i>Fringilla monticola</i>
Koel	The Koel	<i>Eudynamis scolopacea</i>
Maina	The Common myna	<i>Acridothera tristis</i>
Mor	The common pea fowl	<i>Pavo cristatus</i>
Murgabi	The Indian duck	<i>Anas poeciborhyncha</i>
Neel Kantā	The Blue Jay or Roller	<i>Coracia bengalensis</i>
Pahari Bulbul	The red whiskered bulbul	<i>Otocornis jacobsoni</i>
Pahari Kowva	The Himalayan Jungle Crow	<i>Corvus bevaillonti</i>
Pahari Titar	The hill partridge	<i>Arborophila forquieola</i>
Safaid Bagla	The cattle Egret	<i>Bulbulcus ibis</i>
Selva kabutar	The eastern stock pigeon	<i>Columba oena</i>
Taliri	The wattled lapwing	<i>Lobivanallus indicus</i>
Titar	The gray partridge	<i>F. pondicerianus</i>

W. S. S. S.
11/10/1946

W. S. S. S.
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Local Name	English Name	Scientific Name
Tota	The large Indian Parakeet	<i>Psittacula eupatria</i>
REPTILES		
Azgar	Python	
Goh	Monitor Lizard	
Gunther	Pit viper	
Kala Nag	King Cobra	
Lamb	Rat Snake	
Nag	Cobra	
FISH		
Deola	Murrel	
Godh	Eel	
Karad	Backwa	
Maha-sher	----	

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 Range Officer
 Forest Range
 Uda H.P. 174306

10

Details of Ground Water Source

Location Details

Hadbast Number * Khata No *
 Khatauni No * Khasra No *
 District * Tehsil *
 IPH Division *
 IPH Sub Division *
 Village * Name of Estate *

Whether the source is located in an area declared as notified under section 5, if so, give details

Source Details

Source of Water *
 Quality of ground water *
 Quantum of water availability (liter/day) *
 Source Area *
 Name of the Gram Panchyat / Municipality *
 Nature of existing use of source *

Whether the source is under the private ownership, if so, details of the ownership

Purpose of sinking well /augmentation of ground water source

Purpose for which water is proposed to be extracted or used *
 Details of prospective users *
 Quantum of water proposed to be extracted (liter/day) *

In case of mismatch between quantum of availability of water and its use, the details of availability of

English ▼

INR 10000.00

Order #:

[Hide Breakup](#)

2088926

Coupon Code

Apply

Order Amount

10000.00

Total Amount

INR 10000.00

Billing Information

Ashwani Kumar

JAL BHAWAN, KASUMPTI HIMACHAL PRADESH

171009

SHIMLA

HIMACHAL PRADESH

India ▼

9418030665

ashwanikumar501557@yahoo.com

Notes (Optional)

My Billing and Shipping address are different

Payment Information

Debit Cards

We Accept

RuPay ▼

Card Number

6070936055360017

Expiry Date

CVV

Aug (08) ▼

2023 ▼

...

Save your cards with CCAvenue Checkout for future payments ?
(Note: We do not store your CVV/CVC number.)

I agree with the Privacy Policy by proceeding with this payment.

INR 10000.00 (Total Amount Payable)

Make Payment

Cancel

Form-1A

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1	2	3	4
Step 1	Step 2	Step 3	Step 4
Application Form	Checklist	Payment	Declaration

Details of Applicant

IUID *	13941300	Name of Applicant *	Ashwani Kumar
Father/Husband Name *	S/O ▾	Bahal singh	
Permanent Address *	VPO Chattara Ward No. 6 Tehsil ,Distt Una		
Corresponding Address *	VPO Chattara Tehsil Distt Una (HP)		
Firm Type *	Others ▾		
Mobile No *	9418030665	Phone No *	9418030665
Email *	thakurmarbles5015@gmail.		
Please Specify other firm type *	NA		

