HARYANA STATE POLLUTION CONTROL BOARD
C-11, SECTOR-6, PANCHKULA
Ph-0172-577870-73, Fax No. 2581201
E-Mail: hspcbcoordination@gmail.com
website: hspcb.org.in

Dated: 06/09/2023

To

The Director General,
Information, Public Relations
& Cultural Affairs Department,
Haryana, Chandigarh.

Subject: Draft EIA/EMP report of public hearing - Mining of Stone (Minor Mineral) from Donkhera Stone Mine with production capacity 15,00,000 MTPA over an area of 7.46 ha located at Village Donkhera (Gram Panchayat), Tehsil Nangal Chaudhary, District Mahendragarh, State Haryana - regarding submission of draft EIA (Environment Impact Assessment) report for conducting Public Hearing as per provision of EIA Notification 2006 (amended thereof).

Kindly refer to the subject noted above.

I have been directed to enclose herewith an advertisement regarding Public Hearing Notice to be held on **11.10.2023 at 10:00 AM** at the site of the unit for the project of "*Mining of Stone (Minor Mineral) from Donkhera Stone Mine with production capacity 15,00,000 MTPA over an area of 7.46 ha located at Village Donkhera (Gram Panchayat), Tehsil Nangal Chaudhary, District Mahendragarh, State Haryana*" for publication in the following leading newspapers on DAVP rates:-

1. One major national daily newspaper.
2. One Regional Vernacular Daily Newspaper in Hindi.

This advertisement should appear on or before 10.09.2023 in the above-mentioned two leading newspapers only and bills of the above two newspapers on DAVP rates may be sent to this office at the earliest, The bill payment of above said notice will be made for the two newspapers only.
DA/-Advertisement

Sr. Env. Engineer (HQ)
For Member Secretary

Copy to:-

A copy of the above is forwarded to the following for information and necessary action:-

1. The Deputy Commissioner, Mahendragarh at Narnaul.
2. The Chairman, Zila Parishad, District Mahendragarh at Narnaul.
3. The Executive Officer, Municipal Council Narnaul for display on the notice board
4. The Joint Director, District Industries Centre, District Mahendragarh at Narnaul.
5. The Regional Officer, Mahendragarh, Haryana State Pollution Control Board, SCO D-6 & D-7, Suncity Commercial Complex, Sector-6, Block Rewari along with a copy of the EIA report & Executive Summary and CD for sending the same to the concerned authorities mentioned above to place the same in their offices for consultation of the general public during office hours.
6. M/s Stone Field, Ground Floor, Opp state warehouse, Kotputli Road, Nangal Chaudhary, Mahendragarh, Haryana - 123023.
7. The Sr. Env. Engineer (IT) HSPCB (HQ) for uploading the notice on the website of the Board.

DA/-Advertisement

Sr. Env. Engineer (HQ)
For Member Secretary

Copy to:-

A copy of the above is forwarded to the following for information please:-

1. The Additional Chief Secretary to Govt. Haryana, Environment Department, Chandigarh.
2. The Director General, Environment Department, Haryana at Sector 17, Chandigarh.
3. P.S. to Chairman/ P.A. to Member Secretary, HSPCB, Panchkula

DA/-Advertisement

Sr. Env. Engineer (HQ)
For Member Secretary

Digitally Signed by Sanjiv Kumar
Date: 06-09-2023 13:14:56
Reason: Approved

HARYANA STATE POLLUTION CONTROL BOARD
C-11, SECTOR-6, PANCHKULA
Ph-0172-577870-73, Fax No. 2581201
E-Mail: hspcbcoordination@gmail.com
website: hspcb.org.in

Notice for Public Hearing

It is for the information of concerned that M/s Stone Field, Ground Floor, Opp state warehouse, Kotputli Road, Nangal Chaudhary, Mahendragarh has proposed a project regarding Mining of Stone (Minor Mineral) from Donkhera Stone Mine with production capacity 15,00,000 MTPA over an area of 7.46 ha located at Village Donkhera (Gram Panchayat), Tehsil Nangal Chaudhary, District Mahendragarh, State Haryana, and going to conduct of Public Hearing for obtaining Environmental Clearance.

The project proponent mentioned above has applied to the Haryana State Pollution Control Board for conducting the Public Hearing for obtaining Environmental Clearance as per EIA notification dated 14th September, 2006 for the proposed project. Accordingly, the Public Hearing for the above said project has been fixed on **11.10.2023 at 11.00 AM** at Village Donkhera (Gram Panchayat), Tehsil Nangal Chaudhary, District Mahendragarh .

Copies of executive summary of the project report and EIA study report, submitted by the project proponent, are available in the Head Office of the Board and on the website of the Board i.e. https://hspcb.org.in/ as well as in the following offices, which can be perused during office hours, on any working day:-

1. Deputy Commissioner, Mahendragarh at Narnaul.
2. Chairman, Zila Parishad, District Mahendragarh at Narnaul.
3. Executive Engineer, Municipal Council, Narnaul.
4. Joint Director, District Industries Centre, District Mahendragarh at Narnaul.
5. Regional Officer, Mahendragarh, Haryana State Pollution Control Board, SCO D-6 & D-7, Suncity Commercial Complex, Sector-6, A- Block, Rewari.

Notice is hereby given to all concerned to file suggestions, views, comments and objections, if any, on the above said proposed project, to the Chairman, Haryana State Pollution Control Board, C-11, Sector-6, Panchkula as well as Regional Officer, Mahendragarh, Haryana State Pollution Control Board, at SCO D-6 & D-7, Suncity Commercial Complex, Sector-6, A- Block, Rewari i.e. within 30 days of the publication of this notice. Besides, a Public Hearing will also be held on the Date, Time & Venue mentioned above at the proposed site of the project, which can be attended by any person including Environmental Groups, bonafide residents and others, located at the project site/sites of displacement/sites likely to be affected. Oral/Written suggestions, if any can also be made during the Public Hearing.

No TA/DA will be admissible for attending the Public Hearing.

Pardeep Kumar, IAS
Member Secretary

STONE FIELD

Ground Floor, Opp State Warehouse, Kotputli Road, Nangal Chaudhary – 123023, Distt- Mahendergarh

Date: 27.07.2023

To,

Haryana State Pollution Control Board (Head Office)

C-11, Sector-6, Panchkula, Haryana - 134109, Haryana

Phone No: 0172-2577872 & 0172-2577873

Email: hspcbho@gmail.com; hspcb@hry.nic.in;

Sub.: Mining of Stone (Minor Mineral) from Donkhera Stone Mine with production capacity 15,00,000 MTPA over an area of 7.46 ha located at Donkhera (Gram Panchayat) Village, Nangal Chaudhary Tehsil, & Mahendergarh District of Haryana - Regarding Submission of Draft EIA (Environment Impact Assessment) Report for Conducting Public Hearing as per provision of EIA Notification 2006 (amended thereof)

Ref.: State Level Environment Impact Assessment Authority, Haryana- ToR Letter File No. SEIAA/HR/2023/364 dated 06.07.2023.

Sir,

With reference to above mentioned subject, M/s Stone Field has proposed Mining of Stone (Minor Mineral) from Donkhera Stone Mine with production capacity 15,00,000 MTPA over an area of 7.46 ha located at Donkhera (Gram Panchayat) Village, Nangal Chaudhary Tehsil, & Mahendragarh District of Haryana. M/s Stone Field has appointed Parivesh Environmental Engineering Services, a NABET accredited consultant vide NABFT /EIA/2124/IA 0092(Rev.01), for conducting EIA study and obtaining Environmental Clearance as per EIA Notification, 2006 and its subsequent amendments.

As per EIA Notification 2006, our project requires Public Hearing, for this purpose we are submitting the following documents with demand draft of INR 1,50,000 (**DD NO 001039**) on dated **27.07.2023**

1) One Hard copy of Draft EIA/EMP Report.
2) One Hard copies of executive summary in Hindi and English.
3) One Soft copies of above documents in CD.
4) Demand Draft in name of Member Secretary, Haryana State Pollution Control Board, payable at Panchkula.

In view of the above, it is requested to please acknowledge the mentioned documents and process the project for Public Hearing on an early date.

Thanking You,

For M/s Stone Field

RAAG KHURANA
(Authorized Signatory)

Encl. As above

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ON DEMAND PAY ***MEMBER SECRETARY ,HARYANA STATE POLLUTION CONTROL BOARD Or Order
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रुपये ONE LAKH FIFTY THOUSAND ONLY.

₹ *1,50,000.00

FOR VALUE RECEIVED

STONE FIELD
NAGAL CHAUDHARY
MAHENDERGARH -
123023

REF. No. 414413001026

B 24495 C 20666

AUTHORISED SIGNATORIES
Please sign above

001039 123240053: 999990* 16

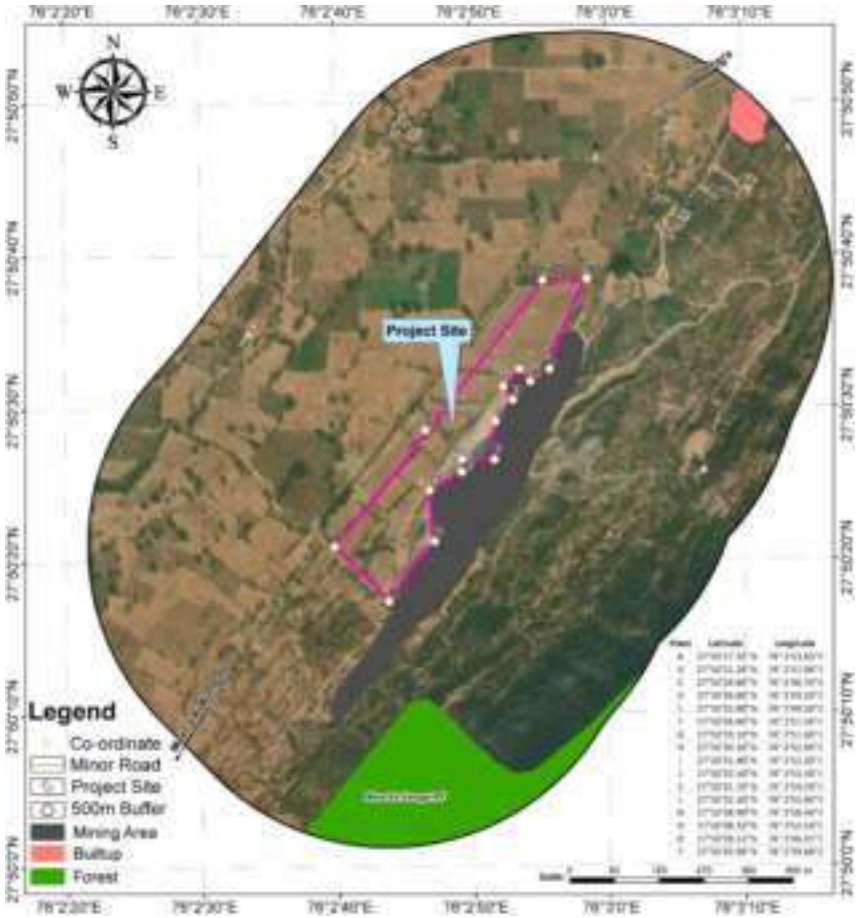
DRAFT ENVIRONMENT IMPACT ASSESSMENT (EIA) REPORT

MINING OF STONE (MINOR MINERAL) FROM DONKHERA STONE MINE

VILLAGE DONKHERA (GRAM PANCHAYAT) VILLAGE, NANGAL CHAUDHARY TEHSIL, & MAHENDRAGARH DISTRICT OF HARYANA.

MAXIMUM PRODUCTION – 15,00,000 MTPA

AREA – 7.46 HA



PROPONENT	:	**M/S STONE FIELD**
ENVIRONMENT CONSULTANT	:	**PARIVESH ENVIRONMENTAL ENGINEERING SERVICES** Nabet Certificate No. - NABET /EIA/2124/IA 0092 (Rev.01)
STUDY PERIOD	:	**PRE-MONSOON (MARCH TO MAY 2023)**
VERSION	:	**PEES/EIA/23-24/023**

JULY 2023

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CHAPTER – 01

INTRODUCTION

1. Introduction

Environmental Impact Assessment (EIA) is a procedure used to examine the environmental consequences or impacts, both beneficial and adverse, of a proposed development and to ensure that these effects are considered in project design stage and suggest mitigation measures are proposed to minimize the adverse impacts caused to the project activity.

M/s Stone Field, Through Shri Ashwani Khurana, R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon stood the highest bidder for the auction of the mine held on 27.03.2022 for Stone (Minor Mineral) of Donkhera, Nangal Chaudhary Tehsil, Mahendragarh District of Haryana State.

The applicant is involved in the Mining business for last many years. The applicant can invest necessary funds for the scientific and systematic development of mines including land rejuvenation and progressive reclamation programme and other measures necessary to protect the quality of the environment and human health etc.

1.1. Project Brief

The Letter of Intent has been issued to M/s Stone Field, through Ashwani Khurana, R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon by Director Mines & Geology, Panchkula Haryana for Mining of Stone (Minor Mineral) in "Donkhera" having tentative area of 7.46 hectares in Nangal Chaudhary Tehsil of District Mahendragarh, Haryana via e-auction held on 27.03.2022 for a period of 10 years. The NOCs and approvals have been obtained from the various respective authorities and briefed in Table 1.1.

Table 1-1: Approvals / Permissions from Concerned Authorities

Item	Permission / Approval Details	Annex No.
Letter of Intent	The Letter of Intent has been issued to M/s Stone Field, through Ashwani Khurana, R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon by Director Mines & Geology, State of Haryana Govt., Chandigarh vide memo no. **DMG/ HY/ ML/ DONKHERA/ 2022/ 2713, Panchkula Dated 20-04-2022** for Mining of Stone (Minor Mineral) in Donkhera village over an area of 7.46 hectares in Nangal Chaudhary Tehsil of District Mahendragarh, Haryana for a period of 10 years.	Annex 1.1
Approved Mining Plan	As per rule 70 of Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Presentation of Illegal Mining Rule, 2012, the mining plan was approved vide memo no. **DMG/ HY/ MP/ DONKHERA/ 2022/ 2732-2735 Panchkula Dated 19.05.2023.**	Annex 1.2
Cluster Letter	Department of Mines and Geology, Narnaul confirms one more mine (XANDY Stone Mines& Minerals – Area 4.80 Ha) is available within 500m radius from lease for form cluster vide letter **Memo No./1795 dated 01.06.2023**.	Annex 1.3
Forest NOC	The lease area land is owned by gram panchayat as no forest land involved in lease area. The NOC has been asked from department vide **SARAL ID: HFLC/2023/00355 Dated: 26/07/2023**. The acknowledgement letter is enclosed.	Annex 1.4
Tehsildar NOC	The clarification has been obtained from the Tehsildar about no habitat is coming within 500m from the lease area and no forest land involved within 500m and cluster status on dated 09.06.2023.	Annex 1.5

Item	Permission / Approval Details	Annex No.
Panchayat NOC	No objection letter from the Panchayat Donkhera has been obtained on dated 29.06.2023 for the mining operation.	1.6
DSR	District Survey Report of Mahendragarh District is available and enclosed.	1.7
Water Supply	Water will be supplied via hired private water tankers for dust suppression, plantation, and domestic use.	-
Electricity Supply	Electrical supply is available in all nearby villages. The permission will be taken from concerned department for the electricity use.	-

Table 1-2: Salient Features of Mine

S. No.	Parameters	Description		
1.	Name of the project	Mining of Stone (Minor Mineral) from Donkhera Stone Mine by M/s Stone Field		
2.	Nature & category of Mine	Non-Coal Mining Category 'B' of Activity 1(a)		
3.	Project Proponent	M/s Stone Field		
4.	Khasra No.	59//1.10/1,10/2, 60//4 min ,7/1min,7/2 min ,6/1, 6/2, 5 min 13/1 min, 13/2 min, 14/1 min,14/2. 15/1, 15/2, 17, 18/1, 18/2 min 19 min, 22 min, 23, 24, 62//6 min, min,16,17 min, 25, 63//1 min, 2,3,9,10 min,11,20,21, 64//1, 65//5.		
5.	Total Lease area	7.46 Ha (Gram Panchayat Land)		
6.	Location of the project	Village- Donkhera, Tehsil- Nangal Chaudhary, District- Mahendragarh, Haryana		
7.	Toposheet No.	G43E1 – Project Site G43D13, G43D14, G43E1 & G43E2 - Study Area.		
8.	Maximum Production Capacity	15,00,000 MTPA		
9.	Geological Mineral Reserve	1,95,54,155 MT		
10.	Mineable Reserve	1,56,43,324 MT		
11.	Geographical co-ordinates	**Point**	**Longitude**	**Latitude**
		A	76^0 02' 43.626"	27^0 50' 17.355"
		B	76^0 02' 47.056"	27^0 50' 21.258"
		C	76^0 02' 46.7"	27^0 50' 24.6"
		D	76^0 02' 49.1"	27^0 50' 26.6"
		E	76^0 02' 49.1"	27^0 50' 25.8"
		F	76^0 02' 51.5"	27^0 50' 26.6"
		G	76^0 02' 51.6"	27^0 50' 29.1"
		H	76^0 02' 52.9"	27^0 50' 30.5"
		I	76^0 02' 52.2"	27^0 50' 31.4"
		J	76^0 02' 53.4"	27^0 50' 32.5"
		K	76^0 02' 54.2"	27^0 50' 31.7"
		L	76^0 02' 55.6"	27^0 50' 32.5"
		M	76^0 02' 58.4"	27^0 50' 38.4"
		N	76^0 02' 55.143"	27^0 50' 38.322"
		O	76^0 02' 46.407"	27^0 50' 28.549"
		P	76^0 02' 39.682"	27^0 50' 20.958"
		A	76^0 02' 43.626"	27^0 50' 17.355"
		B	76^0 02' 47.056"	27^0 50' 21.258"

S. No.	Parameters	Description		
		C	76^0 02' 46.7"	27^0 50' 24.6"
		D	76^0 02' 49.1"	27^0 50' 26.6"
		E	76^0 02' 49.1"	27^0 50' 25.8"
		F	76^0 02' 51.5"	27^0 50' 26.6"
		G	76^0 02' 51.6"	27^0 50' 29.1"
12.	Topography of ML area	The general slope of the land of southern most part of the district Mahendragarh is from south to north. The lease area is consisting of slightly undulatory agriculture land. The highest point in the lease area is recorded to be 355 mRL and the lowest point recorded is 350 mRL. The lease area does not have any water body. The area sloping towards west in which water flows during rains for a short duration, otherwise they remain dry for the rest of the months. The rainwater from fields drains either into local johars or in agriculture fields.		
13.	Mining Method & Technology	**Proposed Method of Mining:** The present mining operations are designed to be carried out by mechanized open cast mining method. The entire operations proposed are mechanized. Apart of mining, the loading and transportation up to stack yard shall be done mechanically. It is proposed to load in the trucks/ dumpers directly to the destinations and mineral is not usually put up in this stack yard to avoid the double handling. In the present operation the bench height and width shall be 10m x 10m. Each bench will advance one by one. While carrying out the mining operations in accordance with the above provision the overall pit slope shall be maintenance the 49^0 the mineral bearing rocks being hard and compact. The mining operations shall be carried out by fully mechanized opencast method utilizing Heavy Earth Moving Equipment (HEMM) in conjunction with deep hole drilling dry crawler mounted DTH drills and blasting. To start with benches shall be kept along dip and advanced along the strike to give a well-blended material in each bench. The direction may be varied in due course based on experience gained, to give wider benches, longer faces and proper alignment along haul roads/ ramps. It is proposed to be adopted mechanized opencast mining method for exploitation of the mineral. Drilling and blasting shall be required to dislodge the mineral. The mining method involves breaking the rocks with explosives, loading the material with excavators and haulage with dumpers.		
14.	Ultimate depth of Mining	90.0 m BGL		

S. No.	Parameters	Description
15.	Ground water level	The ultimate depth of the mining area will be 90 m at end of life. The general water table around the lease area is at 80 - 100 m BGL.
16.	GWT intersection	Mining will be done above ground water level. So, ground water table will not be intersected.
17.	Drainage pattern/ water courses	The areal is mainly sloping both west and north direction. Mining shall be mainly below the general ground level with only one slicing of each bench one by one. Such situation may warrant any water accumulation at the lower parts of the pit. However, as the mine progresses and mining continue below the general ground level as envisaged during lease period, the mining area will become a depression, which may warrant accumulation of water during rainy season. A scheme is proposed to prevent the accumulation of such water.
18.	Water requirement & source	The source of water is private water tankers. The break-up of water requirement is as follows:

S. No.	Description	Demand
1	Dust Suppression	5.7
2	Greenbelt Development	6.3
3	Domestic Requirement	2.7
	Total	**14.7 KLD**

19.	Cost of project	The capital cost for the project will be Rs. 11 Crores including proposed lease area and machinery will be hired on contract bases.

Source: Approved Mining Plan & Project Feasibility Report

Table 1-3: Mining Cluster Details (Mines within 500m radius)

S. No.	Lease Name	Area
1	Stone Mine by M/s XANDY Mines & Minerals	4.80 Ha
2	Stone Mine by M/s Stone Field	7.46 Ha
Total		**12.26 Ha**

Source: Cluster NOC from Mining Department

1.2. Nature of the Project

The Ministry of Environment, Forest, and Climate Change (MoEF&CC), Govt. of India through its notification of 14th September 2006 and its subsequent amendment under the Environment (Protection) Act, 1986 classifies the projects under Non-Coal Mining Category 'B' of Activity 1(A). This is a project of minor mineral.

1.2.1. Need for the Project and Its importance to the Country and or Region

The said project plays a significant role in the domestic as well as infrastructural market. Achieving a huge infrastructure as being envisaged by Government of India particularly in road and housing sector requires basic building materials. The stone is one of primary building material required for the purpose. The mining activities as proposed are the backbone of all construction and infrastructure projects as the raw material for construction is available only from such mining.

The stone extracted will be consumed by the Stone crusher of district Mahendergarh itself and further transported to Stone Crusher Zones of Naurangpur, Shikopur, Raiseena of Distt. Gurgaon as well as stone crusher zone of Pali and Mohtabad of Dist Faridabad. The raw stone as well as the crushed material of stone is in high demand in real estate, construction projects as well as in building construction projects. The project will add revenue to the Government by way of direct and indirect taxes.

1.2.2. Demand-Supply Gap

Stone is an essential constituent for infrastructural development projects like road, dams, bridges, and building. It has high demand in region due to increase in industrial and other infrastructural activities.

1.2.3. Imports vs. Indigenous Production

In the current stone quarry business scenario, import and export is not envisaged. The stone is most consumed in the nearby construction projects.

1.2.4. Export Possibility

Not applicable as the production will be consumed within local area. Domestic demand is one of the chief reasons for the rapid growth of Stone business in India. Thus, domestic market for stone as building materials is well established.

1.3. Location of the Project

This is the stone mine project with 15,00,000 MTPA production over an area of 7.46 ha (Gram Panchayat) which is located at Donkhera Village, Nangal Chaudhary Tehsil & Mahendragarh District and Haryana State. Lease area is well connected to nearest villages via village road.

Figure 1.1: Location Map of Proposed Project

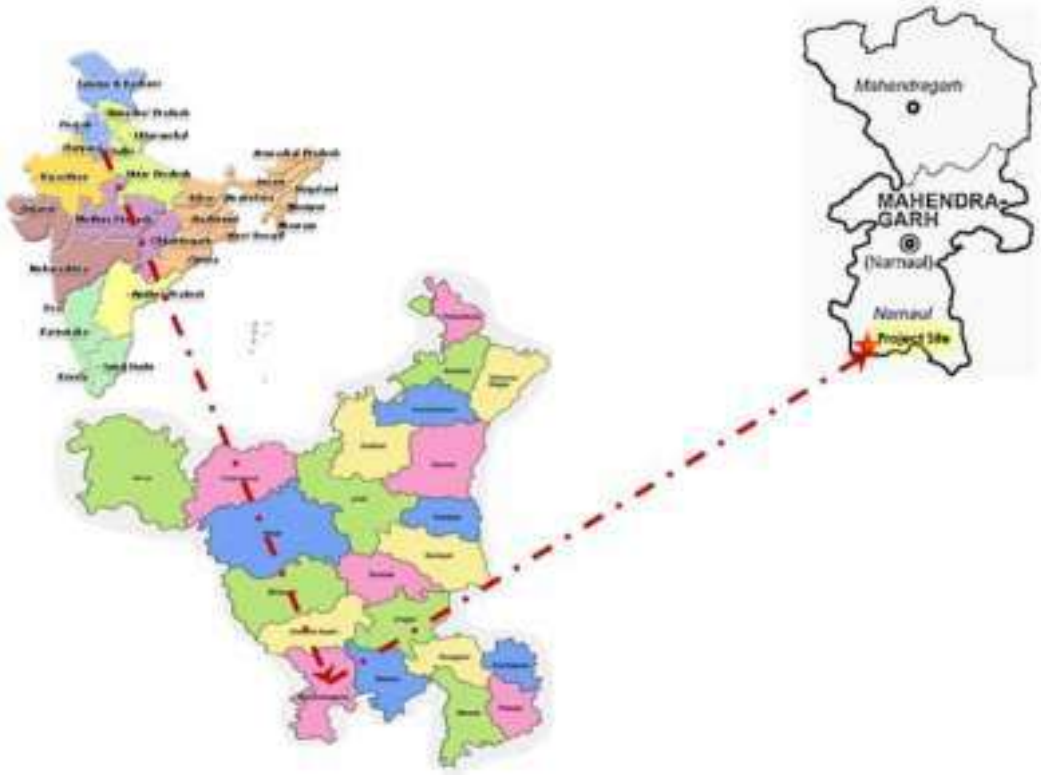


Figure 1.2: Co-Ordinates Map with 500 m Buffer from Proposed Site

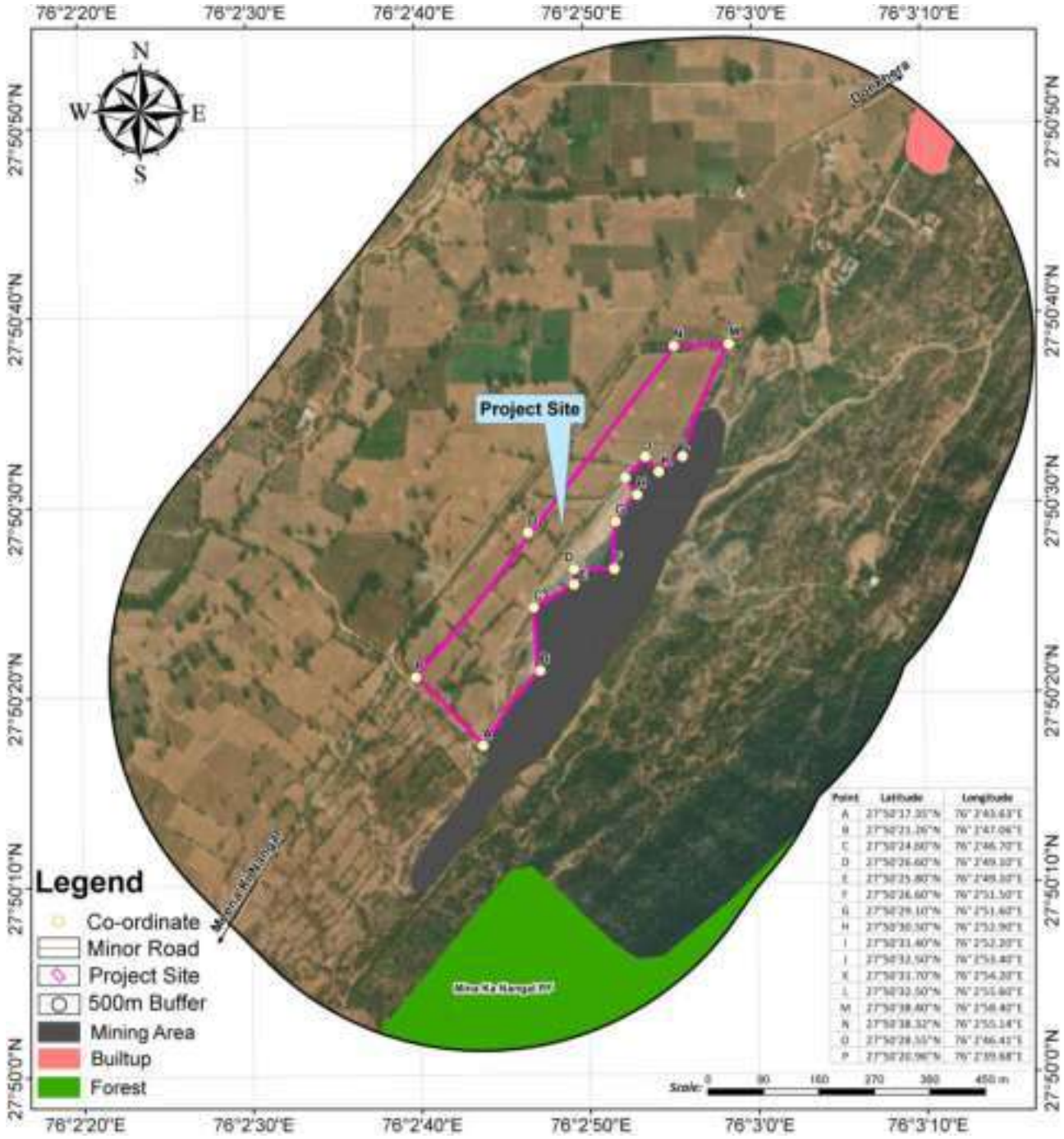


Figure 1.3: Base Map with 2 km Buffer Showing Site Features

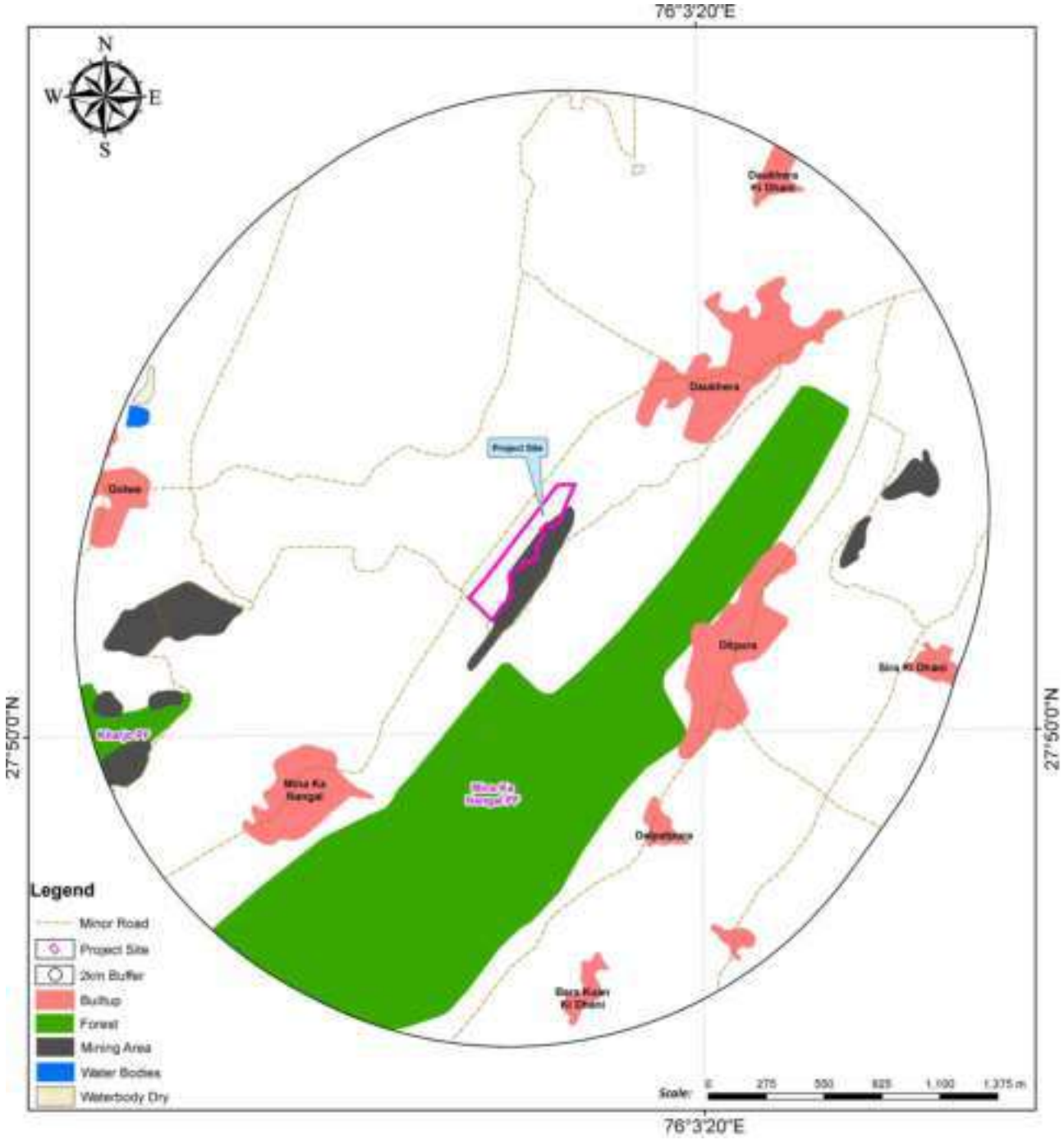
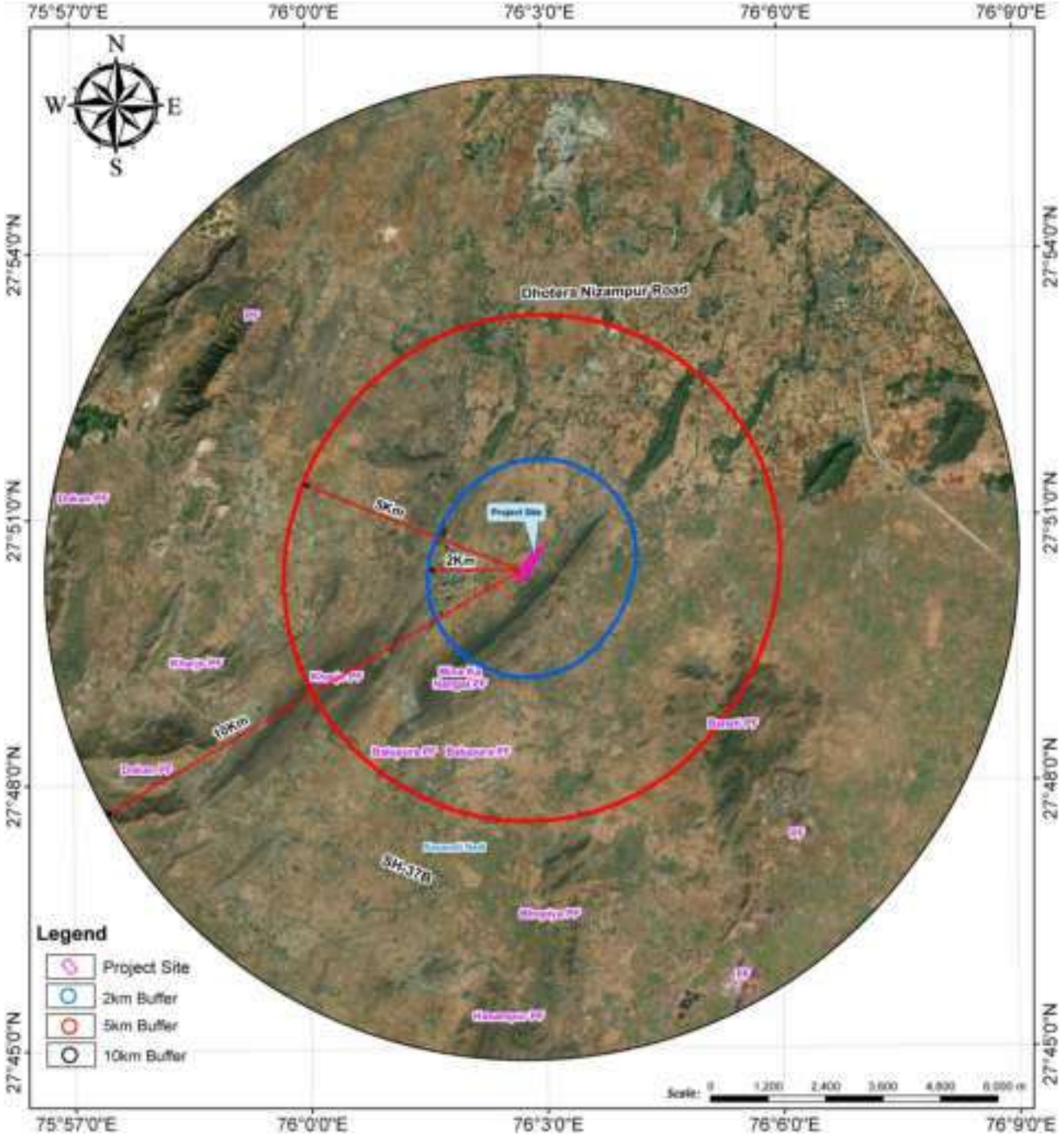


Figure 1.4: Google Map with 10 km Buffer from Proposed Site



1.4. Purpose of the Report

The purpose of the assessment is to ensure that decision makers consider the environmental impacts when deciding whether or not to proceed with a project. The International Association for Impact Assessment (IAIA) defines an environmental impact assessment as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made". EIA are unique in that they do not require adherence to a predetermined environmental outcome, but rather they require decision makers to account for environmental values in their decisions and to

justify those decisions considering detailed environmental studies and public comments on the potential environmental impacts.

The Environmental Impact Assessment has been prepared to assess the current environmental scenario of the area and then based on the activities of the mining proposed, to carry out Environment Management Plan (EMP). This plan will identify and address the impacts, where these are adverse in nature, and thereafter design mitigative measures to manage such impacts in a manner as to conserve environment and ecology of the area. The EMP has been prepared with a view to ultimately ensure that the adverse impacts are minimized if these cannot be prevented altogether.

1.5. The Study

This is the individual project. The proposal was submitted on PARIVESH portal on dated 01.07.2023 for obtaining "Terms of Reference" (ToR). The standard ToR was issued by State Level Environment Impact Assessment Authority, Haryana vide **File No. SEIAA/HR/2023/364 on dated 06.07.2023** which is enclosed as **Annex 1.8**. Baseline studies have been done for one season (pre-monsoon) i.e., from March to May 2023. The point-wise compliance of the standard ToR with additional points is given in Table 1.3.

Table 1-4: Pointwise Compliance of Terms of Reference

Terms of Reference Issued by SEIAA, Haryana	Compliance
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 as this is the fresh lease.
2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	The Letter of Intent has been issued to M/s Stone Field, through Ashwani Khurana, R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon by Director Mines & Geology, State of Haryana Govt., Chandigarh vide memo no. **DMG/ HY/ ML/ DONKHERA/ 2022/ 2713, Panchkula Dated 20-04-2022** for Mining of Stone (Minor Mineral) in Donkhera village over an area of 7.46 hectares in Nangal Chaudhary Tehsil of District Mahendragarh, Haryana for a period of 10 years. (Annex 1.1)
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.	All documents including approved mine plan, EIA are compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. are in the name of the M/s Stone Field.
4) All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ toposheet, topographic sheet, geomorphology, and	All the maps are superimposed on toposheet no.- G43D13 of SOI for project site and toposheet no.- G43D13, G43D14, G43E1 &

Terms of Reference Issued by SEIAA, Haryana	Compliance
geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	G43E2 of SOI for study area of 10km. Co-ordinates of lease area are given in Table 1.2 and marked in figure 1.2. Other maps as land use were also prepared and given in report.
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.	All the maps are prepared in SOI toposheet in 1:50,000 scale indicating the feature of site and surrounding. Study area map is enclosed as figure 3.1 and digitized land-use of study area is given in figure 3.3 of 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 State land use board or the concerned authority.	This is the stone mine project over an area of 7.46 ha located at Village Dhonkhera, Tehsil Nangal Chaudhry & District Mahendragarh and State Haryana. No diversion is proposed.
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.	The Safety, Health and Environmental (SHE) policy has been developed which will be accessible to all at site and to other stakeholders. The following key principles will be demonstrated: ✓ **Safety**: Our company is committed to providing a safe working environment for all employees and contractors. We will comply with all relevant safety regulations and strive to continuously improve safety standards. We will provide appropriate safety training, equipment, and procedures to minimize the risks associated with mining operations. ✓ **Health**: Our company recognizes the importance of promoting the health and well-being of employees and contractors. We will provide access to medical services and support programs to prevent work-related illnesses and injuries. We will also strive to minimize exposure to hazardous materials and ensure that our employees and contractors are adequately protected. ✓ **Environment**: Our company is committed to protecting the environment and minimizing the impact of mining operations. We will comply with all environmental regulations and strive to continuously improve environmental standards. We will

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	implement measures to prevent pollution, conserve natural resources, and minimize the environmental impact of our operations. ✓ **Stakeholder engagement**: Our company recognizes the importance of engaging with stakeholders, including employees, contractors, local communities, and regulators, to ensure that we operate in a responsible and sustainable manner. We will seek feedback from stakeholders and strive to address any concerns or issues in a timely and transparent manner. ✓ **Continuous improvement**: Our company is committed to continuously improving our SHE performance. We will regularly monitor and review our performance and implement measures to address any identified weaknesses or areas for improvement. We will also ensure that all employees and contractors are trained and educated in SHE policies and procedures. ✓ **Compliance**: Our company will comply with all relevant laws and regulations, as well as industry best practices, related to safety, health, and the environment. We will also hold ourselves accountable for maintaining high standards of SHE performance and strive to be a leader in sustainable mining practices. Apart from this, EMC has been framed in hierarchical system to ensuring the implementation and adaptions of norms and EC conditions.
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.	This is the opencast mine semi-mechanized stone mine. The maximum depth will be 90 m from the surface level and no activity will be involved in monsoon period. Mining operations are associated with several potential hazards that affect adversely human health and environment. Nevertheless, the following natural/ industrial problems may be encountered during the mining operation. ✓ Inundation: Filling of the mine pit due to excessive rains,

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	✓ Blasting- fly rocks and Boulders, ✓ Drilling- Noise and Vibration, ✓ Handling of overburden and heavy machinery, ✓ Storage of diesel, ✓ Slope failures at the mine faces or stacks The detailed study has been done and incorporated in chapter 7 of report.
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.	The study area will comprise of 10 km zone around the mine lease from lease periphery. The maps have been given in chapter 1 & 3 marking the study area and features. No waste will be generated from process except municipal waste.
10) Land use of the study rea delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	FCC imagery (Digital data) was used for interpretation for the relevant land use classes. On screen visual interpretation coupled with supervised image classification techniques are used to prepare the land use classification. ✓ Digitization of the study area (10 km radius from the plant site) from the Survey of India Toposheet maps. ✓ In the present study the Landsat satellite image with Toposheet no. G43D13, G43D14, G43E1 & G43E2 have been procured and interpreted using the ERDAS imaging software adopting the necessary interpretation techniques. ✓ Satellite data interpretation and vectorization of the resulting units. ✓ Field checking and ground truth validation. ✓ Composition of final LU/LC map. Study area is mainly covering agricultural land (44.7%) by following waste land (35.5%) & forest land (12.1%) of the total study area, refer section 3.3.2 of report and project site land-use at different stage is given in section 2.8 of report.
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.	Soil: There is thin soil covering 30 – 50 cm. Soil and powder of quartzite will be stacked and spread on the 7.5m buffer zone and will be used for plantation purposes.

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	Rejects: Entire mineral produced is usable/saleable.
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.	No forest land is involved in the proposed lease area. Application has been submitted to the concerned authority; acknowledgement has been enclosed as Annex 1.4.
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.	No forest land is involved in the proposed lease area. Application has been submitted to the concerned authority; acknowledgement has been enclosed as Annex 1.4.
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.	No applicable as no forest land involved, or no national park, sanctuary or biosphere reserve is coming within 10km study area.
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.	Ecology assessment was carried out in and around the lease area to study the wildlife of the area. As per the faunal survey data, a total of seven species were found within the **Schedule-I** of Indian Wildlife (Protection) Act, 1972 which includes **Pavo cristatus (Indian Peafowl), Naja naja (Indian Cobra), Ptyas mucosa (Rat Snake), Varanus benghalensis (Common Indian Monitor lizard), Python molurus (Indian Python), Herpestes edwardsii (Common Mongoose) and Felis chaus (Jungle Cat)**. Certain steps in consultation with forest department shall be undertaken to protect and conserve these species which are as follows: • Habitat of these species will not be disturbed.

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	• Arrangement of food, water etc. shall be done within their natural habitat. • Plantation using native species shall be undertaken to enhance the natural habitat of these species. • Suitable roosting and nesting sites with acacia species will be developed for Peafowl. • Awareness camp will be organized for workers and villagers. Refer Section 3.8 of EIA report.
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.	There is no wildlife sanctuary, elephant corridor, tiger reserve or any sensitive receptor within study area (10 km) from lease area.
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.	The present study on the floral & faunal assessment for the project activity is based on the field survey of the area. By the following forest inventory methodology, the survey of biological parameters has been conducted within the core zone and buffer zone (10 km radial distance) from project site in accordance with the guidelines issued by the ministry of Environment, Forest, and Climate Change, CPCB and SPCB during the study period. A preliminary survey of the study area has been performed to get a general picture of the landscapes in vegetation. The detailed study has been incorporated in report in section 3.8 of chapter.
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 as project is not part of any declared critically polluted area.

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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).	Not applicable.
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, familywise, 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.	The project site is free from any habitat, the lease issued in name of M/s Stone Field, So, there is no Project Affected Person (PAP) by the proposed mining activities. Hence, there is no need for an R&R Plan.
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.	Baseline data as collected in core as well as buffer zone of 10 km from the project boundary during pre-monsoon season (March to May 2023) in accordance with the guidelines for preparation of EIA. ✓ A meteorological station was collected hourly for wind speed, wind direction, dry and wet bulb temperature, relative humidity, and general weather conditions were recorded throughout the study period in an automated data logger. ✓ To assess the Ambient Air Quality (AAQ), 7 samples of ambient air were collected by installation of Respirable Dust Sampler and Fine Particulate Sampler at different locations from the study area during study period and analysed for primary air pollutants to work out the existing status of air quality. ✓ 5 groundwater samples & 4 surface water samples were collected during the study period from the existing hand-

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	pumps and bore wells, while surface water was collected from nearest pond, rivers, and lakes. The samples were analysed for parameters necessary to determine water quality (based on IS: 10500: 2012, IS 3025 and APHA 23rd Edition, 2017 for ground water, water quality criteria classified by CPCB for surface water) and those which are relevant from the point of view of environmental impact of the proposed site. ✓ 5 soil samples were collected and analysed for relevant physical and chemical characteristics to assess the impact of the proposed plant on soil. ✓ The noise level measurements were also made at 7 locations in different intervals of time with the help of sound level meter to establish the baseline noise levels in the impact zone.
23) Air quality modelling 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 modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air quality modeling was done to for the cumulative impact identification. The maximum/ highest predicted worst-case incremental GLC (24-hour average) of PM10 due to operations at mine project, as predicted by ISCST3 model, will be 0.093 µg/m³ through area source which will be within the project premises or near to the project site. To mitigate the source emission, the following mitigation measure will be adopted. ✓ Water sprinkling will be done on the haul roads twice a day. ✓ Water spraying on mine faces to control dust emanating from loading and handling operations. ✓ Water spraying over the muck pile to be loaded to reduce dust generation during loading operations. ✓ Water sprinklers along the mine haulage roads to reduce dust generation during plying of dumpers on the haul road. ✓ Trucks transporting materials will be covered to reduce dust emission.

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	✓ Extensive plantation of trees of different varieties. ✓ Dust masks to all workers working in dusty atmosphere. ✓ A good housekeeping and proper maintenance of vehicles and machineries, which will help in controlling pollution. ✓ Periodical monitoring of air samples at various locations. ✓ All over-burden dumps shall be stabilized with legumes and grass to prevent the erosion of soil and arrest the dust emission during windy days.
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.	The total water demand will be 14.7 KLD for mining operation, domestic use, and plantation purposes. Approx. 0.54 KLD municipal wastewater also will be generated which will be treated in septic tank & further may be utilized for water sprinkling. No discharge outside the lease will be ensured. Details of water demand, use and water balance have been given in section 4.8 of chapter 4.
25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Water will be sourced from private water tankers.
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.	Ground water level will not be intersected during mining. An amount of INR 2 lakh capital with 20 thousand recurring among has been secured for rainwater which will be constructed on nearby school or panchayat office. Budget details are given in table 10.10 of chapter 10.
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.	There is no major impact on the water environment. Assessment of the adverse impact and indicate the proposed mitigation. For details, refer to section 4.8 & 4.10 of 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	The water table will not be intersected during mining in the lease area as ultimate depth of mining is 90m and the water table is up to 100 m BGL. Proper analysis/ monitoring will be done to check the ground water. The domestic wastewater disposed from the mining activity may cause contamination of surface water.

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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.	Ground water will not withdraw so permission is not required from CGWA.
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.	No water body is available in lease area and no stream is passing through.
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.	The water table will not be intersected during mining in the lease area as ultimate depth of mining is 90m and the water table is up to 100 m BGL. Proper analysis/ monitoring will be done to check the ground water. The domestic wastewater disposed from the mining activity may cause contamination of surface water. Ground water will not withdraw so permission is not required from CGWA.
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.	A suitable combination of trees (Approx. 6,294) that can grow fast and have good leaf cover to contain dust pollution shall be adopted to develop the greenbelt. Greenbelt development will be done wherever possible. Plantation will be done within the first 2 years and in later years maintenance will be ensured. The gap plants also will be ensured to complete the numbers of total plants. Neem, Peepal, Mango, Shisham, Sirish, Babool, Gulmohar and other local fruity plants will be planted along the haul roads, along the riverbanks, schools, public building, and other social forestry programme. For details, refer to section 10.7 of chapter 10.
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.	During proposed mining, there will be an increase in traffic flow on major roads, which is running at about 1.85 km in NE direction due to movement of trucks/ dumpers carrying mined materials from the mine to destination. A total of 1200 PCU/ day will increase in the existing traffic due to this mining activity. After commencement of the project, the projected traffic represents a zone of stable flow (LOS Category "B") in 2023 which is convenient at all locations. From the above table, it can be concluded that the incremental load on the carrying capacity of the concerned road is not likely to have any adverse effect or impact.