When and where company incorporated/ registered

Place of incorporation/registration *	Chattara
Year of incorporation *	2019
Registration No. *	NA
Place of registration of the firm/co-operative society *	Una
Names of the Director/ Partners/ Governing body members/ Trustees *	NA
Address of the Director/ Partners/ Governing body members/ Trustees *	NA

to the beneficiaries

firm is registered with Department of Industries *

No

Details of the Works to be executed /maintained

Details of works *

Una

Approximate cost/expenditure to be incurred *

NA

Whether the works are to be executed / maintained individually or collectively on cooperative or/on community basis

Individually

Where works are to be executed/ maintained collectively, supply the details of the participants and their shares *

No

Where the source or the land over which source is located is not under the ownership of the applicant, the mode of acquisition of such source / land *

Owned

Whether the consent of other existing competitive users of the source has been obtained, if so, give details

Not required

Purpose for which water is proposed to be extracted or used (Domestic, Industrial, Commercial, Irrigation) *

Commercial

Date of commencement of the work *

2019-10-24

Date by which the work is to be completed *

2019-10-29

Waste water management arrangements *

NA

Any other information which may be considered relevant or the applicant wishes to be included in the permit to be granted

NA

Save & Next

Home
https://emerginghimachal.hp.gov.in/backoffice/backoffice/frontuser/home)
> Payment Detail

Payment Detail

Order #	Grand Total	Order Date & Time
1572330803253309	₹ 10000	2019-10-29 12:02:46
Billing Name	Billing Address	Contact number
Ashwani Kumar	VPO Chattara Tehsil Distt Una (HP), ...	8629810769
Email Address	Billing Address	Contact number
Ashwani Kumar	VPO Chattara Tehsil Distt Una (HP), ...	8629810769

Pay Now

Environmental Policy

I, Sh. Ashwani Kumar Prop. M/s Banorhey Mahadev Stone Crusher, Riverbed mining for extraction of (e.g., Sand, Stone and *Bajri*) located at Khasra No. 6525/1 and 6526/1, Mauza/Mohal Bادهرا in Tehsil Haroli, District Una, Himachal Pradesh.

I reaffirm my commitment to contributing towards a clean and sustainable environment and continually enhancing our environmental performance as an integral part of our business philosophy and values.

Towards this commitment, I shall:-

- Integrate sound environmental management practices in all our activities.
- Conduct our operations in an environmentally responsible manner to comply with applicable legal and other requirements related to its environmental aspects and strive to go beyond.
- Progressively adopt cleaner and energy efficient technologies.
- Minimize waste generation and promote recovery, recycle, and reuse.
- Increase greenery in and around our working areas and mines.
- Strive for continual improvement in our environmental performance by setting challenging targets, measuring progress, taking corrective action, and communicating environmental information to all concerned.
- Enhance environmental awareness amongst employees working for and on behalf of us and the general populace around working areas and mines.
- Encourage our business associates to adopt similar approach for environmental protection.

Ashwani Kumar

(Authorized Signatory)

Mr. Ashwani Kumar

Prop. M/s Banorhey Mahadev Stone Crusher



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

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

Analyzing for an Assured Future

TEST CERTIFICATE

ANNEXURE-X

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011225-01	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village Badehra, Tehsil Haroli, District Una, (H.P.)

Sampling & Analysis Data

Sample Drawn By	NTL Representative	:	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Project Site	:	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	PM2.5	SO ₂	NO ₂	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	01.12.2025	55.63	28.93	8.65	12.63	0.32
2	04.12.2025	52.32	27.73	12.63	13.69	0.36
3	08.12.2025	45.25	24.44	12.47	14.53	0.34
4	11.12.2025	52.53	27.32	8.69	16.58	0.24
5	15.12.2025	51.26	25.63	12.85	15.63	0.35
6	18.12.2025	59.63	31.60	8.47	14.69	0.51
7	22.12.2025	58.45	29.81	8.56	15.85	0.26
8	25.12.2025	37.25	18.15	8.15	12.42	0.20
9	01.01.2026	51.24	28.69	10.42	14.45	0.38
10	02.01.2026	54.63	31.69	8.47	13.58	0.46
11	08.01.2026	53.20	27.13	11.65	13.65	0.36
12	09.01.2026	58.45	30.40	12.56	14.25	0.50
13	15.01.2026	69.63	38.99	11.45	16.90	0.52
14	16.01.2026	56.23	30.36	9.68	14.63	0.47
15	22.01.2026	58.42	31.55	11.36	13.96	0.50
16	23.01.2026	68.50	38.36	8.69	16.56	0.51
17	02.02.2026	54.26	28.76	8.69	15.23	0.47
18	03.02.2026	63.00	34.02	8.15	13.58	0.47
19	10.02.2026	56.59	29.43	8.69	12.63	0.38
20	11.02.2026	58.65	31.08	10.20	14.36	0.43
21	17.02.2026	70.56	45.99	12.85	16.90	0.74
22	18.02.2026	59.35	32.11	12.60	15.26	0.43
23	24.02.2026	65.12	33.21	12.47	12.42	0.48
24	25.02.2026	56.58	29.99	12.41	16.50	0.44
Min		37.25	18.15	8.15	12.42	0.2
Max		70.56	45.99	12.85	16.9	0.74
Avg.		56.95	30.64	10.45	14.62	0.42
P 98		70.13	42.77	12.85	16.90	0.64
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

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011225-02	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village Badehra, Tehsil Haroli, District Una, (H.P.)

Sampling & Analysis Data

Sample Drawn By	NTL Representative	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Lal Singhi	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	PM2.5	SO ₂	NO ₂	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	01.12.2025	44.53	23.16	7.96	12.88	0.26
2	04.12.2025	42.54	22.55	9.56	11.93	0.29
3	08.12.2025	44.84	24.21	8.25	11.63	0.34
4	11.12.2025	29.93	15.56	7.96	10.55	0.13
5	15.12.2025	43.76	21.88	10.52	12.77	0.30
6	18.12.2025	49.09	26.02	11.52	13.72	0.42
7	22.12.2025	41.49	21.16	10.85	14.75	0.19
8	25.12.2025	37.65	19.95	12.36	11.86	0.22
9	01.01.2026	34.81	19.49	10.63	12.88	0.26
10	02.01.2026	34.72	20.14	11.56	11.72	0.30
11	08.01.2026	46.84	23.89	12.54	14.75	0.32
12	09.01.2026	34.77	18.08	10.85	11.95	0.30
13	15.01.2026	33.86	18.96	9.56	12.80	0.25
14	16.01.2026	35.39	19.11	11.85	12.65	0.30
15	22.01.2026	46.87	25.31	12.36	10.66	0.40
16	23.01.2026	34.86	19.52	11.96	11.95	0.26
17	02.02.2026	55.63	29.48	13.42	12.88	0.48
18	03.02.2026	34.8	18.79	11.78	12.99	0.26
19	10.02.2026	48.23	25.08	11.69	10.55	0.33
20	11.02.2026	52.45	27.80	13.24	14.75	0.39
21	17.02.2026	30.76	16.30	11.57	10.83	0.23
22	18.02.2026	53.69	29.05	12.85	15.55	0.39
23	24.02.2026	36.60	18.67	13.45	15.15	0.27
24	25.02.2026	58.69	31.11	13.45	15.55	0.48
Min		29.93	15.56	7.96	10.55	0.13
Max		58.69	31.11	13.45	15.55	0.48
Avg.		41.95	22.30	11.32	12.82	0.31
P 98		57.28	30.36	13.45	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

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TEST CERTIFICATE

Test Report of Ambient Air Quality Analysis	Report Code AAQ-011225-03	Date of Issue 02/03/2026
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Issued To: **M/s Banorhey Mahadev Stone Crusher**

Location: **Proposed Mining of Sandstone and Bajri from Swan River beside the village Bادهhra, Tehsil Haroli, District Una, (H.P.)**