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33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	A site office, canteen – cum rest shelter, store, First Air Room, Creche with V.T. Centre are proposed to be available on site. Toilet for male and female separately will be provided.
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.	The mining activity in the mine site will be converted into the pit at conceptual stage. The mining is conceived as one long open mine pit. The opencast mechanized mining method has been considered feasible for exploitation of the deposit. The aspects of geotechnical behavior of quarry rocks have also been taken into consideration to ascertain the suitable mine pit slopes. Refer section 2.8 of chapter 2.
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.	The open cast method involves dust generation by drilling, blasting, excavation, loading and transportation of minerals. At site, during excavation and loading activity, dust is the main pollutant which affects the health of workers whereas environmental and climatic conditions also generate health problems. Occupational health hazards have been identified and a risk matrix was developed. For details, refer to section 7.3.7 of chapter 7.
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.	Following health related hazards were identified in open cast mining operations to the workers: a. Light: The workers may be exposed to the risk of poor illumination or excessive brightness. The effects are eye strain, headache, eye pain and lachrymation, congestion around the cornea and eye fatigue. In the present case, the mining activity is done during daytime only. b. Heat and Humidity: The most common physical hazard is heat. The direct effects of heat exposure are burns, heat exhaustion, heat stroke and heat cramps; the indirect effects are decreased efficiency, increased fatigue, and enhanced accident rates. Heat and humidity are encountered in hot and humid conditions when temperatures and air temperatures increase in summer up to 38.1^{0}C or above in the riverbed mining area.

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	c. Eye Irritation: - During the high windy days in summer the dust could be the problems for eyes like itching and watering of eyes. d. Respiratory Problems: Large amounts of dust in the air can be a health hazard, exacerbating respiratory disorders such as asthma and irritating the lungs and bronchial passages. e. Noise Induced Hearing Loss: Machinery is the main source of noise pollution at the mine site. Occupational health hazards have been identified and risk matrix was developed. For details, refer to section 7.3.7 of chapter 7.
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.	The broad activities proposed under the ESR initiative along with financial implications and year-wise allocation of funds are shown in Table 10.10 of chapter 10. The salient features of the programme are as follows: ✓ Social welfare programs like provision of medical facilities educational facilities, water supply for the employees as well as for nearby villagers will be taken. ✓ A well laid plan for employment of the local people has been prepared by giving priority to local people. ✓ Supplementing Govt. efforts in health monitoring camps, social welfare, and various awareness programs among the rural population. ✓ Assisting social plantation program. ✓ Adoption of villages for general development. ✓ Supply of water to village nearby villages. ✓ Development of facilities within villages like roads, etc.
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.	The environmental management must be integrated into the process of mine planning so that ecological balance of the area is maintained, and adverse effects are minimized. An Environmental Management Plan (EMP) is a site-specific plan developed to ensure that the project is implemented in an environmentally sustainable manner. An

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	effective EMP ensures the application of best practice environment management to a project. For details, refer to chapter 10 of report.
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 the draft EIA report. The Final EIA/EMP will include all the public issues/suggestion after conducting the 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 identified.
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.	The detailed activity-wise EMP has been calculated which are ₹ 1400,000 as a Capital Cost and ₹ 4,80,000 per annum as a Recurring cost, respectively. Total budget of ₹ 38,00,000 for environmental measurements has been ensured by the developer. For details, refer to section 10.10 of report.
42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	The DMP has been prepared based on the Risk Assessment and related findings covered in the report. The objectives of DMP are to describe the company's emergency preparedness, organization, the resource availability, and response actions applicable to deal with various types of situations that can occur at mines in the shortest possible time. For details, refer to section 7.4 of report.
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.	The execution of the project brings overall improvement in the locality, neighborhood, and the State by bringing up industry, roads, infrastructure sectors and employment generation at local level. Hence it will be helpful for economic growth and support to enhance quality of life through employment. For details, refer to section 8.2 of report.
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.	Complied.
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.	Complied.

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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.	Complied. Annexure 3.2.
d) Where the documents provided are in a language other than English, an English translation should be provided.	Noted, complied.
e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Noted.
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.	Noted.
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.	Noted, no change has been done.
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.	This is fresh lease, not 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.	The EIA report includes Figure 2.1 for Contour Map of Lease Area with 100m Buffer, Figure 2.6 for Surface Geological Plan, Figure 2.7 for Geological sections, Figure 2.8 to 2.12 for Production / Working Plan, Figure 2.13 for Conceptual Plan, Figure 4.5 for Progressive Mine Closure Plan & Figure 10.1 for Environmental Plan. Refer chapter 2, 4 & 10 for more map's information.

Source: Terms of Reference issued by SEIAA, Haryana

1.5.1. Scope of the Study

The Scope and objective of the study includes following issues:

- Understanding the basic project activities and make a detailed review of policy and regulations.
- To study and analysis, the anticipated impacts of the proposed project on overall baseline environmental and socioeconomic conditions in its surrounding study area.
- To identify environmental sensitive features within the study area and places of architectural and cultural importance, if any, and its safeguarding.
- To recommend project specific appropriate preventive and mitigative measures to minimize pollution, environmental and social disturbances during entire life-cycle period of the project.
- To adopt suitable environmental action plans and management systems, to implement and monitor the appropriate mitigative measures.

Field studies for the project were conducted for the pre-monsoon season (March to May 2023) to determine the existing conditions of various environmental attributes as outlined in **Table 1.4**.

Table 1-5: Environmental Attributes and Frequency of Monitoring

S. No.	Attributes	Parameters	Frequency
1	Ambient Air	PM_{10}, $PM_{2.5}$, SO_2, NO_X & CO	Twice a week for one season as per CPCB guidelines at 7 locations.
2	Meteorology	Wind speed and direction, temperature, relative humidity & rainfall.	Near to project site at one location for one season continue hourly recording as per norms.
3	Water	Physical, Chemical and Bacteriological parameters	Once in a season (Surface Water at 4 & Ground Water 5 Locations)
4	Ecology	Existing terrestrial and aquatic flora and fauna within 10km radius circle.	Primary Inventorization and Secondary data was collected from the forest department.
5	Ambient Noise	Noise levels in dB(A)	Once in a season (24 hours) at 7 locations.
6	Soil	Physico-chemical soil quality	Once during study period at 05 locations.
7	Land use	Land use classification for different categories	Based on Toposheets (SOI) and Satellite imagery.
8	Socio-economic	Demographic and Working Status	Based on Census of India, 2011 and primary consultation.
9	Hydrology	Drainage Pattern and nature of streams	secondary sources like Survey of India Maps, Hydrology Atlas of India, CGWB etc.
10	Risk assessment and Disaster Management	Identification of areas where disaster can occur by fires and release of toxic substances	Site specific Hazard Identification and Risk assessment was done initially (As and when there is change in stored quantity of hazardous materials or process at site).

Source: Guidelines of Central Pollution Control Board, New Delhi

1.5.2. Methodology of the Study

The Environment Impact Assessment study was carried out as given in TOR which includes Identification, assessment, Quantitative Evaluation and Prediction of possible impacts. To minimize impact due to the proposed project on various environmental components, an impact

identification matrix has been prepared, while the assessment of impacts has been based on mathematical models and/or scientific knowledge and judgment.

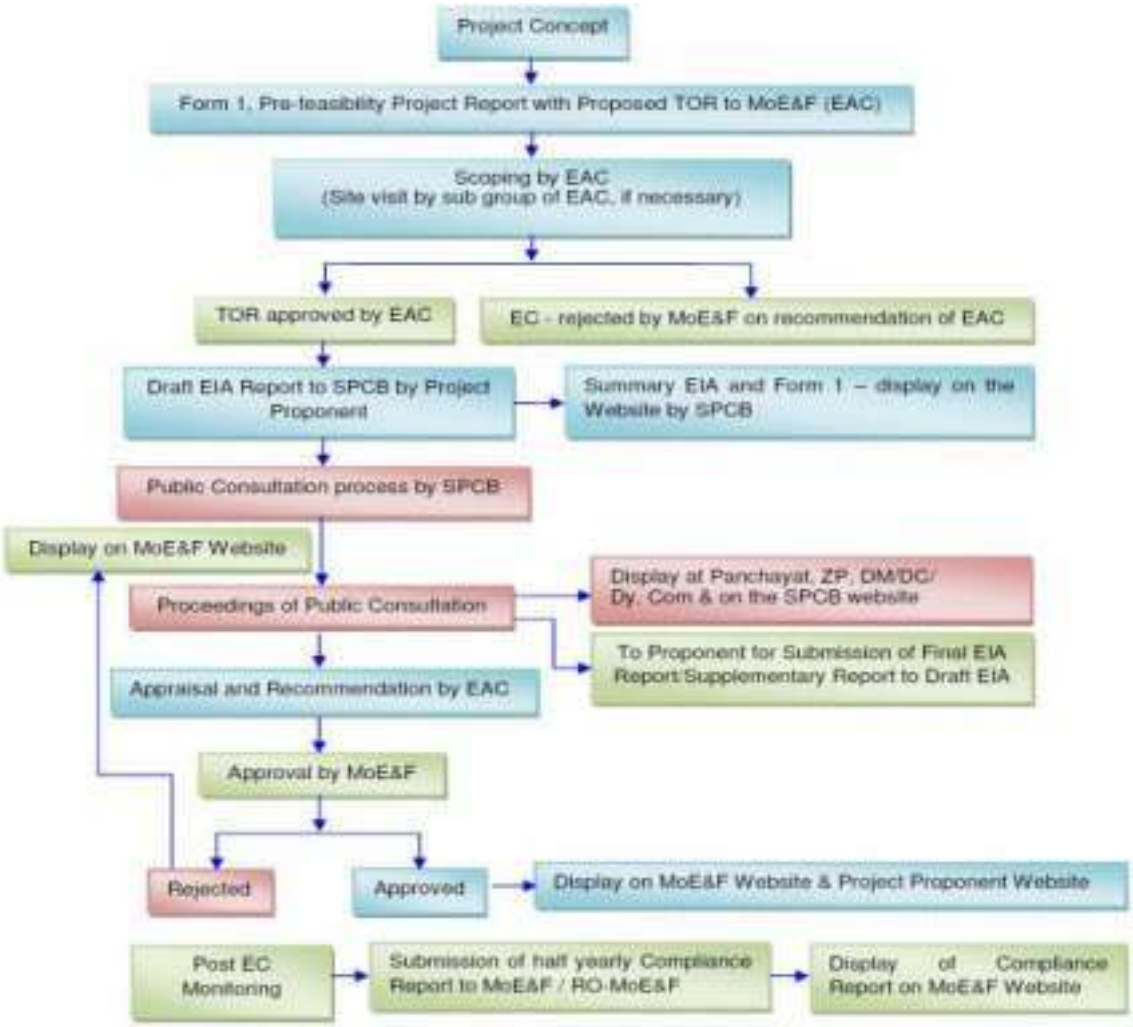
- Existing environmental status of the environment components was assessed. Identification and quantification of significant impacts of the proposed project on these environment components was carried out. The work carried is briefly reported below and has been elaborated in subsequent chapters.
- Predominant wind direction expected during the period of baseline monitoring in the study area as recorded by India Meteorological Department.
- Topography and location of surface water bodies like ponds, canals, and rivers.
- Location of villages/towns/sensitive areas.
- Identified pollution pocket, if any, within the study area.
- Accessibility, power availability and security of monitoring equipment.
- Areas which represent baseline conditions; and
- Collection, collation, and analysis of baseline data for various environmental attributes.

1.6. Environment Clearance Process

Environmental clearance of any new project or expansion of existing projects is now done as per the notification of the Ministry of Environment and Forest & Climate Change (MoEF&CC), Govt. of India dated 14th September 2006 and subsequently amended. This notification requires prior environmental clearance of all projects from competent central govt. or state govt. authorities, as may be the case. The projects are further classified into Category 'A' or Category 'B' projects based on spatial extent of potential impacts on human health, natural and man-made resources. Category 'A' projects require prior clearance by the MoEF&CC, Govt. of India while the Category 'B' projects must get clearance from the State Level Environment Impact Assessment Authority (SEIAA), constituted by the Central Government for this purpose. The environment clearance procedure for new projects requires maximum of four stages all of which may not be applicable to all the projects.

The process of environmental clearance for the proposed project is shown in the schematic diagram below given as Figure 1.5.

Figure 1.5: Schematic Diagram for Environmental Clearances Process



These four stages are as follows:

Stage 1- Screening: It refers to the definite assignment of environmental category to projects or activities. In case of Category 'B' projects scrutiny of application at State level to categorize project in 'B1' or 'B2' is done. The 'B2' projects do not require EIA Reports.

Stage 2 - Scoping: It refers to the process where EAC or SEAC determines detailed and comprehensive ToR for the EIA report and can also include site visits by the committee if required. But this process excludes construction projects such as township/ commercial complex / housing complex, etc.

Stage 3- Public Consultation: It refers to the process by which the concerns and views of local people and other stakeholders are ascertained and taken into consideration regarding the project. The Public Consultation takes part in two steps: Public Hearing and written responses.

Stage 4- Appraisal: This refers to detailed scrutiny of the application and EIA report to make categorical recommendations to the regulatory authority.

1.7. Legislative & Regulatory Framework

The environmental regulations, legislation as and policy guidelines and control that may impact the project are the responsibility of a variety of Government agencies. The principal environmental regulatory agency in India is the Ministry of Environment and Forest & Climate Change (MoEF&CC), Delhi. MoEF&CC formulates environmental policies and accords environmental

clearance for different projects. The relevant standards, which are of significance to the proposed project, are discussed in the section below.

Table 1-6: Key Environmental Legislation

Rules / Act	Scope and Objectives	Applicable Agencies
Water (Prevention and Control of Pollution) Act 1974 and Amendment Act, 2014.	To provide for prevention & control of water pollution and enhancing water quality	Central and State Pollution Control Boards
The Air (Prevention and Control of Pollution) Act, 1981	To provide for the prevention and control of air pollution.	CPCB & SPCB
Forest Conservation Act 1980 & Forest (Conservation) Rules, 2003	To halt rapid deforestation & resulting environment degradation.	GoI.
Environment Protection Act 1986, Amendments 1993.	To provide for the protection and improvement of environment.	GoI, MoEF&CC.
Noise Pollution (Regulation and control) (Amendment) Rules, 2010	To control & take measures for abatement of noise and ensure that level does not cross standard.	GoI, Nodal Agencies of MoEF&CC & State Govt.
Hazardous and Other Wastes (Management& Transboundary Movement) Amendment Rules, 2019	To the adequate handling of hazardous materials or wastes.	Central Government, Nodal Agencies MoEF&CC, CPCB
Solid Waste Management Rules 2016	To regulate the management and handling of the municipal or domestic solid wastes	CPCB, SPCB, State Govt. and Municipal Authority

Source: (i) MoEF&CC and CPCB

1.8. Report Structure

The overall contents of the EIA report have been prepared as per the generic structure (Appendix III) of EIA Notification issued by Ministry of Environment & Forests and Climate Change (MoEF&CC), Govt. of India on 14th September 2006 and subsequent amendments. The report consists of eleven chapters. The content of the chapters is briefly described in this section.

Chapter-1 Introduction: This chapter contains the general information on the mining of minerals, major sources of environmental impacts in respect of mining projects and details of environmental clearance process.

Chapter-2 Project Description: In this chapter the proponent should also furnish detailed description of the proposed project, such as the type of the project, need for the project, project location, layout, project activities during construction and operational phases, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing, and other requirements. If the project site is near a sensitive area, it is to be mentioned clearly why an alternative site could not be considered. The project implementation schedule estimated cost of development as well as operation etc. should be also included.

Chapter-3 Description of the Environment: This chapter should cover baseline data in the project area and study area.

Chapter-4 Anticipated Environmental Impacts Assessment & Mitigation Measures: This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modelling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give the details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

Chapter-5 Analysis of Alternatives (Technology & Site): This chapter gives details of various alternatives both in respect of location of site and technologies to be deployed in case the initial scoping exercise considers such a need.

Chapter-6 Environment Monitoring Program: This chapter should cover the planned environmental monitoring program. It should also include the technical aspects of monitoring the effectiveness of mitigation measures.

Chapter-7 Additional Studies: This chapter should cover the details of the additional studies required in addition to those specified in the ToR and which are necessary to cater to more specific issues applicable to the project.

Chapter-8 Project Benefits: This chapter should cover the benefits accruing to the locality, neighbourhood, region, and nation. It should bring out details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

Chapter-9 Environmental Cost Benefit Analysis: This chapter should cover on Environmental Cost Benefit Analysis of the project.

Chapter-10 Environmental Management Plan: This chapter should comprehensively present the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, both during the construction and operational phase and provisions made towards the same in the cost estimates of project construction and operation. This chapter should also describe the proposed post-monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

Chapter-11 Summary & Conclusion: This chapter gives the summary of the full EIA report condensed to ten A-4 size pages at the maximum. It should provide the overall justification for implementation of the project and should explain how the adverse effects have been mitigated.

Chapter-12 Disclosure of the Consultant: This chapter should include the names of the consultants engaged with their brief resume and nature of consultancy rendered.

CHAPTER – 02

PROJECT DESCRIPTION

2. Project Description

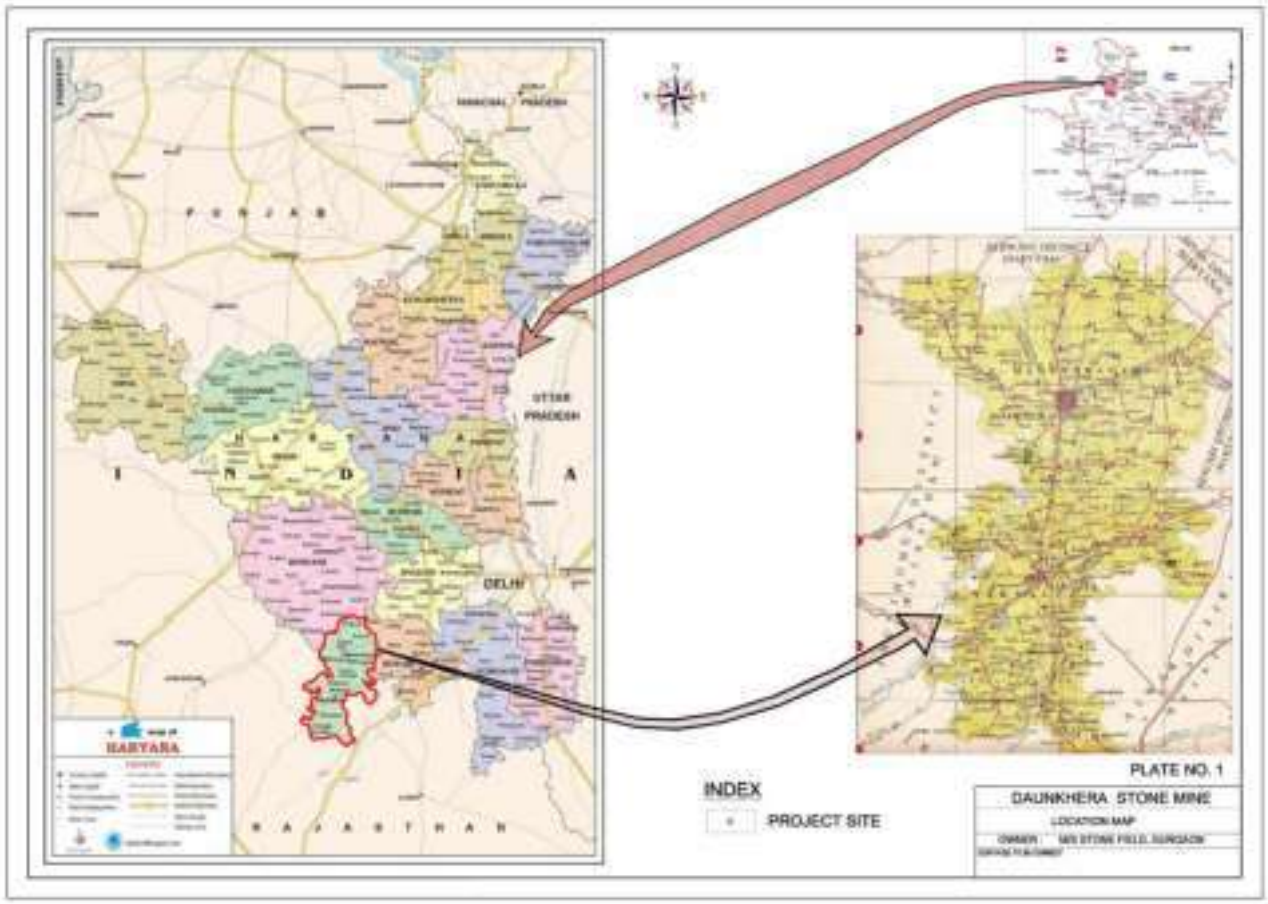
2.1. General

This chapter addresses the details of the mine, which includes resource requirement, processes and capacities, utilities and services, infra-structure facilities. It also has information of deposit conditions such as nature of occurrence, grade, and resource/ reserve etc. In district Mahendergarh, Aravalli hills exists with different type of minerals such as quartz, felspar, baraytes, dolomite, road metal and masonry stone, sandi bajri, slate stone, limestone, calcite, granite, iron ore, kyanites and quartzite stone mineral. The list of mining leases contracts in district Mahendergarh which are in operation/ temporary closed due to some personal reasons/likely to be in operations.

2.2. Location of Project

The mine is in the revenue estates of Villages Donkhera in Distt. Mahendrargarh, Haryana and is about 10Kms from Nangal Chaudhary, District Mahendrargarh. The lease area is located on the kaccha road and then a metalled road up to village Donkhera and is easily approachable from Nangal Chaudhary, Mahendrargarh and other important towns. Khasra & Jamabandi details of lease area are enclosed as **Annex 2.1**.

Figure 2.1: Location Map



The toposheet details for project site & study area is given below:

- ✓ The proposed project is covered in toposheet no.- G43E1 of SOI.
- ✓ Study area is falling within toposheet no.- G43D13, G43D14, G43E1 & G43E2 of SOI.

2.3. Mine Details

2.3.1. Topography

The lease area is consisting of slightly undulatory agriculture land. The highest point in the lease area is recorded to be 355 mRL and the lowest point recorded is 350 mRL. The lease area does not have any water body. The area sloping towards west in which water flows during rains for a short duration, otherwise they remain dry for the rest of the months. The rainwater from fields drains either into local johars or in agriculture fields. Difference between highest and lowest elevation of both pits is approx. 4-5 m. Contour map of lease area with 100m buffer is shown as Figure 2.1 & Elevation Map / Slope Map of Study area are given as Figure 2.2.

Figure 2.2: Contour Map of Lease Area with 100m Buffer

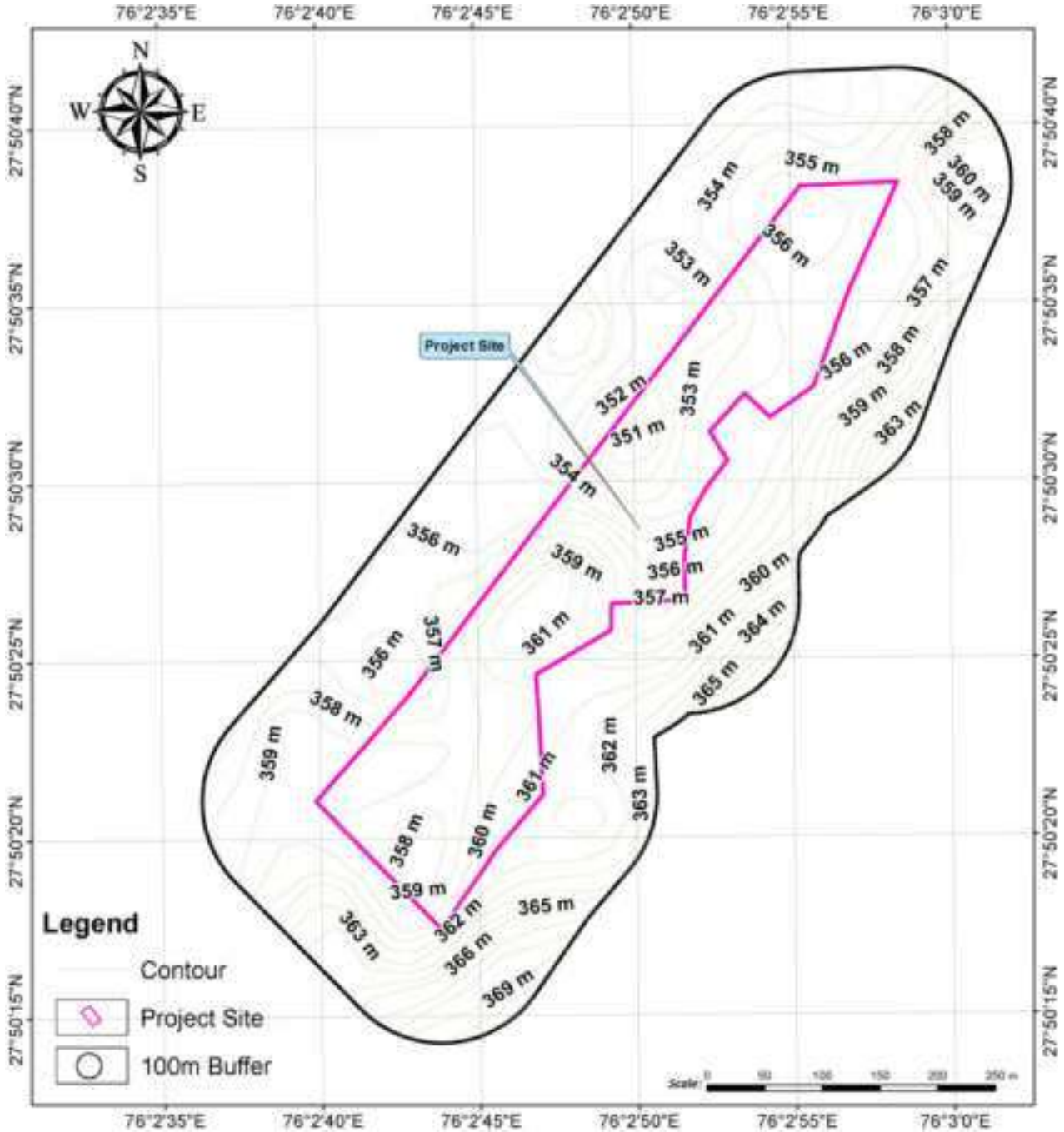
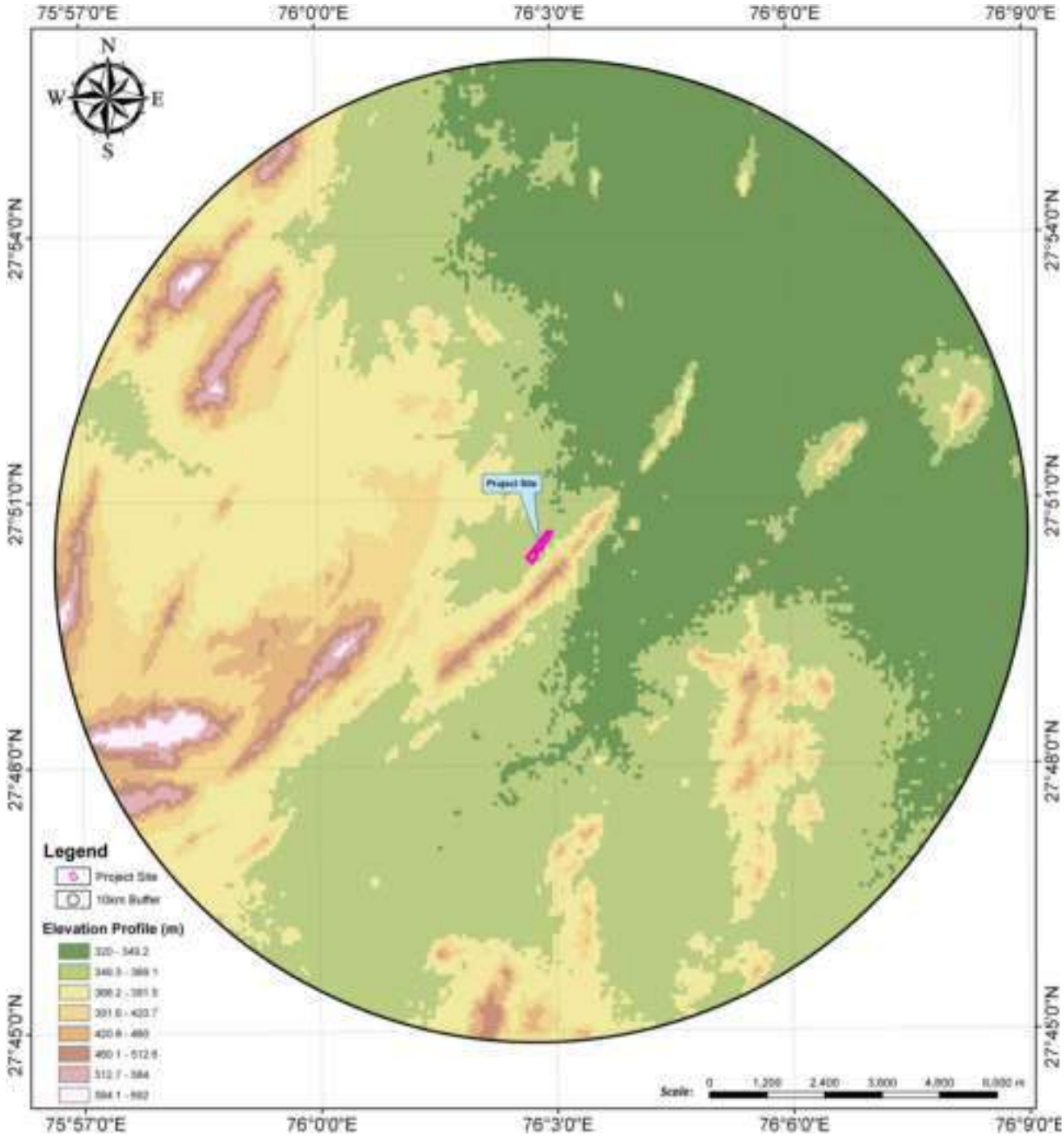


Figure 2.3: Elevation / Slope Profile of Study Area

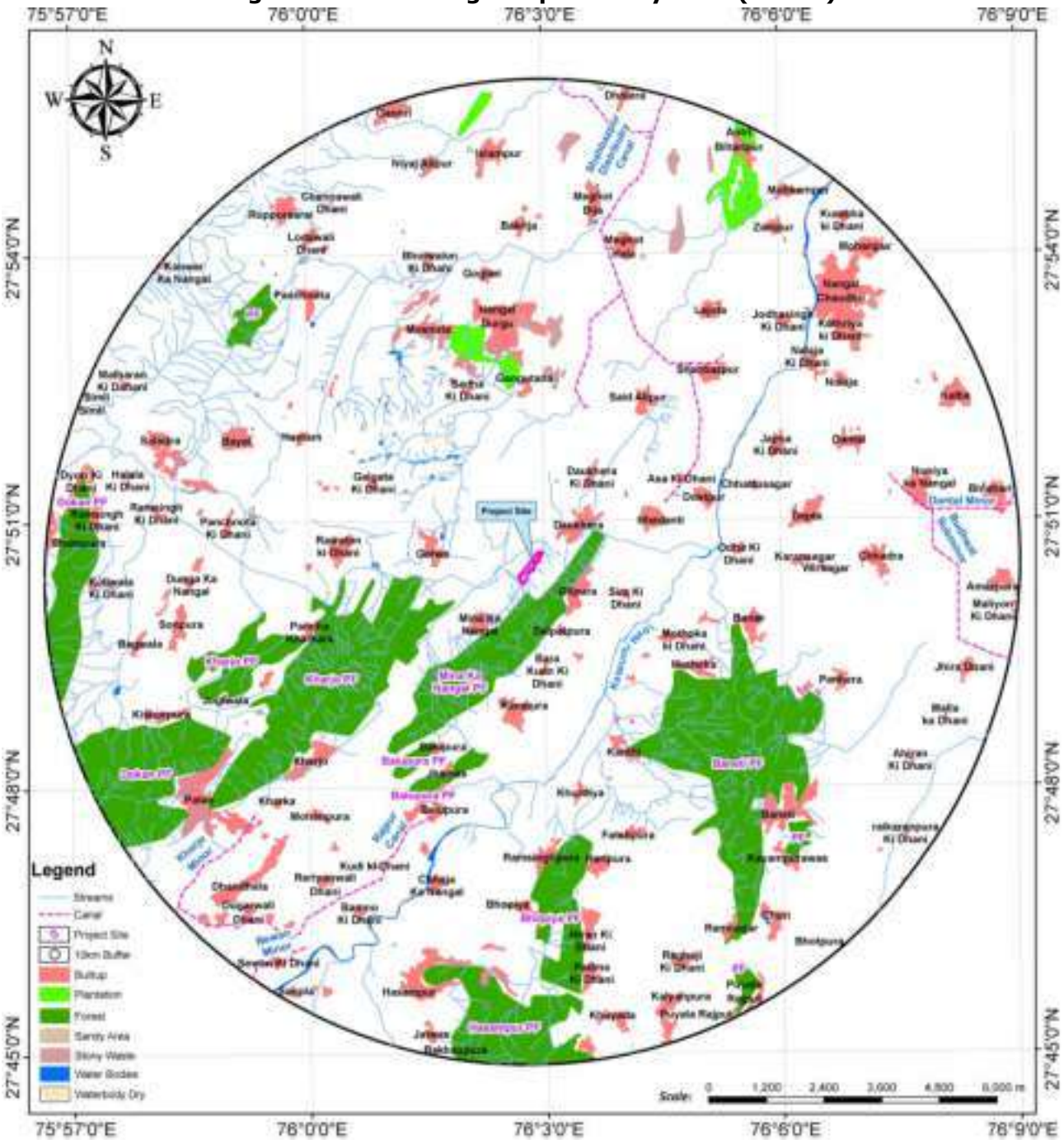


2.3.2. Drainage Pattern / Mine Drainage

The general slope of the land of southern most part of the district Mahendragarh is from south to north. The Krishna Wati River which passes through the district originates from the hillocks of Sikar district of Rajasthan. This is a seasonal river which remain dry except during rainy days. Physio graphically the district consists of flat and level plain interrupted from place to place by clusters of sand dunes, isolated hillocks, and rocky ridges. A few isolated rocky ridges elevated sharply from the plain occur in the southernmost portion of the district.

The areal is mainly sloping both west and north direction. Mining shall be mainly below the general ground level with only one slicing of each bench one by one. Such situation may warrant any water accumulation at the lower parts of the pit. However, as the mine progresses and mining continue below the general ground level as envisaged during lease period, the mining area will become a depression, which may warrant accumulation of water during rainy season. A scheme is proposed to prevent the accumulation of such water.

Figure 2.4: Drainage Map of Study Area (10 km)



2.4. Geology and Exploration

2.4.1. Geological Setup of Mahendragarh District

In district Mahendragarh, Aravalli hills exists with different type of minerals such as quartz, felspar, baraytes, dolomite, road metal and masonry stone, sandi bajri, slate stone, limestone, calcite, granite, iron ore, kyanites and quartzite stonel mineral. Aravalli hill range inselbergs and scattered in different locations of the district.

Regionally the area belongs to the Alwar Series of Delhi Super Group. The regional stratigraphic sequence in Mahendragarh and Mahendragarh District is as follows:

Table 2-1: Regional Geology

Series	Geology
Ajabgarh Series	Biotite-schist, phyllites, quartzite and impure biotitic limestones and calciphytes.
Alwar Series	Quartzites, arkose, conglomerates, and mica-schists with bedded lavas.
Rialo Series	Rialo limestone and Rialo marble, quartzite

Figure 2.5: Geology Map of Haryana State

Aravalli hills which scattered through different villages of the district such as Garhi Khudana, Zerpur, Mandola, Rajawas, Ushmapur, Sohla, Basai, Digrota, Madhogarh, Pali, Narnaul, Pachnota, Rasulpur, Jakhani, Khatoti, Lehroda, Khampura, Khaspur, Dhanota, Rambas, Karoli, Maroli, Naya Gaon, Musnota, Bayal, Gangutana, Golwa, Jainpur, Antri Biharipur, Morund, Berundla, Sareli, Ghataser, Bakhrija, Sehlong, Mudandpura, Basirpur, Amarpur Jorasi, Bazar etc. Minerals like fluvial Sandi Bajril Ordinary clay brick earth are available throughout the riverbed area of Krishna Wati and Dohan rivers which are passed through the villages such as Deroli Jat, Kherki, Baproli, Mehrampur, Khatoti, Badopur, Jadupur, Bamanwas, Dhani Jajma, Nolayaja, Antri, Biharipur, Kojinda, Mandi, Dhani Bhathotha, Nangal Pipa, Nangat Kaliya etc. The area of Mahendergarh district is marked by the Indo-gangetic Alluvial Plains with outcrops of Arava"i Ranges and overlain by Eolian Sand Dunes at isolated places. In addition, Brick earth is excavated at scattered places. The list of mining leases] contracts in district Mahendragarh which are in operation/ temporary closed due to some personal reasons/likely to be in operations.

2.4.2. Local Geology

Detailed surface geological mapping was carried out to evolve an overall picture in respect of reserves and grade of Building stone. Mapping on 1:1000 scales was done for the entire proposed area comprising of 7.32 hectares. Geological cross sections on 1:1000 scales were also drawn to ascertain the nature of the deposit.

Description of Formation

The different formations of the area belong to Alwar Series of Delhi Super Group. The following sequences have been observed in the area.

- Alluvium
- Quartzite (Stone)

The description of different formation found in the area is as under:

Soil: The surface of the proposed area is almost barren and there is a thin soil on the upper levels of the lease area. There is a thin soil cover of about 0.30 to 0.50m thick in the proposed area. Soil is mixed, fine grained, grey to light brown in colour and is not very fertile/ good for agriculture.

QUARTZITE (BUILDING STONE): This type of formation covers a major part of the area. It is reddish, bluish, and Gray in colour, semi friable to hard and fine grained in nature. Quartzite occurs mostly as building stone extending over the entire length and width of the lease area. The Quartzite is overlain by a thin soil cover ranging from 30 cm to 50 cm. There are no pits existing in the area. It is totally virgin area, but the nearby in the eastern face/edge adjacent to this area is actively worked for stone/ dolomite up to about 50m depth from surface.

STRUCTURE: The general strike of quartzite is N 250-300 E to S 250-300 W with dips of 850 to 890 due west as shown in the nearby mines of Donkhera.

ORIGIN AND CONTROL OF MINERALISATION: Quartzite is a metamorphosed product of sandstone, which have undergone low degree metamorphism.

Figure 2.6: Surface Geological Map

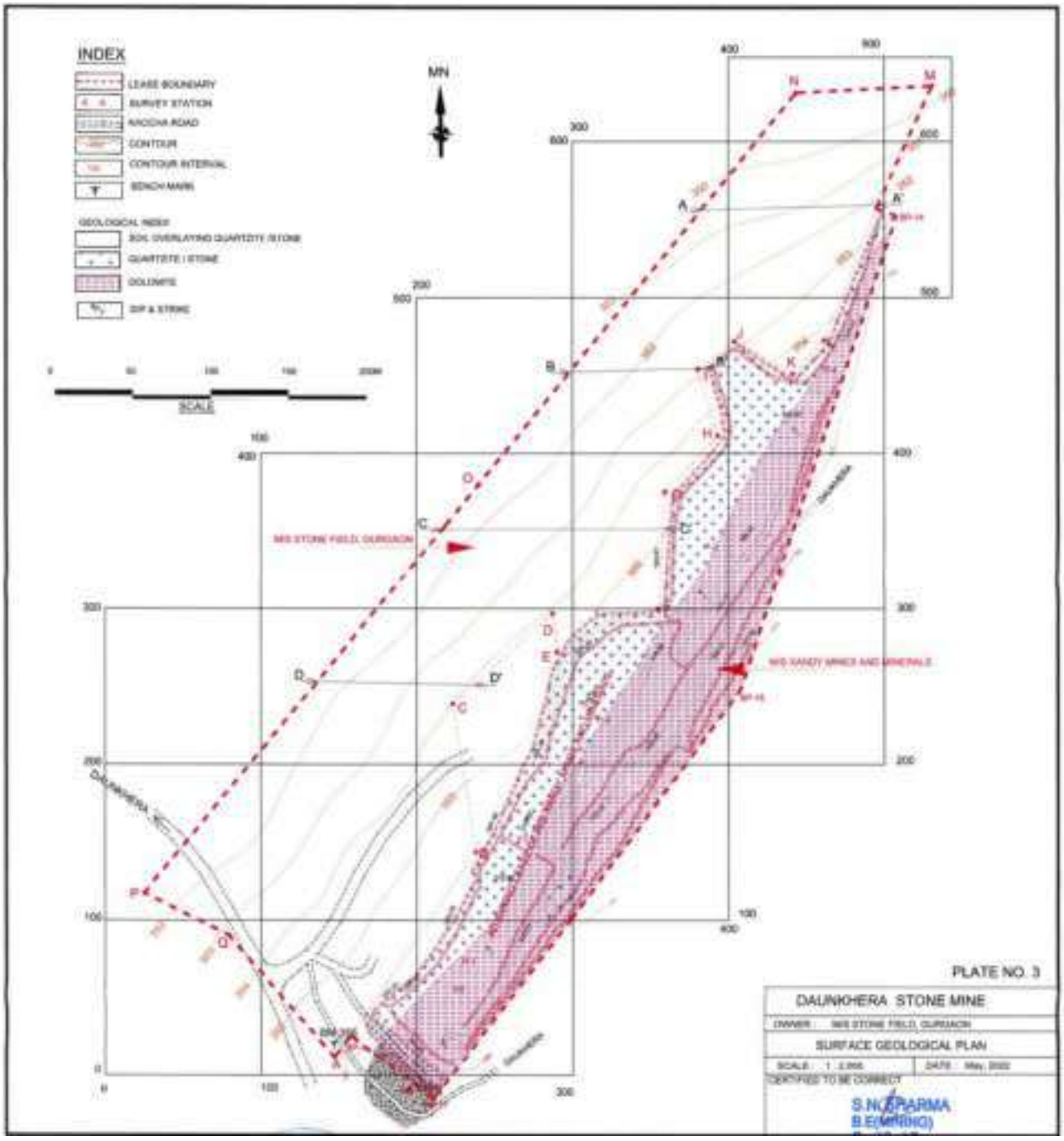
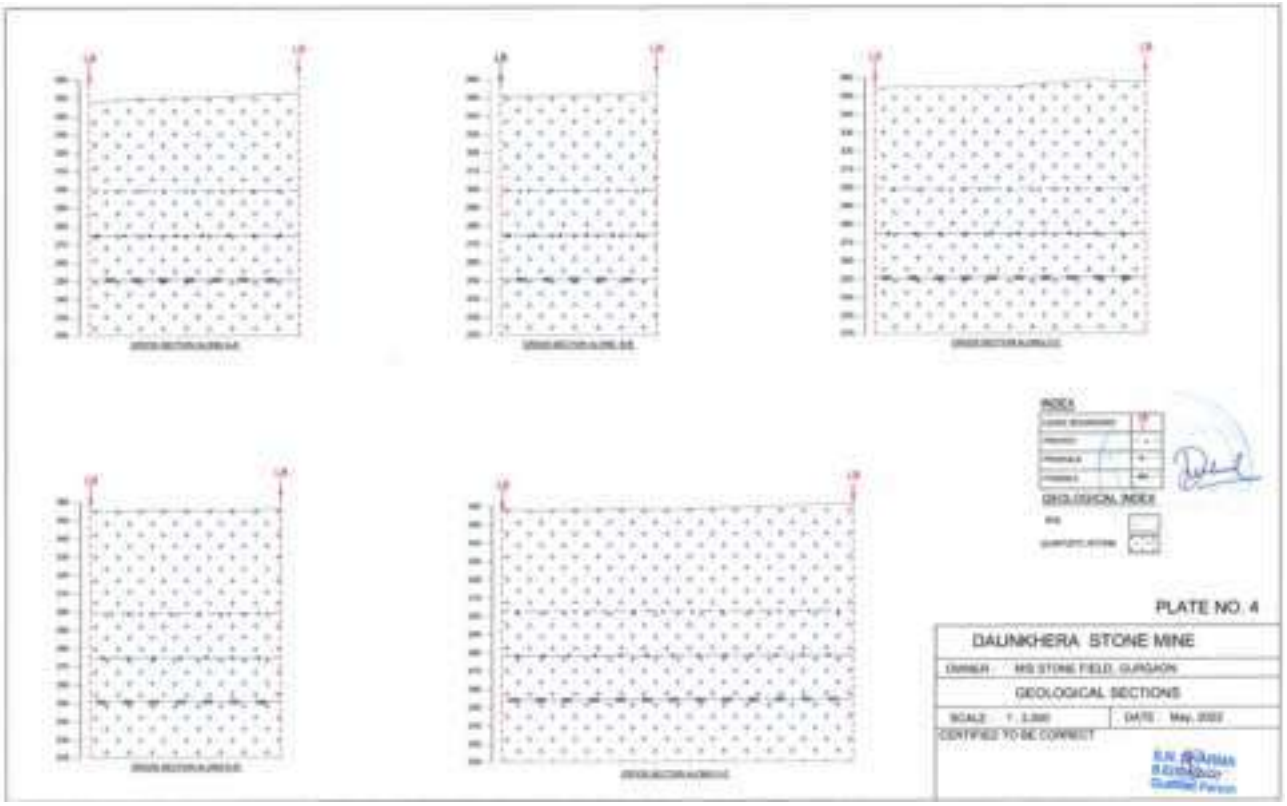


Figure 2.7: Surface Geological Sections



2.5. Exploration of Area

ALREADY CARRIED OUT IN THE AREA: The allotted area is an agriculture land in the vicinity of existing stone mine of nearby lessee Xandy Mines and Minerals which is about 50m deep from ground level. Mineral is very well exposed in the entire area. The mineral is exposed in the entire eastern edge of the proposed are and the nearby working clearly reveal the occurrence of mineral in the whole area so, there is no need of further prospecting in this area before start of mining.

PROPOSED TO BE CARRIED OUT: The mineral is exposed up to the lowermost level of 300mRL in the east side of nearby mine& the topmost part of the proposed area is at about 355mRL, however, to augment the production and confirm the continuity of the further depth it is proposed to do at least 6 exploratory bore wells to ascertain the further depth continuity. These exploratory bores are proposed to be drilled up to 100m from ground level. Therefore, bores are proposed up to 250mRL.

2.5.1. Reserve Estimation

Methods of estimation of reserves of quartzite:

- The total mineral resources and reserves have been calculated by cross-sectional area method. In this method the cross-sectional area of section line is multiplied by the influence of the section line to arrive at volume.
- The reserves are calculated based on established width, thickness, and strike length/influence of the mineralized formation in the area where good pits are available such area in put under proved category.

- In the allotted area, the mineral is exposed at the lowermost level of 315mRLon the lease boundary. So, the occurrence of mineral is considered for total thickness of mineral exposed under proved category of reserve up to and above 300 mRL. Mineral is exposed for about 50m. Therefore further25m (between 300 mRL to 275mRL is considered as probable reserves and further between 275 to 250 mRL depth is considered as possible category.
- The bulk density of Stone, (quartzite) is considered 2.5 which is further multiplied by volume to arrive at the tonnage.

2.5.2. Details of UNFC Classification

UNFC is a three-digit code-based system, the economic viability axis representing the first digit, the feasibility axis the second digit and the geological axis the third digit. Each digit provided. Codes 1, 2 and 3 in decreasing order. The highest category of resources under UNFC system has code (111) and for lowest category the code is (334).

- Code (111): This code is provided for the economically mineable part of the measured mineral resources (proved category reserves).
- Code (121): This code is provided for the economically mineable part of the indicated mineral resources (probable category reserves).
- Code (211): The part of the measured mineral resources (proved category), which as per feasibility study has not found economically mineable. The reserves blocked in 7.5 meters buffer zone and 45 meters from permanent structure.
- Code (222): The part of the indicated mineral resources (probable category), which as per feasibility study has not found economically mineable. The reserves blocked in 7.5 meters buffer zone and 45 meters from permanent structure.
- Code (333): Tonnage, Grade and mineral contents can be estimated with low level of confidence and resources are also inferred from geological.

The Section wise reserves for road metal and masonry stone (quartzite) are summarized below:

Table 2-2: Section-wise Reserve Estimation

Section Line	Cross sectional area M^2	Influence Length (m)	Bulk density	Proved reserves in MT	Probable reserves in MT	Possible reserves in MT
A-A’	5725	134	2.5	1917875		
	2806	134	2.5		940010	
	2806	134	2.5			940010
B-B’	4543	100	2.5	1135750		
	2143	100	2.5		535750	
	2143	100	2.5			535750
C-C’	742	100	2.5	1857250		
	3572	100	2.5		893000	
	3572	100	2.5			893000
D-D’	5308	100	2.5	1329000		
	2602	100	2.5		650500	
	2602	100	2.5			650500
E-E’	9764	152	2.5	3710320		

Section Line	Cross sectional area M^2	Influence Length (m)	Bulk density	Proved reserves in MT	Probable reserves in MT	Possible reserves in MT
	4694	152	2.5		1783720	
	4694	152	2.5			1783720
Total Reserves of all categories				**9948195**	**4802980**	**4802980**
Total Geological reserves						**19,55,4155 MT**
Reserves blocked in 7.5m lease boundary						**6 75,250 MT**
Reserves blocked in last benches						**3235580 MT**
Total Blocked Reserves						**39,10,830 MT**
Mineable reserves						**15,64,3325 MT**

Table 2-3: Mineral Reserve According to UNFC Guidelines

Resources	Geological (MT)	7.5m barrier (MT)	Another barrier (MT)	Infrastructure barrier (MT)	Mineable (MT)
111	99,48,195	368280	17,64,684	Nil	78,15,231
121	48,02,980	153485	7,35,448	Nil	39,14,047
122	48,02,980	153485	7,35,448	Nil	39,14,047
211	21,32,964	Nil	Nil	Nil	Nil
221	8,88,933	Nil	Nil	Nil	Nil
222	8,88,935	Nil	Nil	Nil	Nil
331	Nil	Nil	Nil	Nil	Nil
332	Nil	Nil	Nil	Nil	Nil
333	Nil	Nil	Nil	Nil	Nil
334	Nil	Nil	Nil	Nil	Nil

Source: Approved Mining Plan

2.6. Mining

2.6.1. Pre-Production Activities

As a pre-production activity, a thin cover of soil about 30 cm to 50 cm will be scrapped in advance and shall be stacked separately to be used for plantation purpose. As mining operations advance to lower levels, larger face lengths and width shall be available. Face management, which is a continuous process, shall be considered to secure shortest (average) lead distance up to crushers / dump yard as also to prevent clustering of dumpers. Following activities shall be undertaken during quarry development phase:

- Mineral is overlain by a thin soil cover of about 0.30 to 0.50m thick layer. Which will be scraped and stacked properly. It will be removed ahead of mining and will be used for plantation purpose in the first year itself.
- To make the access road to the mine working area.
- Provision and construction of access roads from ground level to mines office complex, workshop, entrance to mine faces.
- Construction of mine office, first aid station, crèche, canteen, workshop, and other ancillary infrastructural facilities shall also be undertaken.