Sampling & Analysis Data

Sample Drawn By	NTL Representative	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Kapila Farm	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	PM2.5	SO ₂	NO ₂	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	01.12.2025	42.46	23.78	7.55	11.96	0.32
2	04.12.2025	38.76	22.48	7.26	10.57	0.29
3	08.12.2025	44.67	25.46	9.85	12.87	0.34
4	11.12.2025	39.82	22.30	8.54	13.34	0.35
5	15.12.2025	51.28	27.69	7.85	12.67	0.37
6	18.12.2025	48.59	25.27	8.71	14.49	0.31
7	22.12.2025	52.52	27.84	7.65	13.45	0.33
8	25.12.2025	47.62	27.62	6.85	10.75	0.34
9	01.01.2026	50.84	28.47	7.54	12.89	0.42
10	02.01.2026	46.17	24.93	7.65	13.08	0.49
11	08.01.2026	49.34	28.62	8.56	11.45	0.42
12	09.01.2026	54.75	28.47	7.96	12.59	0.53
13	15.01.2026	47.78	25.80	8.28	14.59	0.55
14	16.01.2026	53.37	28.29	8.56	15.27	0.44
15	22.01.2026	48.75	26.33	9.45	13.06	0.39
16	23.01.2026	55.43	28.27	9.68	14.71	0.48
17	02.02.2026	49.67	25.83	8.36	14.76	0.42
18	03.02.2026	54.63	28.95	8.59	15.14	0.55
19	10.02.2026	60.75	32.81	7.26	14.68	0.46
20	11.02.2026	58.35	32.68	7.87	13.52	0.39
21	17.02.2026	52.52	28.36	8.62	13.29	0.54
22	18.02.2026	57.86	33.56	8.12	15.18	0.49
23	24.02.2026	49.67	26.82	7.65	14.25	0.56
24	25.02.2026	46.75	24.31	8.67	15.33	0.51
Min		38.76	22.3	6.85	10.57	0.29
Max		60.75	33.56	9.85	15.33	0.56
Avg.		50.10	27.29	8.21	13.50	0.43
P 98		59.65	33.22	9.77	15.30	0.56
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

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011225-04	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village Bادهhra, Tehsil Haroli, District Una, (H.P.)

Sampling & Analysis Data

Sample Drawn By	NTL Representative	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Baba Balak Nath Temple	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	PM2.5	SO ₂	NO ₂	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	01.12.2025	44.29	23.01	10.86	18.36	0.26
2	04.12.2025	43.30	21.46	10.96	17.85	0.29
3	08.12.2025	44.60	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	0.30
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	0.20
8	25.12.2025	37.41	21.70	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	47.60	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	11.25	17.89	0.30
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	13.42	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	13.24	15.25	0.41
21	17.02.2026	62.36	34.05	17.45	20.65	0.47
22	18.02.2026	54.36	30.93	13.42	18.47	0.39
23	24.02.2026	60.12	31.26	13.45	16.65	0.44
24	25.02.2026	57.63	32.27	12.52	18.65	0.45
Min		31.69	13.89	10.63	15.25	0.14
Max		62.36	34.05	17.45	20.65	0.47
Avg.		45.70	24.41	11.95	17.31	0.33
P 98		61.33	34.05	15.61	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

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021225-05	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village Badehra, Tehsil Haroli, District Una, (H.P.)

Sampling & Analysis Data

Sample Drawn By	NTL Representative	: Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Dera Baba Garib	: 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	PM2.5	SO ₂	NO ₂	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	02.12.2025	48.29	25.09	7.40	11.58	0.28
2	03.12.2025	43.3	21.46	8.96	13.63	0.29
3	09.12.2025	47.6	24.90	8.25	11.33	0.36
4	10.12.2025	28.68	15.50	7.40	9.58	0.13
5	16.12.2025	48.52	24.76	8.36	10.47	0.33
6	17.12.2025	48.85	28.05	10.52	10.63	0.42
7	24.12.2025	45.25	21.86	10.85	13.45	0.20
8	26.12.2025	38.41	22.28	12.36	10.56	0.22
9	04.01.2026	39.57	22.95	11.36	10.58	0.30
10	06.01.2026	38.48	20.01	10.25	10.42	0.33
11	11.01.2026	49.6	27.14	12.54	14.45	0.34
12	13.01.2026	38.53	15.50	11.63	10.65	0.33
13	18.01.2026	33.62	18.83	11.48	11.85	0.25
14	20.01.2026	36.15	18.08	10.52	14.35	0.30
15	25.01.2026	51.63	28.27	12.36	10.67	0.44
16	27.01.2026	35.62	19.59	10.63	13.65	0.26
17	01.02.2026	41.15	23.04	13.42	9.58	0.35
18	04.02.2026	41.56	24.10	10.89	11.52	0.31
19	08.02.2026	54.99	31.01	11.58	10.58	0.37
20	09.02.2026	49.55	25.30	13.24	11.45	0.37
21	15.02.2026	33.52	18.10	11.69	10.63	0.25
22	16.02.2026	55.42	31.54	13.45	14.85	0.44
23	22.02.2026	40.36	20.99	13.45	14.85	0.29
24	23.02.2026	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

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021225-06	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village Badehra, Tehsil Haroli, District Una, (H.P.)

Sampling & Analysis Data

Sample Drawn By	NTL Representative	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	IPH Guest House	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	PM2.5	SO ₂	NO ₂	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-1)	IS:5182(Part-4)	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	6.96	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	23.01.2026	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	13.02.2026	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

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021225-07	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village Badehra, Tehsil Haroli, District Una, (H.P.)

Sampling & Analysis Data

Sample Drawn By	NTL Representative	Monitoring Period	Dec 2025 - Feb 2026
Sampling Location	Ward No. 10, Una	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	PM2.5	SO ₂	NO ₂	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	02.12.2025	29.63	16.59	7.45	10.78	0.33
2	03.12.2025	28.75	16.68	8.16	9.36	0.24
3	09.12.2025	30.35	17.30	7.23	12.53	0.26
4	10.12.2025	27.34	15.31	5.46	11.58	0.28
5	16.12.2025	34.53	18.65	7.42	10.63	0.24
6	17.12.2025	35.24	18.32	6.87	12.69	0.35
7	24.12.2025	37.41	19.83	8.18	10.85	0.32
8	26.12.2025	29.63	17.19	8.63	12.58	0.28
9	04.01.2026	36.28	20.32	7.93	11.45	0.25
10	06.01.2026	34.46	18.61	6.56	13.63	0.29
11	11.01.2026	35.69	20.70	6.08	11.08	0.21
12	13.01.2026	37.46	19.48	7.45	11.45	0.32
13	18.01.2026	38.76	20.93	6.63	10.90	0.36
14	20.01.2026	29.35	15.56	5.95	12.53	0.23
15	25.01.2026	35.62	19.23	6.53	13.45	0.26
16	27.01.2026	39.58	20.19	7.58	12.56	0.35
17	01.02.2026	34.56	17.97	8.00	11.23	0.31
18	04.02.2026	33.86	17.95	6.69	13.42	0.36
19	08.02.2026	35.69	19.27	7.92	12.48	0.28
20	09.02.2026	36.85	20.64	8.58	13.25	0.24
21	15.02.2026	40.76	22.01	6.45	11.25	0.29
22	16.02.2026	37.35	21.66	5.93	10.63	0.32
23	22.02.2026	35.62	19.23	6.08	12.42	0.28
24	23.02.2026	38.58	20.06	6.56	13.50	0.25
Min		27.34	15.31	5.46	9.36	0.21
Max		40.76	22.01	8.63	13.63	0.36
Avg.		34.72	18.90	7.10	11.93	0.29
P 98		40.22	21.85	8.61	13.57	0.36
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³	2 mg/m ³

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021225-08	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village Badehra, Tehsil Haroli, District Una, (H.P.)

Sampling & Analysis Data

Sample Drawn By : NTL Representative : Monitoring Period : Dec 2025 - Feb 2026
 Sampling Location : Mount Everest School : Protocol Used : CPCB Guidelines
 Sampling Plan & Procedure : SOP-AAQ/08 : Sampling Instrument Used : Respirable Dust Sampler (PM₁₀), Fine Particulate (PM_{2.5}) Sampler