2.6.2. Proposed Method of Mining

Mining activity will be carried out by open cast manual method.

- ✓ Drilling of "Down-the-Hole" holes as per specified pattern.
- ✓ Blasting of holes.
- ✓ Primary Blasting.
- ✓ Secondary Blasting.
- ✓ Loading of blasted material by deploying hydraulic excavators.
- ✓ Transportation of material to Crusher (Transportation of the material is arranged by users/crusher owners at their own. Lease holders in the area produce minerals and same is loaded in the trucks supplied by crusher owners. Although it is the responsibility of the lease holder to follow the traffic rules/ safety guidelines given by DGMS in operation of dumpers/trucks.

Thus, these mining operations shall be carried out by fully mechanized opencast method utilizing Heavy Earth Moving Equipment (HEMM) in conjunction with deep hole drilling by crawler mounted DTH drills and blasting. To start with benches shall be kept narrow and then gradually widened. To the extent possible, benches shall be kept along dip and advanced along the strike to give a well-blended material in each bench. The direction may be varied in due course based on experience gained, to give wider benches, longer faces and proper alignment along haul roads / ramps.

As the mineral is very well exposed on the east face of the proposed mine, workings will start from this side and will advance from east to west direction. It is further informed by lessee that the proposed mining contract for stone in Donkhera village which happens to be in immediate vicinity of the existing dolomite and stone mine. The management of these both mines has decided to work the common 7.5m buffer one on each side of leases. Therefore, in view of the common consent of both the mines, they are planning to obtain the permission to mine the common lease boundary of 7.5m +7.5m=15.0m of both the leases from the Directorate of mines safety/competent Authority. The same is very necessary and safer to amalgamate the common boundary of the both the leases. To make the mine safe from the safety point of view, it is necessary to work the common lease boundary systematically with due permission from Competent Authority. A copy of consent for working of common buffer zone(7.5m+7.5m)) to keep the mines safe as well as optimum utilization of available resources is in the interest of both the lessees.

In view of the above it is proposed to start the mine from the edge of the dolomite mine and the benches/working will move from east to west side by making benches of 10m height. By doing this the existing mine face of the Xandy mine will also become safer.

It is proposed to adopt mechanized opencast mining method for exploitation of the mineral. Drilling and blasting shall be required to dislodge the mineral. The mining method involves breaking the rocks with explosives, loading the material with excavators and haulage with dumpers.

Table 2-4: Present Breakup of Land Use in the Lease Area

S. No.	Details	Area in hectares
1	Pits (Broken Area)	0.0
2	Dump	0.0
3	Road	0.0
4	Plantation	0.0

S. No.	Details	Area in hectares
5	Infrastructure	0.0
6	Undisturbed land	7.46
	Total	7.46

PIT DESIGN PARAMETERS: In view of the geological setting of the deposit it is proposed to work the mine by mechanized open cast method using shovel and dumper combination. The rate of production is proposed 15,00,000 MT/year (5000 TPD) by the following mentioned parameters so that not only the production is achieved but mine also takes a proper / regular shape and size.

Table 2-5: Pit Design Parameters

S. No.	Particulars	Dimensions with unit
1	Final Bench Height and width	10mx10m (with intermediate safety berm of 8 m)
2	Working Bench Width	15-20m
3	Overall Ultimate pit slope	49^{O}
4	Bench Alignment and bench slope	Parallel to each other; 80^{0}
5	Face length	All along the strike length
6	Depth of pit at the end of 5^{th} year (Below General Ground)	64 m
7	Blast hole diameter	100-110mm
8	Inclination of blast hole	Vertical
9	Width of Haul Road	12m
10	Gradient of haul Road	1 in 16

- Ultimate Pit slope
- Bench Height and width
- Face length
- Bench Alignment
- Direction of face advance
- Depth of pit.

Ultimate pit slope: Quartzite rock is hard and compact. Once the pit reaches the ultimate limit which is proposed 220mRL, it is necessary that it does not start collapsing due to weathering and other effects. This can be achieved by planning ultimate pit slope at a maximum of 49 degree to avoid collapse of the pit sides. There is no overburden except a thin sol cover. Entire mineral produced will be useful.

Bench height and width: Since the host rock quartzite is hard and compact, the same parameters are considered for making benches. In view of mechanized method of mining to be adopted, the bench height is proposed 10.0mtrs. Operating bench width will be 15-20 m which will finally reduce to 6.5 m while working bench below with intermediate safety berm of 8 m. Formation of benches in this manner will result in an overall safe slope of 490 or less in the ultimate pit position.

Face length: The following parameters have been followed to arrive at the face length to facilitate the required production of 15,00,000 MT mineral. Since one pit is planned to develop in the area to obtain targeted production, the optimum face length available along the strike length is

sufficient to cater to the optimum production required. The face length will attain the maximum length at the end of 1st year.

Bench alignment: The benches are gradually aligned to give a regular shape. In general, the benches will advance in three directions west, north, and south parallel to each other. Since geological formation in the area is of simple nature, there will not be difficulty in maintaining the proposed bench alignment.

Depth of pit: The reserves up to 220 mRL are proposed to be worked. The surface level reserves will be depleted during the lease period. The workings will start at 350 mRL and will reach up to 260 mRL at the end of 5th year.

Development during the First five years: As the area has not been worked in the past. It will be worked systematically; certain pre-production development work is required. No mineral and waste dump yard are proposed as the entire mineral produced is saleable.

Working area occupied at the end of 5th year will be = 6.66 Hectares

Approach road from mine to mineral stack yard, soil stack yard and dump yard and site services shall also be made.

2.6.3. Year wise Production & Development for First Five Years

MINE ROADS

It is proposed to work the mine from top downward for which a mine road is proposed between 220 MRL to 285 mRL. The position of benches at the end of each year and the quantum of mineral produced is proposed as under:

Table 2-6: Production Details (5 years)

Year	Bench level	Total Production (MTPA)
1st	350 to 300 mRL	15,00,000
2nd	350 to 290 mRL	15,00,000
3rd	350 to 280 mRL	15,00,000
4th	350 to 270mRL	15,00,000
5th	350 to 260 mRL	15,00,000

Proposed Rate of Production: The proposed rate of production of 15, 00,000 MT/year shall be achieved by the end of 1st year. The rate of production shall be maintained up to the end of life of mine.

Mine able Reserves and Anticipated Life of the mines: As discussed in the chapter of geology, the Insitu geological reserves are calculated 19,55,4155 MT. As per the proposed method of mining and occurrence of mineral 80 % geological reserves 15,64,3324 MT are mineable. The life of the mine is therefore assessed as 10 years at the proposed rate of 15,00,000 tons of mineral / year. As the mining will proceed further depth wise the working will be kept 3 m above the water table. If the water table is found to be more than 80 m below ground working can go deeper. And life will be increased accordingly.

Figure 2.8: Production Plan 1st Year

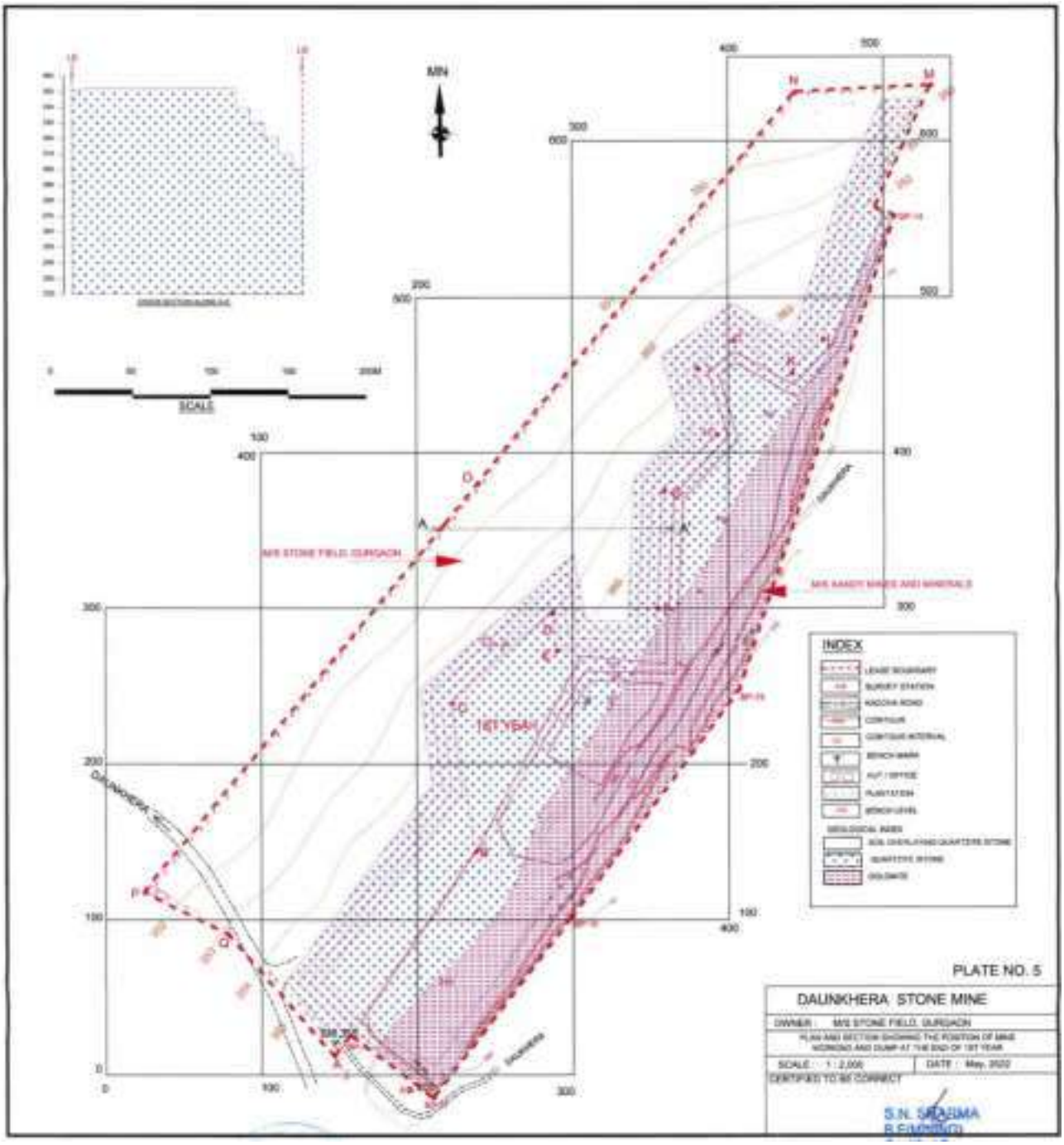


Figure 2.9: Production Plan 2nd Year

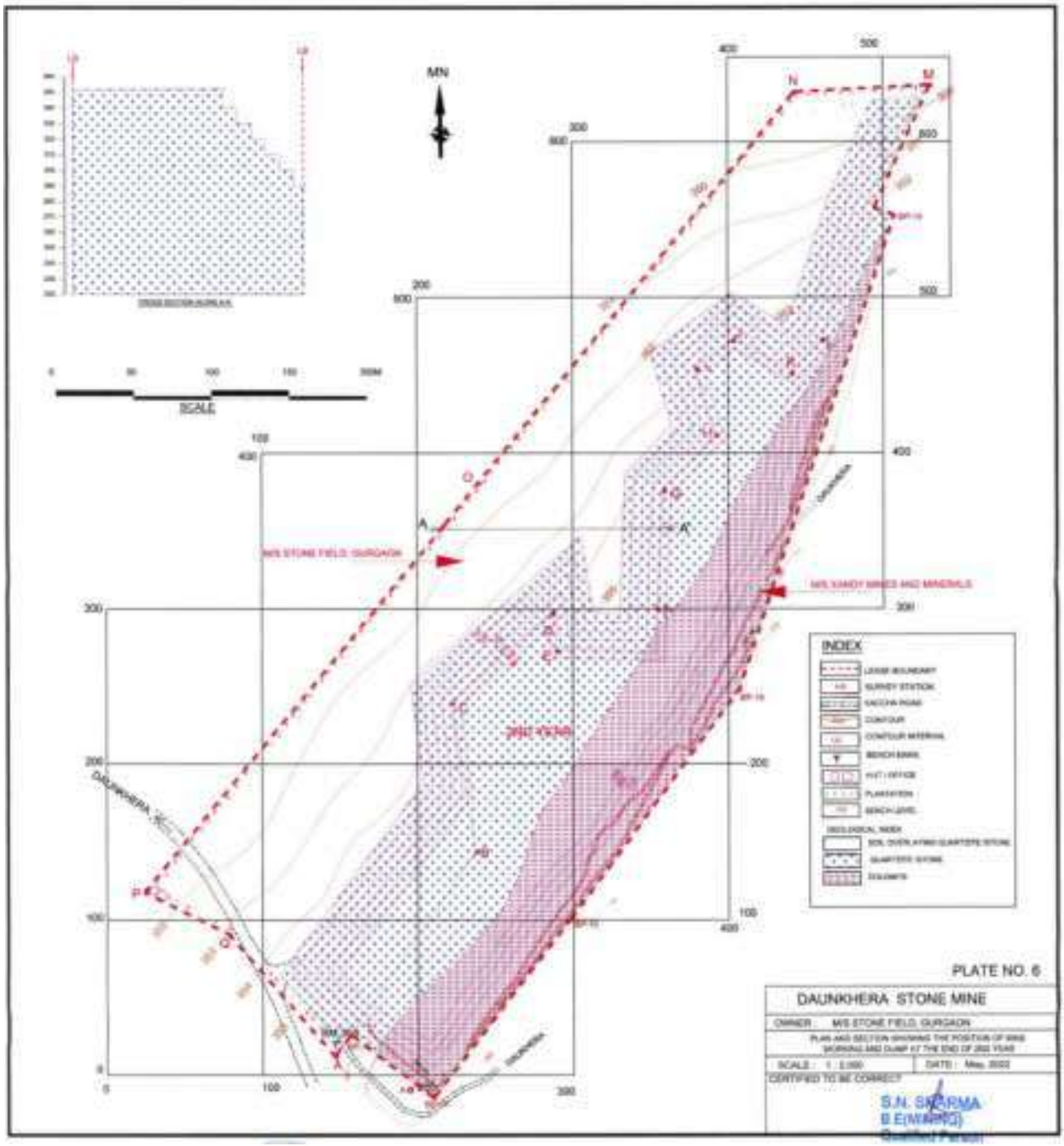


Figure 2.10: Production Plan 3rd Year

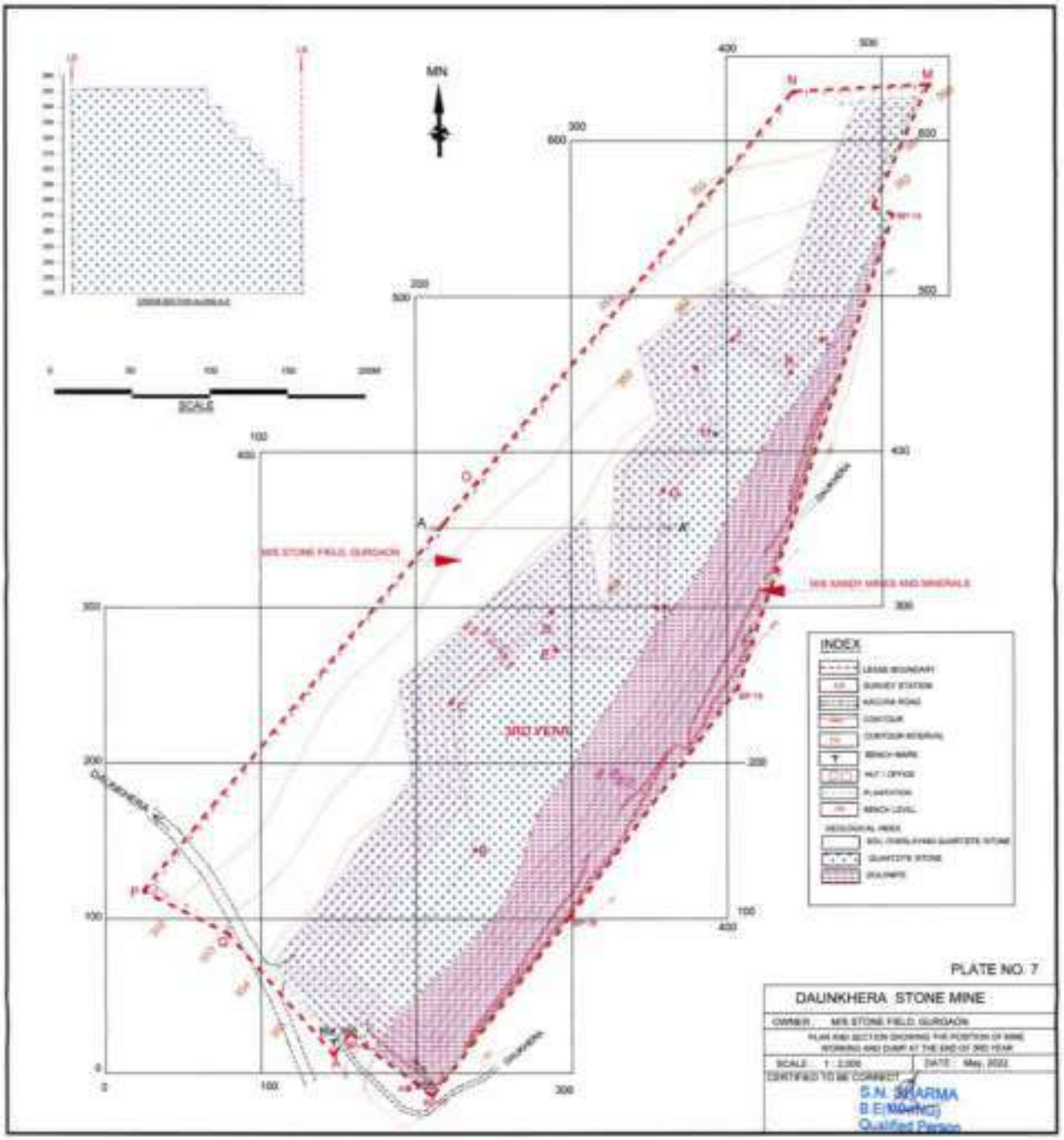


Figure 2.11: Production Plan 4th Year

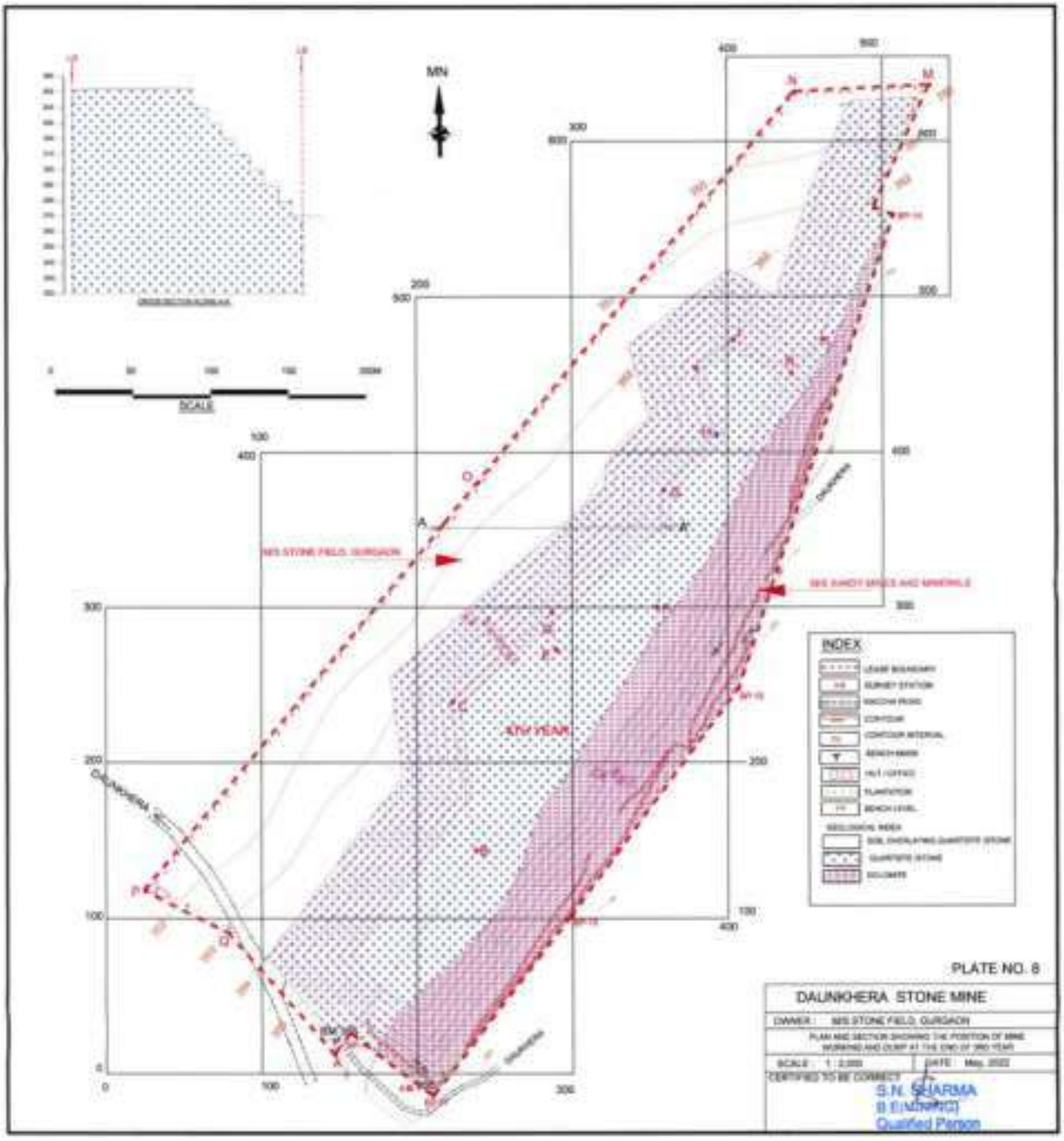
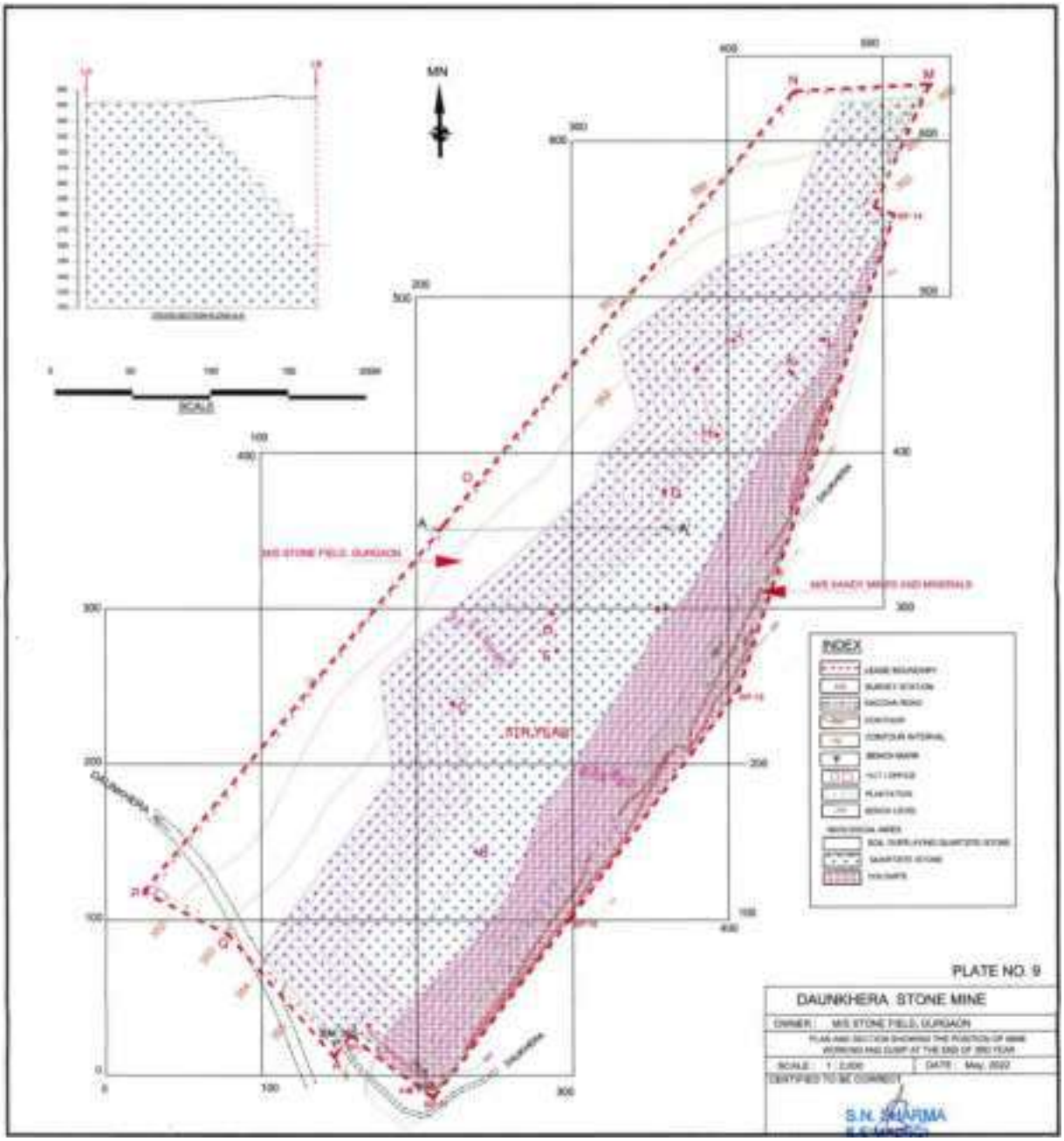


Figure 2.12: Production Plan 5th Year



2.6.4. Extent of Mechanization

Description for the calculation of adequacy and type of machinery and equipment proposed to be used in different mining operations are enumerated below:

Targeted Production	=	15,00,000 MTPA
Working days per annum	=	300
Production per day	=	5000 MT

LOADING EQUIPMENT, HAULAGE AND OTHER MINING MACHINERY

Hydraulic Excavator: The productivity of excavator is decided based on the following consideration i.e., two shifts per day working and 300 days in a year.

Table 2-7: Excavator Details

Cat.	Excavator Category	Capacity
A	Diesel Hydraulic shovel	3.2 m^3
B	Fill Factor	90%
C	Tonnage Factor	2.5
D	Availability of excavator	80%
E	Utilization of excavator	80%

For arriving at the rate of production per hour in case of the mine under reference, the following formula is applicable:

Q = C x F x T x BD x BF/Tc

Where,

Q = Per hour handling of excavator in T
C = Bucket Capacity in cubic metres = 3.2 cum
F = 0.90
T = Time in seconds = 3600
Bf = Operating efficiency = 0.90
BD = Blasted Mass = 1.4
Tc = Time cycle per pass at 90-degree swing = 45 seconds

Thus Q = 3.2 x 0.9 x 3600 x 1.4 x 0.90/45 = 290 T per Hour
Per Excavator Per Day Output = Hourly capacity of excavator x effective hour per day = 290 x 12 = 3480 T
Therefore, No of Excavators required = Total Handling per day/Handling by excavator per day = 5000 / 3480 = 1.43or say 2 Nos + 1 excavators will be ready standby. Therefore total 3 no's of excavators are required for this project.

Hauling Equipment: For calculation of number of dumpers, it is the lead from the mine to the destination which will determine the number of dumpers. Based on calculations, it is established that total 36 Nos of 35 MT capacity dumpers would be sufficient to execute the rated production at an average lead of 15 Km (one way with average speed of dumper 20 Kmph). As the nearby crusher are about 10 to 15 km away from the mine. Each dumper can make at least 4 trips. However, all the dumpers/ transportation arrangement is being done by crusher owners in the area. This is a very sound practice including the standby equipment; total requirement of dumper works out to be 42 Nos. of 35 MT capacities.

Hydraulic Rock Breaker: To minimize the secondary blasting and to contain the accidents due to fly rocks, it is proposed to deploy Hydraulic rock breakers for breaking of big boulders generated consequently upon primary blasting, at working face site.

Thus, the total population of the equipment and other ancillaries as per above assumptions and calculations, are summarized in below table:

Table 2-8: List of Machinery

S. No.	Equipment	Size	Nos
1	Hydraulic Excavator for Loading of mineral	3.2cu.m	2

S. No.	Equipment	Size	Nos
2	Rock breaker (Hydraulic Excavator) as substitute to secondary blasting	1.6 cum	1
3	Rear dumpers for transportation of mineral from mine to destination	35 T	36
4	Drill Machine with compressor of 365 cfm capacity.	100-110mm	1
5	Track chain Dozer	350 HP	1
6	Pay loader (General Purpose, loading etc.)	145 HP	1
7	Water sprinkler	10 KL	1
8	Mobile Maintenance van	-	1
		Total	**44**

Fuel Consumption: The diesel requirement for the mining operation will be 3,070 Liter / day in peak production stage. The break-up of diesel consumption is given below.

Table 2-9: Fuel Consumption / Day

S. No.	Machine	Details of Diesel requirements	Consumption
1.	Dumper (Provided by third part)	(Considering diesel consumption by the dumper is 3 km/ Liter) i.e., 50 liters for 150 km. Total Diesel consumption for 36 Dumper = 36 x 50 = 1800 Ltr	1800
2.	Excavator and rock breaker	Hourly Consumption = 15 liters /Shovel/excavator	720
		16-hour diesel consumption = 15 x 16 x 3 = 720 liters	
3.	Dozer & Pay loader	Diesel consumption 12 liters /hr	240
		10 hrs diesel consumption = 12 x 10 = 120 liters x 2 = 240	
4.	Wagon Drill/Air Compressor	No. of Compressor-1 compressors	150
		Diesel consumption by 1 compressor in 10 hours working = 1 x15 x 10 = 150 liters	
5.	Explosive Van	--	40
6.	Maintenance Van	--	60
7.	Water Tankers	--	30
8.	Light Vehicles	--	30
Total diesel requirements per day			**3070 liters**

Source: Approved Mining Plan

2.6.5. Drilling & Blasting Parameters

Drilling Parameters:

a) Tonnage of mineral excavated per hole — 10 m x 4m x 5m x 2.5= 500 T
b) No. of holes required per day — 5000 MT/500 T = 10.0
c) Total meter age of drilling/day — 10 holes x 10 m = 100 m
d) Capacity of each drill machine — 10 m per hour or 80 m / shift or 160 m per day
e) Hence no of drill machines — Drilling required / day / capacity of drilling / day
100/160 = 0.626 or say 1Nos of drill machine

Thus, it is proposed to use one drill machine of 100 - 110mm dia. As per the production target of about 5000 MT (2000 M3per day) it is estimated that about 10 holes of 10 m depth per day (100

m per day) will be required to maintain the proposed production targets. Therefore at least 1 drill machines of higher drilling rate (10 m/hour) with availability of 75% of time as well and 80 % utilization hours will be required. The details of machinery and performance will be as under.

Table 2-10: Drilling Parameters

S. No.	Details	Dia
1	A machine can drill total of meters in a shift	100-110m
2	Total drill meters required per day	100 m
3	Total no of machines required per day	0.62
4	20% consideration for maintenance and spare capacity	0.12
5	Total no of machines required (4.80 say 5)	1

Blasting Parameters:

Following parameters were considered for proper and adequate blast design.

- Drilling
- Selection of Hole Diameter
- Required Production
- Terrain
- Material Characteristics
- Type and Size of Excavating and Hauling Equipment
- Bench Height
- Explosives Type and Size
- Burden and Spacing
- Stemming
- Timing/Delays
- Scaled Distance (Peak Particle Velocity)
- Weather and Atmospheric Conditions
- Time of Day

For mining of building stone drilling and blasting is required. The job of drilling and blasting is of continues nature. Considering the time frame of mining and total requirement of material, the daily mineral production works out to be 5000 MT (2000 cum). The above target will be utilized to frame the pattern and size of blast. The blasting parameters are described as below.

Table 2-11: Blasting Parameters

Item	Values
Bench height (m)	10
Hole depth (m) (including sub-grade drilling)	9.5
Burden (m)	4
Spacing (m)	5
Volume (m^3)	4x5x10= 200
Tonnage yield (t)	200x2.5=500 T
Powder Factor (assumed)	8t/kg of explosive
Charge per hole (kg)	500 T/8 = 62.50 Kg
Total quantity of rock to be Broken per day (ton)	15,00,000 t/ 300 days = 5000 TPD
Explosive required for blasting per day	5000/8 =625 kg
Blasting Frequency (Every day)	1

Item	Values
Explosive required per blast per day	625 kg
No. of holes per day	5000 t (Production/day)/500 t (Tonnage per hole) =10.0 Holes
No of holes per blast	10

Types of Explosives

Emulsion	Primer charge (20% of charge per hole)
ANFO	column charge 80 % of charge per hole

Initiation System & Minimum Charge / Day

Delay	milliseconds delay detonators
Drilling Pattern	Staggered
Firing Pattern	V-Pattern

Secondary Blasting: Large sized fragments should be reduced to acceptable size by drilling shallow holes (0.75-1.2m). The pattern will be as follows.

Depth of Hole	0.75 – 1.2 m
Diameter of Holes	38 mm
Diameter of Explosives	25 mm
Quantity of Explosives	120 gm
Firing Pattern	

Secondary blasting is proposed but it will be minimized by deploying hydraulic rock breaker for breaking large size stone/boulders.

Storage of Explosives: Both primary / mass blast and secondary blasting will be carried out in the mines. Keeping in view the availability of explosive from authorized source/ supplier for use Tie up will be done with an explosive supplier who maintains an explosive magazine with License to Purchase, Sell and Use. This agency can bring explosives (sell) as per requirement and use in the project premises. This system will avoid construction of explosive magazine in mine premises.

2.6.6. Mode of Transportation

Mineral will be transported by hired trucks. Loaded trucks will travel on Kuccha Road made for plying of trucks. No. of such temporary road will provide access to the riverbed and the movement of loaded trucks. Similarly, mineral will be transported on the other side through approach roads which finally reaches to final destinations.

The transportation of mineral from pit head / stock yard to the consumer end crushers / traders will be carried out by the trucks deployed by the customer/purchaser and will be generally of 35 MT Capacity. Customers/purchasers come with transport arrangement of their own. However necessary arrangement of trucks can be done from the nearby truck operators union available at Nangal Chaudhary. To accommodate and to ensure smooth production and its transport to the tune of 143 dumpers/Day, the following points shall be considered:

- Existing Kachha road which joins mine to metalled road shall be strengthened and shall be maintained regularly.
- Proper traffic control shall be done at road crossings.
- Road crossings shall be wide enough to ensure that dumpers plying on the roads are safe to cross/overtake, wherever necessary.

- Along both side of Kachha road, plantation shall be done as it will arrest the dust and will act as sound barrier to larger extent.

2.6.6.1. Stacking of Mineral Rejects & Disposal of Waste

Disposal of Waste:

- Soil: There is a thin soil cover 30 – 50 cm. Soil and powder of quartzite will be stacked and spread on the 7.5m buffer zone and will be used for plantation purpose.
- Rejects: Entire mineral produced is usable/saleable.

Maximum Height and Slope of Dumps: In the present case soil generated will be used for plantation purpose only the same shall be sorted out and spread over the lease boundary of 7.5m. A minor quantity of soil will be generated during the first year only shall be used for plantation.
Dump Yard for mineral: Entire mineral produced will be supplied to crushers. But at times there could be slump in the market Around 10-15% of material shall be temporarily stored in the mine itself to avoid double handling. Rest of the material will be supplied to near bye crushers those are in the nearby area. As no dump/ waste will remain without sale. No provision of dump yard is proposed.

2.6.6.2. Use of Mineral

The entire mineral produced will be used in the building industry as road metal, crushed metal, and dust etc after crushing by the crushers. The mineral will be sold to buyers in raw form in and around Haryana, Delhi, and other states of north India.

2.6.6.3. Mineral Beneficiation & Processing

In view of the availability of direct market for building stone R.O.M., presently there is no proposal of beneficiation. R.O.M. Mineral will be sold to various crushers located in the area. Part of the building stone product will be sold in the form of lumps to the crusher owners.

2.7. Resource Requirement

2.7.1. Site Services

Manager's Office: As detailed in the preceding chapter the mines are designed to produce some 15,00,000 tons of building stone. The activities shall be supervised by one competent person as overall manager. In addition, one mining mate cum blaster is proposed to supervise the drilling and blasting operation. Main administrative office is proposed to be set up in nearby locality on rental accommodation. However, at site one office of Manager is proposed of about 5 x 3 m Size which shall also provide accommodation for key supervisory staff as well.

Canteen -cum-rest shelter: To provide the rest shelter for the personnel working in the mine and to provide tea/refreshment etc.as per the Mines Act, 1952. The arrangement shall be made to install a rest shelter-cum-canteen as shown in plate no.4 and shall be utilized by the workers. The rest shelter will be for having rest during the lunch hours by the operators/ labour. The size of rest shelter shall be about 15 x 3 meter to accommodate the working labours.

Store: Since the mining operation will involve heavy earth moving machinery, a small storeroom will be provided for day-to-day operations. No provisions for a separate workshop are being made as the heavy repairs will be carried out elsewhere. Workshop will be made outside the lease area after talking land on lease or rent.

First Aid Room: To provide the first aid for any sort of injuries encountered during the mining operation, one small first aid room shall be provided. First aid kit and sufficient stock of material / medicines needed for first aid shall be provided as per requirement. As the mining engineer / Manager and mining mates are qualified first aiders they can provide first aid to the labour on the spot. More ever the Govt. Hospitals is there at the Nangal Chaudhary which is just 6 km. From the mine and necessary medical aid can be provided from there.

Crèche: At present, provision of crèche is not provided, however in future if women workers are employed, arrangement for a small crèche shall be made as per the requirement.

V.T. Centre: Necessary arrangement shall be made for conducting refresher course as laid down in Mines vocational training rules.

Magazine: Explosive proposed to be purchase from authorized source/ authorised agency for use in mine than there will not be need of construction of magazine.

2.7.2. Electricity Supply

Presently there is no arrangement for supply, at the mine but it is proposed to take an extension of the electricity line from the nearby point which is just 0.2 Km from mines site.

2.7.3. Water Supply

The requirement of water for the project will be sourced from private water tankers. The total water demand will be 14.7 KLD which will conclude dust suppression (5.7 KLD), plantation (6.3 KLD) & domestic requirement (2.7 KLD). Details are given in Table 1.2. The water supply for drinking& dust suppression purpose will be made available by hired tractor tanker. The water will be taken from the village public water supply which is just 0.5 km. away from the mine site and is controlled by the public health department of the state Govt. The water form supply tube well is used for the entire village Donkhera. Therefore, the same arrangement shall continue for the mines as well.

2.7.4. Manpower Requirement

Statutory personnel as detailed below are proposed to be deployed by project proponent as per requirement of Mines Act-1952 and latest DGMS circulars. Manpower will be preferred from nearby region based on their skills. Total requirement of employee (skilled & unskilled) will be required 89 which may be sourced from nearest villages as per their skills.

Table 2-12: Manpower Requirement

S. No.	Designation	Category	Numbers
1	Mines Manager first class	Highly skilled	1
2	Assistant Managers/Foreman	Highly skilled	2
3	Mining Mate cum Blaster	Highly skilled	2
4	Security Guard & Water Man	Semi-skilled	3
5	Environment Assistance	Skilled	1
6	Diesel hydraulic shoved operator & back hole operator	Highly skilled	6
7	Dumpers operators	Highly skilled	70
8	Drill operators	Highly skilled	2
9	Track chain Dozer operators	Highly skilled	1
10	Water sprinkler	Skilled	1
	Total		**89**

In addition to the above-mentioned staff rest of the function i.e., supply of explosives, preparation, and amendment of plans etc. security personnel shall be proposed to be performed from the professional on lease/job work basis.

2.8. Conceptual Development Plan

The detailed mining plan has been prepared with a project life of 10 years. The mining is conceived as one long open mine pit. The opencast mechanized mining method has been considered feasible for exploitation of the deposit. The aspects of geotechnical behaviour of quarry rocks have also been taken into consideration to ascertain the suitable mine pit slopes. The major rock of the quarry is quartzite with clay intercalations and could be classified in the category of harder rock strata. The conceptualized mine pits are based on appropriate overall slope angle broadly confirming to prevailing norms of mine safety department for harder rock strata. The broad configurations of mine pit slope are shown in the enclosed drawing and the broad details are as follows:

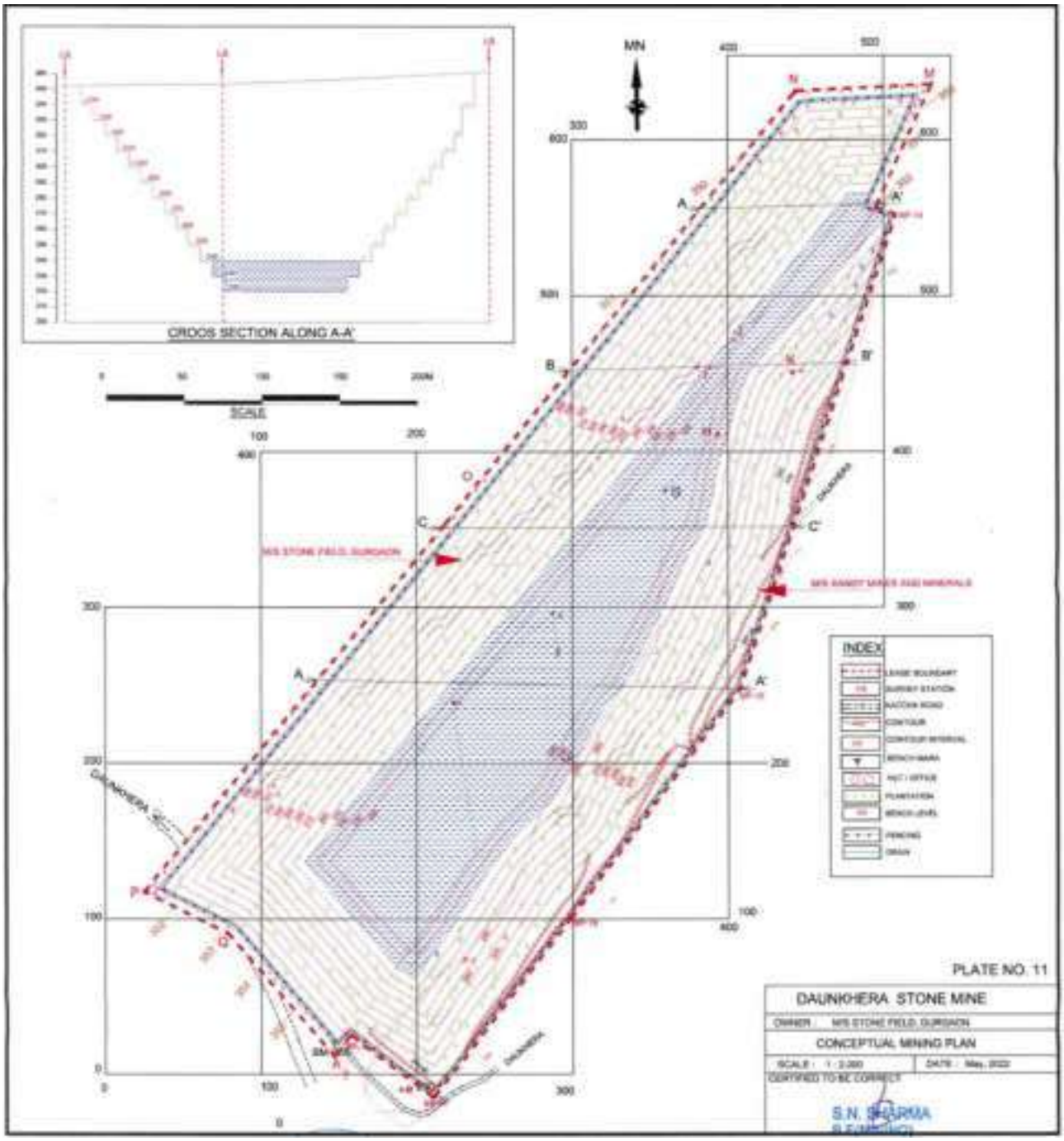
- Overall Slope – 49 degrees
- Bench Height – 10 meters
- Bench Width – Operating width 15-20 m which will finally reduce to 10 meters at the end of working with intermediate safety berm of 8 m width.
- Individual Bench Slope – 80 degrees
- Burden of Holes - 4 meters
- Spacing of Holes - 5 meters
- The breakup of present land use and at the end of 5th year.

Table 2-13: Land-Use Pattern at Different Stage

S. No.	Details	Existing land use (ha)	At the end of 5th year (ha)	At the end of lease period (Ha)
1	Pits (Broken Area)	0	6.66	0
2	Dump	0	0	0
3	Infrastructure	0.12	0.2	0.2
4	Plantation on benches and along Lease boundary	0	0.6	5.18
5	Back filled	0	0	0
6	Water body	0	0	2.08
7	Undisturbed land	7.34	0	0
Total		**7.46**	**7.46**	**7.46**

Source: Approved Mining Plan

Figure 2.13: Conceptual Plan



2.9. Summary

The total proposed production is 15,00,000 MTPA. This mining project will provide employment to 89 people which will include skilled and unskilled labours and indirect employment will also be created due to this project. A suitable combination of trees that can grow fast and have good leaf cover to contain dust pollution shall be adopted to develop greenbelt. Greenbelt development will be done wherever possible. Plantation (Total about 6,294) will be done within first 2 years and in later years maintenance will be ensured. The project proponent will also play an important role in the development and improvement of the infrastructure of that region which will help in improving the standard of living of that region.

CHAPTER – 03

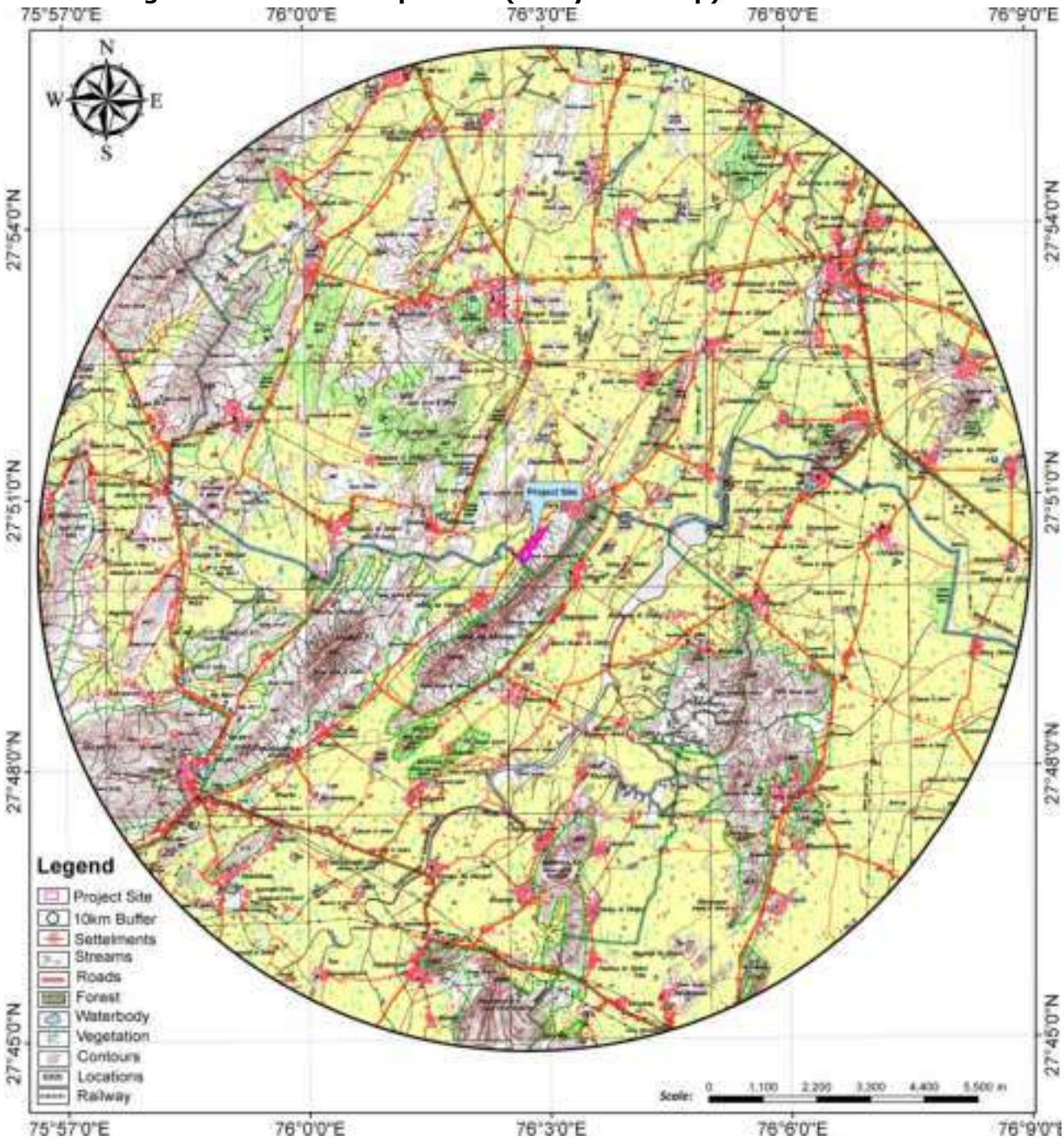
DESCRIPTION OF ENVIRONMENT

3. Description of Environment

3.1. Introduction

Baseline environmental status in and around enhanced project depicts the existing environmental conditions of air, noise, water, soil, biological and socio-economic environment. A radial distance of 10 km is considered as "study area" for baseline data collection and environmental monitoring. Baseline data was collected for various environmental attributes to compute the impacts that are likely to arise due to proposed development activity.