S. No.	Monitoring Date	PM10	PM2.5	SO ₂	NO ₂	CO
		IS:5182(Part-23)	IS:5182(Part-24)	IS:5182(Part-2)	IS:5182(Part-6)	IS:5182(Part-10)
1	02.12.2025	36.24	20.29	6.34	9.27	0.31
2	03.12.2025	38.99	22.61	7.48	9.73	0.28
3	09.12.2025	32.52	18.54	6.58	9.76	0.35
4	10.12.2025	36.25	20.30	7.35	10.82	0.24
5	16.12.2025	37.48	20.24	7.12	10.86	0.32
6	17.12.2025	36.85	19.16	6.65	11.55	0.29
7	24.12.2025	44.25	23.45	7.35	11.87	0.28
8	26.12.2025	41.52	24.08	6.72	11.96	0.31
9	04.01.2026	42.47	23.78	6.78	12.57	0.28
10	06.01.2026	40.32	21.77	6.48	14.06	0.36
11	11.01.2026	41.62	24.14	7.56	9.89	0.33
12	13.01.2026	39.63	20.61	6.45	10.52	0.27
13	18.01.2026	41.23	22.26	7.68	11.36	0.32
14	20.01.2026	46.58	24.69	6.36	11.51	0.36
15	25.01.2026	42.50	22.95	7.59	13.68	0.38
16	27.01.2026	41.53	21.18	7.92	13.34	0.36
17	01.02.2026	48.57	25.26	8.25	13.77	0.34
18	04.02.2026	43.85	23.24	6.85	12.65	0.43
19	08.02.2026	44.23	23.88	8.24	12.76	0.40
20	09.02.2026	38.58	21.60	6.45	13.22	0.34
21	15.02.2026	42.22	22.80	9.52	13.58	0.41
22	16.02.2026	47.25	27.41	7.65	13.84	0.45
23	22.02.2026	40.52	21.88	6.48	12.51	0.32
24	23.02.2026	45.36	23.59	7.68	13.46	0.41
Min		32.52	18.54	6.34	9.27	0.24
Max		48.57	27.41	9.52	14.06	0.45
Avg.		41.27	22.49	7.23	12.02	0.34
P 98		47.96	26.42	8.94	13.96	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

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	AN-011225-02	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village Bادهhra, 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	58.8	42.6	dB(A)
2.	Lal Singhi	10.12.2025	54.2	41.5	dB(A)
3.	Kapila Farm	15.12.2025	57.5	43.0	dB(A)
4.	Baba Balak Nath Temple	04.01.2026	47.1	38.8	dB(A)
5.	Dera Baba Garib	18.01.2026	48.0	35.4	dB(A)
6.	IPH Guest House	27.01.2026	55.4	42.0	dB(A)
7.	Ward No. 10, Una	10.02.2026	53.6	41.5	dB(A)
8.	Mount Everest School	15.02.2026	47.2	34.6	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: -

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Water	W-170226-03	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village Bادهhra, 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 Dariyan Wala	GW2 Ghaluwal	GW3 Arjunpura	GW4 Hotel Royal Castle	GW5 Rampur Village	GW 6 Saisowal	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	-	7.46	7.29	7.38	7.55	7.29	7.40	6.5-8.5	No Relaxation
6	Total Hardness (as CaCO ₃)	mg/l	178	156	164	148	155	180	200	600
7	Iron (as Fe)	mg/l	0.06	0.05	0.09	0.08	0.05	0.06	1.0	No Relaxation
8	Chlorides (as Cl)	mg/l	14.5	15.8	18.6	10.4	12.5	15.4	250	1000
9	Fluoride (as F)	mg/l	0.32	0.26	0.36	0.30	0.33	0.21	1	1.5
10	Conductivity	µmhos/cm	586.0	590.0	458.0	412.0	530.0	564.0	-	-
11	TDS	mg/l	317.0	348.0	326.0	340.0	342.0	319.0	500	2000
12	Calcium(as Ca ²⁺)	mg/l	64.4	65.8	64.0	66.1	62.0	66.5	75	200
13	Magnesium (as Mg ²⁺)	mg/l	10.5	8.90	6.75	10.2	8.50	9.21	30	100

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14	Copper (as Cu)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	1.5
15	Manganese(as Mn)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.3
16	Sulphate (as SO ₄)	mg/l	26.0	25.4	28.0	25.0	24.2	26.6	200	400
17	Nitrate(as NO ₃)	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	0.112	0.125	0.138	0.114	0.124	0.124	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 Cr ₆₊)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	No Relaxation
27	Mineral oil	mg/l	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5	No Relaxation
28	Alkalinity as CaCO ₃	mg/l	186.0	172.0	155.0	146.0	158.0	164.0	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: -