Figure 3.1: Site on toposheet (Study Area Map) with10 km Buffer



3.2. Study Area & Period

According to Appendix III of EIA Notification, 2006 and its amendment till date, study area was selected as 10.0 km radius from the lease boundary. The area was selected to do the studies and collect the baseline data as ambient air, water, soil, noise, meteorology, hydrogeology, hydrology, land-use, ecological and socio-economic data etc. The relevant information and data (both primary and secondary) were collected in core as well as buffer zone of 10 km from the project boundary during pre-monsoon season (March to May 2023) in accordance with the guidelines for preparation of EIA.

3.2.1. Methodologies Adopted

The baseline data for environmental parameters were collected as per standard Terms of Reference for the relevant category of the project. The data was also authenticated or validated from the secondary data collected from regarding departments of agencies. The detailed methodology is as given below.

3.2.2. Primary Data Collection Methodologies

A detailed field monitoring study of the project study area was carried out for baseline environment assessment of the project area. Baseline data was generated for various environmental parameters including air, water (surface and groundwater), land and soil, ecology, and socio-economic status to determine quality of the prevailing environmental settings. Sampling of soil and water, monitoring of air quality and noise level and other field data collection were carried out by the team operating from this field station. The field team consisted of technical personnel viz. environmental scientists and social experts along with the field staff.

The noteworthy activities completed during the field visit were as follows:

- ✓ A meteorological station was setup on the roof top a house in nearby village from proposed mining lease. Wind speed, wind direction, dry and wet bulb temperature, relative humidity, and general weather conditions were recorded throughout the study period in an automated data logger.
- ✓ To assess the Ambient Air Quality (AAQ), samples of ambient air were collected by installation of Respirable Dust Sampler and Fine Particulate Sampler at different locations from the study area during study period and analysed for primary air pollutants to work out the existing status of air quality.
- ✓ Groundwater samples were collected during the study period from the existing hand-pumps and bore wells, while surface water was collected from nearest pond, rivers, and lakes. The samples were analysed for parameters necessary to determine water quality (based on IS: 10500: 2012, IS 3025 and APHA 23rd Edition, 2017 for ground water, water quality criteria classified by CPCB for surface water) and those which are relevant from the point of view of environmental impact of the proposed site.
- ✓ Soil samples were collected and analysed for relevant physical and chemical characteristics to assess the impact of the proposed plant on soil.
- ✓ The noise level measurements were also made at two locations in different intervals of time with the help of sound level meter to establish the baseline noise levels in the impact zone.

- ✓ Ecological data was procured from both primary and secondary sources. A primary data was collected through survey and walkover by ecological experts.
- ✓ Socio-economic data was collected from field studies and secondary sources like Census of India 2011 etc.

3.2.3. Secondary Data Collection

Secondary data are those collected over the years that can be used to understand the existing environmental scenario of the study area. The secondary data is required to authenticate the primary data as the primary data was collected over the short period which should be comparing to know the trend of baseline data to compete the understanding of baseline scenario.

Table 3-1: Detailed of Secondary Data Collection

S. No.	Area	Description	Source
1.	Meteorology	Temperature, humidity, rainfall, wind speed, Wind Direction	IMD Station Gurugram (1981-2010).
2.	Ambient Air	Air Pollutants	Central Pollution Control Board.
3.	Water Quality	Water (Surface & Ground) Characteristics	
4.	Soil Quality	Soil characteristics	
5.	Nature of terrain	Land-use	Survey of India (Toposheet), National Remote Sensing Centre (Satellite image).
6.	Hydrogeology	Geological formation, hydro-geological analysis	District Ground Water Information Booklet, Mahendragarh, Haryana.
7.	Seismic Data	Seismic zone	Seismicity Map.
8.	Biological Environment	Inventory of flora & fauna	District Forest Department.
9.	Socio-economic status	Demographic profile, household, occupation status.	Census data (2001 & 2011).

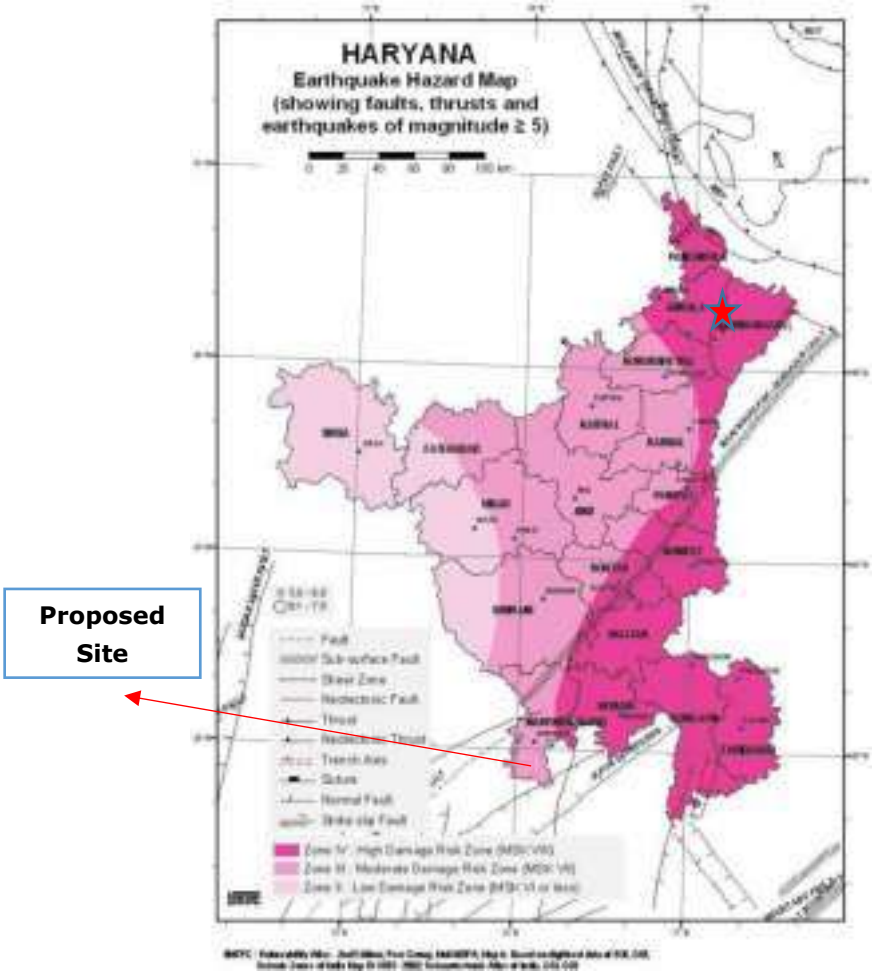
3.3. Physical Environment

3.3.1. Seismic Status of Project Site

The area which has struck by the present event has been described as a region of Seismic Zone-III which is defined as moderate damage risk zone (MSK intensity< VII) in the Seismic Map of Haryana. Adequate measures need to be adopted during operation phase of the project-by-project proponent.

Seismic Hazard of Haryana: The seismic zoning map of Haryana is shown in Figure 3.2. Ambala, Sonipat, Rohtak, Karnal, Gurgaon, Faridabad, Panipat, Rewari and Yamuna Nagar districts lie in Zone IV. The districts of Kurukshetra, Jind, Hissar, Bhiwani, Mahendragarh and Kaithal lie in Zone III while only Sirsa district lies in Zone II. The entire state of Delhi lies in Zone IV and so does the Union Territory of Chandigarh. Since the earthquake database in India is still incomplete, especially with regards to earthquakes prior to the historical period (before 1800 A.D.), these zones offer a rough guide of the earthquake hazard in any region and need to be regularly updated.

Figure 3.2: Earthquake Hazard Map of Haryana



Earthquake History of Haryana State

Eastern parts of Haryana along with Delhi lie in the Gangetic Plain. This is a foredeep, a downward of the Himalayan foreland, of variable depth, converted into flat plains by long-vigorous sedimentation. This is known as a geosyncline and the Gangetic Plain is the Indo-Gangetic Geosyncline. This has shown considerable amounts of flexure and dislocation at the northern end and is bounded on the north by the Himalayan Frontal Thrust. The floor of the Gangetic trough (if see without all the sediments) is not an even plain but shows corrugated inequalities and buried ridges (shelf faults). The region sits atop the Delhi-Haridwar ridge, which is a sub-surface ridge, trending NE-SW. There are numerous faults in this region, like the Moradabad, Panipat and Sohna faults. Delhi, Chandigarh, and many parts of Haryana lie in Zone IV and thus they are extremely vulnerable to earthquakes. Most earthquakes in this region are shallow though a few earthquakes of intermediate depth have been recorded in Haryana. The alluvial cover of the Indo-Gangetic plain makes even distant earthquake felt here quite strongly. This region often feels deep-seated earthquakes that are centred on the Pakistan-Afghanistan Border and in the Hindukush mountains in Afghanistan. However, it must be stated that proximity to faults does not necessarily translate into a higher hazard as compared to areas located further away, as damage from earthquakes depends on numerous factors such as subsurface geology as well as adherence to the building codes.

3.3.2. Land-Use Details

The objective of assessing the land use details of the area is to know the existing land use pattern of the area and to know about the land that can be used for the proposed development activities in the study area. It also enables to envisage the scenario emerging due to the increase in demand for land with increase in population and the impacts arising due to the interface with various project activities.

Methodology: The land use / land cover map is prepared by adopting the interpretation techniques of the satellite image in combination with collateral data such as Survey of India topographical maps and census records. Image classification has been done by using visual interpretation techniques and digital classification using the image processing software's. The various activities for preparation of Land-use (LU)/ Land cover (LC) include pre-processing, rectification, enhancements and classifying the satellite data for assessing the change in LU/LC due to proposed developmental activities. The imagery is interpreted, and ground verification was done for corrections. The final map is prepared after ground truthing of the study area. The different land use/land cover categories in the study area have been carried out based on the NRSC land use / land cover classification system.

Interpretation Technique: Standard on-screen visual interpretation procedure was followed. The various Land use / Land cover classes interpreted along with the Survey of India topographical maps during the initial rapid reconnaissance of the study area. The physiognomic expressions conceived by image elements of Colour, tone, texture, size, shape, pattern, shadow, location, and associated features are used to interpret the FCC imagery. Image interpretation keys were developed for each of the LU/LC classes in terms of image elements.

FCC imagery (Digital data) was used for interpretation for the relevant land use classes. On screen visual interpretation coupled with supervised image classification techniques are used to prepare the land use classification.

- ✓ Digitization of the study area (10 km radius from the plant site) from the Survey of India Toposheet maps.
- ✓ Satellite Data Selection: In the present study the Landsat satellite image with Toposheet no. G43D13, G43D14, G43E1 & G43E2 have been procured and interpreted using the ERDAS imaging software adopting the necessary interpretation techniques.
- ✓ Satellite data interpretation and vectorization of the resulting units.
- ✓ Field checking and ground truth validation.
- ✓ Composition of final LU/LC map.

3.3.2.1. Land-use of the Study Area

Study area is mainly covering agricultural land (44.7%) by following waste land (35.5%) & forest land (12.1%) of the total study area.

Figure 3.3: Land-Use Map of Study Area (10 km Buffer)

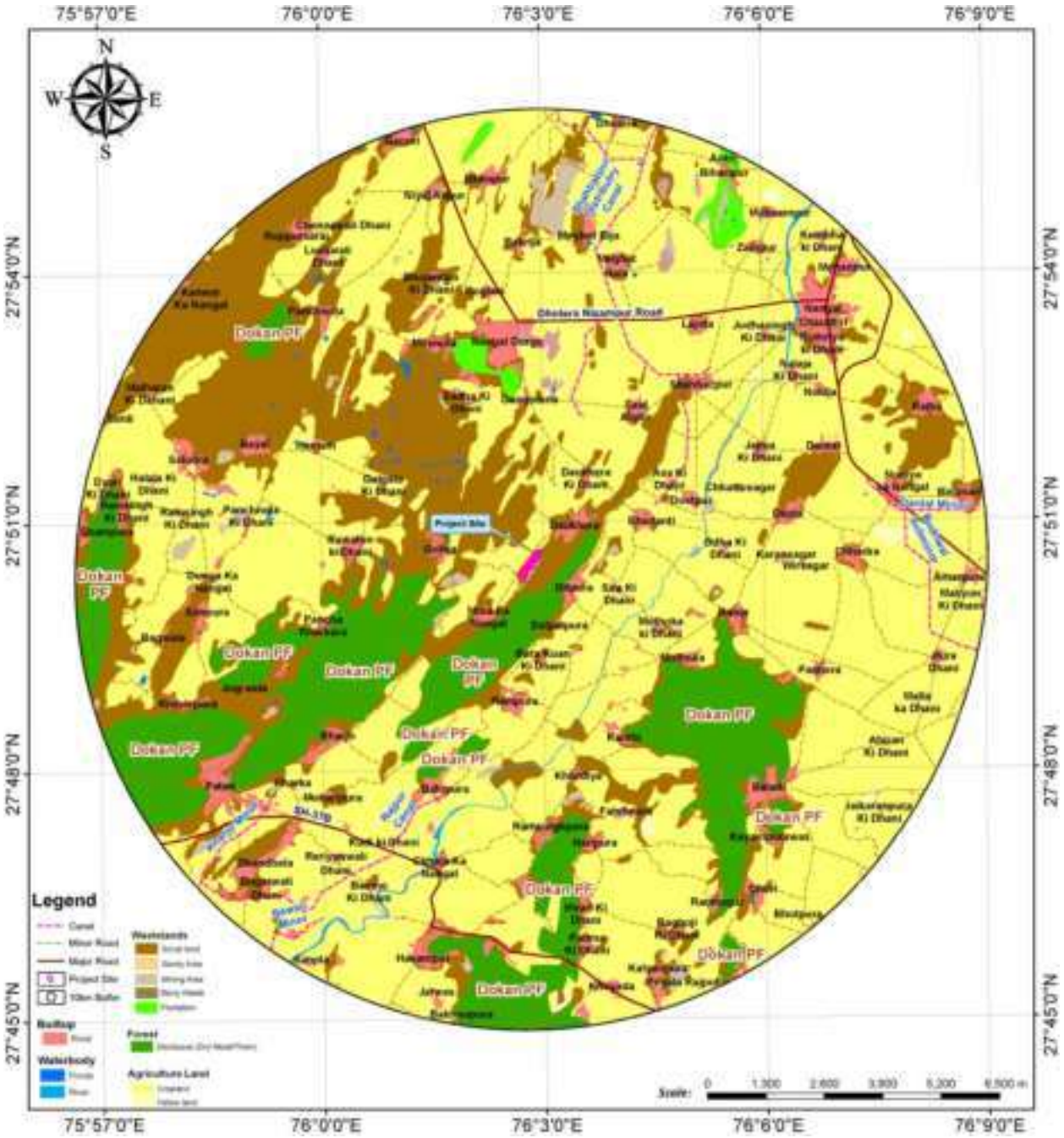


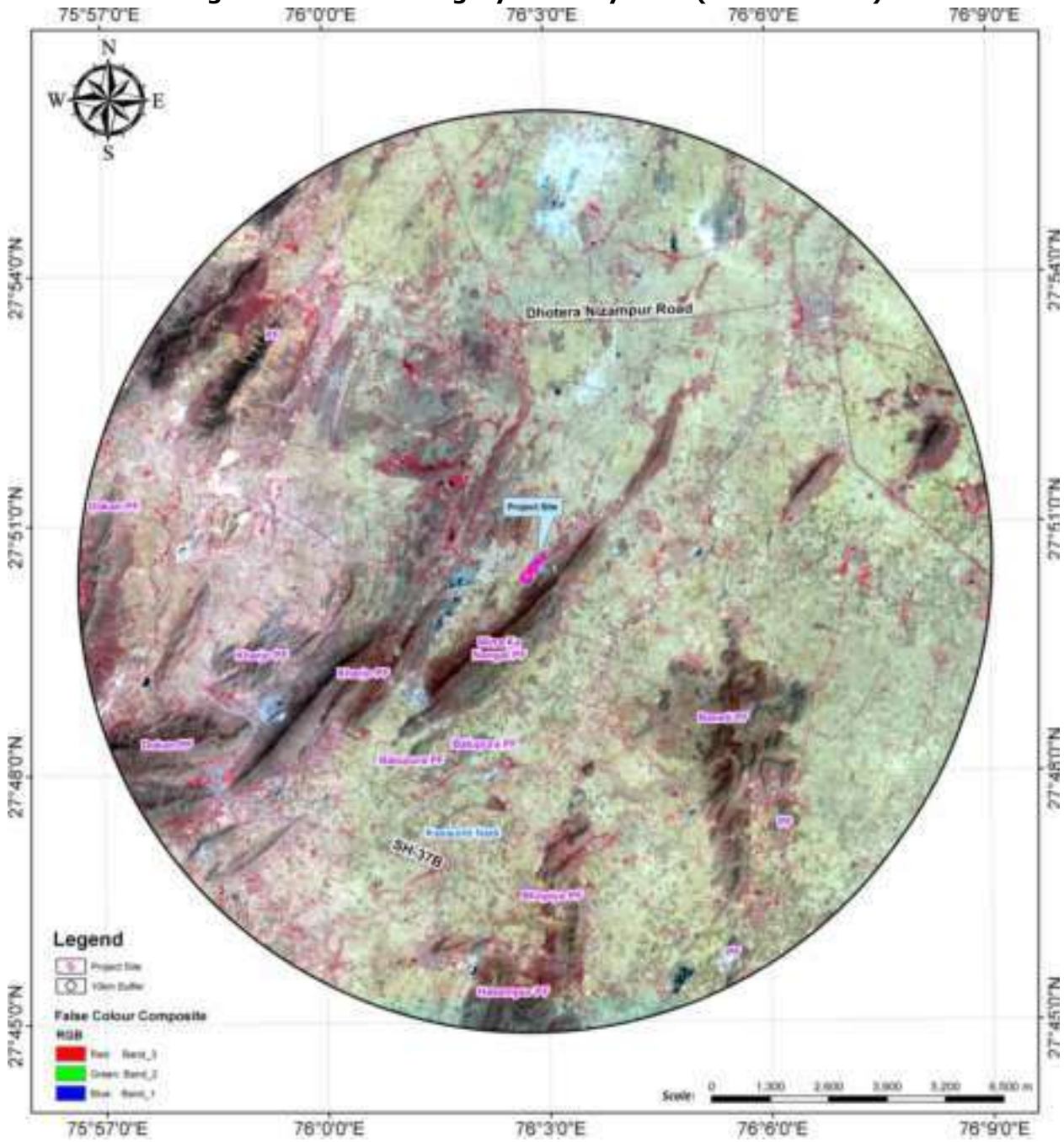
Table 3-2: Land-use Classification of the Study Area

Classification (Level 1)	Category (Level 2)	Subcategory (Level 3)	Area in Hectare	Area in %
Built-up	Rural	Rural	1622.4	5.0
Agriculture Land	Cropland		14651.1	44.7
	Fallow land	Fallow land	193.5	0.6
Waterbody	Ponds	Permanent	19.5	0.1
	Ponds	Seasonal	31.7	0.1
	River	Non-Perennial	66.2	0.2
Wastelands	Scrub land	Open Scrub	11623.1	35.5

Classification (Level 1)	Category (Level 2)	Subcategory (Level 3)	Area in Hectare	Area in %
	Sandy Area		12.4	0.0
	Mining Area		289.8	0.9
	Stony Waste		92.8	0.3
	Plantation		212.0	0.6
Forest	Deciduous (Dry / Moist / Thorn)		3956.4	12.1
		Total	**32771.0**	**100.0**

Source: SOI Toposheet No. H43L2, H43L3, H43L4 & H43L7.

Figure 3.4: FCC Imagery of Study Area (10 km Buffer)



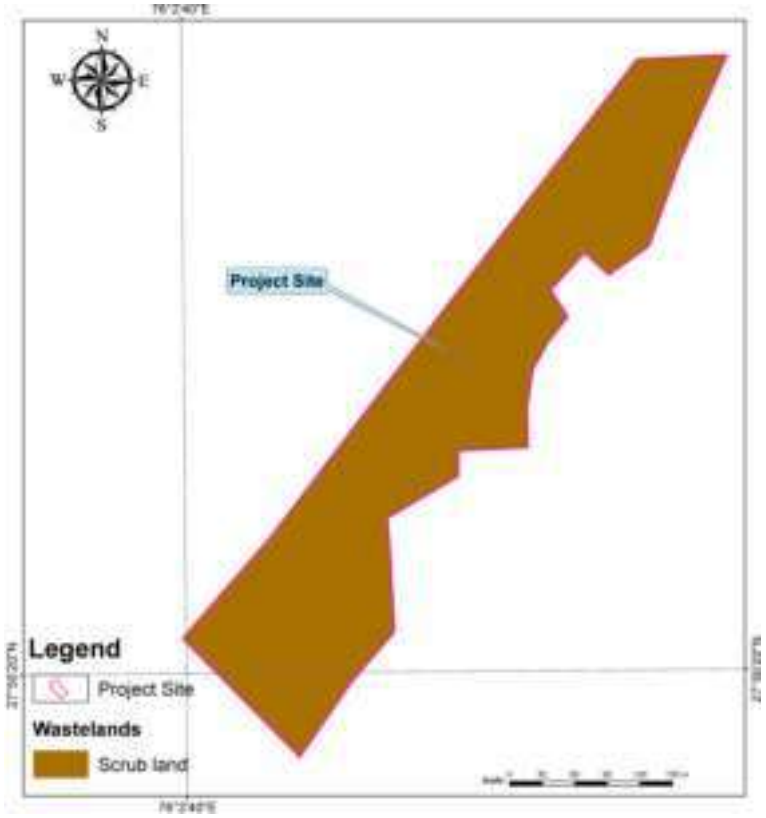
3.3.2.2. Land-use of the Project Area

The proposed project site area waste land of gram panchayat Donkhera. Area land-use is detailed below.

Table 3-3: Land-use Classification of the Project Site

Classification (Level 1)	Category (Level 2)	Subcategory (Level 3)	Area in Hectare	Area in %
Wastelands	Scrub Land	Open Scrub	7.74	100.0
		Total	**7.74**	**100.0**

Figure 3.5: Land-Use Map of Project Site



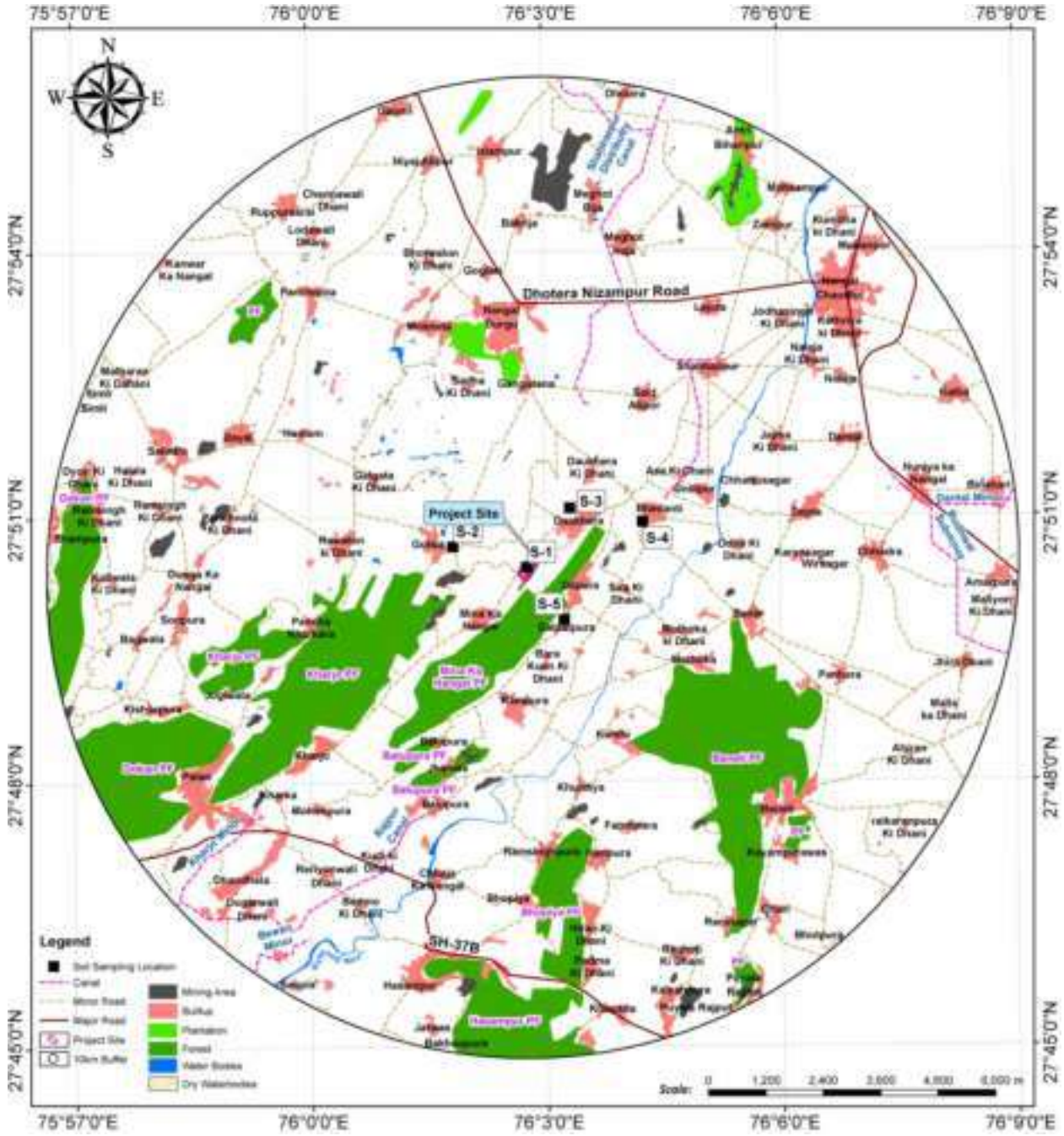
3.3.3. Soil Environment

To assess the baseline status of soil quality in the study area for tree plantation, filtration/ percolation of water, ground water scenario etc. total 5 soil samples were collected. The samples were collected by ramming an augur into the soil up to 30-cm depth. The sealed samples were sent to laboratory for analysis. Soil samples were analysed as per the standard methods prescribed in "Soil Chemical Analysis" (M.L. Jackson, 1967). The soil quality as analysed from the collected samples is given in Table 3.4 and the locations are shown in Figure 3.6.

Table 3-4: Soil Sampling Locations

S. No.	Location Name	Location Code	Latitude	Longitude
1	Near Project Site	S-1	27°50'25.51"N	76° 2'45.78"E
2	Golwa	S-2	27°50'39.70"N	76° 1'49.56"E
3	Donkhera	S-3	27°51'5.81"N	76° 3'19.11"E
4	Bhedanti	S-4	27°50'56.16"N	76° 4'14.75"E
5	Dalpatpura	S-5	27°49'50.03"N	76° 3'14.34"E

Figure 3.6: Soil Sampling Locations



The samples were analysed as per the standard methods prescribed in Department of Agriculture & Cooperation Ministry of Agriculture; Government of India" & IS 2720. The important properties analysed for soil are bulk density, porosity, infiltration rate, pH, and organic matter, kjehldal Nitrogen, Phosphorous and Potassium. The standard classification of soil and physico-chemical characteristics of the soils is presented below in Table 3.5.

Table 3-5: Soil Classification Standards as per ICAR

Soil Test	Classification	
pH	<4.5 Extremely acidic	7.31-7.80 slightly alkaline
	4.51- 5.50 Very strongly acidic	7.81-8.50 moderately alkaline
	5.51-6.0 moderately acidic	8.51-9.0 strongly alkaline

Soil Test	Classification	
	6.01-6.50 slightly acidic 6.51-7.30 Neutral	9.01 very strongly alkaline
Salinity Electrical Conductivity (mmhos/cm) (1 ppm = 640 mmhos/cm)	Upto 1.00 Average 1.01-2.00 harmful to germination	2.01-3.00 harmful to crops (sensitive to salts)
Organic Carbon	Upto 0.2: very less 0.21-0.4: less 0.41-0.5 medium,	0.51-0.8: on an average sufficient 0.81-1.00: sufficient >1.0 more than sufficient
Nitrogen (Kg/ha)	Upto 50 very less 51-100 less 101-150 good	151-300 Better >300 sufficient
Phosphorus (Kg/ha)	Upto 15 very less 16-30 less 31-50 medium,	51-65 on an average sufficient 66-80 sufficient >80 more than sufficient
Potash (Kg/ha)	0 -120 very less 120-180 less 181-240 medium	241-300 average 301-360 better >360 more than sufficient

Source: Handbook of Agriculture, Indian Council of Agriculture Research, New Delhi

Table 3-6: Soil Quality Results

Parameters	Unit	SQ-1	SQ-2	SQ-3	SQ-4	SQ-5
pH	----	7.8	6.8	7.1	7.5	7.3
Electrical Conductivity	µmhos /cm	279	2.57	284	314	324
Moisture	%	13.7	22	16.8	14.3	18.2
Soil texture	USDA System	Loam	Sandy Clay Loom	Loam	Loam	Sandy Clay Loam
Sand	%	45	52	35	43	52
Silt	%	37	22	38	36	20
Clay	%	18	26	27	21	28
Infiltration Rate	cm/hr	1.21	1.25	1.31	1.27	1.21
Bulk density	gm/cm^3	1.55	1.55	1.50	1.54	1.51
Porosity	%	43.2	44.0	43.6	44.0	44.2
Iron (DTPA Extractable)	mg/kg	1.57	1.87	2.34	2.18	1.85
Zinc (DTPA Extractable)	mg/kg	2.31	2.31	2.64	2.15	2.01
Copper (DTPA Extractable)	mg/kg	3.51	3.14	3.51	3.63	2.94
Sodium as Na	mg/kg	138	129	149	138	154
Calcium as Ca	mg/kg	1103	1059	1231	1029	1204
Magnesium as Mg	mg/kg	532	604	669	569	681
SAR Value	USDA System	6.83	6.33	6.84	6.90	7.09
Nitrogen as N	kg/ha as N	313	259	281	287	298
Phosphorus	kg/ha as P	15	16	16	18	22
Potassium as K	kg/ha as K	72	81	71	75	89
Organic Carbon	%	0.59	0.77	0.65	0.73	0.76
Organic matter	%	1.02	1.05	1.08	0.99	1.12

SQ-Soil Sampling Locations

Results Interpretation: The soil was predominantly Sandy Loam in the study area. The pH was found ranging from 6.8 to 7.8, this presents that soil is neutral to moderately alkaline as per ICAR guideline. The conductivity was found varying from 257 µmhos/cm to 314 µmhos/cm in the study area. The level of organic carbon in study area found varying from 0.99% to 1.08 % as observed sufficient to more than sufficient as per ICAR classification. Nitrogen was varying from 259 kg/ha to 313 kg/ha i.e., better to sufficient for soil fertility as per ICAR classification. Phosphorous was varying from 15 kg/ha to 22 kg/ha as observed very less to less in soil as per ICAR classification. Potassium was varying from 71 kg/ha to 89 kg/ha as observed very less to average in soil as per ICAR classification. Overall, the soil quality was found good in terms of fertility.

3.4. Water Environment

3.4.1. Hydrogeology (Aquifer System)

The district is underlain by alluvium and blown sand of Recent to sub-Recent age which are overlying the rocks of post Delhi and Delhi system. The alluvium in the area belongs to older alluvium stage comprising of sand, silt, clay, and calcareous nodules. The alluvium is the freshwater deposit of Indo-Gangetic River system.

In alluvium the granular zones exist down to entire thickness, which is negligible near the out crop of Delhi system to about 150m in the northern part of district. The average thickness of the alluvium in the district is more than 50m. Exploratory drilling has been carried out at 19 exploratory sites in alluvial formation and 35 in Hard rock areas. In alluvial formations the successful exploratory tube well tapped aquifer zones down to the depth of 170m & 235 m yielding 220 lpm to 1200 lpm for 6 to 23m drawdown.

The transmissivity value ranges from 150 to 810 m2/day in alluvial formations and between 370 and 1685 m2/day in hard rocks. The lateral hydraulic conductivity ranges from 1.5 to 20 m/ day. In hard rock area the depth of bore holes ranges between 50 to 135 m and the water bearing zones in weathered fractured quartzite and limestone were tapped. The discharge of tube wells varies between 100 to 1325 lpm with 3 to 15m draw down in limestone aquifers. The discharge of tube wells constructed in quartzite formation ranges between 22 and 820 lpm for reasonable drawdowns.

The block wise ground water resource potential in the district has been assessed as per GEC 97. The stage of ground water development in the district ranges between 49% (block –Narnaul) to178% (block –Kanina). The total replenishable ground water resource in the district is 21435Ham. The net ground water draft is 22778 Ham., thus over exploiting 1343 Ham of ground water. The stage of ground water development in the district is 104%.

The water supply of the district is mainly based on ground water through tube wells. The water supply of the villages is met out through installation of hand pumps and construction of and dug wells by the local villagers.

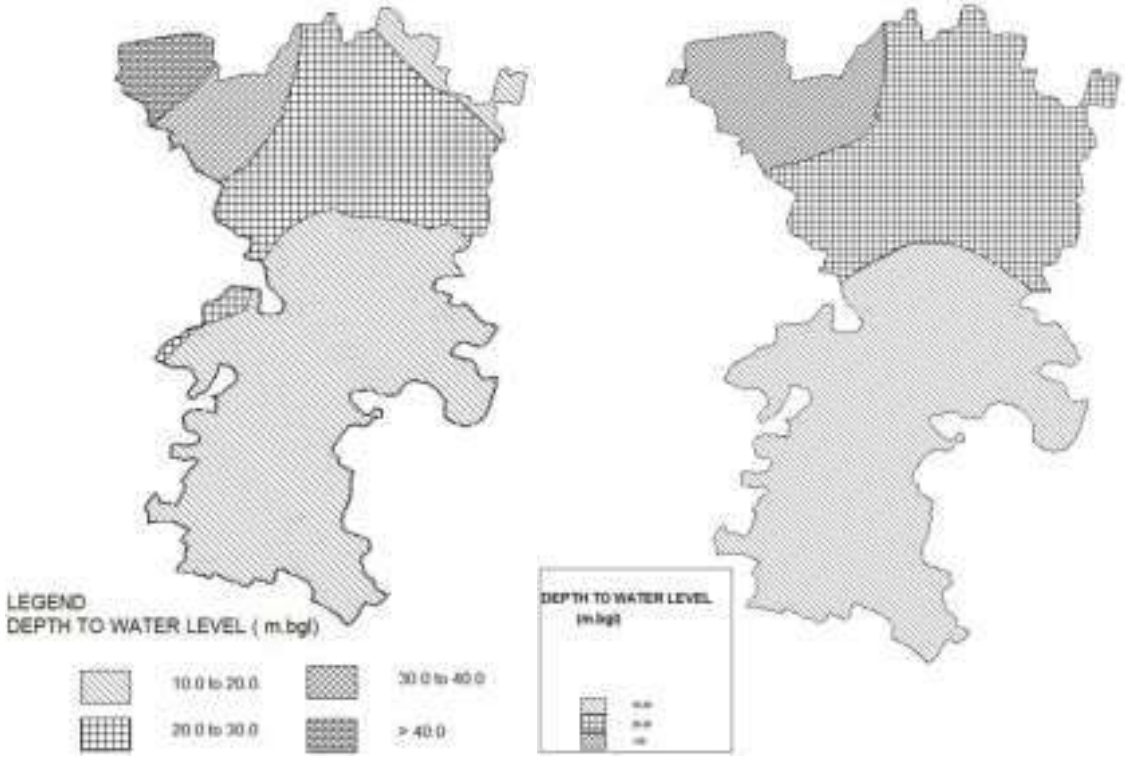
Water for irrigation in the district is also based mainly on ground water. Out of total irrigated area of 1210 sq km an area of 1190 sq km is based on ground water irrigation. Only in 20 sq km irrigation is based on canals. Ground water is being extracted through large no of tube wells and dug wells in the district.

The stage of ground water development in the district is 107%. This means that the ground water in the district is under stress and there is very limited scope for ground water development. Two

numbers of artificial recharge schemes were implemented in the district in collaboration with the state agencies to create awareness in the district.

Figure 3.7: Hydrogeology Map of Mahendragarh District

Figure 3.8: Pre-Monsoon (May 2012) & Post-Monsoon (November 2012) Water Level



Source:https://cgwb.gov.in/District_Profile/Haryana/Mahendragarh.pdf;

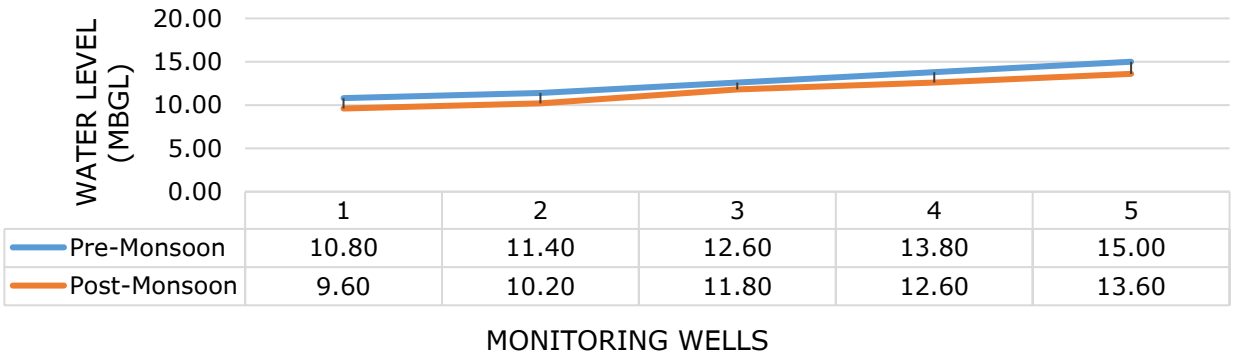
3.4.2. Water Level Fluctuation in Study Area

To assess the ground water scenario, 5 samples were collected from dug wells. Sampling locations with co-ordinates are given below in Table 3.7. The water level fluctuation in ground water was varying from 10.8 MBGL to 15.0 MBGL in pre-monsoon and 9.6 MBGL to 13.6 MBGL in post-monsoon season.

Table 3-7: Ground Water Level Fluctuation in Area

Location	Latitude	Longitude	Pre-Monsoon	Post-Monsoon
WL – 1	27°50'26.58"N	76° 2'40.47"E	10.80	9.60
WL – 2	27°50'38.60"N	76° 1'51.71"E	11.40	10.20
WL – 3	27°51'6.00"N	76° 3'21.50"E	12.60	11.80
WL – 4	27°50'56.32"N	76° 4'16.59"E	13.80	12.60
WL – 5	27°50'3.27"N	76° 3'27.36"E	15.00	13.60

Figure 3.9: Water Level Fluctuation of Pre-monsoon and Post-monsoon



3.4.3. Water Quality

3.4.3.1. Methodology for Sampling & Analysis

Water samples were collected from the available identified water bodies during the summer season (March to May 2023). Five ground water sources were examined for physico-chemical and heavy metals to access the effect of the already ongoing activities on surface and ground water. Water sampling locations are given in Table 3.8 & Figure 3.10.

Figure 3.10: Water Sampling Locations

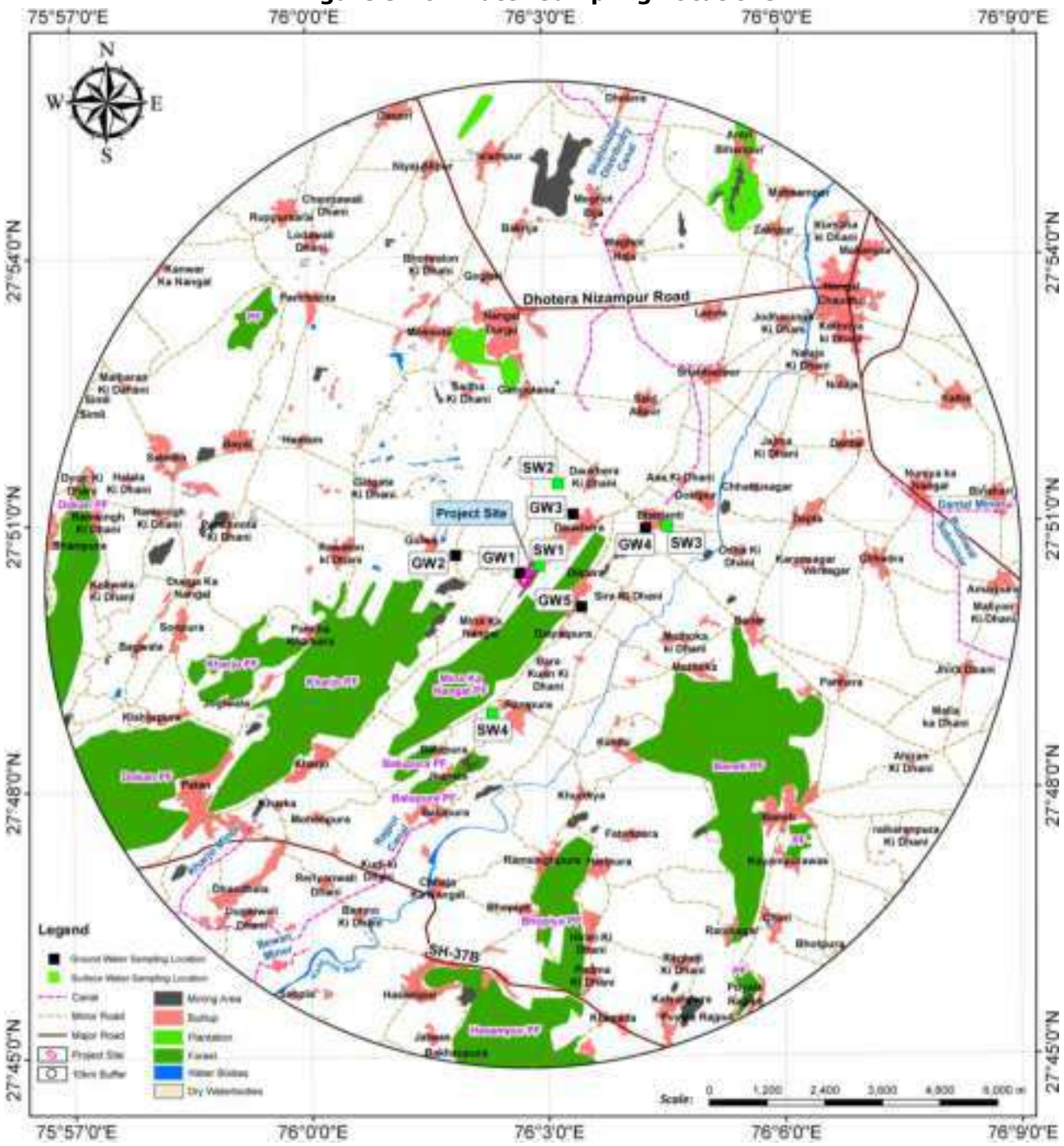


Table 3-8: Ground Water Sampling Location

Location Name	Location Code	Distance (km)	Direction	Co-Ordinates	
				Latitude	Longitude
Near Project Site	GW1	0.1	NNE	27°50'26.58"N	76° 2'40.47"E
Golwa	GW2	1.4	WNW	27°50'38.60"N	76° 1'51.71"E
Donkhera	GW3	1.1	NE	27°51'6.00"N	76° 3'21.50"E
Bhedanti	GW4	2.2	ENE	27°50'56.32"N	76° 4'16.59"E
Dilpura	GW5	1.3	SE	27°50'3.27"N	76° 3'27.36"E

HP- Hand Pump

Analyses of the samples were carried out as per established standard methods and procedures prescribed by CPCB, IS 3025 Codes and APHA 23rd edition, 2017. Samples for chemical analysis were collected in glass/plastic sterilized water bottles. Samples collected for metal content were acidified with 1 ml HNO_3. Parameters like dissolved oxygen (DO) and pH were analysed at the time of sample collection.

3.4.3.2. Groundwater Quality of Study Area

The analyze details of ground water is given below.

Table 3-9: Ground Water Results

		Source	Handpump / Borewell					IS 10500 :2012	
S. No.	Parameters	Unit	GW-1	GW-2	GW-3	GW-4	GW-5	AL	PL
1	pH	--	7.20	7.60	7.20	7.70	7.50	6.5-8.5	NR
2	Conductivity	µS/cm	1612	1298	1189	1342	2248	$	$
3	Total Dissolve Solids	mg/l	1017	797	723	817	1361	500	2000
4	Alkalinity as $CaCO_3$	mg/l	328.4	160.0	237.1	245.0	360.0	200	600
5	Total Hardness as $CaCO_3$	mg/l	395.3	295.7	360.7	412.7	472.8	300	600
6	Calcium as Ca	mg/l	86.3	62.4	68.4	74.3	89.3	75	200
7	Magnesium as Mg	mg/l	43.7	34.0	46.2	55.2	60.8	30	100
8	Sodium	mg/l	176	134	89	107	245	$	$
9	Potassium	mg/l	4	3	5	4	21	$	$
10	Bicarbonate	mg/l	328.4	245.0	237.1	245.0	360.0	$	$
11	Chloride as Cl	mg/l	304.9	244.0	209.3	267.0	451.0	250	1000
12	Sulphate as SO_4	mg/l	60.0	65.0	58.0	54.0	120.0	200	400
13	Nitrate as NO_3	mg/l	2.1	1.9	1.0	2.1	3.1	45	NR
14	Total Nitrogen as N	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	$	$
15	Fluoride as F	mg/l	1.03	1.19	1.14	1.01	1.37	1.00	1.50
16	Total Phosphorus as P	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	$	$
17	Phenolic compound as C_6H_5OH	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.002
18	Cyanide	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	NR
19	Aluminium	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.2
20	Arsenic	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.05
21	Cadmium	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003	0.003	NR
22	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	NR
23	Iron	mg/l	0.31	0.11	0.21	0.1	0.14	0.3	NR
24	Copper	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	1.5

		Source	Handpump / Borewell					IS 10500 :2012	
S. No.	Parameters	Unit	GW-1	GW-2	GW-3	GW-4	GW-5	AL	PL
25	Lead	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	NR
26	Manganese	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	0.1	0.3
27	Mercury	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	NR
28	Zinc	mg/l	1.8	2.1	1.7	1.8	2.2	5	15

AL- Acceptable Limit, PL- Permissible Limits in absence of alternate sources, NR- No Relaxation

GROUND WATER RESULTS INTERPRETATION

All the parameters were observed well within permissible limits for drinking water standard 10500:2012. pH (7.2 to 7.7), TDS (723 mg/l to 1361 mg/l), alkalinity (160.0 mg/l to 360.0 mg/l), Total Hardness (295.7 mg/l to 472.8 mg/l), Calcium as Ca (62.4 mg/l to 89.3 mg/l), Magnesium as Mg (34.0 mg/l to 60.8 mg/l), Chloride (209.3 mg/l to 451.0 mg/l) & Sulphate (54.0 mg/l to 120.0 mg/l) parameters were analysed. Water was also analysed for heavy metal. Fluoride level is very high and not good for health. Ground water quality of the Mahendragarh District is not potable without treatment.

3.4.3.3. Surface Water Quality

Table 3-10: Surface Water Sampling Location

S. No.	Location Name	Location Code	Latitude	Longitude
1	Pond Near Project Site	SW1	27°50'31.29"N	76° 2'55.13"E
2	Donkhera Ki Dhani Near Pond	SW2	27°51'26.90"N	76° 3'10.15"E
3	Bhedanti Near Pond	SW3	27°50'57.54"N	76° 4'32.83"E
4	Rampur Near Pond	SW4	27°48'51.84"N	76° 2'19.05"E

Table 3-11: CPCB Water Quality Criteria

Designated Best Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	Total Coliforms Organism MPN/100ml shall be 50 or less
		pH between 6.5 and 8.5
		Dissolved Oxygen 6mg/l or more
		Biochemical Oxygen Demand 5 days 20°C 2mg/l or less
Outdoor bathing (Organized)	B	Total Coliforms Organism MPN/100ml shall be 500 or less
		pH between 6.5 and 8.5
		Dissolved Oxygen 5mg/l or more
		Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	Total Coliforms Organism MPN/100ml shall be 5000 or less
		pH between 6 to 9
		Dissolved Oxygen 4mg/l or more
		Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Propagation of Wildlife and Fisheries	D	pH between 6.5 to 8.5
		Dissolved Oxygen 4mg/l or more
		Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	pH between 6.0 to 8.5
		Electrical Conductivity at 25°C micro mhos/cm Max. 2250
		Sodium absorption Ratio Max. 26
		Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

The analyze details of surface water is given in Table 3.12.