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Surface Water	SW-170226-07	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village Bادهरा, 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	Near Project Site (Upstream)	Near Project Site Downstream)
1.	pH (at 25°C)	IS:3025(Part-11)	---	7.38	7.47
2.	Temperature	IS:3025(Part-9)	°C	20.0	23.0
3.	Turbidity	IS:3025(Part-10)	NTU	1.6	2.4
4.	Electric Conductivity @25°C	IS:3025(Part-14)	µS/cm	318	326
5.	Sulphate (SO ₄)	IS:3025(Part-24)	mg/l	21.0	24.0
6.	Nitrate (NO ₃)	IS:3025(Part-34)	mg/l	1.75	2.06
7.	Total Hardness (as CaCO ₃)	IS:3025(Part-21)	mg/l	142.0	151.0
8.	Chloride (as Cl)	IS:3025(Part-32)	mg/l	48.2	65.4
9.	Fluoride (as F)	APHA 4500F	mg/l	0.23	0.30
10.	COD (as O ₂)	APHA-5220 B	mg/l	12.0	14.0
11.	Iron (as Fe)	IS:3025(Part-53)	mg/l	0.16	0.20
12.	Dissolve Oxygen	IS:3025(Part-38)	mg/l	7.5	6.6
13.	Total Dissolved Solid	IS:3025(Part-16)	mg/l	204	210
14.	BOD (3 days at 27°C)	IS:3025 (P-44)	mg/l	2.2	2.4
15.	Calcium (as Ca)	IS:3025(Part-40)	mg/l	54.8	58.6
16.	Magnesium (as Mg)	IS:3025(Part-46)	mg/l	8.5	10.2

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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	21.8	24.5
24.	Potassium (as K)	IS:3025(Part-45)	mg/l	1.54	1.78
25.	Total Alkalinity (as CaCO ₃)	IS:3025(Part-23)	mg/l	162	165
26.	Phosphate (as P)	IS:3025(Part-31)	mg/l	0.23	0.27
27.	Nitrite (as NO ₂)	IS:3025(Part-34)	mg/l	0.18	0.21
28.	Total Suspended Solid	IS:3025(Part-17)	mg/l	7.2	8.5
29.	Faecal Coliform	IS-1622	MPN/100 ml	1.2 × 10 ³	1.4 × 10 ³
30.	Total Coliform	IS-1622	MPN/100 ml	2.6 × 10 ³	2.8 × 10 ³

BDL- Below Detection Limit

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Soil Quality	SQ-170226-05	02/03/2026

Issued To: M/s Banorhey Mahadev Stone Crusher

Location: Proposed Mining of Sandstone and Bajri from Swan River beside the village
Badehra, Tehsil Haroli, District Una, (H.P.)

Sampling & Analysis Data

Sample Received On : 16/02/2026
 Sample Description : Soil Sample
 Sample Quantity : 2.0 Kg
 Sample Drawn By : NTL Representative
 Analysis Duration : 17/02/2026 to 23/02/2026

Sr. No.	Parameters	Location	Project	Near Shiv	Arya	Sambal	Near Law	Pandogha
			Site 1	Mandir	Nagar	Village	College	Uprela
		Units	Results	Results	Results	Results	Results	Results
1	pH	-	7.54	7.66	7.60	7.37	7.48	7.64
2	Conductivity	µmhos/cm	388.0	364.0	418.0	391.00	448.0	378.0
3	Sodium (as Na)	mg/kg	288.0	268.0	280.0	258.76	296.0	268.0
4	Water holding capacity	%	30.22	32.04	32.08	36.43	40.02	37.02
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	846.0	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	1.56	1.46	1.87	1.60	1.68
17	Bulk Density	Kg/cm ³	1450	1230	1304	1540	1167	1426
18	Total Kjeldahl Nitrogen (TKN)	%	0.038	0.030	0.030	0.02	0.032	0.036

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



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