Table 3-12: Surface Water Results

S. No.	Parameters	Unit	SW-1	SW-2	SW-3	SW-4	CPCB Standards*	
							IS 2296	Class
1	Turbidity	NTU	17.9	19.5	18.5	17.5	$	$
2	pH	--	7.54	8.14	7.36	8.11	6.5 – 8.5	Class A
3	Temperature	^{0}C	25.1	25.6	25.9	25.8	$	$
4	Total Suspended Solids	mg/l	39	33	25	31	$	$
5	Conductivity	µS/cm	632	599	548	521	$	$
6	Total Dissolve Solids	mg/l	457	484	399	418	$	$
7	Alkalinity as $CaCO_3$	mg/l	168.9	176.9	181.1	183.6	$	$
8	Total Hardness as $CaCO_3$	mg/l	179.2	168.7	180.7	180.0	$	$
9	Calcium as Ca	mg/l	42.3	39.9	41.9	45.9	$	$
10	Magnesium as Mg	mg/l	17.9	16.8	18.5	15.9	$	$
11	Sodium	mg/l	30	38	35	33	$	$
12	Potassium	mg/l	4	5	4	5	$	$
13	Bicarbonate	mg/l	168.9	176.9	181.1	183.6	$	$
14	Chloride as Cl	mg/l	48.5	46.9	42.6	44.5	$	$
15	Sulphate as SO_4	mg/l	30.3	32.4	36.8	33.9	$	$
16	Nitrate as NO_3	mg/l	9.9	10.2	11.9	10.1	$	$
17	Total Carbon	mg/l	<1	<1	<1	<1	$	$
18	Fluoride as F	mg/l	0.98	0.87	0.71	0.84	1.5	$
19	Phenolic compound as C_6H_5OH	mg/l	<0.001	<0.001	<0.001	<0.001	0.005	$
20	Nickel	mg/l	<0.03	<0.03	<0.03	<0.03	$	$
21	Arsenic	mg/l	<0.020	<0.020	<0.020	<0.020	0.2	$
22	Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01	$	$
23	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05	$	$
24	Iron	mg/l	0.54	0.49	0.69	0.68	$	$
25	Lead	mg/l	<0.1	<0.1	<0.1	<0.1	$	$
26	Zinc	mg/l	2.8	3.3	4.1	0.51	$	$
27	Dissolve Oxygen	mg/l	6.9	6.2	7.1	6.8	5	Class A
28	COD	mg/l	9.6	10.1	9.2	8.9	$	$
29	BOD, 27°C 3 days	mg/l	<5	<5	<5	<5	3	Below E**
30	Total Coliforms	MPN / 100ml	0.3 x 10^3	0.2 x 10^3	0.1 x 10^3	0.2 x 10^3	500	Class B

IS 2296-class B designated for inland surface water & class as per CPCB Water Quality Criteria, ** Not meeting to any class defined by CPCB.

OBSERVATIONS & INTERPRETATIONS

The parameters were analysed compared to CPCB water quality criteria (Table 3-11). The pH was varying between 7.2 to 7.8, denotes water meeting to the Class A which is defined for Drinking Water Source without conventional treatment but after disinfection. Dissolved Oxygen was varying between 6.2 to 7.1, denotes water quality meeting to Class A. Total Coliform is meeting

to Class B which denotes as Outdoor bathing (Organized). The water is suitable for irrigation purposes.

3.5. Meteorological Condition

Meteorology is the key to understand the air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind in the broadest sense. Wind fluctuations over a very wide range of time, accomplish dispersion and strongly influence other processes associated with them.

3.5.1. Meteorological Data as per IMD Gurugram (Haryana)

The climate of Mahendragarh district can be classified as tropical steppe, semi-arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates the district. There are four seasons in a year. The hot weather season starts from mid-March to last week of the June followed by the south-west monsoon which lasts up to September. The transition period from September to October forms the post-monsoon season. The winter season starts late in November and remains up to first week of March. The normal annual rainfall of the district is 420 mm which is unevenly distributed over the area 22 days. The southwest monsoon sets in from last week of June and withdraws in in end of September, contributed about 85% of annual rainfall. July and August are the west test months. Rest 15% rainfall is received during non-monsoon period in the wake of western disturbances and thunderstorms. Generally, rainfall in the district increases from southwest to northeast. The general direction of wind in summer season is west to east and in winter it is northwest to southwest.

Normal Annual Rainfall : 420 mm
Normal Monsoon Rainfall : 355 mm
Temp. Mean Maximum : 41^{0}C (May & June)
Normal Rain Days : 22

The meteorological data is collected from the nearest IMD station at Gurugram, Haryana. The monthly maximum, minimum and average values are collected for all the parameters like rainfall, temperature, humidity & wind speed are presented in Table 3.13.

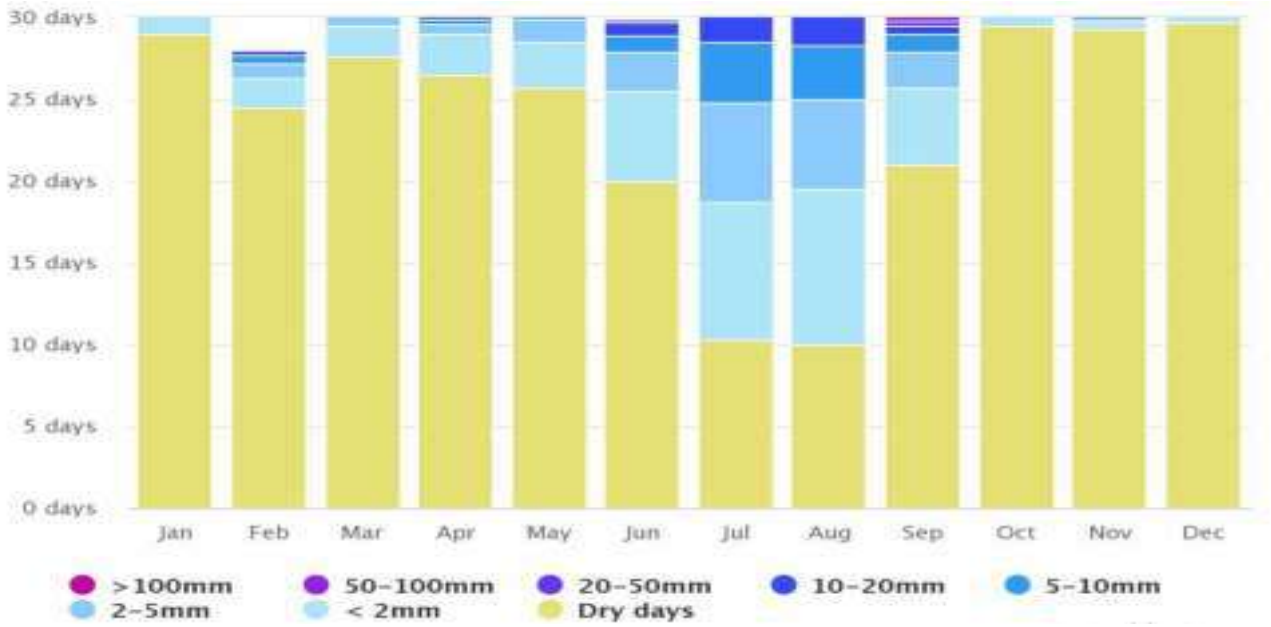
Table 3-13: Meteorological Table as per IMD, Gurugram (1981-2010)

Season / Month		Rainfall (mm)	Temperature (^{0}C)		Humidity (%)		Wind	
			Max	Min	08.30 hrs.	17:30 hrs.	Speed (kmph)	Direction
Winter	December	9.9	27.0	2.8	80.0	55.0	2.0	NW, W
	January	15.0	24.9	2.4	82.0	54.0	2.8	NW, W
	February	21.4	28.7	4.2	73.0	45.0	3.4	NW, SE
	Total / Mean	**46.3**	**26.9**	**3.1**	**78.3**	**51.3**	**2.7**	**-**
Summer	March	12.3	35.7	8.0	65.0	37.0	4.1	NW, SE
	April	18.2	42.1	13.3	49.0	28.0	4.3	NW, W
	May	34.3	44.5	18.3	48.0	31.0	4.6	NW, SE
	Total / Mean	**64.8**	**40.8**	**13.2**	**54.0**	**32.0**	**4.3**	**-**
Monsoon	June	67.3	44.9	24.6	57.0	40.0	5.5	NW, SE
	July	171.3	40.2	23.1	76.0	63.0	4.1	SE, NW
	August	190.7	37.8	23.2	81.0	69.0	2.1	SE, NW

Season / Month		Rainfall (mm)	Temperature (°C)		Humidity (%)		Wind	
			Max	Min	08.30 hrs.	17:30 hrs.	Speed (kmph)	Direction
	September	93.8	37.6	20.5	74.0	59.0	2.6	NW, SE
	Total / Mean	**523.1**	**40.1**	**22.9**	**72.0**	**57.8**	**3.6**	**-**
Post-Monsoon	October	12.0	36.2	12.4	66.0	45.0	1.9	NW, SE
	November	10.7	32.7	7.2	66.0	47.0	1.6	NW, W
	December	9.9	27.0	2.8	80.0	55.0	2.0	NW, W
	Total / Mean	**32.6**	**32.0**	**7.5**	**70.7**	**49.0**	**1.8**	**-**
Total Annual average Rainfall is 657 (mm)								

Source: ***https://imdpune.gov.in/library/publication.html;***

Figure 3.11: Average Rainfall (30 Years)



https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/mahendragarh_india_1264395

3.5.2. Onsite Micro-Meteorology (Hourly)

The data on meteorological parameters in the study area were monitored continuously for pre-monsoon season (March to May 2023). A meteorological station was setup on the roof top a house in nearby habitat to proposed lease. Wind speed, wind direction, dry and wet bulb temperature, relative humidity, and general weather conditions were recorded throughout the study period in an automated data logger.

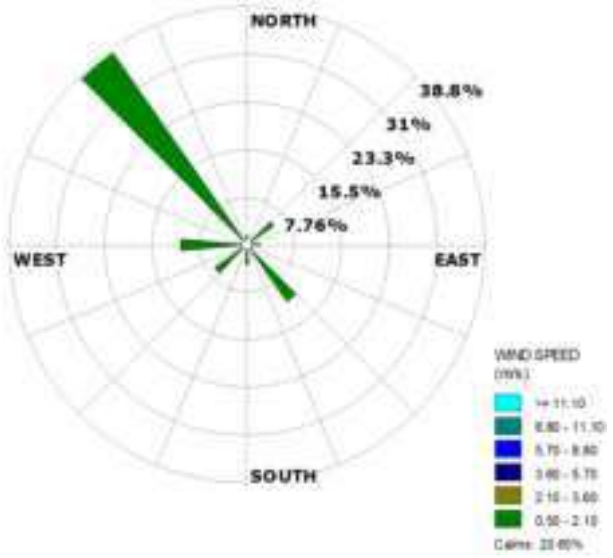
Table 3-14: On-site Micro Meteorological Data

Months	Temperature (°C)			Relative Humidity (%)			Average Wind Speed		Rainfall
	Max.	Min.	Average	Max.	Min.	Average	Kmph	m/s	mm
March	36.7	14.6	26.8	81.5	47.0	62.2	8.2	2.3	23.6
April	41.6	20.7	31.7	80.9	46.3	62.5	11.1	3.1	11.8
May	43.1	22.2	32.8	83.2	47.7	64.4	13.5	3.8	46.0
Average	**40.5**	**19.2**	**30.4**	**81.9**	**47.0**	**63.0**	**11.0**	**3.0**	**81.4**

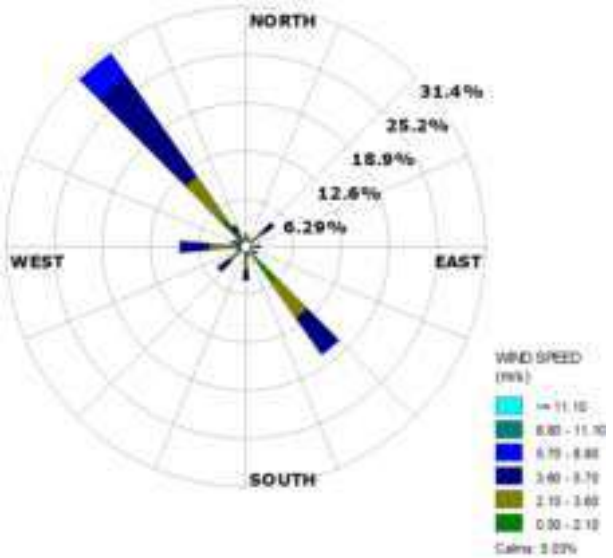
The maximum temperature recorded during the study period was 43.1°C in the month of May and the minimum temperature was 14.6°C in the month of March. The highest RH found in the

study area was 83.2% in the month of May, while minimum monthly average RH found 46.3% in the month of April. The average wind speed recorded was 3.0 m/sec. Predominant wind direction during the study period was mainly North-West to South-East followed by west to east. Hourly onsite micro-meteorological data is enclosed as **Annex 3.1**.

Figure 3.12: Wind Pattern as per IMD & Onsite



Pre-Monsoon (IMD Gurugram)



Pre-Monsoon (On Site)

3.6. Air Environment

The baseline studies on air environment include identification of specific air pollution parameters and their existing levels in ambient air. The ambient air quality with respect to the core and buffer zone of 10 km radius around the proposed project site forms the baseline information. The sources of air pollution in the region are mostly due to vehicular traffic, dust arising from unpaved village road and domestic fuel/ biomass burning. The quantification of impacts of the proposed project on the ambient air quality requires to evaluate the existing ambient air quality of the area.

3.6.1. Monitoring Methodology, Parameters & Locations

Monitoring has been carried out as per the latest CPCB and MoEF&CC guidelines and notifications. This is to allow a comparison with the present revised standards mentioned in the latest Gazette Notification of the Central Pollution Control Board (November 2009).

The monitoring has been carried out at a frequency of two samples per week at each of 8 locations, adopting a continuous 24-hour continuous schedule for Particulate Matter, Sulphur Dioxide and Nitrogen Dioxide except CO for one hour. It was ensured that the equipment was placed at a height of at least 1 m to 1.5 m above the ground level at each monitoring station, for negating the effects of windblown ground dust. Also, distance of the sampler to any air flow obstacle i.e., buildings, must be more than two times the height of the obstacle above the sampler has been ensured. The equipment was placed at open space free from trees and vegetation which otherwise act as a sink of pollutants resulting in lower levels in monitoring results.

The sampling locations for ambient air quality were established based on the following considerations: Meteorological conditions including wind direction, Topography of the study area; and Representativeness of regional background air quality for obtaining baseline status.

Figure 3.13: Ambient Air Monitoring Locations

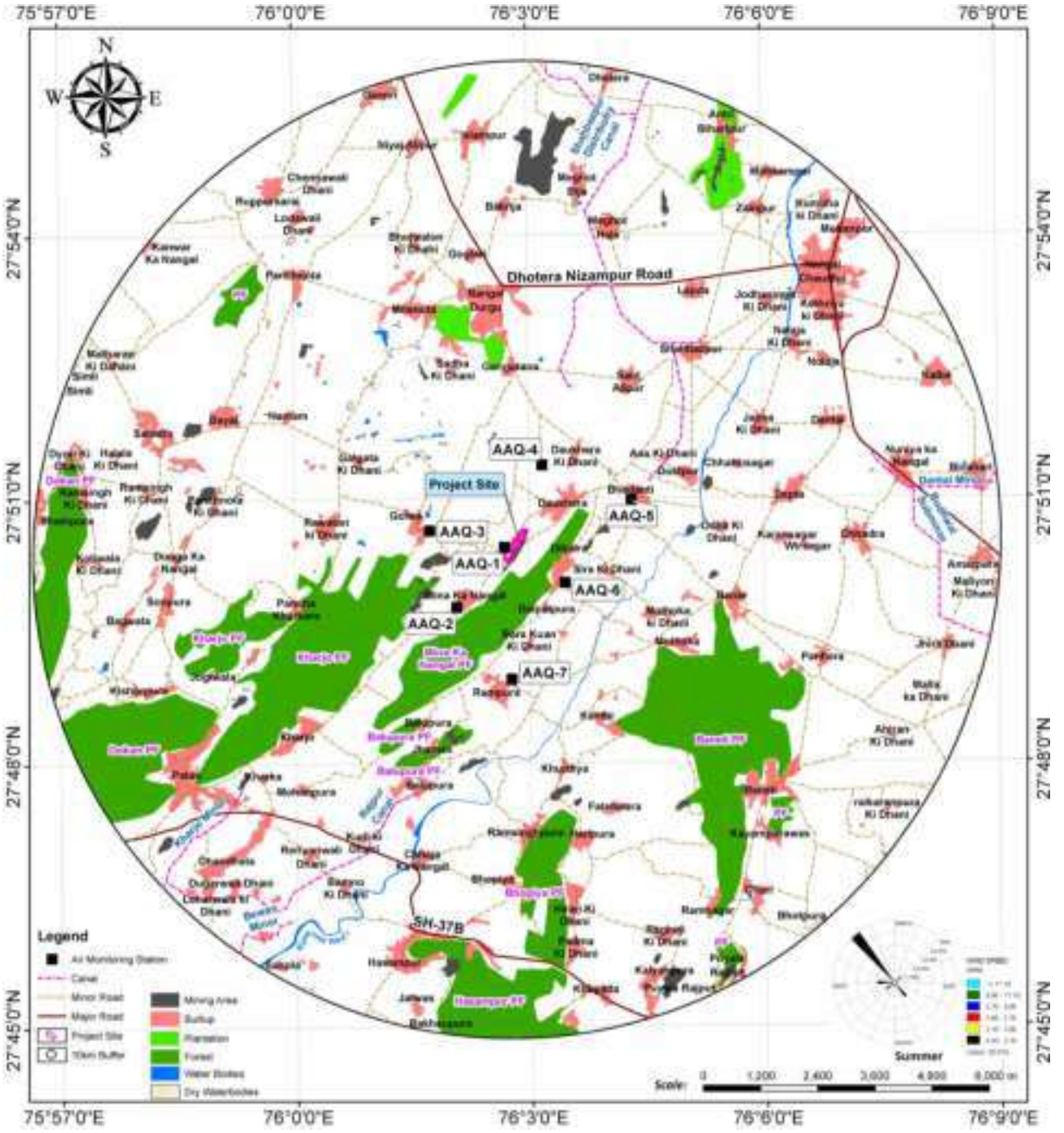


Table 3-15: Ambient Air Monitoring Locations

S. No.	Location Name	Code	Distance (km)	Direction	Latitude	Longitude
1	Near Project Site	AAQ-1	0.2	NNE	27°50'27.05"N	76° 2'40.97"E
2	Mina Ka Nangal	AAQ-2	1.4	SW	27°49'46.32"N	76° 2'4.26"E
3	Golwa	AAQ-3	1.6	WNW	27°50'38.52"N	76° 1'43.77"E
4	Donkhera Ki Dhani	AAQ-4	1.4	NNE	27°51'23.13"N	76° 3'10.25"E
5	Bhedanti	AAQ-5	2.3	ENE	27°50'58.99"N	76° 4'18.83"E
6	Dilpura	AAQ-6	1.3	SE	27°50'2.72"N	76° 3'27.36"E
7	Rampura	AAQ-7	2.6	SSE	27°48'57.00"N	76° 2'46.06"E

3.6.2. Air Quality of Study Area

Consolidated values of ambient air quality are given in Table 3.16. The monitoring reports and photographs are enclosed as **Annex 3.2**.

AIR QUALITY RESULT INTERPRETATION

- ✓ Particulate Matter: PM_{10} was varying from 42 µg/m^3 to 82 µg/m^3. $PM_{2.5}$ was observed 15 µg/m^3 to 34 µg/m^3.
- ✓ Gaseous Pollutants: SO_2 was varying from 5.8 µg/m^3 to 11.6 µg/m^3. NOx was observed 10.1 µg/m^3 to 16.0 µg/m^3 in study area. CO was observed from 0.41 mg/m^3 to 1.12 mg/m^3 in study area.
- ✓ The mineralogical composition of free silica in PM10 was also analysed and is presented in the **Table 3-17**, which follows the standard ToR requirement.
- ✓ As per the results observed of ambient air quality of the project site and the surrounding areas, the ambient air quality is well below the NAAQS limits, however after commissioning of the project the prevailing baseline status of area will be changed so to maintain the ambient air quality of the area.
- ✓ To control the air pollution, proper measurements along with suitable EMP will be adopted, which will be elaborated in environment management plan and impact chapter of report.

Table 3-16: Ambient Air Quality Results

Parameters			PM_{10}			$PM_{2.5}$			SO_2			NO_X			CO		
Name of monitoring equipment used			RDS			Fine Particle Sampler			RDS with Gas Attachments			RDS with Gas Attachments			CO Analyzer (NDIR)		
Equipment sensitivity			5 µg/m³												0.1 mg/m³		
AAQ standard (CPCB) for Industrial, Residential & other Areas			100 µg/m³			60 µg/m³			80 µg/m³			80 µg/m³			4 mg/m³		
AAQ standard (CPCB) for Sensitive Areas			100 µg/m³			60 µg/m³			80 µg/m³			80 µg/m³			4 mg/m³		
Code	Location Name	Category (R, I, S)	Min.	Max	98% tile	Min.	Max.	98% tile	Min.	Max.	98% tile	Min.	Max.	98%tile	Min.	Max.	98% tile
AAQ-1	Near Project Site	R	47	82	78	17	31	31	6.4	9.8	9.7	10.1	13.7	13.5	0.59	1.11	1.09
AAQ-2	Mina Ka Nangal	R	44	69	68	15	24	24	6.8	10.1	9.7	10.1	14.1	13.7	0.58	1.09	1.08
AAQ-3	Golwa	R	42	71	70	16	25	25	7.2	10.6	10.4	10.1	16.0	15.5	0.46	1.11	1.09
AAQ-4	Donkhera Ki Dhani	R	48	75	75	17	34	33	6.4	11.6	10.9	10.1	15.2	14.6	0.52	1.11	1.10
AAQ-5	Bhedanti	R	46	81	76	16	28	27	6.9	10.1	10.1	10.1	14.1	14.1	0.69	1.12	1.11
AAQ-6	Dilpura	R	49	78	77	17	27	27	5.8	11.3	11.0	10.1	15.8	15.3	0.41	0.98	0.95
AAQ-7	Rampura	R	46	76	73	16	27	25	5.8	11.3	10.8	10.1	15.8	14.9	0.41	0.98	0.95

**** 24 hourly or 8 hourly or 1 hourly monitored value, as applicable shall be complied with 98% of the time in a year, ** Annual Arithmetic Means of minimum 104 measurements in a year at a site taken twice a week 24 hourly at uniform intervals, *** Category defined as Residential, Industrial & Sensitive. 5% of the time they may exceed the limits but not on two consecutive days of monitoring, For CO 1 hourly standard is being considered.***

Table 3-17: Mineralogical Composition of PM10

Location Name	Date	PM 10 (µg/m³)	Free Silica (%)	Ca (µg/m³)	Mg (µg/m³)	Ni (µg/m³)	Pb (µg/m³)
Near Project Site	25-03-2023	82	4.1	1.23	0.82	<0.5	<0.05
Mina Ka Nangal	11-03-2023	63	3.2	0.98	0.61	<0.5	<0.05
Golwa	08-05-2023	47	2.4	0.69	0.49	<0.5	<0.05
Donkhera Ki Dhani	10-03-2023	57	2.9	0.87	0.62	<0.5	<0.05
Bhedanti	20-04-2023	59	3.2	0.91	0.55	<0.5	<0.05
Dilpura	05-04-2023	58	2.8	0.88	0.69	<0.5	<0.05
Rampura	29-04-2023	65	3.4	1.13	0.73	<0.5	<0.05

3.7. Noise Environment

3.7.1. Ambient Noise Level Monitoring Stations

In the present study, sound pressure levels (SPL) were measured by a sound level meter (Model: Envirotech Make SLM 100). Since loudness of sound is important for its effects on people, the dependence of loudness upon frequency must be considered in noise impact assessment. This has been achieved using A-weighting filters in the noise measuring instrument which gives a direct reading of approximate loudness. A-weighted equivalent continuous sound pressure level (Leq) values have been computed from the values of A-weighted sound pressure level measured with the help of noise meter.

3.7.2. Frequency & Parameters of Sampling

Noise levels were recorded continuous for 24 hours at an interval of 60 minutes during the day and night times to compute the day equivalent, night equivalent and day-night equivalent level. The noise level was monitored once during the study period at each monitoring location. The noise level is recorded in dB(A). The important parameters measured are Leq, Lday, and Lnight.

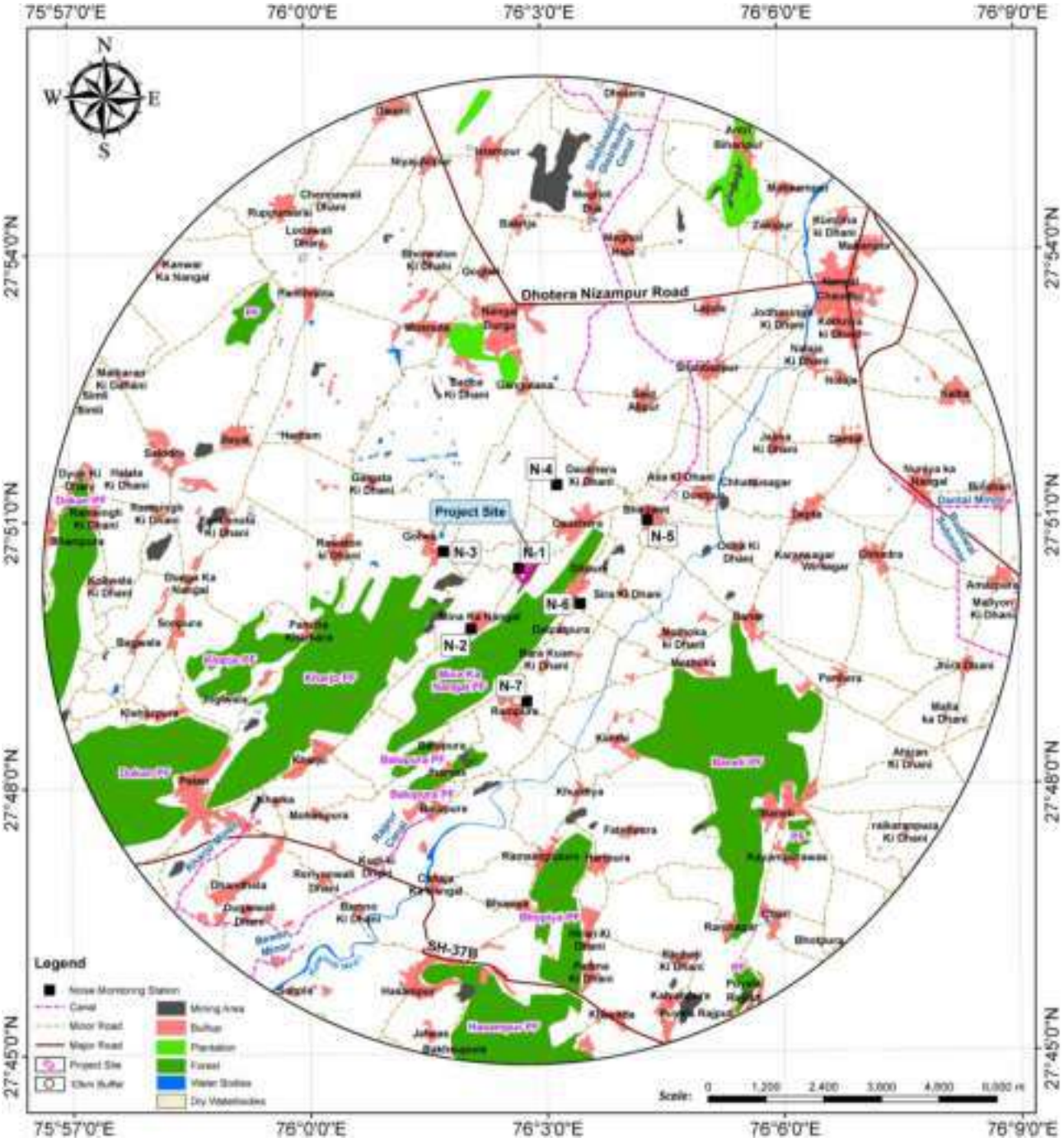
3.7.3. Ambient Noise Level Monitoring Locations

Assessment of ambient noise levels is an important parameter in preparation of impact assessment report. The environmental impact of noise can have several effects varying from annoyance to hearing loss depending on loudness of noise levels. The monitoring for noise levels were done in seven locations keeping considering the population and traffic of the area.

Table 3-18: Ambient Noise Monitoring Locations

S. No.	Location Name	Location Code	Distance (km)	Direction	Latitude	Longitude
1	Near Project Site	N-1	0.3	NNE	27°50'27.05"N	76° 2'40.97"E
2	Mina Ka Nangal	N-2	1.4	SW	27°49'46.32"N	76° 2'4.26"E
3	Golwa	N-3	1.7	WNW	27°50'38.52"N	76° 1'43.77"E
4	Donkhera Ki Dhani	N-4	1.5	NNE	27°51'23.13"N	76° 3'10.25"E
5	Bhedanti	N-5	2.3	ENE	27°50'58.99"N	76° 4'18.83"E
6	Dilpura	N-6	1.3	SE	27°50'2.72"N	76° 3'27.36"E
7	Rampura	N-7	3	SSE	27°48'57.00"N	76° 2'46.06"E

Figure 3.14: Ambient Noise Level Locations



3.7.4. Method of Monitoring

At each location, noise monitoring has been carried out once during study period over a period of 24 hours to obtain Leq values at uniform time intervals of 1 hour. In each hourly time interval Leq values have been computed from SPL readings taken at uniform time intervals of 10 minutes. For each location, day and night-time Leq values have then been computed from the hourly Leq values such that comparison could be made with the national ambient noise standards. Day time Leq was computed from the hourly Leq values between 6.00AM - 10.00PM and night-time Leq from the hourly Leq values between 10.00PM- 6.00AM.

For noise levels measured over a given period interval, it is possible to describe important features of noise using statistical quantities. This is calculated using the percent of the time certain noise levels exceeds the time interval.

The notation for the statistical quantities of noise levels is described below:

- ✓ Hourly Leq values have been computed by integrating sound level meter.
- ✓ **Lday**: As per the CPCB guidelines the day-time limit is between 06:00 hours to 22.00 hours as outlined in Ministry of Environment and Forest Notification S.O. 123 (E) dated 14/02/2000.
- ✓ **Lnight**: As per the CPCB guidelines the night-time limit is between 22:00 hours to 06.00 hours as outlined in Ministry of Environment and Forest Notification S.O. 123 (E) dated 14/02/2000.
- ✓ **Ldn**: A rating developed by Environmental Protection Agency, (US-EPA) for specification of community noise from all the sources is the Day Night Sound Level, (Ldn). It is like a 24-hr equivalent sound level except that during night period (10 PM to 06 AM) a 10 dB (A) weighting penalty is added to the instantaneous sound level before computing the 24-hr average.

Table 3-19: Ambient Noise Level (CPCB Standards)

Area Code	Type of Area	Limits in dB(A) Leq*	
		Day (06:00hrs to 20:00hrs)	Night (20:00hrs to 06:00hrs)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

**** Silence zone is defined as an area up to 100 meters around such premises as hospitals, educational institutions, and courts. The silence zones are to be declared by the competent authority.***

3.7.5. Ambient Noise Level in Study Area

An analysis of the different Leq data obtained during the study period has been made. Variation was noted during the day - time as well as night - time. The results are presented in Table 3.20.

Table 3-20: Ambient Noise Quality Result

Noise Location	Zone	Code	Day				Night			
			Std.	L Max	L Min	L eq	Std.	L Max	L Min	L eq
Near Project Site	Residential	AN-1	55	54.9	38.6	49.9	45	40.2	29.5	35.6
Mina Ka Nangal		AN-2	55	56.4	39.5	50.4	45	38.2	29.3	34.3
Golwa		AN-3	55	55.0	39.6	49.6	45	38.9	29.9	35.0
Donkhera Ki Dhani		AN-4	55	54.2	40.6	49.0	45	37.6	30.0	34.5
Bhedanti		AN-5	55	55.9	39.5	50.3	45	38.6	29.9	34.8
Dilpura		AN-6	55	53.9	41.6	49.6	45	39.5	30.1	35.2
Rampura		AN-7	55	54.5	39.6	49.7	45	40.1	30.2	36.2

The Sound Pressure Level recorded during the daytime on all locations varies from 38.6 dB(A) to 56.4 dB(A) & in time it varies between 29.3 dB(A) to 40.2 dB(A). The noise level was found well within prescribed standards due to absence of any major noise generating activities in the area. The traffic density is normal in the region which is only major source for noise in the area.

3.8. Biological Environment

Study of biological environment is one of the important aspects for the Environmental Impact Assessment, in view of the need for conservation of Environmental quality and biodiversity of geographical area. Ecological systems show complex interrelationship between biotic and Abiotic components including dependence, competition, and mutualism. Biotic components comprise of plant and animal communities which interact not only within and between themselves but also with the Abiotic components viz. Physical and Chemical, components of the environment.

Generally, biological communities are the good indicators of climatic and edaphic factors. Studies on biological aspects of ecosystems are important in Environmental Impact Assessment for safety of natural flora and fauna. Information on the impact of environmental stress on the community structure serves as an inexpensive and efficient early warning system to check the damage to a particular ecosystem. The biological environment includes mainly terrestrial and aquatic ecosystems.

The animal and plant communities exist in their natural habitats in well-organized manner. Their natural settings can be disturbed by any externally induced anthropological activities or by naturally induced calamities or disaster. So, once this setting is disturbed, it becomes practically impossible or takes a longer time to come to its original state. Plants and animals are more susceptible to environmental stress. The sensitivity of animal and plant species to the changes occurring in their existing ecosystem can, therefore, be used for monitoring Environmental Impact Assessment studies of any project.

3.8.1. Objective of Biological Study

The main objectives of biological study were:

- ✓ To collect the baseline data for the study along with a description of the existing terrestrial, wetland, and aquatic biodiversity.
- ✓ To assess the scheduled species in the proposed site (rare, endangered, critically endangered, endemic, and vulnerable).
- ✓ To identify the locations and features of ecological significance.
- ✓ To identify the Impacts of proposed project before, after and during development phase.

Table 3-21: Mode of Data Collection and Parameters

Sr. No.	Aspect	Mode of Data collection	Parameters monitored	Remarks
1.	Terrestrial Biodiversity	By field survey	Floral and Faunal diversity	**For Floral Diversity:** Random survey, sapling survey/forest inventory, walking transects, collection and identification with the help of relevant literature. **For Faunal Diversity:** direct and indirect sampling, walking transects, point sampling and nest sampling etc.
2.		From authentic sources like Forests department of Haryana and available published literatures from ZSI, BSI etc.	Floral and Faunal diversity and study of vegetation, forest type, importance etc.	Data collected from the working plan of the region, forest types from the authentic literature of Champion & Seth.

Sr. No.	Aspect	Mode of Data collection	Parameters monitored	Remarks
3.	Aquatic Biodiversity	By field survey	Floral and Faunal diversity	**For Plankton Study-** Lackey's drops method and light microscope **For other aquatic-** Random survey, opportunistic observations
4.		From authentic sources like Forests department of Haryana.	Floral and Faunal diversity and study of vegetation, forest type, importance etc.	Desktop literature review to identify the representative spectrum of threatened species, population, and ecological communities.

3.8.2. Environmental Sensitivity of the Study Area

There is no wildlife sanctuary, elephant corridor, tiger reserve or any sensitive receptor within study area (10 km) from lease area. Project site doesn't involve any forest area.

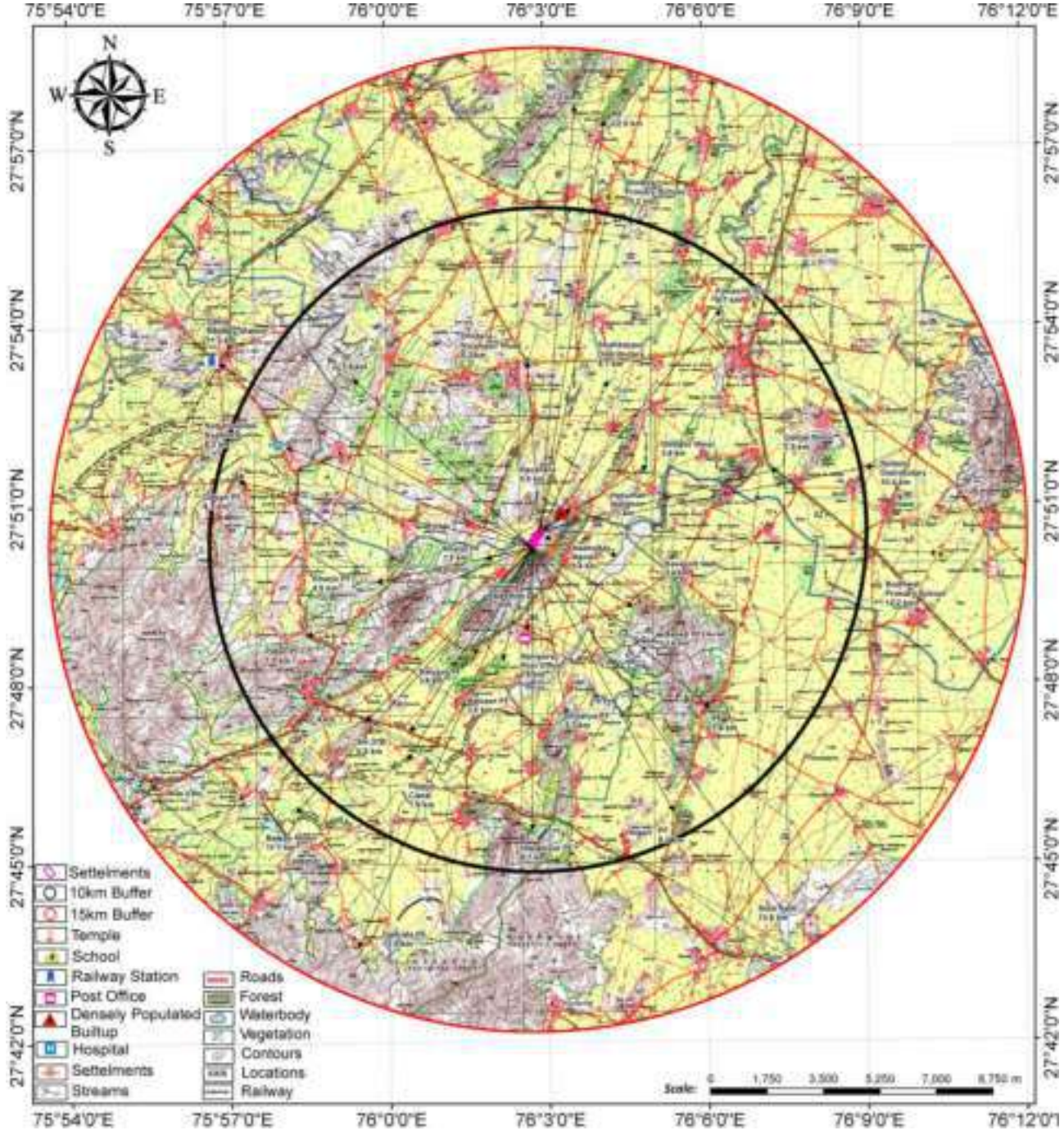
Table 3-22: Environmental Settling of Study Area (15km Buffer)

S. No.	Accessibility	Description	Distance (km)	Direction
1	Highway/ Road	SH-37B	6.8	SSW
		Dhotera Nizampur Road	5.3	NNW
2	Railway Stations	Dabla Railway Station	11.2	NW
3	Religious	Baba Madhodas Mandir	0.4	SE
		Hanuman Mandir	1.1	NE
4	Airport	Bachhod Airstrip	29.3	NE
5	Hospitals	Sub Hospital Syaldora	8.2	NW
6	Institutional Buildings	Dholera Primary School	10.2	NNE
		Budhwal Primary School	12.2	E
7	Post Office	Rampura Branch Post Office	2.6	SSW
8	Nearby Settlement	Donkhera	0.8	NE
9	Interstate Boundary	Haryana-Rajhasthan	0.1	SW
10	Waterbody	Sota Nadi	13.6	SE
		Kasaunti Nadi	2.4	ESE
		Kasaunti Nadi	8.7	NE
		Dostpur Minor	3.8	NE
		Dantal Minor	7.5	ENE
		Shahbazpur Distributary	5.1	NNE
		Raipur Canal	7.6	SSW
		Nolpur Distributary	10.4	ENE
11	Forest	Baneti Protected Forest	3.6	SE
		Protected Forest	7.4	SE
		Protected Forest	9.2	SE
		Hasampur Protected Forest	8.7	S
		Gadrata Protected Forest	13.5	SSW
		Protected Forest	7.4	SW
		Patan Protected Forest	7.5	SW
		Kharjo Protected Forest	1.5	SW

S. No.	Accessibility	Description	Distance (km)	Direction
		Kharjo Protected Forest	4.9	WSW
		Bhopiya Protected Forest	5.3	SSE
		Balupur Protected Forest	3.6	SSW
		Balupur Protected Forest	3.8	SSW
		Dokan Protected Forest	9.3	WNW
		Protected Forest	7.6	NW
		Reserve Forest	13.2	N
		Reserve Forest	12.9	NNE

Source: SOI Toposheet (G43D13, G43D14, G43E1 & G43E2) & Google References.

Figure 3.15: Environment Sensitivity Map (15 km Buffer) of Proposed Site



3.8.3. Forest Cover of the Region

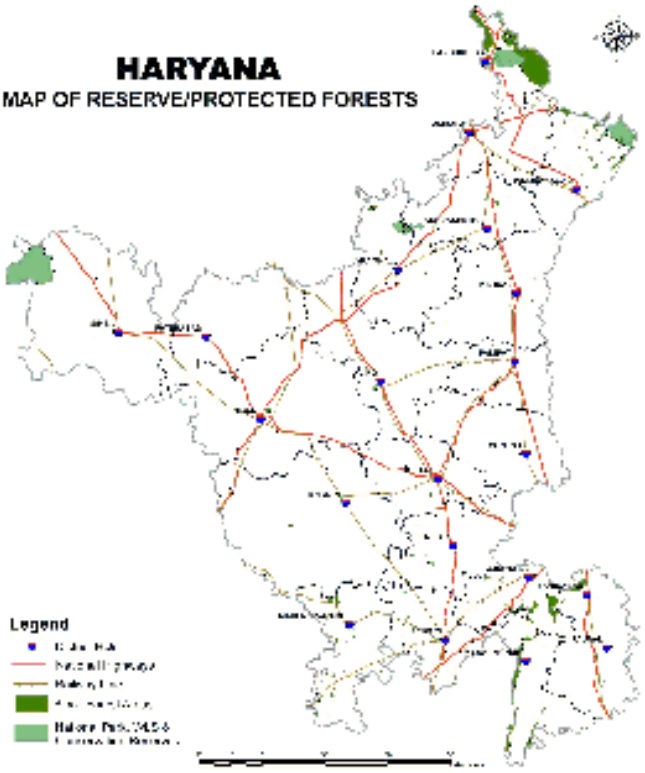
The forest type found in the study area is Dry Deciduous Type Forest as per Champion and Seth Classification (1968). The recorded forest cover of the state is 1559 sq. km, which is 3.53% of its geographical area. The reserved, protected, and unclassified forests are 249 sq. km, 1158 sq. km and 152 sq. km respectively of the recorded forest area. (India State of Forest Report, 2021).
The proposed mine area is not falling under any reserve forest. However, some forest areas are located around the proposed mine area and the details of such forests area given in Table 3.22.

Table 3-23: Forest Cover of the Project Affected Area

District / State	Geographical Area (km^2)	Very Dense Forest (km^2)	Mod. Dense Forest (km^2)	Open Forest (km^2)	Total (km^2)	% of GA
Mahendragarh	1,899	0.00	20.82	82.56	103.38	5.44
Haryana	**44212**	**28**	**445.38**	**1130**	**1603.48**	**3.63**

Source: ISFR, 2021

Figure 3.16: Eco-regions of Haryana



3.8.4. Ecology of the Study Area

Biological communities are the indicator environmental condition and resource of its distribution and survival. Biotic component comprises of both plants (Flora) and animals (Fauna) communities, which interact not only within and between them but also with the Abiotic components, viz. physical and chemical components of the environment. The changes in biotic community are studied in the pattern of distribution, abundance, and diversity. The study area is divided into two parts i.e.:

Core Zone: Project Site i.e., Stone Mine, Donkhera, Mahedragarh. The core zone consists of slightly undulatory agriculture land. The highest point in the lease area is recorded to be 355 mRL and the lowest point recorded is 350 mRL. The lease area does not have any water body. The area sloping towards west in which water flows during rains for a short duration, otherwise they remain dry for the rest of the months. The rainwater from fields drains either into local johars or in agriculture fields.

The excavation will be done in this area. Hence, the impacts on the biological environment in this area will be larger, which will require specific environment mitigation measures.

Buffer Zone: Area within 10 Km radius from the project site. The buffer zone consists of agriculture fields, inhabited areas, ranges of Aravali Hills, Forest areas, scrub lands and various types of water bodies like rivers, nallas, johars etc. The buffer zone exhibits various types of terrestrial as well as aquatic biodiversity.

This area will have less impact of mining. However, it is necessary to assess the impacts of the project activities to prevent the surrounding biological communities from adverse impacts. The impact of the project area beyond ten kilometres is considered insignificant.

Methodology: The present study on the floral assessment for the project activity is based on the field survey of the area. By the following forest inventory methodology, the survey of biological parameters has been conducted within the core zone and buffer zone (10 km radial distance) from project site, in accordance with the guidelines issued by the ministry of Environment, Forest and Climate Change, CPCB and SPCB during the study period.

A preliminary survey of the study area has been performed to get a general picture of the landscapes in vegetation. Traverses have been taken within different zone of the study area to note major vegetation patterns and plant communities including their growth form and dominant species. A **forest inventory** is **"an attempt to describe the quantity and quality of forest trees and many of the characteristics of the land area upon which the trees are grown."**

The objective for this floral inventory of the study area is to provide complete checklist of floristic structure within the core zone and buffer zone (10 km radial distance) from project site for formulating effective management and conservation measures.

Biological environment is a good bio-indicator of changing environmental quality. Reconnaissance survey was undertaken around the proposed project site. In the present survey 10 km radius area around the project site was considered as study area. Both terrestrial and aquatic ecological analysis was carried out in the field and in the laboratory. Assessment of flora and fauna was undertaken in the study area. The field study was undertaken during April 2023.

In addition to the field study, literature review /desk research was carried out to determine the existing conditions within the study area and to identify habitats and species of potential importance that may be affected by the Project.

The following parameters were primarily considered in the study.

- ✓ Assessment of present state of vegetation, flora and fauna in the study area.
- ✓ Collection of data from literature about the flora and fauna accounts
- ✓ Identification of rare, endangered plants and animal species (if any).
- ✓ Identification of important plants/animals' species having diverse economic values.

3.8.5. Terrestrial Ecology

The natural flora and fauna of the land habitats constitute terrestrial ecosystem. The study of terrestrial ecosystem is important as a part of the monitoring environmental changes. Due to rapid industrialization and other anthropogenic activities, the ecological status of an area changes dramatically. Thus, impact evaluation of any developmental activities is highly essential with a view to develop proper mitigation plan.

3.8.5.1. Floral Survey

The core Zone of study area mainly consists undulating agricultural land. Hence, trees were sparsely observed in some of the fields. Some Shrubs and herbs were observed during the season when there are no agriculture practices.

The buffer zone of the study area shows floral diversity. Dense forest was observed in forest areas of Aravalli Hills. Shrubs, Herbs, Climbers, Grasses were seen in agricultural fields, forest areas and Scrub lands etc.

As per the primary survey and secondary sources, a total of 86 plant species were recorded with 35 tree species, 11 shrub species, 25 herb species and 15 species of grasses and climbers. All these species belong to 37 families in which Fabaceae stands with highest number of species i.e., 13 followed by Poaceae i.e., 11 species. Other families were found with 1 to 4 species under them.

Table 3-24: Floral of the Study Area

S. No.	Description	No. of Species
1	Trees	35
2	Shrubs	11
3	Herbs	25
4	Grasses & Climbers	15
Total		**86**

Figure 3.17: Floral Species observed in Study Area

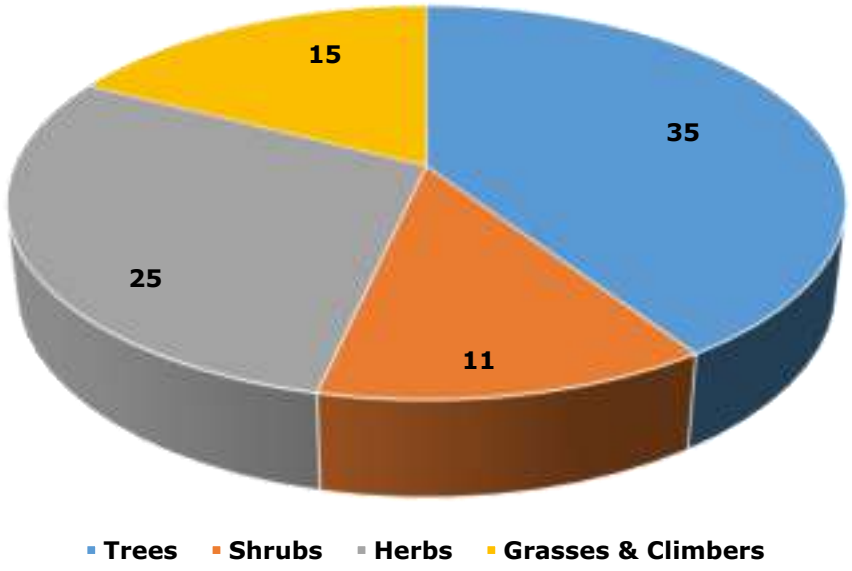
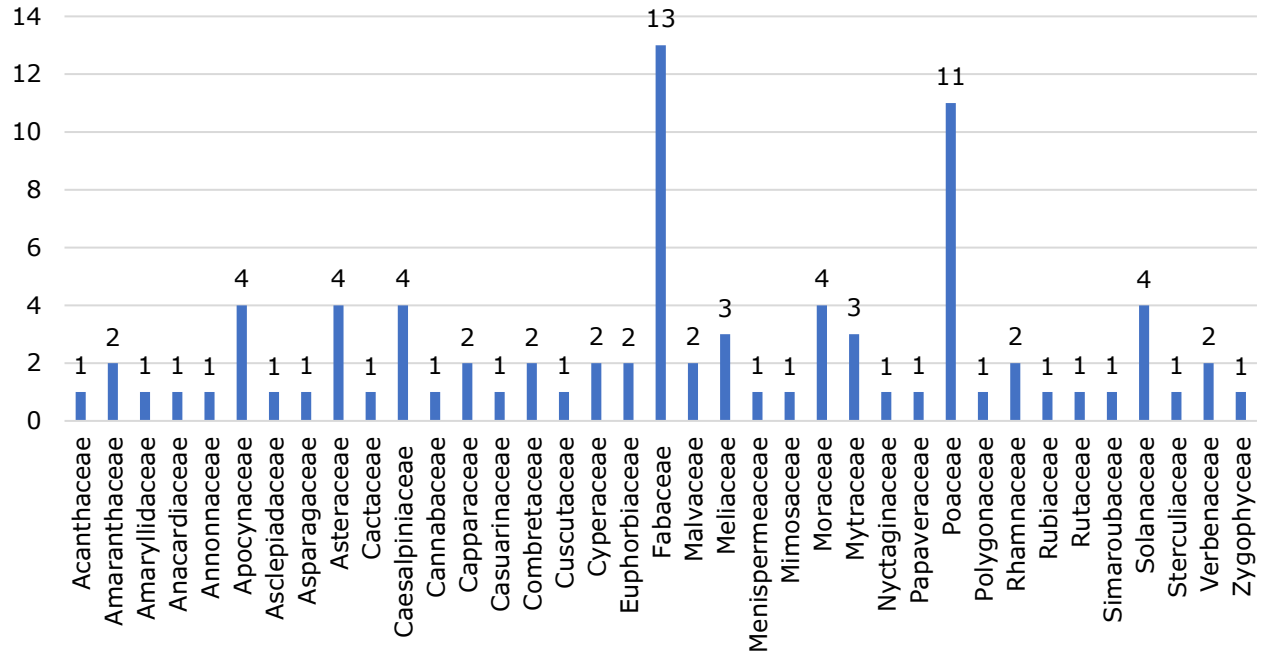


Figure 3.18: Plant Families Observed in Study Area



During the survey, no rare, endangered, or threatened species of flora was observed in the study area. The floral inventory is presented in table below:

Table 3-25: Floral Checklist of Buffer Zone

S. No.	Scientific Name	Local Name	Family
Trees			
1	*Acacia nilotica*	Babool	Fabaceae
2	*Acacia catechu*	Khair	Fabaceae
3	*Acacia leucophloea*	Ronjh	Fabaceae
4	*Aegle marmelos*	Bel	Rutaceae
5	*Ailanthes excelsa*	Arusa	Simaroubaceae
6	*Albizia lebbeck*	Siris	Fabaceae
7	*Alstonia scholoris*	Saptaparni	Apocyanaceae
8	*Anthocephalus cadamba*	Kadamb	Rubiaceae
9	*Azadiracta indica*	Neem	Meliaceae
10	*Bauhinia variegata*	Kachnar	Caesalpiniaceae
11	*Bombax ceiba*	Semal	Malvaceae
12	*Butea monosperma*	Dhak	Fabaceae
13	*Cassia fistula*	Amaltas	Fabaceae
14	*Cassia siamea*	Kassod	Caesalpiniaceae
15	*Casuarina equisetifolia*	Jungli Saru	Casuarinaceae
16	*Callistemon viminalis*	Bottle Brush	Myrtaceae
17	*Dalbergia sissoo*	Shisham	Fabaceae
18	*Delonix regia*	Gulmohar	Fabaceae
19	*Eucalyptus spp*	Safeda	Mytraceae
20	*Ficus benghalensis*	Bargad	Moraceae
21	*Ficus religiosa*	Pipal	Moraceae
22	*Ficus glomerata*	Gular	Moraceae

S. No.	Scientific Name	Local Name	Family
23	*Pithecellobium dulce*	Jungle Jalebi	Fabaceae
24	*Mangifera indica*	Aam	Anacardiaceae
25	*Melia azedarach*	Bakain	Meliaceae
26	*Morus alba*	Toot	Moraceae
27	*Pongamia pinnata*	Karanj	Fabaceae
28	*Prosopis juliflora*	Angrezi babool	Fabaceae
29	*Polyalthia longifolia*	Ashok	Annonnaceae
30	*Syzygium cumini*	Jamun	Myrtaceae
31	*Tamarindus indica*	Imli	Caesalpiniaceae
32	*Terminalia arjuna*	Arjun	Combretaceae
33	*Terminalia bellerica*	Bahera	Combretaceae
34	*Toona ciliata*	Toon	Meliaceae
35	*Ziziphus mauritiana*	Ber	Rhamnaceae
Shrubs			
1	*Bougainvillea glabra*	Bougainvellia	Nyctaginaceae
2	*Calotropis procera*	Aak	Asclepiadaceae
3	*Calligonum polygonoides*	Phog	Polygonaceae
4	*Carissa carandas*	Karonda	Apocynaceae
5	*Helicteres isora*	Maror phali	Sterculiaceae
6	*Indigofera pulchella*	Kathi	Fabaceae
7	*Lantana camara*	Raimuniya	Verbenaceae
8	*Nerium oleander*	Kaner	Apocynaceae
9	*Ricinus communis*	Arandi	Euphorbiaceae
10	*Thevetia peruviana*	Pili Kaner	Apocynaceae
11	*Ziziphus nummularia*	Jharberi	Rhamnaceae
Herbs			
1	*Abutilon indicum*	Kanghi	Malvaceae
2	*Achyranthes aspera*	Chirchita	Amaranthaceae
3	*Adhatoda vasica*	Bansak	Acanthaceae
4	*Aerva tomentosa*	Bui	Amaranthaceae
5	*Agave americana*	Gwarpatha	Amaryllidaceae
6	*Argemone mexicana*	Satyanashi	Papaveraceae
7	*Asparagus racemosus*	Satawari	Asparagaceae
8	*Cannabis sativa*	Bhang	Cannabaceae
9	*Cassia tora*	Panwar	Caesalpiniaceae
10	*Cleome viscosa*	Bagra	Capparaceae
11	*Clitoria ternatea*	Aparajita	Fabaceae
12	*Cyperus segetum*	Gungu	Cyperaceae
13	*Datura metel*	Dhatura	Solanaceae
14	*Echinops echinatus*	Gokharu	Asteraceae
15	*Eclipta alba*	Bhringaraj	Asteraceae
16	*Euphobia hirta*	Dudhi	Euphorbiaceae
17	*Mimosa pudica*	Lajwanti	Mimosaceae
18	*Opuntia dillenii*	Nagphani	Cactaceae
19	*Parthenium hysterophorus*	Gajar Ghass	Asteraceae

S. No.	Scientific Name	Local Name	Family
20	*Solanum nigrum*	Makoi	Solanaceae
21	*Solanum xanthocarpum*	Kateri	Solanaceae
22	*Tribulus terrestris*	Gokhru	Zygophyceae
23	*Vitex negundo*	Bana	Verbenaceae
24	*Withania somnifera*	Ashvagandha	Solanaceae
25	*Xanthium strumarium*	Chota gokhru	Asteraceae
Grasses and Climbers			
1	*Apluda mutica*	Tachula	Poaceae
2	*Arundo donax*	Doka	Poaceae
3	*Brachiaria ramosa*	Makra	Poaceae
4	*Cuscuta reflexa*	Amarbel	Cuscutaceae
5	*Capparis sepiaria*	Hins	Capparaceae
6	*Cenchrus ciliaris*	Anjan grass	Poaceae
7	*Cyperus rotundus*	Dilla	Cyperaceae
8	*Cynodon dactylon*	Doob	Poaceae
9	*Digitaria cilliaris*	Wild Crab grass	Poaceae
10	*Heteropogon contortus*	Black Spear Grass	Poaceae
11	*Saccharum munja*	Moonj	Poaceae
12	*Saccharum spontaneum*	Kaans grass	Poaceae
13	*Sporobolus marginalus*	Chiria	Poaceae
14	*Tinospora cordifolia*	Giloy	Menispermeaceae
15	*Vetiveria zizanoides*	Khas	Poaceae

Source: Primary Survey Supported by Secondary Data

Plantation of Economic Importance: Several plants found in the study area possess importance as medicine & other allied uses. The details of such plants are as follows:

Table 3-26: Plants of Medicinal Importance & Other Allied Uses

S. No.	Botanical Name	Common Name	Family Name	Part used	Medicinal use
1	*Abutilon indicum*	Kanghi	Malvaceae	Roots	Roots decoction is taken with milk or honey orally for long life span with strength
				Seeds	Seeds powder is taken orally as a Constipation remedy
				Leaves	Leaves Powder is taken orally with cow milk to cure diabetes
2	*Ailanthus excelsa*	Ardu	Simaroubaceae	Stem	Stem Juice mixed with sugar or honey is given orally to birth control
				Bark	Stem bark Decoction is given orally mixed with honey to treat Dysentery
3	*Albizia lebbeck*	Safed Siris	Leguminosae	Leaf	Leaf extracts are helpful in Bites and stings from venomous animals, ear pain and coughing
				Bark	Bark extract is helpful in Blood purification.
				Seeds	Seeds extracts are used in Diarrhea and Dysentery

S. No.	Botanical Name	Common Name	Family Name	Part used	Medicinal use
4	*Azadirachta indica.*	Neem	Meliaceae	Leaf	Leaf extract cures Leprosy, intestinal helminthiasis, respiratory disorders, constipation, rheumatism, chronic syphilitic sores, and ulcer
				Flower	Flowers extracts are useful in Bile suppression, elimination of intestinal worms and phlegm
				Fruit	Fruit is taken for curing Piles, intestinal worms, urinary disorder, phlegm, eye problem, diabetes, wounds, and leprosy
				Bark	Analgesic and antipyretic
5	*Butea monosperma*	Dhak	Fabaceae	Flowers	Powder of flowers mixed with milk is taken for three days to cure fever
6	*Cassia siamea*	Kassod	Caesalpiniaceae	Roots	Roots extracts are helpful in getting rid of Conjunctivitis
				Leaf and Flower	Leaf and flower extract are helpful in Indigestion and taken as expectorant
				Leaf	Leaf extract cures Heartburn and taken as antipyretic
				Seeds	Seeds are useful in getting rid of Intestinal worms and used as antidote for snake and scorpion bites
7	*Cassia fistula*	Amaltas	Caesalpiniaceae	Seeds	Mild laxative
				Leaf	Insect bites, swelling, rheumatism and facial paralysis
				Roots	Tonic, an astringent, febrifuge and strong purgative, migraine, and dysentery
8	*Cynodon dactylon*	Doob	Poaceae	Whole plant	fodder
9	*Cassia tora*	Chakor	Caesalpiniaceae	leaves	used as vegetables
10	*Datura metel*	Dhatura	Solanaceae	Seeds	Its 2-3 seeds should be taken daily to cure headache
				Leaves	Crushed leaves of Datura are used in treatment of bones diseases and scrotum swelling
					Pulp of its leaves is used for a scorpion sting
				Seeds	Its seeds crushed with water and used to treat for skin diseases
11	*Dalbergia sissoo*	Shisham	Leguminosae	Leaf	Gonorrhea
				Roots	Astringent
				Wood	Leprosy and to allay vomiting

S. No.	Botanical Name	Common Name	Family Name	Part used	Medicinal use
12	*Ficus benghalensis*	Bargad	Moraceae	Bark	Dysentery, diarrhea, leucorrhoea, nervous disorders and reduces blood sugar in diabetes
				Leaf	Leaf extract is applied externally to abscesses and wounds to promote suppuration.
				Aerial Roots	Pimples, leucorrhea and osteomalacia
				Twigs	Strengthen gums and teeth
				Latex	Rheumatism, haemorrhoids, gonorrhea, cracks of the sole and skin diseases
13	*Ficus glomerata*	Gular	Moraceae	Bark	Diabetes, bronchitis, dry cough, dysentery, diarrhea etc.
				Leaf	Diarrhea, dyspepsia, haemorrhages, and obesity
				Fruit	Leprosy, blood diseases, fatigue, leucoderma etc.
14	*Mangifera indica*	Aam	Anacardiaceae	Roots and Bark	Anti-syphilitic, anti-inflammatory, leucorrhoea, wounds, ulcers and vomiting.
				Leaf	Cough, hiccup, burning sensation, hemorrhages, diarrhoea, and dysentery
				Flower	Anorexia, dyspepsia, diarrhoea and aneamia etc
				Ripe Fruit	Anorexia, dyspepsia, cardiopathy, hemorrhages from uterus, lungs, and intestine and aneamia.
				Unripe Fruit	Dysentery ophthalmia, and urethrorrhagia
15	*Melia azedarach*	Bakayan	Meliaceae	Leaves	5 ml juice of its leaves is used to remove barriers of menstruation
				Seeds	Its seeds crushed with mustard seed are applied on joints to relief arthritis
16	*Ricinus communis*	Arandi	Euphorbiaceae	Seeds	used for oil extraction
17	*Saccharum munja*	Munj	Poaceae	Whole plant	for making rope
18	*Saccharum spontaneum*	Kaushi grass	Poaceae	Whole plant	for making rope and broom
19	*Tribulus terrestris*	Gokhru	Zygophyllaceae	Fruits	15-20 gm powder of its fruit's dosage is used to treat female sterility
					3 gm powder of its fruit with 15-20 gm dry Fig is taken three times in a day to treat asthma

S. No.	Botanical Name	Common Name	Family Name	Part used	Medicinal use
20	*Tamarindus indica*	Imli	Leguminosae	Fruit	used as food
21	*Terminalia arjuna*	Arjun	Combretaceae	Leaf, Stem Bark	Medicinal use
22	*Terminalia bellirica*	Bahera	Combretaceae	Fruit	Used in stomach pain

Source: Primary Survey Supported by Secondary Data

3.8.5.2. Agricultural Status of Area

As the study area mainly comprises agriculture land and buffer area has mainly agricultural lands, various crops were reported in various seasons in the area. The major crops reported were paddy, jowar, bajra and makai in kharif seasons, while that of Rabi seasons crops were wheat, barley, mustard, sunflower, toor, mung, chana, masoor, rapeseed, pea and barseem. The cultivation in this area is highly mechanized and there are profound facilities for irrigation through canals and deep tube wells. The farmers also use both chemical and bio-fertilizer in adequate quantity.

Table 3-27: Crops in Study Area

S. No	Scientific Name	Common Name	Family	Season
1	*Brassica napus*	Rapeseed/Canola	Brassicaceae	Rabi
2	*Brassica nigra*	Mustard	Brassicaceae	Rabi
3	*Cicer arietinum*	Chana	Fabaceae	Rabi
4	*Hordeum vulgare*	Barley	Poaceae	Rabi
5	*Lens culinaris*	Masoor/Lentil	Fabaceae	Rabi
6	*Oryza sativa*	Rice / Paddy	Poaceae	Kharif
7	*Pennisetum glaucum*	Bajra/Pearlmillet	Poaceae	Kharif
8	*Sorghum bicolor*	Jowar	Poaceae	Kharif
9	*Triticum aestivum*	Wheat	Poaceae	Rabi
10	*Zea mays*	Maize/Makai	Poaceae	Kharif
11	*Helianthus spp.*	Sunflower	Asteraceae	Rabi
12	*Cajanus cajan*	Toor	Fabaceae	Rabi
13	*Vigna spp.*	Mung	Fabaceae	Rabi
14	*Pisum sativum*	Pea	Fabaceae	Rabi
15	*Trifolium alexandrinum*	Berseem	Fabaceae	Rabi

Source: Primary Survey Supported by Secondary Data

3.8.5.3. Faunal Diversity

To prepare a detailed report on the status of wildlife biodiversity within 10 km radial area to assess the impacts due to the project activity and evolve suitable mitigation measures to protect and conserve wildlife biodiversity following components were studied:

a. Wildlife Survey (Diversity)
b. Habitat Study (Feeding, Breeding and Roosting areas)
c. Distribution/Status of Birds
d. Rare & Endangered species of Fauna
e. Specific local characteristics of biodiversity in the study area.

Methodology for Faunal Diversity: The presence of mammals, avifauna and reptiles were observed by using conventional methods like transect walks during the daytime. Amphibians were observed in the river and other water bodies. Butterflies were also observed in the study area. As the study area consists of agricultural lands, built-up areas, forest areas, river, roads, canals and drains etc. many species of fauna was seen. Domesticated animals like Cow, Buffalo, Goat, Sheep etc. were seen near inhabited areas while some wild animals were reported from agricultural fields, near river area and forest area. The presence of fauna species was also confirmed from the local inhabitants.

As per the primary survey and secondary sources, a total of 60 fauna species were recorded with 12 mammal species, 29 avifauna species, 8 reptile species, 5 amphibian species and 6 species of butterfly.

Table 3-28: Faunal Checklist of Buffer Zone

S. No.	Description	No. of Species
1	Mammals	12
2	Avifauna	29
3	Reptiles	8
4	Amphibians	5
5	Butterflies	6
	Total	**60**

Figure 3.19: No. of Fauna Species recorded from Study Area

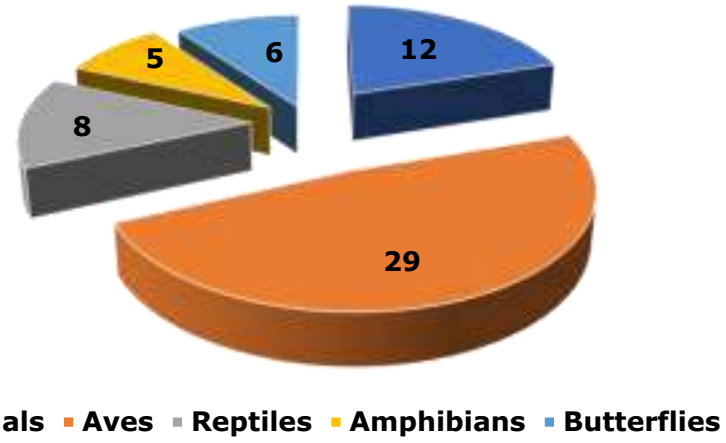


Table 3-29: Faunal Checklist of Buffer Zone

S. No.	Common Name	Scientific Name	Schedule as per WPA, 1972
Mammals			
1.	Black Rat	*Rattus rattus*	Schedule-V
2.	**Common Mongoose**	***Herpestes edwardsii***	**Schedule-I**
3.	Nilgai	*Boselaphus tragocamelus*	Schedule - III
4.	Five Striped Palm Squirrel	*Funambulus pennanti*	Schedule-IV
5.	Little Indian field mouse	*Mus booduga*	Schedule-V
6.	Indian Hare	*Lepus nigricollis*	Schedule-IV
7.	Bandar	*Macaca mulatta*	Schedule-II
8.	Bat	*Rousettus leschenaultia*	Schedule-V

S. No.	Common Name	Scientific Name	Schedule as per WPA, 1972
9.	Common Langur	*Presbytis entellus*	Schedule-II
10.	**Jungle Cat**	***Felis chaus***	**Schedule-I**
11.	Asian House Shrew	*Suncus murinus*	Least Concern
12.	Common House Mouse	*Mus musculus*	Schedule-V
Amphibians			
13.	Common Indian Toad	*Duttaphrynus melanostictus*	Not Listed
14.	Indian Bull Frog	*Hoplobatrachus tigerinus*	Schedule-IV
15.	Indian Skipper Frog	*Euphlyctis cyanophlyctis*	Schedule-IV
16.	Toad	*Bufo bufo*	Not Listed
17.	Common Frog	*Rana tigrina*	Schedule-IV
Reptiles			
18.	House gecko	*Hemidactylus flavivridis*	Common
19.	Common garden lizard	*Calotes versicolor*	Common
20.	**Indian Cobra**	***Naja naja***	**Schedule-I**
21.	**Rat Snake**	***Ptyas mucosa***	**Schedule-I**
22.	Common Indian Krait	*Bungarus caeruleus*	Schedule-IV
23.	Snake-eyed Lacerta	*Ophisops jerdonii*	Schedule-IV
24.	**Common Indian Monitor**	***Varanus benghalensis***	**Schedule-I**
25.	**Indian Python**	***Python molurus***	**Schedule-I**
Butterflies			
26.	White orange tip	*Ixias marianne*	Common
27.	Lime butterfly	*Papilio demoleus*	Common
28.	Common mormon	*Papilio polytes*	Common
29.	Common Grass Yellow	*Eurema hecabe*	Fairly Common
30.	Stripped Tiger	*Danaus genutia*	Common
31.	Common Bush Brown	*Mycalesis perseus*	Common
Avifauna			
32.	House Crow	*Corvus splendens*	Schedule-V
33.	Rock Pigeon	*Columba livia*	Common
34.	Jungle babbler	*Turdoides striatus*	Schedule-IV
35.	Common Myna	*Acridotheres tristis*	Schedule-IV
36.	Green bee-eater	*Merops orientalis*	Least Concern
37.	Indian roller	*Coracias benghalensis*	Schedule-IV
38.	Black Drongo	*Dicrurus macrocercus*	Schedule-IV
39.	House swift	*Apus affinis*	Schedule-IV
40.	Indian Cuckoo	*Cuculus micropterus*	Schedule-IV
41.	Cattle Egret	*Bubulcus ibis*	Schedule-IV
42.	Little Egret	*Egretta garzetta*	Schedule-IV
43.	Pond heron	*Ardeola grayii*	Schedule-IV
44.	Red wattled lapwing	*Vanellus indicus*	Schedule-IV
45.	Spotted Dove	*Streptopelia chinensis*	Schedule-IV
46.	Tree Pie	*Dendrocitta vagabunda*	Schedule-IV
47.	White Breasted Kingfisher	*Halcyon smyrnensis*	Schedule-IV
48.	Asian Koel	*Eudynamys scolopacea*	Schedule-IV

S. No.	Common Name	Scientific Name	Schedule as per WPA, 1972
49.	Indian Robin	*Saxicooides fulicata*	Schedule-IV
50.	Sun Bird	*Nectarinia asiatica*	Schedule-IV
51.	House Sparrow	*Passer domesticus*	Schedule-IV
52.	Red Vented Bulbul	*Pycnonotus cafer*	Schedule-IV
53.	Bank Myna	*Acridotheres ginginianus*	Schedule-IV
54.	Common Babbler	*Turdoides caudatus*	Schedule-IV
55.	Rose Ringed Parakeet	*Psittacula krameri*	Schedule-IV
56.	Baya	*Ploceus philippinus*	Schedule-IV
57.	**Peafowl**	***Pavo cristatus***	**Schedule-I**
58.	Bater	*Coturnix coturnix*	Schedule-IV
59.	Red-wattled lapwing	*Vanellus indicus*	Schedule-IV
60.	Hoopoe	*Upupa epops*	Schedule-IV

Source: Primary Survey Supported by Secondary Data

3.8.6. Scheduled Species as per WPA, 1972

As per the faunal survey data, a total of seven species were found within the **Schedule-I** of Indian Wildlife (Protection) Act, 1972 which includes **Pavo cristatus (Indian Peafowl), Naja naja (Indian Cobra), Ptyas mucosa (Rat Snake), Varanus benghalensis (Common Indian Monitor lizard), Python molurus (Indian Python), Herpestes edwardsii (Common Mongoose) and Felis chaus (Jungle Cat)**.

Certain steps in consultation with forest department shall be undertaken to protect and conserve these species which are as follows:

- Habitat of these species will not be disturbed.
- Arrangement of food, water etc. shall be done within their natural habitat.
- Plantation using native species shall be undertaken to enhance the natural habitat of these species.
- Suitable roosting and nesting sites with acacia species will be developed for Peafowl.
- Awareness camp will be organized for workers and villagers.

3.8.7. Aquatic Ecology

The core zone of study area comprises the riverbed of Markanda River. Besides, buffer zone of study area includes other rivers, ponds, canals, and drains. Aquatic biotic communities like Phytoplankton and Zooplanktons, Macrophytes and Fishes were studied.

Methodology for Aquatic Diversity: The samples for analysis of planktons were collected from the sub surface layer at knee depth of the water bodies. Water samples were filtered through plankton net of 20µ mesh size (APHA, 1971). The filtered samples were concentrated by using the centrifuge in laboratory. By using Lackey's drops method and light microscope (Lackey, 1938), the analysis was carried out for phytoplankton and zooplankton.

Macrophytes: The presence of macrophytes were studied in rivers, ponds, canal, waterlogged area and drains within the study area. An inventory of macrophytes is given in the Table below.

Table 3-30: Checklists of Macrophytes in Aquatic Habitats

S. No.	Common Name	Scientific Name	Growth Form
1.	Water hyacinth	*Eichhornea crassipes*	Floating
2.	Duck weed	*Lemna minor*	Floating
3.	Kalmi Saag	*Ipomoea aquatica*	Floating
4.	Garundi	*Alternanthera sessilis*	Floating
5.	Oriental Pepper	*Polygonum orientale*	Amphibious
6.	Barnyard Grass	*Echinochloa glabrescens*	Amphibious
7.	Jal kumbhi	*Pistia stratiotes*	Floating
8.	Lotus	*Nymphea nouchali*	Emergent
9.	Harinkhuri	*Convolvulus arvensis*	Amphibious
10.	Patera	*Typha angustifolia*	Amphibious

Source: Primary Survey Supported by Secondary Data

Plankton: The samples collected from the water bodies were analysed for identification of phytoplankton and zooplankton. The details of phytoplankton and zooplankton are as follows.

Table 3-31: List of Phytoplankton from Study Area

Cyanophyceae	Bacillariophyceae	Chlorophyceae
Anabaena	*Fragilaria*	*Spirogyra*
Nostoc	*Synedra*	*Chlorella vulgaris*
Oscillatoria formosa	*Navicula*	*Microspora*
Phormidium	*Cylindrotheca*	*Ulothrix*

Source: Primary Survey Supported by Secondary Data

Table 3-32: List of Zooplanktons from Study Area

Rotifers	Protozoa	Cladocera	Copepoda
Ascomorpha saltans	*Amoeba proteus*	*Bosmina longirostris*	*Cyclops sp.*
Brachionus bidentata	*Centropyxis spp.*	*Daphnia laevis*	*Eucyclops agilis*
Colurella obtusa	*Chlamydomonas minor*	*Moina brachiata*	*Nauplii*
Keratella	*Amoeba*		*Diaptomus*

Source: Primary Survey Supported by Secondary Data

Fishes: The fishes were observed in the rivers, canals, and ponds. The pisciculture activities were observed very less and restricted only in the rivers and ponds of some villages. The fishes found were major carps like Rohu (Labeo rohita), Catla (Catla catla) and Mrigal (Cirrhinus mrigala). Other species found were Puntius sophore, Wallago attu, Channa punctatus etc. An inventory of fishes are as follows.

Table 3-33: List of Zooplanktons from Study Area

S. No.	Scientific Name	Common Name	Family
Major Carps			
1	*Catla catla*	Katla	Cyprinidae
2	*Labeo rohita*	Rohu	Cyprinidae
3	*Cirrhinus mrigala*	Mrigal	Cyprinidae
4	*Labeo calbasu*	Kalbasu	Cyprinidae
Minor Carps			
5	*Puntius sophore*	Putti	Cyprinidae
6	*Labeo bata*	Bata	Cyprinidae
Cat Fishes			
7	*Wallago attu*	Lanchi	Siluridae

S. No.	Scientific Name	Common Name	Family
8	*Mystus seenghala*	Singhara	Bagridae
9	*Channa punctatus*	Girai	Channidae
10	*Clarias batrachus*	Mangur	Clariidae

Source: Primary Survey Supported by Secondary Data

3.9. Socioeconomic Environment

Socio-economic environment is an essential part of environmental study which incorporates various facts related to socio-economic conditions in the area and deals with the total environment. Socio-economic study includes demographic structure of the area, provision of basic amenities viz. housing education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature of aesthetic significance such as temples, historical monuments etc. at the baseline level. This would help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project.

Socio-economic study of an area provides a good opportunity to assess the socioeconomic conditions of an area. This study will possibly estimate the change in living and social standards of the area benefitted due to the project. The gross economic production of the area will be increased substantially due to the existence of this project. It can undoubtedly be said that this plant will provide direct and indirect employment and improve the infrastructural facilities and living standards of the area.

3.9.1. Demography of Study Area

Study area is following 2 states namely, Haryana & Rajasthan. Three districts (Mahendragarh, Jaipur & Sikar) & Three blocks (Narnaul, Kotputli & Neem ka Thana) are coming in study area. Demography of the study area is given in table below.

Figure 3.20: Population & Gender Ration of Study Area

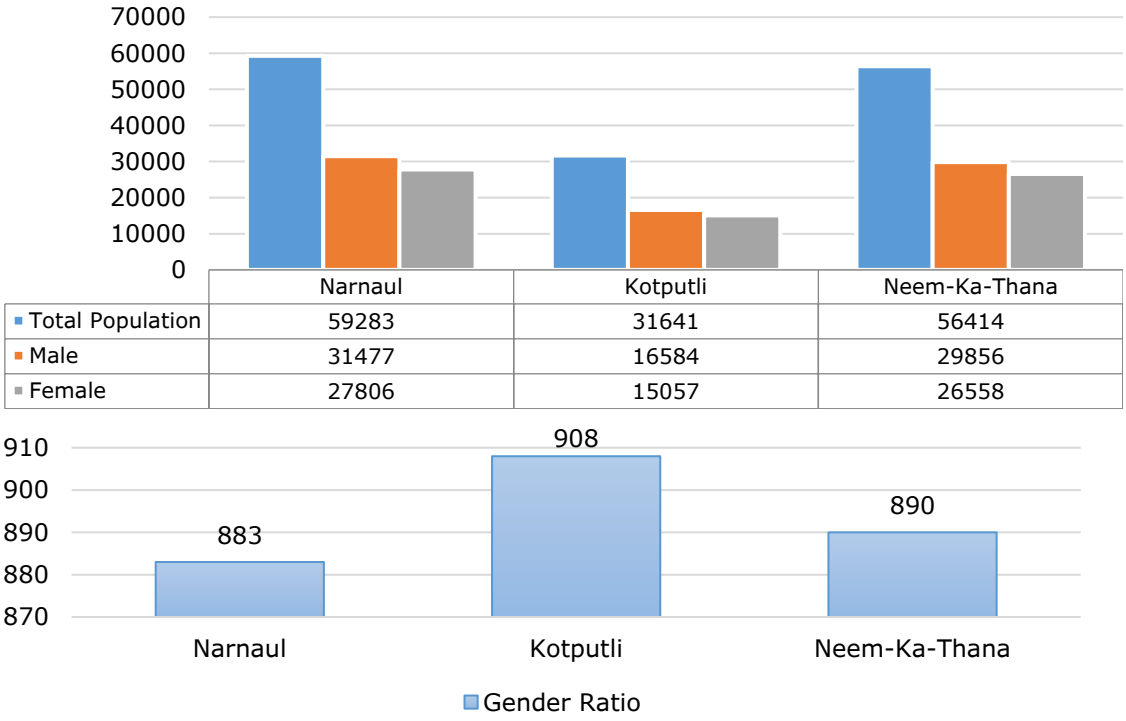


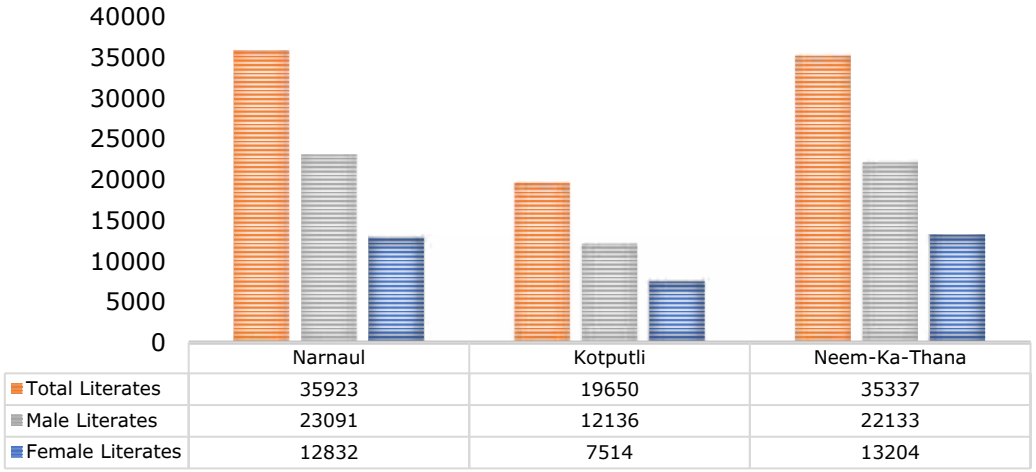
Table 3-34: Demographic Structure of the Study Area

S. No.	State	Name of District	Name of the Block	Household	Total Population	Male	Female	Population 0-6 Years	HH Size	Gender Ratio
1	Haryana	Mahendragarh	Narnaul	9721	59283	31477	27806	7779	6.1	883
2	Rajasthan	Jaipur	Kotputli	5619	31641	16584	15057	4571	5.6	908
3		Sikar	Neem-Ka-Thana	9532	56414	29856	26558	8065	5.9	890
Total				**24872**	**147338**	**77917**	**69421**	**20415**	**5.9**	**894**

Table 3-35: Population Distribution of the Study Area

S. No.	State	Name of District	Name of the Block	Household	Population						
					Total	SC	Male	Female	ST	Male	Female
1	Haryana	Mahendragarh	Narnaul	9721	59283	8456	4501	3955	0	0	0
2	Rajasthan	Jaipur	Kotputli	5619	31641	5517	2886	2631	2051	1068	983
3		Sikar	Neem-Ka-Thana	9532	56414	7367	3865	3502	4057	2151	1906
Total				**24872**	**147338**	**21340**	**11252**	**10088**	**6108**	**3219**	**2889**

Figure 3.21: Literacy Rate & Worker Status of Study Area



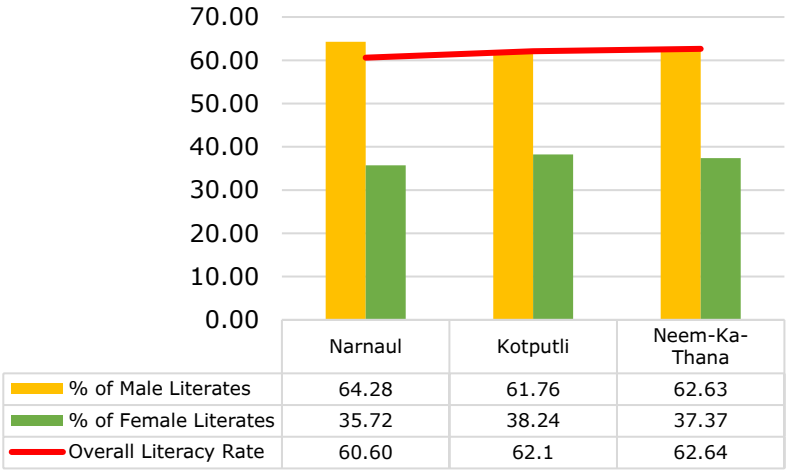


Table 3-36: Literacy Rate of the Study Area

S. No.	State	Name of District	Name of the Block	Total Population	Total Literates	Male Literates	% of Male Literates	Female Literates	% of Female Literates	Overall Literacy Rate
1	Haryana	Mahendragarh	Narnaul	59283	35923	23091	64.28	12832	35.72	60.60
2	Rajasthan	Jaipur	Kotputli	31641	19650	12136	61.76	7514	38.24	62.1
3		Sikar	Neem-Ka-Thana	56414	35337	22133	62.63	13204	37.37	62.64
Total				**147338**	**90910**	**57360**	**62.89**	**33550**	**37.11**	**61.78**

Source Census Data, 2011

Table 3-37: Occupational Structure of the Study Area

S. No.	State	Name of District	Name of the Block	Total Population	Total Main Workers	Main Workers				Marginal Workers	Non-workers
						Cultivators	Agricultural labours	Household labours	Other Workers		
1	Haryana	Mahendragarh	Narnaul	59283	14053	6200	597	384	6872	7198	38032
2	Rajasthan	Jaipur	Kotputli	31641	10517	6089	1062	124	3242	3274	17850
3		Sikar	Neem-Ka-Thana	56414	14048	5937	526	225	7360	6392	35974
Total				**147338**	**38618**	**18226**	**2185**	**733**	**17474**	**16864**	**91856**

Source Census Data, 2011

Table 3-38: Education and Medical Facilities of the Study Area

S. No.	State	Name of District	Name of the Block	Govt School				CHC	PHC	PHSC	MCWC
				Primary	Middle	Secondary	Sr. Secondary				
1	Haryana	Mahendragarh	Narnaul	32	17	7	4	0	1	7	1
2	Rajasthan	Jaipur	Kotputli	22	17	9	2	1	2	7	5
3		Sikar	Neem-Ka-Thana	42	27	15	7	2	1	19	6
Total				**96**	**61**	**31**	**13**	**3**	**4**	**33**	**12**

CHC- Community Health Center, PHC- Primary Health Center, PHSC-Primary Health Sub-center, MCWC-Maternity Child Welfare Centre

Table 3-39: Drinking Water Facilities in the Study Area

S. No.	State	Name of District	Name of the Block	Tap Water	Untreated Tap Water	Covered Well Water (CW)	Hand Pump (HP)	Tube-well (TW)
1	Haryana	Mahendragarh	Narnaul	23	16	0	2	22

S. No.	State	Name of District	Name of the Block	Tap Water	Untreated Tap Water	Covered Well Water (CW)	Hand Pump (HP)	Tube-well (TW)
2	Rajasthan	Jaipur	Kotputli	12	13	11	17	18
3		Sikar	Neem-Ka-Thana	15	20	14	28	32
Total				**50**	**49**	**25**	**47**	**72**

Source Census Data, 2011

Table 3-40: Land Use Classification in the Study Area

Land-Use Classification	**Study Area**			
State	**Haryana**	**Rajasthan**		**Total**
Name of District	Mahendragarh	Jaipur	Sikar	
Name of the Block	Narnaul	Kotputli	Neem-Ka-Thana	**Total**
Forest Area (in Hectares)	0	1055	4241	5295
Area under Non-Agricultural Uses (in Hectares)	5621	450	658	6728
Barren & Un-cultivable Land Area (in Hectares)	0	300	618	918
Permanent Pastures and Other Grazing Land Area (in Hectares)	0	137	768	5296
Land Under Miscellaneous Tree Crops etc. Area (in Hectares)	0	3	95	6729
Culturable Waste Land Area (in Hectares)	44	40	497	919
Fallows Land other than Current Fallows Area (in Hectares)	0	177	349	905
Current Fallows Area (in Hectares)	7	387	384	98
Net Area Sown (in Hectares)	7907	5148	5978	581
Total Unirrigated Land Area (in Hectares)	3774	2787	2401	526
Area Irrigated by Source (in Hectares)	4133	2361	3577	778
Canals Area (in Hectares)	0	796	563	19033
Wells/Tube Wells Area (in Hectares)	4133	1452	3014	8962
Tanks/Lakes Area (in Hectares)	0	0	0	10071
Waterfall Area (in Hectares)	0	0	0	1358
Other Source (specify) Area (in Hectares)	0	113	0	8599

Source Census Data, 2011

Table 3-41: Public Facilities Available in the Study Area

Sl. No.	State	Name of District	Name of the Block	Post Office	Telephone (landlines)	Public Call Office /Mobile (PCO)	Mobile Phone Coverage	Private Courier Facility	Public Bus Service	Private Bus Service	Railway Station	ATM	Commercial Bank	Cooperative Bank	Agricultural Credit Societies	Self - Help Group (SHG)	Public Distribution System (PDS) Shop	Weekly Haat	Cinema/Video Hall	Public Library
1	Haryana	Mahendragarh	Narnaul	0	17	12	23	0	22	9	0	0	1	3	1	23	22	0	0	0
2	Rajasthan	Jaipur	Kotputli	1	17	17	18	1	5	5	0	3	3	3	3	2	14	1	1	3
3		Sikar	Neem-Ka-Thana	1	29	27	39	1	4	17	0	6	6	6	6	5	24	1	1	2
Total				2	63	56	80	2	31	31	0	9	10	12	10	30	60	2	2	5

Source Census Data, 2011

3.10. Conclusion

The baseline status of the project site is good as maximum area is agricultural land. No other source of emission identified in the region except traffic density and mining projects.

CHAPTER – 04

ANTICIPATED ENVIRONMENTAL IMPACTS ASSESSMENT & MITIGATION MEASURES

4. Anticipated Environmental Impacts & Mitigation Measures

4.1. General

The environmental parameters likely to be affected by mining are related to many factors, i.e., physical, social, economic, agriculture and aesthetic. Opencast mining involves loading / unloading and transportation of mineral. The excavated stone will be transported via trucks/dumpers to outsiders. The operations may disturb environment of the area in various ways, such as removal of mass, change of landscape, flora and fauna of the area, surface drainage, and change in air, water, and soil quality. While for the purpose of development and economic up-liftmen of people, there is need for establishment of mining industries, but these should be environment friendly. Therefore, it is essential to assess the impacts of mining on different environmental parameters, before starting the mining operations, so that abatement measures could be planned for eco-friendly mining in the area.

"Environmental Impact" can be defined as any alternation of base line environmental conditions or creation of a new set of environmental conditions, adverse or beneficial, caused or induced by the action or set of proposed actions under consideration. Opencast mining activities cause adverse impacts on the surrounding environment unless proper environmental management plan is adopted. Selecting suitable sites for mining and adopting all the guidelines prescribed by the Ministry of Environment and Forests & Climate Change (MoEF&CC) and Indian Bureau of Mines (IBM) can minimize the major possible impacts.

4.2. Impact Assessment

It summarizes the pollution potential of the proposed open cast mine, its possible impact on the surrounding environment and the necessary management actions proposed for control and abatement of pollution. The environmental components that are likely to be influenced are illustrated below in Table 4.1.

Table 4-1: Types of Impact due to Mining Activity

Types of the Impact	Causes of Impact
Impact on land and soil	By overburden, mining, topsoil removal and solid waste generation.
Impact on air quality	Generation of particulate matters from various sources
Impact on surface water, ground water and hydrogeology	Run-off from OB dump; wash off eroded material of soil, leaching of oil /grease, wastewater generated due to sanitation purpose and other purposes.
Impact on noise and vibration level	Movement of dumpers for transportation of minerals; blasting
Impact on ecology (flora and fauna)	Loss of forest land, loss of surface vegetation
Impact on socio-economic environment (population and settlement)	Land use pattern change, economic growth, environment quality degradation, lowering of water table causing shortage of drinking water.

4.3. Identification of Impacts

During the working life of mine, air, water, noise, and land use are likely to be affected due to minerals and associated activities. Positive impacts on socio-economic environment are expected due to creation of employment opportunities and development of infrastructure such as roads, schools, hospitals etc. The identification matrix indicates interrelationship between activities causing impact (columns) and aspects getting impacted (rows). The significant impacts are marked as (√) for beneficial impacts and as (•) for adverse impacts. Any detailed assessment shall be done only for the significant impacts. The matrix will assist in identifying significant impacts as Table 4.2.

Table 4-2: Impact Identification Matrix

Aspects Impacted Attributes	Site		Ancillary / Activity Area					Post Operation	
	Site Clearance	Operation (Opencast)	Transportation	Mineral Storage	Water Discharge	Greenbelt Development	Employment	Urbanization (Buffer)	Transportation
Ambient Air		•	•	•		√			
Water Resource		•							
Water Quality		•		•	•				
Ambient Noise		•	•			√			
Vibration		•	•						
Flora and Fauna		•				√			
Soil / Land-use	•	•		•		√			
Infrastructure		•	√					√	√
Traffic			•						
Health & Safety		•		•					
Socio-economic		•					√	√	√

•Adverse Impact √ Beneficial Impacts

4.4. Impacts on Land-use and Mitigation Measures

This is the stone mining project. The project area does not consist of any forest land. It does not consist of any human habitations. Land-use plan of the mining lease area during pre-operation, operation and post-operational is incorporated in the Chapter 2 (Table 2-13). Various components of land environment have been identified for study of impact of the mine operations. The impact of mining on land and soil can be assessed in following ways:

- Change in landscape.
- Soil and Land-use pattern.
- Impact due to OB Dump.
- Impact due to mining activities

4.4.1. Identified Impact on Land-Use

The waste generation will have two major impacts on landscape.

- Land degradation by mining and resultant external dumps which conflicts with land use for agriculture/ forestry.
- Destruction of soil and vegetation, changes in geological structure & relief.

The landscape of the ML area will be disturbed by the proposed excavation and dumping in the area. The topography of the mine lease area will be characterized by excavated depressions / voids and elevated portions by dumping of OB / waste. The proposed mining will affect the core-zone but would marginally affect the buffer zone or over all view of the area. Since opencast other than fully mechanized method of mining has been proposed, subsidence is not expected.

4.4.2. Solid Waste Generation

As stated in mining method, there will be OB/waste generation which is saleable. There will not be any difficulty in OB/ handling. There is very thin soil/topsoil which will be scraped and used for plantation.

The Mining affect environment in various ways including depletion of land cover, vegetation, removal of soil, change of landscape & deposition of the solid waste product thus causing imbalance in the landscape and increasing air, water, and soil pollution. About 2% mineral production will come under the category of rejects as there are thin, soft layers of calc schist within the bed rock which are not fit as road metal/crushed material. This reject/overburden/inter-burden shall be used for internal uses like making of haul road, parapet wall, boundary walls etc and rest of the waste shall be disposed-off/solid to open market as per Haryana Minerals Rules, 2012 after taking due permission from Mines & geology Department of Government of Haryana. All unsold rejects and soil will be finally used for reclamation of the mined-out area at the final closure of the mine.

Soil: There is a thin soil cover 30 – 50 cm. Soil and powder of quartzite will be stacked and spread on the 7.5m buffer zone and will be used for plantation purpose.

Rejects: Entire mineral produced is usable/saleable.

4.4.3. Soil & Land-use Pattern of the Lease Area

The lease area is consisting of slightly undulatory agriculture land. The highest point in the lease area is recorded to be 355 mRL and the lowest point recorded is 350 mRL. The lease area does not have any water body. The area sloping towards west in which water flows during rains for a short duration, otherwise they remain dry for the rest of the months.

In the present case soil generated will be used for plantation purpose only the same shall be sorted out and spread over the lease boundary of 7.5m. A minor quantity of soil will be generated during the first year only shall be used for plantation.

4.4.4. Mitigation Measures for Impacts on Land-Use

At the conceptual stage, there will be a pit which will be converted in water reservoir. Fencing will be done around the lease area. A suitable combination of trees (Approx. 6,249) that can grow fast and have good leaf cover to contain dust pollution shall be adopted to develop greenbelt. Greenbelt development will be done wherever possible as safety zone, panchayat, and transportation route. Plantation will be done within first 2 years and in later years maintenance will be ensured. The gap plants also will be ensured to complete the numbers of total plants.

4.4.5. Conclusion

The land-use will be converted into water reservoir at the conceptual stage. Plantation will be ensured on 1/3 part of lease area with transportation road and panchayat as well.

4.5. Impact on Ambient Air Quality

4.5.1. Identified Anticipated Impact on Ambient Air Quality

The air pollution impact of proposed stone mine depends on the intensity of ore extraction operations, mode of transport and mode of screening of ore. The intensity of operation is directly related to the rate of production of ore from mining. Drills and dumpers are engaged mainly for extracting and transporting the ore from the mining areas.

Proposed mining activity will be carried out by the existing open cast manual/semi mechanized means at location shown by year wise plan and section using excavator/loader & dumper combination and other manual tools such as spades, chisel, hammer etc. The air borne particulate matter (PM10) generated by ore and waste handling operations, transportation and screening of ore is the main respirable air pollutant. The emissions of Sulphur dioxide (SO2), Nitrogen Oxides (NO2), CO and CH4 contributed by transportation of minerals will be marginal. Prediction of impacts on air environment has been carried out taking into consideration proposed production and net increase in emissions. Air pollution sources in the operating mine have been classified into three categories as given below:

- Area sources; Control by dust suppressions
- Line sources; Control by dust suppressions
- Point Source; Control by dust collection and treatment or/and by dust suppressions

Area Sources: Being an opencast mine, loading, unloading, and stockpiling on ground area are considered as area sources.

Line Sources: Transportation of ore through movement of tippers on the haul road inside the mine lease area is considered as line sources.

Point Sources: Stacks of bag filters connected to belt conveyors, if any and stack of DG sets are considered as point sources.

As the project is mining project and DG set is not proposed for power back. So, point source is not applicable for this project. Only two types of sources are considered for impact modelling purpose.

In opencast mining the different process of handling, transportation, and storage of line in the mining activities are prone to generation of high levels of fugitive dust that may increase the levels of PM_{10} and SPM to high extent. The probable sources of pollution due to mining activities are shown in Table 4-3.

Table 4-3: Predominant Source of Air Pollution

S. No.	Source	Type of Pollutant
1	Mining activity (loading/unloading)	PM_{10}, PM
2	Transport of overburden or soil for dumping/ backfill and mining mineral to sorting/sizing	PM_{10}, PM
3	Dumping of waste	PM_{10}, PM
4	Sorting of mining mineral and loading	PM_{10}, PM
5	Transportation of sorted mining mineral	PM_{10}, SPM, SO_2, NO_x, CO

The effects of air pollutants upon receptors are influenced by concentrations of pollutants and their dispersion in the atmosphere. Air quality modelling is an important tool for prediction, planning and evaluation of air pollution control activities besides identifying the requirements for

emission control to meet the regulatory standards. The efficient management of air quality requires the use of modelling techniques to analyze the patterns of pollutant concentrations from many individual sources of air pollutants operating simultaneously. The main impacts of air pollutants on the health of human and others are given Table 4-4.

Table 4-4: Identified Impacts of Air Pollutions on Human, Animals and Plants

Pollutant	Impact on human health, habitats, and species
Particulate matter	PM_{10} can penetrate deep into the lung and cause more damage, while larger particles are typically filtered out through the airways' natural mechanisms. Particulates can damage surfaces and materials.
Sulphur dioxide (SO_2)	SO_2 can cause coughing, make people more prone to respiratory infections, and aggravate asthma and chronic bronchitis. SO_2 can attach itself to particles and, if these particles are inhaled, they can cause more serious health effects. Acid rain acidifies soils and water. This can affect aquatic life, cause deforestation, and alter the species composition of plant and animal communities. Acid rain can corrode building materials and paints.
Oxides of Nitrogen (NO_x)	NO_x can increase a person's susceptibility to, and the severity of, respiratory infections and asthma. Long-term exposure to high levels of NO_x can cause chronic lung disease. High NO_x levels damage foliage, decrease plant growth, and reduce crop yield. Deposition of nitrogen compounds can lead to soil and water acidification. NO_x can cause eutrophication of soils and water, which alters the species composition of plant communities and can eliminate sensitive species. NO_x is a component of photochemical smog.
Carbon monoxide (CO)	When inhaled by people and animals, CO bonds to the haemoglobin in the blood, and reduces the oxygen carrying capacity of the red blood cells. The resulting lack of oxygen in the body causes cells to die.
Silica	The most common health problem associated with exposure to airborne silica is silicosis, a lung disease caused by the inhalation of crystalline silica particles. Silicosis can lead to scarring of the lungs, which can cause shortness of breath, coughing, and chest pain. It is a progressive disease, and in severe cases, it can be fatal.

4.5.2. Impact Assessment on Air Quality due to Operation

Emission to Air: The main emissions to air from mining operations consist of wind-borne dust, process dust and the mineral transportation.

Modelling Methodology: The fugitive dust emissions have been estimated using the methodologies outline in the AP-42 (USEPA) and National Pollutant Inventory (NPI) Emission Estimation Technique Manual (EET) for Mining Version 3.1 (January 2012, Australia).

Air quality impacts of the proposed expansion have been assessed using the ISCST3 computer dispersion model, developed by USEPA. Using the model, 24-hour maximum ground-level PM10 concentration at the nearest sensitive receiver to the site has been predicted. Other emissions are ignored.

ISCST3 model is designed to predict ground-level concentrations or dry deposition of pollutants emitted from one or more sources, which may be stacks, area sources, volume sources, open pits or any combination of these. ISC3 is essentially a statistical Gaussian plume model that requires a time series of both meteorological and source emission data.

4.5.3. ISCST3 Dispersion Model

The Industrial Source Complex (ISC) Short Term model provides options to model emissions from a wide range of sources that might be present at a typical industrial source complex. ISCST3 is USEPA approved model to predict the air quality. The model uses urban dispersion and regulatory defaults options as per guidelines on air quality models (PROBES/70/1997-1998). Emission sources are categorized into four basic types of sources, i.e., point sources, volume sources, area sources, and open pit sources. The volume source option and the area source option may also be used to simulate line sources. The model assumes receptors on flat terrain. The ISC short term area source model is based on a numerical integration over the area in the upwind and cross wind directions of Gaussian plume formula. This can be applied to the Point, Area, and Line or Volume sources simultaneously and their resultant incremental concentration of the pollutant can be predicted.

4.5.3.1. Model Options used for Estimation

The options used for short-term computations are:

- The plume rise is estimated by Briggs formulae, but the final rise is always limited to that of the mixing layer.
- Exhaust tip down-wash is not considered.
- Calms processing routine is used by default.
- Flat terrain is used for computations.
- It is assumed that the pollutants do not undergo any physico-chemical transformation and that there is no pollutant removal by dry deposition.
- Meteorological inputs required are hourly wind speed and direction, ambient temperature, stability class, and mixing height.
- Washout by rain is not considered; and
- Cartesian co-ordinate system has been used for computations with 200.0 m grid interval.

4.5.3.2. Emission for Fugitive Dust (PM10)

Emission due to loading/unloading of Mining Mineral: The mineral will be transported to the destination via road through trucks/dumpers. The emission rate of PM_{10} due to unloading/ loading of minerals is calculated using the equation as per AP-42 USEPA guidelines:

$$E = k\ X\ 0.0016\ X \left(\frac{\left(\frac{u}{2.2}\right)^{1/3}}{\left(\frac{M}{2}\right)^{1/4}} \right)$$

Where,

E = Emission Factor, kg/ton

k = Particle size multiplier, 0.74 for TSP & **0.35 for PM10**

M = Moisture Content, %

u = Mean wind speed, m/s

4.5.3.3. Summary of Calculated Emission Rate

The details of source parameters, calculated emission rates from area sources and line sources are described in Table 4-5. As per the Collector Officer letter (Mining Officer) confirms that 2

mines (M/s Xandy Mines and Minerals – 4.80 Ha & M/s Stone Field – 7.46 Ha) are available within 500 from lease to form the cluster of 12.26 Hectare.

Table 4-5: Emission Rate Estimation

S. No.	Activity/Source	Emission* Rate for PM
Area Source Emission Rate from Mining Activity in g/s/m²		
1	Total Area Excavated (Consider for lease period end)	1.11E-07
2	Haul Road to Pakka Road*	7.03E-06
3	Cluster Area (Consider 87% of total cluster area)	1.72E-08
Total Emission Rate		**7.31E-06**

Note: *Emission source has been estimated for the haul road only which has been converted into area source

As this is a stone mine with sand project which will be operated by fully mechanized. The source for the impact assessment was considered approach road, mining activities within mine lease and others surrounding sensitive areas. About 210 m length Kaccha road will be maintained or developed for using of transportation of mineral to destination. That road has also been considered in impact assessment from the approach road.

4.5.3.4. Mixing Height

As site specific mixing heights were not available, mixing heights based on IMD Publication "Atlas of Hourly Mixing Height and Assimilative Capacity of Atmosphere in India", 2008 has been considered for Industrial Source Complex model to establish the worst-case scenario. The details of hourly mixing height are given in Table 4-6 which is used in modelling.

Table 4-6: Hourly Mixing Height for Pre-monsoon Season

Hour of the Day	Mixing Height	Hour of the Day	Mixing Height
1	50.0	13	2100.0
2	50.0	14	2350.0
3	50.0	15	2550.0
4	50.0	16	2650.0
5	50.0	17	2750.0
6	90.0	18	2200.0
7	100.0	19	1350.0
8	150.0	20	725.0
9	300.0	21	50.0
10	610.0	22	50.0
11	1100.0	23	50.0
12	1750.0	24	50.0

4.5.3.5. Meteorological Data

Micrometeorological and microclimatic data recorded at the continuous weather monitoring stations on wind speed, direction, temperature, and rainfall at one-hour interval for the monitoring period of Pre-Monsoon Season i.e., March to May 2023 was used as meteorological input. The distribution of stability classes during this period is given in Table 4-7.

Table 4-7: Wind Pattern Direction & Frequency for Pre-monsoon Season

Stability Class	Frequency of Occurrence
A	8.33

Stability Class	Frequency of Occurrence
B	37.50
C	20.83
D	16.67
E	4.17
F	12.50

4.5.4. Results

In the present case model stimulations have been carried using the hourly Triple Joint Frequency data. Short-term simulations were carried to estimate concentrations at the receptors to obtain an optimum description of variations in concentrations over the site in 10-km radius covering 16 directions. The incremental concentrations are estimated for the monitoring period. For each time scale, i.e., for 24 hr (short term) the model computes the highest concentrations observed during the period over all the measurement points.

The maximum/ highest predicted worst-case incremental GLC (24-hour average) of PM10 due to operations at mine project, as predicted by ISCST3 model, will be 0.093 µg/m³ through area source which will be within the project premises or near to the project site. The predicted 24-hourly GLC at baseline air quality monitoring locations are presented in Table 4-8.

Table 4-8: Emission Rate Estimation

Location Name	Location Code	Distance (km)	Direction	Baseline Max.	Incremental GLC	Predicted GLC	Std.
Near Project Site	AAQ-1	0.3	NNE	82	0.001	82.001	100
Mina Ka Nangal	AAQ-2	1.4	SW	69	0.038	69.438	100
Golwa	AAQ-3	1.7	WNW	71	0.025	71.025	100
Donkhera Ki Dhani	AAQ-4	1.5	NNE	75	0.016	75.016	100
Bhedanti	AAQ-5	2.3	ENE	81	0.006	81.006	100
Dilpura	AAQ-6	1.3	SE	78	0.051	78.051	100
Rampura	AAQ-7	3	SSE	76	0.003	75.803	100

Note: Baseline Studies and Modelling

It can be further observed from the isopleths that the concentrations rapidly decrease with increasing distance and beyond the boundary of project.

Overall, the incremental value of PM_{10} due to mining activity will be very less in comparison of existing air pollution condition. The predicted additional value in the above table presents the worst-case scenario i.e., on the day of maximum predicted GLCs as done by the model from every day hourly input meteorological data. Concentration of the fugitive dust was calculated using the empirical equations for unpaved roads published by USEPA- AP42. For conservative calculation wind was assumed to blow at a velocity of 1.6 m/s perpendicular to the road. The details related to the isopleths with onsite wind-rose are given as **Figure 4.2** & **Figure 4.3**.

Figure 4.1: Predicted Ground Level Concentration of PM

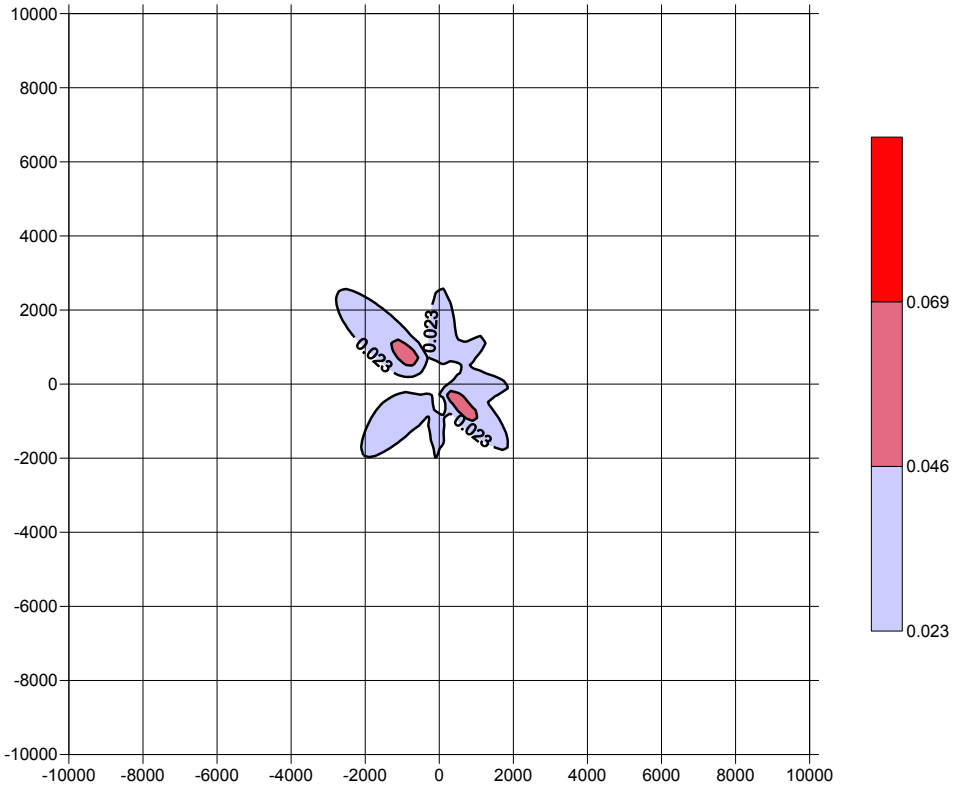
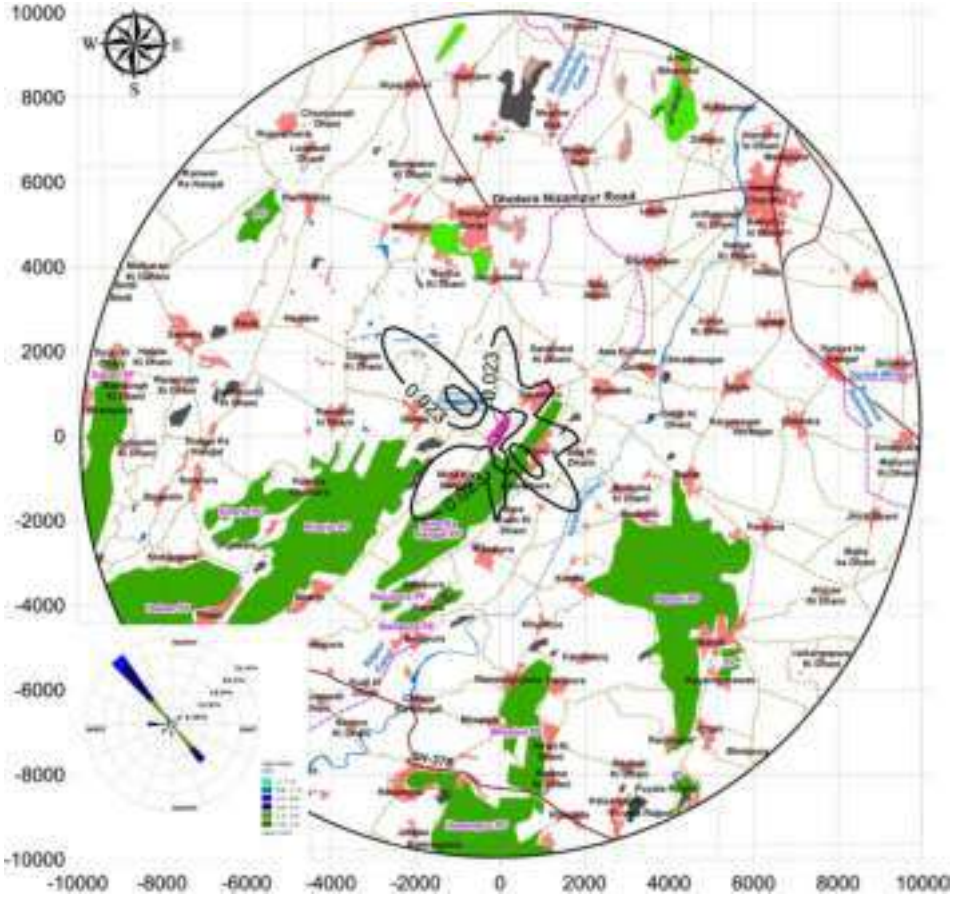


Figure 4.2: Predicted Ground Level Concentration of PM on Base Map



4.5.5. Mitigation Measures for Air Pollution

Mitigative measures suggested for air pollution controls are based on the baseline ambient air quality of the area. From the point of view of maintenance of an acceptable ambient air quality in the region, it is desirable that air quality is monitored on a regular basis to check compliance of standards as prescribed by CPCB. In case of non-compliance, appropriate mitigation measures are needing to be taken.

Most of the particulate emissions due to mineral handling is restricted to the lease area only. Air pollution is caused mainly due to dust generation added with gaseous emission from transportation activities along with mining operation like drilling, blasting, loading, haulage etc. Proper mitigation measures will be practiced during mining activities to control air pollution load below the prescribed limits.

Mitigative measures suggested for air pollution controls are based on the baseline ambient air quality of the area. The impact with mitigation measures is given in below.

Table 4-9: Impacts of Air Pollution and Mitigation Measures

Attributes	Impact	Mitigation Measure
Human	It is evident from the above table the impact due to vehicular movement shall get almost normalized at approx. 100 on either side of transporting road. Approx 0.093 (µg/m^3) will be add on to existing baseline conditions.	❖ Water sprinkling will be done on the haul roads twice in a day. ❖ Water spraying on mine faces to control dust emanating from loading and handling operations. ❖ Water spraying over the muck pile to be loaded to reduce dust generation during loading operations. ❖ Water sprinklers along the mine haulage roads to reduce dust generation during plying of dumpers on the haul road. ❖ Trucks transporting materials will be covered to reduce dust emission. ❖ Extensive plantation of trees of different variety. ❖ Dust masks to all workers working in dusty atmosphere. ❖ A good housekeeping and proper maintenance of vehicles and machineries, which will help in controlling pollution. ❖ Periodical monitoring of air samples at various locations. ❖ All over-burden dumps shall be stabilized with legumes and grass to prevent the erosion of soil and arrest the dust emission during windy days.
Animal	No Impact as it is part of riverbed.	
Plant	Stomatal index may be minimized due to dust deposit on leaf.	
Crops	Crop yield will be affected.	
Infrastructure	There is no major impact on infrastructure due this sandmining operation.	

4.5.6. Biological Method for Dust Control

Trees can act as efficient filters. The systematic and planned greenbelt development not only reduces the fugitive dust but also checks soil erosion and improves the aesthetic beauty of an area. It is essential that planning for greenbelt development should be done at the inception. It is a proven technology for waste dump stabilization and restoration of mined out areas. The developer is proposing the 6249-tree plantation on lease area and approach road during plan period. A budget of INR 8,00,000 has been proposed for the lease period.

Green belt of adequate width should be raised by planting native species around the mine lease area on both sides of haul road, near material handling plant, on external overburden dumps and backfilled quarry along undisturbed area.

The impact of silica on crops and plants is complex and depends on multiple factors, including the concentration and form of silica, the type of plant species, and the environmental conditions. However, it is important to monitor and manage silica levels in agricultural settings to ensure the health and productivity of crops and plants.

4.5.7. Conclusion

In this mining project, the major sources of emission of air pollution are excavation, transportation, loading, hauling operation of minor mineral stone etc. The proposed mining operations are not anticipated to raise the concentration of the pollutions beyond prescribed limits. However, the measures are suggested to mitigate any harmful impacts of pollutants like plantation of trees along haul roads, especially near settlements, to help to reduce the impact of dust on the nearby villages, planning transportation routes of mined material to reach the nearest paved roads by shortest route (minimize transportation over unpaved road); regular water sprinkling on unpaved roads to avoid dust generation during transportation etc.

4.6. Impact on Road due to Traffic Movement

4.6.1. Traffic Projection after Implementation of Mining Project

The extent of these impacts, at any given time, depends upon (i) the rate of vehicular emission within a given stretch of the road and (ii) the prevailing meteorological conditions. The impacts have strong temporal dependence as both factors vary with time. The temporal dependence would have diurnal, seasonal as well as long term components.

During proposed mining, there will be an increase in traffic flow on major road, which is running at about 1.85 km in NE direction due to movement of trucks/ dumpers carrying mined materials from the mine to destination. During the study period, traffic survey was done for one day i.e., 12 hours (8.0 AM to 8.0 PM) with 15-minute intervals at one location which is near to the project site which is connected to the project. Traffic survey location is marked in Figure 4.3.

Figure 4.3: Transportation Route & Survey Location

The Average Annual Daily Traffic (AADT) and PCUs at sampling location is given in Table 4.10.

Table 4-10: Details of Average Annual Daily Traffic (AADT) and PCUs

Location Name	Location Code	Distance (km)	Direction	Existing Traffic per day						
				2 wheelers	3 wheelers	Passenger Cars	LCV	Bus/ Truck	Tractor Trailer	Total Traffic
Nangal Chaudhary Road near Donkhera Road	T1	1.77	NE	21	63	79	79	54	54	197

Source: (PCU Factor: Buses-3, Trucks-3, Car-1, Two-Wheeler-0.5)

The vehicle classification system adopted for conducting the traffic volume counts along with respective Passenger Car Unit (PCU) factors, as recommended by India Road Congress in "Guidelines for Capacity of Rural Roads in Plan Areas" (IR:106-1990) are given in Table 4.11.

Table 4-11: Detail of PCUs Factor as per IRC

Category	Vehicle Class	Equivalent PCUs Factors
Fast Vehicles	Motorcycle or scooter etc.	0.50
	Passenger car, pick-up van, or Auto-rickshaw	1.00
	Agricultural Tractor, Light Commercial Vehicle	1.50
	Truck or Bus	3.00
	Truck-trailer, Agricultural Tractor-Trailer	4.50

Category	Vehicle Class	Equivalent PCUs Factors
Slow Vehicles	Cycle	0.50
	Cycle rickshaw	2.00
	Hand cart	3.00
	Horse-drawn Vehicle	4.00
	Bullock Cart*	8.00

Source- Guidelines for Capacity of Rural Roads in Plan Areas" (IR:106-1990)

The details V/C ratio and level of service as per IRC Guidelines is given in Table 4.12.

Table 4-12: V/C Ratio and Level of Service (LOS) as per IRC

V/C Ratio	LOS	Performance	Performance
0.0-0.2	A	Good	Represents a condition of tree flow
0.2-0.4	B	Above Average	Represents a zone of stable flow
0.4-0.6	C	Average	Represents zone of stable flow but with declining comfort and convenience
0.6-0.8	D	Below Average	Represents the limit of stable flow
0.8-1.0	E	Poor	Represents operating conditions when traffic volumes are at or close to the capacity level
1.0-1.2	F	Very Poor	Represents zone of forced or breakdown flow

Source- Guidelines for Capacity of Rural Roads in Plan Areas" (IR:106-1990)

As per IRC guidelines, the Level of Service (LOS) of existing road represents a condition of free flow (LOS Category" A") at all sampling locations. The impact on traffic is described in Table 4.13.

Table 4-13: Traffic Scenario with Operation of Mine & Level of Service (LOS)

Year	Traffic Volume (PCU/day)	V/C Ratio	LOS as per IRC
	T1	T1	T1
2023	444	0.07	A
Addition due to project (Consider 36 dumpers only for this project)	1200	-	-
Total PCU 2023	**1644**	**0.27**	**B**
2024	1759	0.29	B
2025	1882	0.31	B
2026	2014	0.34	B
2027	2155	0.36	B
2028	2306	0.38	B
2029	2467	0.41	C
2030	2640	0.44	C

Source- Field Survey conducted during monitoring season.

After commencement of the project, the projected traffic represents a zone of stable flow (LOS Category "B") in 2023 which is convenience at all locations. From the above table, it can be concluded that the incremental load on the carrying capacity of the concerned road is not likely to have any adverse effect or impact.

4.6.2. Traffic Management and Mitigation Measures

- ✓ Prohibiting on-street parking of vehicles, and simultaneously developing off-street parking facilities.

- ✓ Reduction of roadside friction through control of abutting land-use and roadside commercial activity.
- ✓ Provision of adequate facilities for pedestrians and cycles.
- ✓ Controlling the cross traffic and side-street traffic by regulating, particularly during peak hours.
- ✓ Improving traffic discipline such as proper lane uses and correct over-taking, through appropriate road markings, education, and publicity.
- ✓ Optimize use of roads at any time by planning vehicles movement.
- ✓ Road crossing to be used will be well marked.
- ✓ Information and warning signals will be retro reflective type provided, clearly visible in the night; and
- ✓ Marshals will be deployed to guide the vehicles and stop vehicles to avoid traffic jam.

4.7. Impact on Noise & Vibration

4.7.1. Noise Impact

Noise generated at the mine is mainly due to truck movements within and outside the ML area. The truck movement inside the ML area will be from dumpers carrying OB/wastes from the pit to the dumps. The noise generated from these vehicles will dissipate within the mine. The dumpers travelling outside with ores will have an impact on the noise level on the settlements along the road.

There shall be noise pollution due to drilling and blasting also. This may go beyond the threshold value i.e., 115.0 dB(A) but will be momentary. No major impact of blasting on the nearby villages is envisaged due to underground mine. The pronounced effect of noise will be felt only near the active working area. Other than this, as there is no involvement of major machinery, the impact of noise levels will be minimal.

Table 4-14: Impact on Noise, Vibration & Mitigation Measures

Attributes	Impact	Mitigation Measure
Human	Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc. due to prolonged exposure. Total 1200 PCU/ day will increase in the existing traffic due to this mining activity hence vehicle collation may occur unwanted sound and can also cause impact on human health of villagers near to transportation route like effect on breathing and respiratory issues. Accidents may occur due to fast movement of vehicles.	• The machinery will be maintained in good running condition so that noise will be reduced to minimum possible level. Vehicles with PUC certificate will be hired. Regular maintenance of vehicles will be done to ensure smooth running of vehicle. • Awareness will be imparted to the workers about the permissible noise level and effect of maximum exposure to those levels. • Personal protective equipment will provide to prevent the noise exposure. Personal Protective Equipment will be provided during mining activity. • In addition, truck drivers will be instructed to make minimum use of horns in the village area and sensitive zones.
Animals		
Crops	There is no major impact on plants and crops due to this operation.	

Attributes	Impact	Mitigation Measure
		• It is proposed to plant about 6,294 nos. of samplings in plan period which will work as noise barrier also. • The truck movement will be from suggested transportation route only. • Regular Health check-up camps will be organized.

4.7.2. Vibration Level due to Blasting

Ground vibration may occur due to the blasting operations. The other effects may be fly rocks, air blast, noise, dust, and fumes. The blasting generates seismic waves in the ground which may cause significant damage to human and property in the area. When an explosive charge is fired in a hole, stress waves propagate radially in all directions and cause the rock particles to oscillate. The oscillation is felt as ground vibration. The ground vibration is measured as the peak particle velocity (PPV). To minimize the effect of blasting controlled blasting with optimum charge and proper stemming of holes will be done.

4.7.3. Precautions during Drilling & Blasting

Following precautions will be taken during blasting period.

- Preparation of charge and charging and stemming of holes will be done by a qualified blaster.
- Before a shot is charged, stemmed, or fired, sufficient warning by signal is given over the entire area falling within the danger zone and ensure that all persons within such area have taken proper shelter.
- During blasting, controlled blasting will be done using delay detonator to prevent flying fragments which may cause injury to local inhabitants within danger zone.
- Proper inspection after shot firing will be done by the blaster.
- The number of shots which exploded shall be counted by the blaster to assess misfire.

Adopting shock tube (non-electrical) initiation system in blasting which allows short delay blasting using short delay detonators allowing in hole as well as surface delay and bottom initiation of blasted rock, and results reduction of fly rock, reductions in noise and ground vibration levels to within permissible limits. All necessary precautions as enumerated under 106(2)(b) of MMR 1961 will be followed.

4.8. Impact on Water

4.8.1. Impact on Surface Water Bodies

There is no tank, water reservoir or any nalla in the core zone. Hence, impacts on surface water drainage may be envisaged. The wastewater generation in the mining process is not envisaged. The possibility of surface water contamination due to wash off dumps is not envisaged. Water treatment is not expected as there will be no harmful effluent to be discharged. Since there is no river or any perennial water course in the applied area, diversion will not be required. No underground mining is proposed and hence no surface subsidence is expected into ground water.

4.8.2. Impact on Groundwater

There is no water body in the core zone. Hand pump / bore well are available in nearby village. The ground water table in the lease area is upto 100. The mining will be done above ground water table as ultimate depth of mine is 90m from surface level. The rainwater stored in mine pit act as artificial ground water source as well as recharge and full fil the need of use in mining and allied activities. This infers that no adverse impacts are there on the local ground water regime due to mining operations. The water requirement at the site, mainly for sprinkling on haul road will be met by nearby villages. Water for drinking & service utilities will be met by nearby village.

The mining will not be intersecting the ground water table; hence there will be no impacts on the local ground water regime due to mining operations. Thus, no impact on ground water table is envisaged due to the proposed mining activity.

4.8.3. Acid Mine Drainage

Acid mine drainage is produced wherever a mine of any type, impermeable formations interact with the water table, aquifer, perched water body or where surface water finds its way into a mine in terrains where sulphides (particularly pyrites) are present in the ore or country rock. Among objectionable features of the acid mine drainage are low pit and high levels of sulphides, iron and total dissolved solid. These deplete the oxygen levels in water, increase the toxicity by rendering heavy metals soluble, and create corrosion problems. There is no sulphide in the country rock, hence problems of acid mine drainage are irrelevant in this mine.

4.8.4. Water Consumption & Management

There is no major impact on water environment. Assessment of the adverse impact and indicate the proposed mitigation. The total water demand will be 14.7 KLD for the mining operation, domestic use, and plantation purpose. Approx. 0.54 KLD municipal wastewater also will be generated which will be treated in septic tank & further may be utilized for water sprinkling. No discharge into the river will be ensured.

Table 4-15: Impact on Water Regime and Its Mitigation Measures

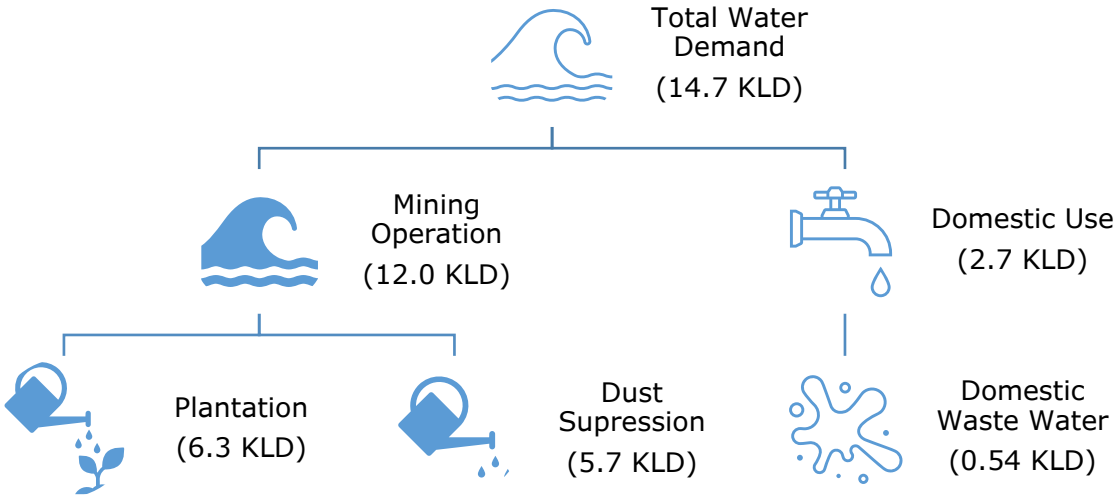
Attributes	Impact	Mitigation Measure
Human	The mining in the lease area may cause the ground water Contamination due to intersection of the water table. The domestic wastewater generated will be stored in septic tanks. Water will be supplied by private water tankers as agreement has been done.	The water table will not be intersected during mining in the lease area as ultimate depth of mining is 90m and the water table is up to 100 m BGL. Proper analysis/ monitoring will be done to check the ground water.
Animals		
Crops	Wastewater discharges through mining operation directly affect the crops and plants	
Plants		

Table 4-16: Water Demand Estimation

Mitigation Measures	Brake-up	Demand
Drinking & Domestic @30 lpcd/ worker	(89 workers x 30 lpcd = 2670 l/ day)	2.9 KLD
Plantation (Mine Lease 3,077 / Year & Haul Road 70)	(3,077 Trees x 2 l/ day + 70 Trees x 2 l/ day = 6,295 l/day)	6.3 KLD

Mitigation Measures	Brake-up	Demand
Dust Suppression@0.5 L/Sq.m (Twice in a day)	(210 m approach road + 550 m within the mine lease) x 5 m Width = 3800 m^2 x 0.5 l/sqm x 2 = 5,700 L/day	5.7 KLD
	Total Water Demand	**14.7 KLD**

Figure 4.4: Water Balance Diagram



4.8.5. Water Quality Management

There are no surface water bodies, the ground water is available in the form of hand pump & bore well near the applied area. Ground water level is below the ultimate depth of mine. After the completion of mining operation in the area, the surface water is likely to be contaminated due to wash off from the dust prone area then pit will provide by adequate plantation before the conceptual period is over. During conceptual period following steps will be taken from water quality management:

- There is no surface water body, the water table is quite below the proposed conceptual working, and hence there will be no impact on ground water.
- During the rainy or post monsoon season, the collected water within the pit will be passing through the settling tanks to settle the suspended heavy particles the clear water will be discharged to local nallah.
- The garland drain will be provided around the dump, whatever wash off from higher altitude area then it will be further drained to settling tank to suspend if any heavy particles, then it will drain to agriculture field or nallah.
- The Stone does not contain any toxic element which is likely to cause surface/ground water pollution. Mining operation will not pose any problem to general water table of area.

4.9. Impact on Soil Environment and mitigation measures

Stone mining can have several impacts on soil and the surrounding environment. These impacts can vary depending on the scale of mining operations, the techniques used, and the measures taken to mitigate adverse effects. Here are some of the potential impacts of stone mining on soil:

- **Soil Erosion**: The removal of vegetation and topsoil during mining activities can leave the soil exposed to erosion by wind and water. Erosion can lead to the loss of fertile topsoil and cause sedimentation in nearby water bodies, affecting aquatic ecosystems.

- **Loss of Biodiversity**: Stone mining may result in the destruction or fragmentation of habitats, leading to a loss of biodiversity in the affected area. Plants and animals that rely on specific soil and vegetation types may be displaced or endangered.
- **Alteration of Soil Structure and Composition**: Mining operations can disrupt the natural structure of the soil, leading to compaction or changes in its physical properties. This can reduce water infiltration and nutrient availability, affecting plant growth and soil fertility.
- **Water Contamination**: Dust and sediments generated during stone mining can contaminate nearby water sources, especially if proper erosion control measures are not in place. Additionally, the use of chemicals in mining processes may leach into the soil and water, further impacting the environment.
- **Air Pollution**: Stone mining operations can generate dust and particulate matter, which can be carried by the wind and settle on nearby soils. This can alter soil pH, nutrient levels, and microbial communities.
- **Habitat Destruction and Fragmentation**: The excavation of stone can lead to the destruction of natural habitats for plants and animals, disrupting ecological balance and causing long-term ecological consequences.
- **Noise and Vibration**: Mining activities often involve blasting and heavy machinery, which can cause noise pollution and ground vibrations. These disturbances can have negative effects on soil organisms and impact soil health.
- **Loss of Agricultural Land**: Stone mining may occur on agricultural land, leading to the loss of productive soil for farming purposes.

To mitigate these impacts, responsible mining practices should be adopted, including proper reclamation and rehabilitation of the mined areas, erosion control measures, water management strategies, and strict adherence to environmental regulations. The goal is to minimize the long-term damage to soil and restore the site as closely as possible to its original state after the mining activities are complete.

4.10. Biological Environment

Stone mining, also known as quarrying, can have significant impacts on biodiversity and the environment. These impacts arise from various stages of the mining process, including site preparation, extraction, processing, transportation, and waste disposal. Some of the key impacts on biodiversity include:

Table 4-17: Impact on Ecology due to Mining Activity and Its Mitigation Measures

Impact on Biodiversity	Mitigation Measures
• Habitat destruction: Quarrying involves the removal of vegetation and topsoil, resulting in the direct loss of habitats for various plant and animal species. • Fragmentation: The creation of quarries can lead to habitat fragmentation, isolating populations and reducing genetic diversity.	• Site selection and planning: Choose quarry locations that have minimal impact on ecologically sensitive areas, critical habitats, and species of conservation concern. • Biodiversity assessments: Conduct thorough biodiversity assessments before starting mining operations to identify species and habitats that need protection.

Impact on Biodiversity	Mitigation Measures
• Loss of species: Quarrying can result in the direct killing or displacement of wildlife residing in the area, leading to a decline in species diversity. • Soil erosion and sedimentation: The removal of vegetation and soil during mining can lead to increased soil erosion and sedimentation in nearby water bodies, negatively affecting aquatic ecosystems. • Water pollution: Quarrying operations can contaminate water sources through the release of pollutants such as sediment, chemicals, and heavy metals. • Noise pollution: Mining activities generate noise, which can disturb wildlife and interfere with their communication, feeding, and breeding behaviours. • Air pollution: Dust and particulate matter generated during mining operations can degrade air quality and harm both terrestrial and aquatic organisms.	• Habitat restoration: Implement plans to restore and rehabilitate mined areas, replanting vegetation and creating new habitats to support local wildlife. • 4. Wildlife corridors: Establish wildlife corridors to connect fragmented habitats and allow species to move freely between different areas. • Environmental regulations: Enforce strict environmental regulations to limit the extent and intensity of quarrying activities and ensure compliance with sustainability standards. • Water management: Implement proper water management practices to minimize water pollution and ensure responsible use of water resources. • Dust control measures: Use water sprays, enclosures, and other dust control technologies to reduce dust emissions and air pollution. • Noise reduction: Implement noise reduction measures, such as using equipment with lower noise levels and restricting noisy operations during sensitive periods for wildlife. • Waste management: Develop effective waste management plans to handle and dispose of mining waste safely and responsibly. • Monitoring and adaptive management: Regularly monitor the environmental impacts of mining activities and adapt mitigation measures as necessary to improve effectiveness.

4.11. Impact on Socio-Economic Environment

To assess the impacts on socioeconomic profile, the related information has been obtained through primary sources as well as secondary sources. Report has been prepared using a combination of methods, including Focus Groups Discussion (FGD) tools and techniques, site visit, community observations, and informal and formal surveys. Direct observation-based methods were implemented to help identifying current socioeconomic environmental Scenario and potential impacts of mining activities as experienced by the local people in the study area, and to rank socioeconomic activities based upon their contribution to household livelihood. This observation/ study reflected various socioeconomic variables and direct-indirect impacts between mining and non-mining communities.

The potential impact of proposed mining activities as experienced by the locals in the villages of the area under study was identified through survey to rank socioeconomic contribution ensuring development. In facts, People perceive that the project will bring handful gains by way of creating significant job opportunities along with development of social infrastructure. The impacts on the different components viz employment, housing, educational, and medical and transport facilities, fuel availability, economics, status, health agriculture is not significant because size of project is

small. Some of these impacts reported by local people & observed during the visit would be beneficial.

4.11.1. Positive Impact

Increase in Job Opportunities: Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate both positive and negative impacts of the proposed project in the region that are stated. Manpower required for the proposed project is about 89 personnel which may include skilled and unskilled workers which will be sourced from local population. As such the project will have positive impact in the area.

No Rehabilitation: Hence, Resettlement & Rehabilitation is not required as there is no land acquisition or displacement of any houses, habitation, or livestock.

Minimal burden in the existing infrastructure facilities: Local work force will be given first preference in the activity due to which influx of the outsiders is not envisaged or it will be very minimal. Thus, there will not be the necessity of provision of housing facility for the local workers and not stressing on the existing civic amenities of the area. If enough local workers will not be available, then workers from outside will be engaged. For the outside workers if any, housing arrangement and the facilities will be provided at the project site.

Improvement in infrastructure: The activity will benefit the local people due to provision of more infrastructural facilities such as developments of approach routes within the village area, streetlight, health facilities etc.

Impact on road development: Movement of trucks and other vehicles to and from the quarry is expected to increase substantially when mining will start. The existing roads connecting the quarry with the national and state highways are mostly narrow mud roads. There will be mud slide and traffic bottle neck if these roads are not widened, and their conditions are not improved by making them paved roads. Hence, there is ample scope for road development in and around the mining areas.

4.11.2. Negative Impact

The negative impact will be limited to some sporadic health problems, which may occur due to increase in fugitive emission near the mines. However, as the incremental dust due to mining activities (Including 500.0 m buffer) will be about 0.019 µg/m^3, there will be within the mining area and will be negligible impact on human health.

Table 4-18: Impact on Socio-economic and Its Mitigation Measures

Impact	Mitigation Measure
Due to mining and transportation, it will generate the opportunity of indirect employments like small shops, Dhaba, garage and restaurant, vegetable shops etc.	Positive Impact
Mining activity will be committed to generate direct employment by recruiting 89 people which will be employed locally, and preference will be given to local people.	Positive Impact
Productivity of crops will be deteriorated affecting the agriculture-based livelihood due to the	14.7 KLD water will be proposed for dust suppression at mine site and approach road by sprinklers to avoid

Impact	Mitigation Measure
pollution arising out of the mines, if proper mitigation measures are not implemented	dust generation during mining activity and transportation. It is proposed to plant about 6,294 nos. of local tree species for three years with consultation of local administration and forest department which help to reduce in the pollution level.
Extraction from mineral may resultant generation of fugitive dust cause workers of the mine to suffer from occupational hazards like skin allergies, eye, and respiratory problems etc. Further, the deep pits created in the channel also can contribute to an increase in accidents in the working environment. This creates serious threat to residents in the area who depend on river water for their domestic purposes.	Mine lease area has been proposed leaving a safety zone of 7.5m. Dust mask will be provided to the workers engaged at dust generation points like excavation and loading points. Regular water sprinkling on unpaved roads to avoid dust generation.
The major source of socio-health impacts of transportation will generate from truck, dust etc. Increase in accidents because of rash driving of dumpers carrying mineral through the roads may be possible.	The plantation is proposed to be done in first 2 years and will be ensured 100% survival in third year. In later fourth & fifth year, plants will be maintained. Local species will be preferred for plantation.

4.12. Impacts on Occupational Health & Safety

Stone mining can have several impacts on human health, primarily due to the release of dust and other harmful particles into the air during the mining and crushing processes. These impacts can be both short-term and long-term and may affect people living in and around the mining areas. Overall, the impacts of stone mining on occupational health can be significant and long-lasting. It is important to implement measures to mitigate these impacts, such as providing protective equipment, implementing proper ventilation systems, and providing training on safe work practices. Additionally, it is important to monitor the health of those involved in the mining activities and provide access to healthcare services when necessary. Details of the principal environmental and occupational risks that are likely to be created are given in below table.

Table 4-19: Impact on Occupational Health & Safety and Mitigation

Impact on Human Health	Mitigation Measures
Respiratory problems: The fine dust particles generated during stone mining can cause respiratory problems such as coughing, wheezing, and shortness of breath. Long-term exposure to such dust can lead to chronic respiratory diseases like silicosis, a serious lung disease caused by inhaling crystalline silica dust.	Regular water spraying or dust suppression measures to minimize airborne dust. Providing workers with personal protective equipment (PPE) like masks to reduce inhalation of dust. Encouraging regular health check-ups for workers to detect any early signs of respiratory issues.
Accidents and injuries: Stone mining involves heavy machinery and equipment, which can lead to	Proper training for workers on the safe use of equipment and machinery.

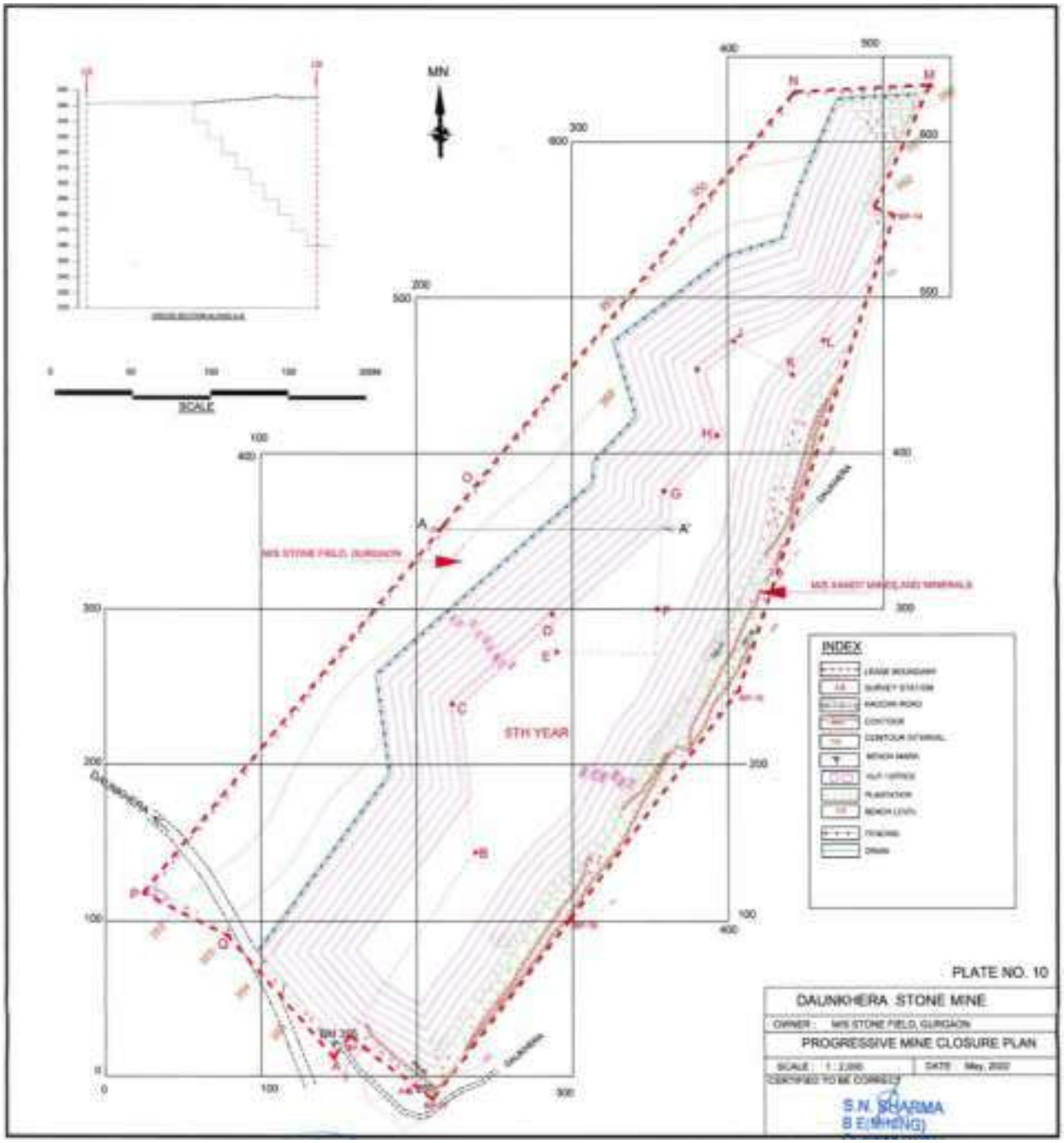
Impact on Human Health	Mitigation Measures
accidents and injuries for workers. This may result in fractures, amputations, or even fatalities.	Regular maintenance and inspection of machinery to ensure their safe operation. Implementing strict safety protocols and providing appropriate safety gear for workers.
Hearing loss: The constant noise generated by stone mining and crushing activities can cause hearing impairment in workers if proper protective measures are not in place.	Implementing noise control measures such as sound barriers or enclosures around noisy machinery. Providing workers with hearing protection equipment, such as earplugs or earmuffs.
Water contamination: Stone mining can lead to the release of pollutants into nearby water sources, affecting the quality of drinking water and potentially causing health problems.	Properly treating wastewater from the mining site before discharging it into water bodies. Regular monitoring of water quality to detect any contamination early on. Creating buffer zones between mining sites and water sources to minimize the risk of pollution.
Mental health impacts: The environmental and social disruptions caused by stone mining, such as loss of livelihoods and displacement, can also lead to stress and mental health issues among affected communities.	Implementing responsible mining practices that consider the well-being of nearby communities. Engaging with the affected communities and involving them in the decision-making process. Providing support and counselling services for those facing mental health challenges.
Spread of diseases: Inadequate sanitation and hygiene practices in mining areas can lead to the spread of diseases, especially during the movement of workers and the influx of people to the mining sites.	Establishing proper sanitation facilities at mining sites. Conducting health awareness programs to educate workers and local communities about disease prevention and hygiene practices.

It's crucial for governments, mining companies, and communities to work together to implement these mitigation measures and minimize the adverse impacts of stone mining on human health. Sustainable and responsible mining practices are essential to protect both the environment and the well-being of those living in mining-affected areas.

4.13. Progressive Mine Closure Plan

Vide notification GSR 330(E) date 10-04-2003, MCDR, 1988 has been amended incorporating preparation of Mine Closure Plan. Corresponding amendments has been made in MCDR, 1960. Accordingly, Haryana Government has also amended the mineral concession rules which requires the Mine Closure Plan (Progressive & Final) as per chapter 10 of the “Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012”. In the present case as it is a new mine a progressive mine closure plan, as a component of the mining plan is required. The present position of the deposit does not permit to close any part of the pits. At the proposed pace of work in the next coming years it will not be possible to close any part except doing protective works like fencing and making of a drain, plantation etc.

Figure 4.5: Progressive Mine Closure Plan



Land-use pattern at various stage will be as follows:

Table 4-20: Land-use pattern at mine closing

S. No.	Details	Existing land use (ha)	At the end of 5th year (ha)	At the end of lease period
1	Pits (Broken Area)	0	6.66	0
2	Dump	0	0	0
4	Infrastructure	0	0.08	0.08
5	Plantation on benches and along Lease boundary	0	0.62	4.02
6	Back filled	0	0	0

S. No.	Details	Existing land use (ha)	At the end of 5th year (ha)	At the end of lease period
7	Water body	0	0	1.22
	Undisturbed land	7.46	0	0
	Total	7.46	7.46	7.46

4.11.3. Reason for Closure

The progressive mine closure plan has been prepared in compliance of Rule 70 (1) of Haryana Minor Mineral Concession Rules 2012 under MMCR 1986.This is reproduced as under: Rule 70. (1) Every mineral concession holder shall prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) and shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorized by the Director in this behalf.

As the mineral is not going to be depleted during the plan period no immediate closure is planned as sufficient reserves are available to carry on the activities. Also, there is good market potential in domestic market.

4.11.4. Statutory Obligations

The lessee is bound to submit the Progressive Mine Closure Plan either with Mining plan or Scheme of Mining Lessee is bound to follow the terms and conditions as will be stipulated in the lease deed /LOI.

In addition to it the rules pertaining to the Protection of Environment i.e., Environment Act. Environment Rules and other associated rules for the protection of environment will have to be followed during mining. The rules stipulated in Mines Act, Mines rules Metalliferous Mines Regulation 1961 and RMMCR.1986 will be followed.

4.14. Conclusion

Overall, the impacts of wastewater from mining can be far-reaching and long-lasting. However, the measures are suggested to mitigate any harmful impacts of pollutants like a plantation of trees along haul roads, especially near settlements, to help to reduce the impact of dust on the nearby villages; planning, transportation routes of mined material to reach the nearest paved roads by the shortest route; regular water sprinkling on unpaved roads to avoid dust generation during transportation etc. Some of impacts may be due to increase in traffic. Transportation of mineral should be minimized in the morning and evening and cannot be done in night. The local people have been provided with either direct employments or indirect employment such as business, contract works and development work like roads, etc. and other welfare amenities. Except dust generation, there is no source which can show a probability for health-related diseases. Regular water sprinkling will be done with sprinkles mounted tankers and dust masks will be provided to the workers. All workers will be subjected to a medical examination as per Mines Rule 1955 both at the time of appointment and at least once in a year. Medical camps will be organized for this activity. Insurance for all employees as per the rules will also be carried out.

CHAPTER – 05

ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)

5. Analysis of Alternatives (Technology & Site)

5.1. Introduction

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 of Sand Mine from Riverbed

The Ministry of Environment, Forest, and Climate Change (MoEF&CC), Govt. of India through its notification of 14th September 2006 and its subsequent amendment under the Environment (Protection) Act, 1986 classifies the projects under Cat. B1. This is a project of minor mineral.

Stone (Minor Mineral) deposits are site specific. The Letter of Intent has been issued to M/s Stone Field, through Ashwani Khurana, R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon by Director Mines & Geology, State of Haryana Govt., Chandigarh vide memo no. DMG/ HY/ ML/ DONKHERA/ 2022/ 2713, Panchkula Dated 20-04-2022 for Mining of Stone (Minor Mineral) in Donkhera village over an area of 7.46 hectares in Nangal Chaudhary Tehsil of District Mahendragarh, Haryana for a period of 10 years.

It is case of fresh quarry lease. The mineral is site specific, so no alternative site was identified. Lease approval from concerned authority has been obtained and enclosed in report.

5.3. Alternative for Technology and Other Parameters

The alternative studies done for the project are given below:

Table 5-1: Alternative Technology & Other Parameters

S. No.	Particular	Alternative Option 1	Alternative Option 2	Remarks
1	Technology	Open-cast manual mining.	Open-cast semi mechanized mining	Open cast semi mechanized is preferred due to benefits listed below: ✓ Stone is tight mineral which need to be loose before manual operation. ✓ East loading and unloading of mineral.
2	Employment	Outsource employment	Local employment	Local employment is preferred which will benefit to the region as given below: ✓ Provides employment to local people along with financial benefits. ✓ No residential building/housing is required
3	Labourer transportation	Private transport	Public transport	Local labours will be preferred which will not generate additional load on public transport. So, the cost of transportation of for labour will be negligible.
4	Material transportation	Rail transport	Truck transport	Material will be transported through Dumpers on the contract basis from locals which will indirectly benefit to region.
6	Water requirement	Ground water/	Tanker supplier	Private water tankers will be preferred for water supply which will ensure to no

S. No.	Particular	Alternative Option 1	Alternative Option 2	Remarks
		surface water supply.		change in ground or surface water level/ quality.
7	Road	Metalled road.	Haul road.	Existing road will be upgraded or widened for the mineral transportation purpose. Two-sided plantation will be ensured on haul road with two-time water sprinkling on haul road.

5.4. Environmental Attributes Management and Mitigation

Adequate environmental management measures will be incorporated during the entire planning, pre- construction, construction, and operational stages of the project to minimize any adverse environmental impact and assure sustainable development of the area.

The mitigation measures which have been suggested for the construction and operational stages of the proposed development will include the following elements:

- ✓ Water sprinkling shall be done on haul roads where dust generation is anticipated.
- ✓ Mineral storage and handling yard will be enclosed from all sides.
- ✓ To minimize the occupational health hazard, proper personal protective equipment's shall be provided to the workers working in the dust prone areas.
- ✓ Air Pollution Control and Management will be done.
- ✓ Noise Control and Management will be done.
- ✓ Water treatment and management will be done.
- ✓ Hazardous and Solid Waste Management will be done.
- ✓ Plantation and Landscaping development will be ensured.

CHAPTER – 06

ENVIRONMENT MONITORING PROGRAM

6. Environment Monitoring Plan

6.1. Introduction

Environmental monitoring program is an essential tool for sustainable development. An environmental monitoring program provides a delivery mechanism to address the adverse environmental impacts of a project during its execution, to enhance project benefits, and to introduce standards of good practice to be adopted for all projects works. An environmental monitoring program is important as it provides useful information and helps to:

Table 6-1: Environmental Management Plan, Activities & Implementation

Environmental Management Plan Activities	Implementation Process
✓ Assist in detecting the development of any unwanted environmental situation, and thus, provides opportunities for adopting appropriate control measures. ✓ Monitoring & tracking the effectiveness of Environmental Management Plan & implementation of mitigation measures planned. ✓ Define the responsibilities of the project proponents, contractors and environmental monitors and provides means of effectively communicating environmental issues among them. ✓ Define monitoring mechanism and identify monitoring parameters. ✓ Evaluate the performance and effectiveness of mitigation measures proposed in the Environment Management Plan (EMP) and suggest improvements in management plan, if required. ✓ Identify training requirement at various levels. ✓ Identification of any significant adverse transformation in environmental condition to Plan additional mitigation measures.	✓ Environmental surveillance ✓ Analysis and interpretation of data ✓ Preparation of reports to support environmental management system and ✓ Organizational set up responsible for the implementation of the programme.

6.2. Environmental Management Cell

Environmental Monitoring will be taken up for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by MoEF&CC and Consent to Operate issued by the State Pollution Control Board. Compliance of same will be submitted to respective authorities on regular basis.

To maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will have complied as per conditions. Proponent has been formulated an Environment Policy of the mine and constitute an Environmental Management Cell and committed to operate the proposed mine with the objectives mentioned in approved Environment Policy. The system of reporting of Non-conformances / violation of any Environmental Law/ Policy will be as per quality management system. The internal

audit will be conducted on periodic basis and any Non-conformances/violation to Environmental Law/ Policy will be closed and discussed during Management Review Meetings of board of directors/ partners.

6.2.1. Hierarchy

A Manager will be appointed to supervise to subordinates for all activities like mining, transportation, environmental pollution controls, workers safety and greenbelt development activity. An Assistant Manager (EHS) will be responsible for the environment, health and safety related issues and supervise to the subordinates like supervisor (who is working in mine site), environmental executive (responsible for regular environmental compliances and coordinate with local administrative body to regarding environmental issues) and horticulturist (responsible for plantation and green area development).

6.2.2. Responsibilities for Environmental Management Cell

The responsibilities of the EMC include the following:

- ✓ Environmental Monitoring of the surrounding area.
- ✓ Developing the green belt/Plantation.
- ✓ Ensuring minimal use of water.
- ✓ Proper implementation of pollution control measures.
- ✓ Access the risk area.
- ✓ Implementation of QMS.
- ✓ Conducting Internal Audits.
- ✓ Closing of NCs and conduction Management Review Meetings.

6.3. Environmental Monitoring and Reporting Procedure

Environmental Monitoring plan shall be decided considering the environmental impact likely to occur due to operation of the project as the main scope of monitoring program is to track timely and regular change in the environmental condition and to take timely action to protect the environment. This may take the form of direct measurement and recording of quantitative information, such as amounts and concentrations of discharges and wastes, for measurement against corporate or statutory standards, consent limits or targets. It may also require measurement of ambient environmental quality.

The key aims of environmental monitoring program are:

- ✓ To ensure that results/ conditions are as forecast during the planning stage, and where they are not, to pinpoint the cause and implement action to remedy the situation.
- ✓ To verify the evaluations made during the planning process, with risk and impact assessments and standards and target setting and to measure operational and process efficiency.
- ✓ Monitoring will also be required to meet compliance with statutory and corporate requirements.
- ✓ Finally, monitoring results provide the basis for auditing, i.e., to identify unexpected changes.

Regular Monitoring of all the environmental parameters viz., air, water, noise, and soil as per the formulated program based on CPCB and MoEF&CC guidelines will be carried out every year to detect any changes from the baseline status.

Table 6-2: Monitoring Methodologies and Parameters

Attributes	Frequency & Location	Measurement Method	Pursuing Agency	Responsibility
A. Air Environment				
PM_{10}, $PM_{2.5}$, SO_2, NO_x & CO	Six Monthly (Within lease area, nearby habitat & as per wind pattern & Transportation)	National Ambient Air Quality Standards (NAAQS) 2009 & IS 5182	SPCB / MoEF&CC	Environment Monitoring Cell
B. Water Environment				
Drinking Water (Ground Water) & Surface Water	Six Monthly (Nearby water body and habitat)	As per IS 10500-2012	SPCB / MoEF&CC	Environment Monitoring Cell
C. Noise				
Noise levels at Day and night - Leq dB (A)	Six Monthly (Lese Area & nearby Habitat)	As per CPCB norms	SPCB / MoEF&CC	Environment Monitoring Cell
D. Soil				
Physical & Chemical Properties of Soil	Six Monthly (Nearby Region)	As per CPCB norms	SPCB / MoEF&CC	Environment Monitoring Cell
E. Socioeconomic				
Health status, Cultural & aesthetic attributes, and Education	Yearly (Bases on consultation with panchayat)	Primary data collection through questionnaire	SPCB / MoEF&CC	Environment Monitoring Cell (Mining In charge)
F. Ecological Impact				
Green Belt Development & Conservation of Wildlife	Yearly (Nearby sensitive receptor)	Primary data collection.	SPCB / MoEF&CC	Environment Monitoring Cell (Mining In charge)

6.4. Reporting Schedule during Operation of Mine

After completion of analysis, copies of all the analysis reports will be sent to MoEF&CC Regional Office and SPCB. Copies of the reports will be maintained in the office and will be made available to the concerned inspecting authorities.

6.5. Monitoring Budget

Environmental monitoring budget is proposed INR 60,000 annual. The details are given in upcoming chapter (Environmental Management Plan).

6.6. Conclusion

To maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will have complied as per conditions. An Environmental Management Cell will be prepared who will be committed to implementation of proposed objectives mentioned in approved Environment Policy. Regular Monitoring of all the

environmental parameters viz., air, water, noise, and soil as per the formulated program based on CPCB and MoEF&CC guidelines will be monitored through NABL/ MoEF&CC approved laboratory.

CHAPTER – 07

ADDITIONAL STUDIES

7. Additional Studies

7.1. General

Mining operations are associated with several potential hazards that affect adversely the human health and environment. It would normally require the assistance of emergency services to handle it effectively. The mining operation will be taken up under the supervision and control of qualified staff including Mine Manager (Grade I). Similarly, mines also have impending dangers and risk which need to be addressed for which a disaster management plan has been prepared with an aim of taking precautionary steps to avert disasters and to take such action after the disaster which limits the damage to the minimum. Nevertheless, the following natural/ industrial problems may be encountered during the mining operation.

- ✓ Inundation: Filling of the mine pit due to excessive rains,
- ✓ Blasting- fly rocks and Boulders,
- ✓ Drilling- Noise and Vibration,
- ✓ Handling of overburden and heavy machinery,
- ✓ Storage of diesel,
- ✓ Slope failures at the mine faces or stacks.

In additional studies, we particularly discussed about the public consultation, risk analysis & risk management and disaster management plan.

7.2. Public Hearing & Consultation

As per the conditions of the ToR and the EIA Notification 2006 and its amendment, public consultation will be held for the project. "**Public Consultation**" refers to the process by which the concerns of local affected persons and others who have plausible stake in the environmental impacts of the project or activity are ascertained with a view to considering all the material concerns in the project or activity design as appropriate. Public consultation process comprises of two parts, viz Public Hearing and written response from stakeholders.

The Public Hearing shall be arranged in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site(s) or in its proximity District -wise, by the concerned State Pollution Control Board (SPCB). The EIA report will be submitted to the State Pollution Control Board along with other relevant documents and additional studies. The SPCB will process the application for Public Hearing and conduct the hearing within 45 days of the application.

For obtaining responses in writing from other concerned persons having a plausible stake in the environmental aspects of the project or activity, the concerned regulatory authority and the State Pollution Control Board (SPCB) or the Union Territory Pollution Control Committee (UTPCC) shall invite responses from such concerned persons by placing on their website the Summary EIA report along with a copy of the application in the prescribed form, within seven days of the receipt of a written request for arranging the public hearing. Confidential information including non-disclosable or legally privileged information involving Intellectual Property Right, source specified in the application shall not be placed on the web site. The regulatory authority concerned may also use other appropriate media for ensuring wide publicity about the project or activity. The regulatory authority shall, however, make available on a written request from any concerned person the Draft EIA report for inspection at a notified place during normal office hours till the

date of the public hearing. All the responses received as part of this public consultation process shall be forwarded to the applicant through the quickest available means.

After completion of the public consultation, the applicant shall address all the material environment concerns expressed during this process, and make appropriate changes in the draft EIA and EMP. The final EIA report, so prepared, shall be submitted by the applicant for appraisal. The applicant may alternatively submit a supplementary report to draft EIA and EMP addressing all the concerns expressed during the public consultation.

The Final EIA/EMP will include all the public issues/suggestion after conducting the public hearing.

7.3. Hazard Identification and Risk Assessment Methodology

All types of industries face certain types of hazards which can disrupt normal activities abruptly. Similar stone mining also has risks which need to be addressed for which a disaster management plan has been formulated with an aim of taking precautionary steps to avert disasters and take such action after disaster which limits the damage to minimum. In the sections below, the identification of various hazards, probable risks during the operational phase of the mining, maximum credible accident analysis and consequences analysis are addressed either qualitatively or quantitatively.

Risk assessments will help mine operators to identify high, medium, and low risk levels. This is a requirement of the Occupational Health and Safety Act 2000 and till amendments. Risk assessments will help to priorities the risks and provide information on the need to safely control the risks. In this way, mine owners and operators will be able to implement safety improvements. As per proposal made under the mining plan the area will be developed by means of opencast manual and semi-mechanized method of mining using hand tools. Extraction of minerals is to be carried out by mechanized mining means. Water table will not be touched during the mining process. No high-risk accidents like landslides, subsidence flood etc. have been apprehended.

7.3.1. Drilling and Blasting

This is the reason of common accident into mines. Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes because of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting.

Drilling and Blasting Parameter: Blasting will be carried out by controlled agency in accordance with the Explosive Act and MMR, 1961. Drilling is proposed to be done by wagon drill (32.0 mm Dia). Secondary blasting will not be required. The drilling & blasting parameters are detailed in Table 2-10 & Table 2-11 of chapter 2.

7.3.2. Vibration

Whenever a blast is conducted the vibration is felt in the form of ground vibration. The ground motion is essentially a wave motion. The particles of the ground through which the blasting/sound wave travels, set themselves to oscillating motions with respect to their rest positions. These waves can affect buildings and structures by forming visible cracks on the surface, because of compression and tension waves and through vertical and horizontal shearing effects.

Proposed mining operations will be on moderate scale. Blasting is proposed, which will less occasionally affect the ground vibration in temporary.

7.3.3. Accident due to Vehicular Movement

Most of the accidents occur during transportation by dumpers, trucks and other vehicles and are often attributable to mechanical failures, in which the factor of human errors cannot be ruled out. Identifying the hazards that come along with the presence of vehicles at the workplace (e.g., reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g., being parked on a slope without being adequately secured)
- Unsafe coupling and uncoupling of trailers, and
- Untrained drivers
- Overturning vehicles

7.3.4. Accident during Sand loading and Transportation

Loading & Unloading:

- There are possibilities that the workers standing on the other side of loading may get injury due to overthrown sands with pebbles.
- There are possibilities of workers getting injured during opening of side covers of the trucks to facilitate sand loading.
- There are chances of falling of cattle/children into sand pit in riverbed- instances of death due to fall in such pits were reported from other areas to the Department of Mines.

Sand Transport:

- The sands loaded in 25 Tons trucks are being sent to the market through public roads.
- All possibilities of road accidents are possible.
- Accident may also occur during movement in the mine.
- There are possibilities that due to overloading, some pebbles or big boulder may injure the public.

7.3.5. Mitigation Measure for Risk & Hazard

High-risk accidents are not anticipated in the area because proposed mining is of small scale. In case of natural disaster such as earthquake, flood, storm etc., as per the situation, applicant will take the assistance from the local competent authority of Govt. and Non-govt. agency, similarly mines manager will be in touch of local people for immediate amelioration and in the case of flood in the nearby nala or river, he will take anticipatory care in coordination with State Government directives. Further the proper maintenance and replacement of required machineries of crusher unit will be taken care to avoid the any accident event.

Possible Risks due to Inundation & Its Control: Mining will be done during the non-monsoon periods so there shall be no problem of inundation is likely to happen. Mining is done by excavating the mineral in 1½ meter slice at a time with a maximum of 2 such slices.

Possible Risks due to Soil Erosion & Its Control: Mining shall be done as per approved mining plan to prevent such consequences.

Risks due to Failure of Pit Slope & Its Control: To allay dangers due to open cast slope failure, final pit, slope stability estimations will be made for the existing mines. Determining the factor of safety, the slopes should be monitored at regular intervals to check for any possible failure.

Risks due to Handling of Over Burden and Heavy Machinery & Its Control: During the mining, most of the activities are done by the vehicles and the heavy machinery for mining and handing of the mineral. During, fifth year working approx. 2056 m3 waste and 3115 m3 over burden will be generate. The waste will be meager. The voids will be around 5% in Basalt stone. This will be used in backfilling and maintaining the approach road. Heavy machinery also causes for accidents due to mechanical failure.

Risks of Accident due to Trucks and Dumpers & Its Control: Identifying the hazards that come along with the presence of vehicles at the workplace (e.g., reversing operations, loading) can cause harm if no properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g., being parked on a slope without being adequately secured)
- Unsafe coupling and uncoupling of trailers, and
- Untrained drivers
- Overturning vehicles

To avoid such instances, we will talk to the workers and their representatives and will involve them in the risk assessment process and tell them what to do, to reduce risk. All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Road signs will be provided at each turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

7.3.6. Storage and Use of Explosives

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper, safe, and careful handling and use of explosives by competent Blasters having Blaster's Certificate of Competency issued by DGMS.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lighter, mobile phones, smoking material etc.
- Conventional explosives shall be used in their original cartridge packing and such cartridge shall not be cut to remove explosive for making cartridge of different size.
- Explosives shall be conveyed in special containers.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

- Before starting charging, clear audible warning signals by Sirens will be given so that people nearby can take shelter.

7.3.7. Occupational Health Hazard

Open cast method involves dust generation by excavation, loading and transportation of mineral. At site, during excavation and loading activity, dust is main pollutant which affects the health of workers whereas environmental and climatic conditions also generate the health problems. Addressing the occupational health hazard means gaining an understanding of the source (its location and magnitude or concentration), identifying an exposure pathway (e.g., a means to get it in contact with someone), and determination of likely a receptor (someone receiving the stuff that is migrating). Occupational hazard due to open cast mining mainly comes under the physical hazards. Possible physical hazards are as below:

Physical Hazards due to Mining Operations:

Following health related hazards were identified in open cast mining operations to the workers:

a. **Light:** The workers may be exposed to the risk of poor illumination or excessive brightness. The effects are eye strain, headache, eye pain and lachrymation, congestion around the cornea and eye fatigue. In present case, the mining activity is done during daytime only.
b. **Heat and Humidity:** The most common physical hazard is heat. The direct effects of heat exposure are burns, heat exhaustion, heat stroke and heat cramps; the indirect effects are decreased efficiency, increased fatigue, and enhanced accident rates. Heat and humidity are encountered in hot and humid condition when temperatures and air temperatures increase in summer up to 46.1^0C or above in the riverbed mining area.
c. **Eye Irritation:** During the high windy days in summer the dust could be the problems for eyes like itching and watering of eyes.
d. **Respiratory Problems:** Large amounts of dust in air can be a health hazard, exacerbating respiratory disorders such as asthma and irritating the lungs and bronchial passages.
e. **Noise Induced Hearing Loss:** Machinery is the main source of noise pollution at the mine site.

Risk Level using Risk Matrix: Risk Matrix is used to identify the level of risk involved in various hazards identified.

The results of risk assessment are given in **Table 7.1**.

Table 7-1: Hazards Faced in Mining Operations

S. No.	Activity	Hazard Description (Risk)	Score				Risk Level
			Consequences	Exposure	Probability	Risk Score	
1.	Site planning and layout	Travel in moving vehicle in uneven terrain	1	2	1	2	Level 3
2.	Storage of explosives	Unintended explosions (exposure to overpressure)	1	5	3	15	Level 1
3.	Charging of explosives	Unintended explosion or exposure (exposure to overpressure)	1	3	1	3	Level 3

S. No.	Activity	Hazard Description (Risk)	Score				Risk Level
			Consequences	Exposure	Probability	Risk Score	
4.	Blasting	Hit by fly rock (bodily injuries)	1	2	1	2	Level 3
5.	Bench Formation	Rock falls or slide due to lack of bench face stability (bodily injuries)	5	1.5	2	15	Level 1
6.	Crushing and sizing of ROM	Hit by Machineries – Electrical Equipment (bodily injuries)	1	3	3	9	Level 2
7.	Transportation of minerals	Vehicle Accident (bodily injuries)	5	5	2	50	Level 1
8.	Transportation of minerals	Accidental 1 fire in vehicle (bodily injuries, exposure to heat radiation)	1	5	1	5	Level 3

By arranging the above hazards from highest to lowest, the hazards were re-arranged as per their risk levels. Ranking of Hazards based on risk levels are provided in **Table 7.2**.

Table 7-2: Hazards Ranked by Risk Level

S. No.	Activity	Hazard Description (Risk)	Risk Score	Risk Level
1.	Site planning and layout	Travel in moving vehicle in uneven terrain	2	Level 3
2.	Storage of explosives	Unintended explosions (exposure to overpressure)	15	Level 1
3.	Charging of explosives	Unintended explosion or Exposure (exposure to overpressure)	3	Level 3
4.	Blasting	Hit by fly rock (bodily injuries)	2	Level 3
5.	Bench Formation	Rock falls or slide due to lack of bench face stability (bodily injuries)	15	Level 1
6.	Crushing and sizing of ROM	Hit by Machineries – Electrical Equipment (bodily injuries)	9	Level 2
7.	Transportation of minerals	Vehicle Accident (bodily injuries)	50	Level 1
8.	Transportation of minerals	Accidental 1fire in vehicle (bodily injuries, exposure to heat radiation)	5	Level 3

7.3.8. Medical Examination Schedule

To minimize the health impacts PPE like dust masks, ear plugs/ muffs and other equipment will be provided for use by the work personnel. All workers will be subjected to Initial Medical Examination as per Mines Rule 1955 at the time of appointment. Periodical Medical Examination will be conducted at least once in five years. Medical camps will be organized. The detail of health checkup and periodical medical examination schedule is given below.

Table 7-3: Medical Examination Schedule

S. No	Activities	1st Year	2nd Year	3rd Year
1.	**Initial Medical Examination (Mine Workers)**			
A.	Physical Check -up		-	-
B.	Psychological Test		-	-
C.	Audiometric Test		-	-
D.	Respiratory Test			
2.	**Periodical Medical Examination (Mine Workers)**			
A.	Physical Check -up	-		
B.	Audiometric Test	-		
C.	Eye Check -up	-		
D.	Respiratory Test	-		
3.	**Medical Camp (Mine Workers and Nearby Villagers**	**-**		
4.	**Training (Mine Workers)**			

7.4. Disaster Management Plan & Mitigation Measures

The Disaster Management Plan (DMP) is a guide, giving general considerations, directions, and procedures for handling emergencies likely to arise from planned operations. The DMP has been prepared based on the Risk Assessment and related findings covered in the report.

The objectives of DMP are to describe the company's emergency preparedness, organization, the resource availability, and response actions applicable to deal with various types of situations that can occur at mines in shortest possible time.

Thus, the overall objectives of the emergency plan are summarized as: -

- ✓ Rapid control and containment of Hazardous situation
- ✓ Minimum the risk and impact of event/ accident
- ✓ Effective prevention of damage to property.

To effectively achieve the objectives of emergency planning, the critical elements that form the backbone of Disaster Management Plan (DMP) are:

- ✓ Reliable and early detection of an emergency and immediate careful planning.
- ✓ The command, co-ordination, and response organization structure along with availability of efficient trained personnel.
- ✓ The availability of resources for handling emergencies.
- ✓ Appropriate emergency response action.
- ✓ Effective notification and communication facilities.
- ✓ Regular review and updating DMP.
- ✓ Training of the concerned personnel.
- ✓ Steps taken for minimizing the effects may include rescue operations, first aid, evacuation, rehabilitation and communicating promptly to people living nearby.

7.4.1. Disaster Management Plan: Structure

The Disaster Management Plan (DMP) is supposed to be a dynamic, changing document focusing on continual advantage of doing this is to have a system that is in synchronicity with commonly used SHE systems such as ISO 14001 and OHSAS 18001.

7.4.2. Policy

The **Safety Health and Environmental (SHE)** policy is existing and accessible to all at site and to other stakeholders. The policy has been framed considering legislative compliance, stakeholder involvement, continual improvement, and management by objectives.

The proponent is committed to contribute 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, following key principles will be demonstrated:

- ✓ Integrate sound environmental management practices in all our activities by forming an Environmental Management Cell.
- ✓ Progressively adopt cleaner and energy efficient technologies.
- ✓ 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.
- ✓ Biodiversity in and around our working areas and mines will be repeated and progressively enhanced for benefit of nature.
- ✓ 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.

7.4.3. Planning

Identification and Prevention of Possible Emergency Situations, Possible emergency situations can broadly be classified into unintended explosions, vehicle collision, and inundation. Additional emergency situations can be developed based on audit or other procedures prior to commencement of operations.

7.4.3.1. Emergency Prevention

Some of the ways of preventing emergencies are as follows:

- Preparation of a Preventive Maintenance Schedule Program and covering maintenance schedules for all critical equipment's and instruments as per recommendations of the manufacturer's user manuals,
- Importantly, it is of great importance to collect and analyze information pertaining to minor incidents and accidents at the site, as well as for recording near-misses or emergencies that were averted. This information gives an indication of how likely or unlikely it is for the site to face actual emergency and what shall be further action to prevent them from occurring.
- Establishment of an ongoing training and evaluation program, incorporating the development of capabilities amongst employees about potential emergencies and ways and means of identifying and averting the same. Most emergencies do not occur without some incident or an abnormal situation. So, there is always sometime of few seconds to few minutes to arrest an incident of abnormal situation from turning in to an emergency.

This is the role of the shift in-charge who is the incident controller (IC) along with his shift team.

7.4.3.2. Emergency Plan Objectives

Specific objectives of the Emergency Response Plan are to be clearly listed with regards to the responses desired for successful management of the possible emergency situations. Suggested Objectives could include:

- ✓ To define and assess emergencies, including risk and environmental impact assessment.
- ✓ To control and contain incidents.
- ✓ To safeguard employees.
- ✓ To minimize damage to property or / and the environment.
- ✓ To inform employees, the public and the authority on the hazards / risks assessed.
- ✓ Safeguard provided residual risk if any and the role to be played by them in the event of emergency.
- ✓ To inform authorities like Safety and Fire Dept and Mutual Aid Centers to come up for help.
- ✓ For effective rescue and treatment of casualties and to count the injured.
- ✓ To identify and list fatal accidents if any.
- ✓ To secure the safe rehabilitation of affected areas and to restore normally.
- ✓ To provide authoritative information to the news media.
- ✓ To preserve records, equipment's etc. and to organize investigation into the cause of the emergency and preventive measures to stop its recurrence.
- ✓ To ensure safety of staff and patients and resume work.
- ✓ To work out a plan with all provisions to handle emergencies and to provide for emergency.
- ✓ Preparedness and the periodical rehearsal of the plan.
- ✓ The objectives are suggested in emergency preparedness plan of TCL. Responsibilities, resources and timeframes require to be allocated for implementing the objectives.

7.4.3.3. Implementation

Allocation of Resources

Key Personnel are identified for carrying out specific and assigned duties in case of any kind of Emergency. All such key personnel shall be available on call on holidays and off duty also.

- ✓ Commander (Manager Quarries)
- ✓ Deputy commander (Personnel Officer)
- ✓ Site Incident Controller (Shift in charge)
- ✓ Deputy Incident Controller (Senior Mining Mate)
- ✓ Other key personnel
- ✓ Essential workers

7.4.3.4. Responsibilities of Commander / Deputy Commander

- ✓ To take charge at the place of incident.
- ✓ To activate the Emergency Preparedness Plan according to severity of situation.
- ✓ Inform all the employees and relatives of the affected employees.
- ✓ Call all key personnel and inform Doctor to be ready for treatment.
- ✓ Commander shall deploy staff carry out following functions.

- ✓ To coordinate and reinforce Emergency Combat at Site along with Site Incident Controller.
- ✓ To liaise with other Departments and guide their personnel.
- ✓ To supervise Assembly and Evacuation at all points.
- ✓ To look after patients who are bed ridden and any Casualties and give psychological support.

- ✓ Activate Assembly and Evacuation Plan if required as per situation by ordering Site Incident Controller.
- ✓ Inform and liaise with Chief Operating Officer, Police department and District Emergency Authority.
- ✓ Arrange for chronological records of emergency to be maintained.
- ✓ Issue authorized statements to News Media.
- ✓ Assign Medicare and Emergency Management tasks to all persons of management cadre.

7.4.3.5. Responsibilities of Mine Foreman

- ✓ To take immediate charge at the site of incident.
- ✓ Ensure that immediate steps as per Emergency Preparedness Plan are taken and direct the worker staff.
- ✓ Inform Commander, Deputy Commander, and other key personnel.
- ✓ Shall blow the Siren / Hooter as per situation to declare Emergency.
- ✓ Supervise assembly and evacuation as per plan, if required.
- ✓ Ensure that Commander has been alerted.
- ✓ Take decisions for controlling the emergency till arrival by Commander.
- ✓ Ensure that casualties are receiving adequate attention and medical care.
- ✓ Ensure accounting for personnel and rescue of missing persons.
- ✓ Control traffic movement in Quarry premises.
- ✓ When emergency is prolonged arrange for relief of rescue workers and catering facilities.
- ✓ In the presence of same, he shall assist Site Incident Controller or take charge at another location, if emergency exists in more than one place.

7.4.3.6. Responsibilities of Essential Workers

- ✓ A task of essential trained staff is made available to get done by Incident Controllers. Such work shall include-
- ✓ Firefighting and spill control till fire brigade takes the charge.
- ✓ To help the fire brigade if it is so required.
- ✓ Emergency engineering work e.g., isolating equipment, materials, urgent repairing or replacement, electrical work etc.
- ✓ Provision of emergency power, water, lighting, material, etc.
- ✓ Movement of equipment, special vehicle, and transport to or from the scene of the incident.
- ✓ Search, evacuation, rescue, and welfare. First - Aid and medical help.
- ✓ Manning of assembly points to record the arrival of evacuated personnel. Manning of outside shelters and welfare of evacuated persons there.
- ✓ Assistance at casualty's reception areas to record details of casualties.

- ✓ Assistance at communication center to handle outgoing and incoming calls and to act as messengers if necessary.

7.4.4. Setting up of Emergency Infrastructure

To enable the key persons to implement the DMP, the following infrastructure will require to be set up:

Assembly Points: In case of emergency the site needs to be evacuated immediately. On evacuation people will go to pre- assigned assembly points. The charge will be taken by shift in charge and in his absence, person deployed by Commander will oversee respective assembly points and will supervise Assembly and Head Count. A Board indicating the Assembly Point having relevant information is placed at point for guidance.

Liaison with State Authorities: Government authorities, local hospital, police fire services, taluka mamlatdar, district collector will be kept informed about the occurrence and development of any incident by Commander and procure necessary help and guidance from these authorities.

7.4.4.1. Task Force of Essential Staff

A task force of essential trained staff is made available to get work done by the Commander. Task Force personnel shall be trained to perform tasks as mentioned above.

Emergency Control Center: Manager-Quarry Office will act as Emergency Control Center and provided with required communication facilities. The Control Center is situated in an area of minimum risk and close to the road to allow for ready access by a vehicle if other systems fail or extra communication facilities are needed to be set up. The Emergency control center should consist of following items:

- ✓ External telephones
- ✓ Internal telephones
- ✓ E-Mail facilities
- ✓ Emergency plan
- ✓ Stationeries
- ✓ Torches and emergency lights.

7.4.5. Fire Fighting

Person noticing the fire shall immediately raise alarm and ask the nearest person to inform Matron and Manager-Quarry. Portable Fire Extinguisher shall be used to extinguish the fire, by the person at site. Matron shall assess the severity of fire and if likely to be severe shall take following steps.

- ✓ Call fire tenders and mobile trailer pump from nearby fire department.
- ✓ Call for assembly of all persons at assembly points
- ✓ Arrange for turning "OFF" main switch of electricity supply.
- ✓ Immediate Step in Case of Explosion
- ✓ At first the concerned security guard should inform about it to the shift-in-charge and Mgr.-Quarry. They will take the precaution described in the Work Instruction.

7.4.5.1. Further Steps in Case of Fire Spreading

Commander shall continuously assess the situation and if it is not being controlled then ensure:

- ✓ Assembly of all persons at the assembly points.
- ✓ Arrival of fire tenders and / or Mobile Trailer Pump.

- ✓ Ensure evacuation in orderly fashion.
- ✓ Ensure that any vehicle parked near the Fire Site is taken away to safe area.
- ✓ Carry out responsibilities as detailed as above.

7.4.5.2. Emergency Preparedness for Electrical Shock / Accident

- ✓ Source of power should be put off immediately in case of any electrical shock.
- ✓ Injured person should be shifted to safe place.
- ✓ Persons engaged in rescuing operation should use all PPEs and take appropriate precaution while removing the injured persons.
- ✓ Trained persons are engaged to give first-aid treatment to injured persons.
- ✓ In case of major injury, the injured is shifted to the Dispensary/Hospital.
- ✓ In case of electrical fire, only CO_2 type Fire Extinguisher is used.
- ✓ Accident report in prescribed form is sent to appropriate authority in case of reportable injury.
- ✓ All the persons engaged to carry out this operation should be equipped with appropriate PPEs (Personal Protective Equipment) like safety shoes, helmets, dust masks etc.

7.4.6. Natural Disasters

Quarry being a single-story building, built on elevated base is structurally safe from effects of Natural Disasters. It affords shelter against cyclone and flood.

7.4.6.1. Cyclone and Flood

When warning of cyclone or heavy rains is received from Local Administration, the Commander shall alert Staff to be prepared.

- ✓ Matron shall withdraw the entire person from workplace and accumulate them in quarry building.
- ✓ All the equipment should be withdrawn from mine and kept in a higher site.
- ✓ The Quarry Manager may advise to leave the staff depending on security of situation.

7.4.6.2. Earthquake

- ✓ When earthquake hits, all persons shall be encouraged to run out in the open areas designated as Assembly Points.
- ✓ All the electrical supply should be disconnected by the electrical department.
- ✓ All key personnel shall reach Quarry immediately and carry out designated responsibilities.
- ✓ All the electrical supply should be disconnected by the electrical department.
- ✓ Steps detailed in Emergency preparedness are to be carried out.
- ✓ As soon as earthquake tremor stops - Site Incident Controller (Matron) shall:
- ✓ Check all areas to ensure that all fires and doused.
- ✓ Check all areas for persons trapped inside.
- ✓ Search and Rescue Operation shall be launched with help of Workers if there is obvious damage to building.

7.5. Rehabilitation and Resettlement

There is no displacement of the population within the project area and the adjacent nearby area, and the complete lease area is a Govt. land. However Social development of the village will be considered as per social activities.

7.6. Conclusion & Summary

Risk assessments will help mine operators to identify high, medium, and low risk levels. This is a requirement of the Occupational Health and Safety Act 2000. Risk assessments will help to priorities the risks and provide information on the need to safely control the risks. In this way, mine owners and operators will be able to implement safety improvements. Mining and allied activities are associated with several potential hazards to both the employees and the public at large. A worker in a mine will be able to work under conditions, which are adequately safe and healthy. At the same time the environmental conditions also will not impair his working efficiency. This is possible only when there is adequate safety in mines. Hence mine safety is one of the most essential aspects of any working mine. There is no displacement of the population within the project area and adjacent nearby area.

CHAPTER – 08

PROJECT BENEFITS

8. Project Benefits

8.1. Introduction

The execution of the project brings overall improvement in the locality, neighbourhood, and the State by bringing up to industry, roads, infrastructure sectors and employment generation at local level. Hence it will be helpful for the economic growth and support to enhance quality of life through employment.

8.2. Physical Benefits

Following physical infrastructure facilities will be improved in the adjoining areas by the proposed project:

Table 8-1: Project Benefits in Respect to Different Aspects

Aspect	Project Benefits
Road Transport	Construction of approach road and maintenance of existing transportation facility will be done for the proposed project. There is separate budget has been mentioned under the EMP head.
Market	By improving the economic status of local habitants through employments will attract market to develop their facilities and services near to the project site it's a part of indirect employment which will be developed due to the proposed project.
Infrastructure	Proposed project will provide the raw material for the infrastructure development like road, building etc.
Plantation or Greenbelt Development	Plantation is a major thrust area in pollution control of mining. Plantation is suitable for detecting, recognizing, and reducing air pollution effects. Trees function as sinks of air pollution, besides their bio-aesthetical values, owing to its large surface area. The green belt supplements oxygen to the atmosphere and combat air pollution effectively. It not only improves the aesthetic beauty and landscape resulting in harmonizing and amalgamating the physical structure of the mines with surrounding environment, but also acts as pollution sink as indicated above. Thus, plantation is of paramount importance. It also checks soil erosion, make the eco-system more complex and functionally stable and make the climate more conductive. Fast growing plant species will be preferred. The plant will be of deep rooting system. The plant will be perennially green to improve the aesthetic beauty of the area. The plant species will be adopted to the local climatic condition. Native plant species will be planted. A suitable combination of trees (about 6.294) that can grow fast and have good leaf cover to contain dust pollution shall be adopted to develop greenbelt. Greenbelt development will be done wherever possible. Plantation will be done within first 2 years and in later years maintenance will be ensured. The gap plants also will be ensured to complete the numbers of total plants.
Local Employment	The project proponent is conscious of its social responsibility and as any good corporate citizen; it is proposed to undertake the need specific (skilled & non-skilled) employment. This Project will provide employment to local people directly and indirectly. Indirect employers are shopkeepers, mechanic, drivers, transporters etc. About 64 persons will get direct employment and 20 persons will get indirect employment form nearby villages. The workers will be mostly skilled.
Social Development	The salient features of the programme are as follows:

Aspect	Project Benefits
	✓ Social welfare program like provision of medical facilities educational facilities, water supply for the employees as well as for nearby villagers will be taken. ✓ A well laid plan for employment of the local people has been prepared by giving priority to local people. ✓ Supplementing Govt. efforts in health monitoring camps, social welfare, and various awareness programs among the rural population. ✓ Assisting social plantation program. ✓ Adoption of villages for general development. ✓ Supply of water to village nearby villages. ✓ Development of facilities within villages like roads, etc.

8.3. Budget allocation for EMP

The company will regularly evaluate the aspects of company operations that impact the environment. Opencast areas targeted for improvement are selected based on several factors, including changes in the regulatory environment, breadth of impact, impact on our customers and other stakeholders, and financial considerations. Management periodically reviews proponent's progress towards mitigating adverse environmental impacts, appropriate actions will be taken that are designed to ensure the success of our proposed project. In line to the OM date 30.09.2020, the commitment approached during public hearing will be addressed in report with allocated budget to the region.

8.4. Summary

The management will recruit the semi-skilled and unskilled workers from the nearby villages as demanding employment is 89 direct and 20 indirect. The project activity and the management will support the local Panchayat and provide other form of assistance for the development of public amenities in this region. The company management will contribute to the local schools, dispensaries for the welfare of the villagers. A suitable combination of trees that can grow fast and have good leaf cover will be adopted to develop the green belt.

9. Environmental Cost Benefit Analysis

As per ToR granted by SEIAA Haryana Cost Benefit Analysis study is not required for the proposed project.

CHAPTER – 09

ENVIRONMENT COST BENEFIT ANALYSIS

CHAPTER – 10

ENVIRONMENTAL MANAGEMENT PLAN

10. Environment Management Plan

10.1. Introduction

The purpose of an environmental management plan (EMP) is to minimize the negative environmental impacts of stone mining activities and ensure that the operations are conducted in a sustainable and responsible manner. The EMP should address the potential impacts on the physical, biological, and socio-economic aspects of the environment, and provide strategies to mitigate and manage these impacts.

The design of an EMP for mining should include the following key elements.

- ✓ A comprehensive baseline study to establish the current conditions of the environment in and around the mining site. This should include data on the geology, hydrology, vegetation, wildlife, and socio-economic factors.
- ✓ Conduct EIA to identify the potential impacts of mining on the environment and develop mitigation measures to address them.
- ✓ Development and implementation of environmental management measures to minimize the impacts of mining on the environment. This may include measures to protect water quality, manage erosion, and control dust emissions.
- ✓ Development and implementation of a plan for the rehabilitation and restoration of the environment after mining activities are completed. This may involve re-vegetation, soil stabilization, and water quality improvement measures.
- ✓ Establishment of a monitoring and reporting system to evaluate the effectiveness of the EMP and ensure compliance with environmental regulations. This should include regular monitoring of water quality, air quality, and soil quality, as well as monitoring of vegetation and wildlife populations.
- ✓ Engagement with local communities to inform them about the mining operations, the potential environmental impacts, and the measures being taken to mitigate these impacts. This should also involve consulting with local communities on the development of the EMP and seeking their feedback on its implementation.

The purpose of an EMP for stone mining is to minimize the negative environmental impacts of mining activities and ensure that the operations are conducted in a sustainable and responsible manner. The design of the EMP should address the potential impacts of mining on the physical, biological, and socio-economic aspects of the environment and provide strategies to mitigate and manage these impacts. An effective EMP ensures the application of best practice environment management to a project.

Table 10-1: Purpose & Design of Environment Management Plan

Purpose of EMP	Design of EMP
✓ Assists proponent in the preparation of an effective and user-friendly EMP.	✓ To ensure adoption of state of art technological environmental control measures and implementing them satisfactorily.
✓ Improve the contribution that an EMP can make to the effectiveness of the environmental management process.	✓ Effectiveness of mitigation measures in mitigation of impacts.

Purpose of EMP	Design of EMP
✓ Ensure a minimum standard and consistent approach to the preparation of EMP.	✓ Description of monitoring program of the surrounding environment.
✓ Ensure that the commitments made as part of the project's EIA are implemented throughout the project life.	✓ Institution arrangements to monitor effectively and take suitable corrective steps for implementation of proper EMP.
✓ Ensure that environment management details are captured and documented at all stages of the project.	✓ An Environmental Management Cell (EMC) should be set up to take care of all environment aspects and to maintain environmental quality in the project area.

10.2. Land Use Pattern

Deviation from planned mining procedure can lead to soil erosion/cutting and thereby degradation of land, causing loss of properties and degradation surrounding of landscape. Thus, for environmentally friendly major mining the following control / abatement measures will be followed:

- ✓ Mineral will be mined out in from the mine lease area and sufficient safety barrier will remain of 7.5 m from periphery.
- ✓ Land use plan of mine lease area has been prepared, submitted to the concern department, and approved from department for the lease period.

10.3. Air Environment Management

Mitigative measures suggested for air emission control will be based on the baseline ambient air quality monitoring data. From the point of view of maintenance of an acceptable ambient air quality in the region, it is desirable that the air quality needs to be monitored on a regular basis to check it with reference t0 the NAAQS 2009 prescribed by MoEF&CC.

To minimize impacts of mining on air and to maintain it within the prescribed limits of CPCB/ SPCB, an Environmental Management Plan (EMP) has been prepared. This will help in resolving all environmental and ecological issues likely to cause due to mining in the area. During mining no, toxic substances are released into the atmosphere as such there seems to be no potential threat to health of human beings. In the mining activities, the source of gaseous emissions is engines of vehicles, Operation of mining machinery/ loading / unloading and transportation. The reasons may be quality of fuel, improper operation of the engine, etc.; proper maintenance of engines will improve combustion process and brings reduction in pollution.

Table 10-2: Air Pollution, Management & Monitoring

Particular	Description / Management
Control of Gaseous Pollution	✓ The only source of gaseous emissions is from engines of Heavy earth moving machines (HEMM). ✓ The emissions from the diesel engines of the machinery can be controlled by proper maintenance and monitoring of machines.
Control of Dust Pollution	✓ The main pollutant in air is Particulate Matter, which is generated due to various mining activities like, drilling, blasting, mineral loading, unloading & transportation etc. ✓ However, to reduce the impact of dust pollution the following steps have been taken during various mining activities.

Particular	Description / Management
Drilling	✓ Sharp drill bits will be used for drilling and regrinding is done periodically to reduce generation of dust. ✓ The drill machines will be kept leakage free and equipped with wet drilling arrangements. ✓ Drill operator and his helper will be equipped with personal protective equipment (ear plugs/earmuffs).
Blasting	✓ The use of 'water ampoules' will be done to arrest dust. ✓ Blasting will be done in controlled manner with the use of latest technology like use of millisecond delay detonators, cord relay to control and prevent the dust to get air borne and to limit the fly rocks within 50–60.0 m. ✓ Overcharging of blast holes will be avoided. ✓ Rock Breakers will be used to avoid secondary blasting. ✓ With the good blasting system, dozing of broken rocks will be less and hence dust due to dozing will be less. ✓ Competent persons carry out blasting and all the precautions lay under MMR; 1961 Act are followed. ✓ Time to time scientific studies regarding ground vibration, noise level, flying rocks and other blasting hazards will be conducted through experts of the subjects
During Loading Operation	✓ Latest loading equipment like hydraulic excavators will be used with dumpers. This reduces the number of buckets to fill from height and thus have comparatively less dust generation. The propagation of this dust is confined to loading point only and does not affect any person both the operators of excavator and dumpers who will sit in closed chamber and will be equipped with dust mask. ✓ Skilled operators will operate excavators. ✓ Avoid overloading of dumpers and consequent spillage on the roads. ✓ The operators' cabin in the dumpers will be provided with dust free enclosure and persons working at high dust prone areas will be provided with dust mask.
During Transport Operation	✓ All the haulage roads including the main ramp be kept wide, levelled, compacted, and properly maintained and watered regularly twice a day during the operation to prevent generation of dust due to movement of dumpers, and other vehicles. ✓ Mineral carrying trucks will be effectively covered by Tarpaulin to avoid escape of fines to atmosphere. ✓ Regular Compaction and grading of haul roads to clear accumulation of loose material.
Plantation	✓ To reduce air pollution in the surroundings, green belt will be developed on both siderophile approach road and nearby villages.
Monitoring of Air Pollution	✓ Air quality will be regularly monitored both in the core zone and the buffer zone. ✓ Periodic air quality survey will be carried out to monitor the changes consequent upon mining activities as per the norms of State Pollution Control Board.

10.4. Noise Level Environment and Vibration

The ambient noise level monitoring carried out in and around the proposed mine lease area shows that ambient noise levels are well within the stipulated limits of MoEF&CC. There is no drilling or blasting for mineral extraction. Noise pollution sources are mainly, drilling, blasting, loading and transportation, which cause some problem to the inhabitants of this area because there is human settlement near the link roads in lease area. Effective steps will be taken to keep the noise level

well below the DGMS prescribed limit of 85 dB(A). That ambient noise levels are well within the stipulated limits of MoEF&CC.

Table 10-3: Noise Level Pollution, Management & Monitoring

Particular	Description / Management
Noise Pollution and Control	✓ All the machineries including transport vehicles will be properly maintained to minimize generation of noise. ✓ Silencers in the machineries will be provided to reduce generation of noise. ✓ Attenuation between source and receive points will be encased. ✓ Drilling with sharp edges bits will minimize generation of noise. ✓ Control blasting will be done with proper charge of explosive to minimize noise during blasting. ✓ Dense plantation in safety zone of mining area will also reduce propagation of noise outside the core zone. ✓ Periodical monitoring of noise will be done to adopt corrective actions wherever needed. ✓ Plantation will be taken up along the approach roads. The plantation minimizes propagation of noise and arrests dust.

Table 10-4: Vibration, Management & Monitoring

Particular	Description / Management
Noise Pollution and Control	✓ To minimize the effect of blasting-controlled blasting with optimum charge and proper stemming of holes will be done. ✓ Blasting will be performed strictly as per the guidelines specified under MMR, 1961. ✓ Proper design of blast with correct spacing, burden and optimum charge/delay. ✓ Supervision of drilling and blasting operations to ensure blast design geometry as per planning. ✓ Sub-drilling will be kept adequate to eliminate toe formation. ✓ Blasting operations will be carried out only during daytime and once or twice in a week as per DGMS guidelines. ✓ Proper warning signals will be used, and information will be circulated on nearby village / panchayat. ✓ Adequate safe distance from habitation as per standards from center of blasting will be maintained. ✓ Drilling parameters like burden, depth, diameter and spacing will be properly designed to ensure proper blast. ✓ Effective stemming of the explosives will be done in the drill holes

10.5. Water Management

There will be no wastewater generation from the mining operations. Only wastewater generation will be sanitary /municipal wastewater, which will be treated in septic tank followed by subsurface dispersion.

Table 10-5: Water Pollution & Management

Particular	Description / Management
Surface Water	✓ No surface water body exists within the lease area, no adverse impacts are envisaged on the same.

Particular	Description / Management
	✓ Proper mitigative measures will be taken up to control the pollutants within prescribed standards and limiting the emissions to site only. ✓ Garland drains will be provided to prevent the entry of rainwater into the mining pit.
Ground Water	✓ Mining will not intersect the ground water table of the area. So, it will not disturb water environment. ✓ Mining will not be operational in rainy season. ✓ At the end of mining, no pit will be available on site as mined-out area will be automatically replenished in monsoon season.
Wastewater	✓ A small amount of wastewater 0.54 KLD will be generated from domestic demand of water which will be stored in septic tanks within lease area.
Water Conservation	✓ The project does not consume any process water except for drinking, dust suppression and plantation. Plantation is proposed, which will increase the water holding capacity and help in recharging of ground water.

10.6. Solid Waste Management

Waste management is an important facet of environment management. Thus, solid waste management is important from both aesthetics and environment viewpoints. Generated food waste or any other domestic waste will be collected in dustbins and will be properly disposed-off. There are no toxic elements present in the mineral, which may contaminate the soil water.

Waste management is an important facet of environment management. Thus, solid waste management is important from both aesthetics and environment viewpoints.

- Generated food waste or any other domestic waste will be collected in dustbins and will be properly disposed-off.
- There are no toxic elements present in the mineral, which may contaminate the soil water.

10.7. Green Belt Development

The mined-out areas will be backfilled and reclaimed with dense poly-culture plantation of the local species. Water reservoirs will be created in the abandoned mine pit that shall increase the water availability to surrounding area for longer periods of time. Plantation will be done in 1/3rd land of lease by growing fruits which will be of commercial utility to the local community. The species to be grown in the areas should be dust tolerant, fast growing and fruit yielding species so that a permanent green belt is created.

As envisaged in the National Forest Policy 1988 that one third of the total area should be under green cover to maintain ecological balance in the country. Therefore, to attain the target as envisaged under State Forest Policy and National Forest Policy, the provision of green belts/ avenue plantations is made under developmental projects. The species proposed should be long rotation, ornamental, evergreen, hardy, wind firm. The species proposed should be long rotation, ornamental, evergreen, hardy, wind firm. The species suitable for urban areas should have capacity to combat pollution.

As this is a mining project having 7.46 ha quarry lease area. About 2.46 ha area will be used for greenbelt. Plantation will be done in 2 three years for 3147 trees/ year & its maintenance will be done in next 3 years. Remaining trees will be planted in nearby villages road or schools and others. Details of proposed plantation are given below:

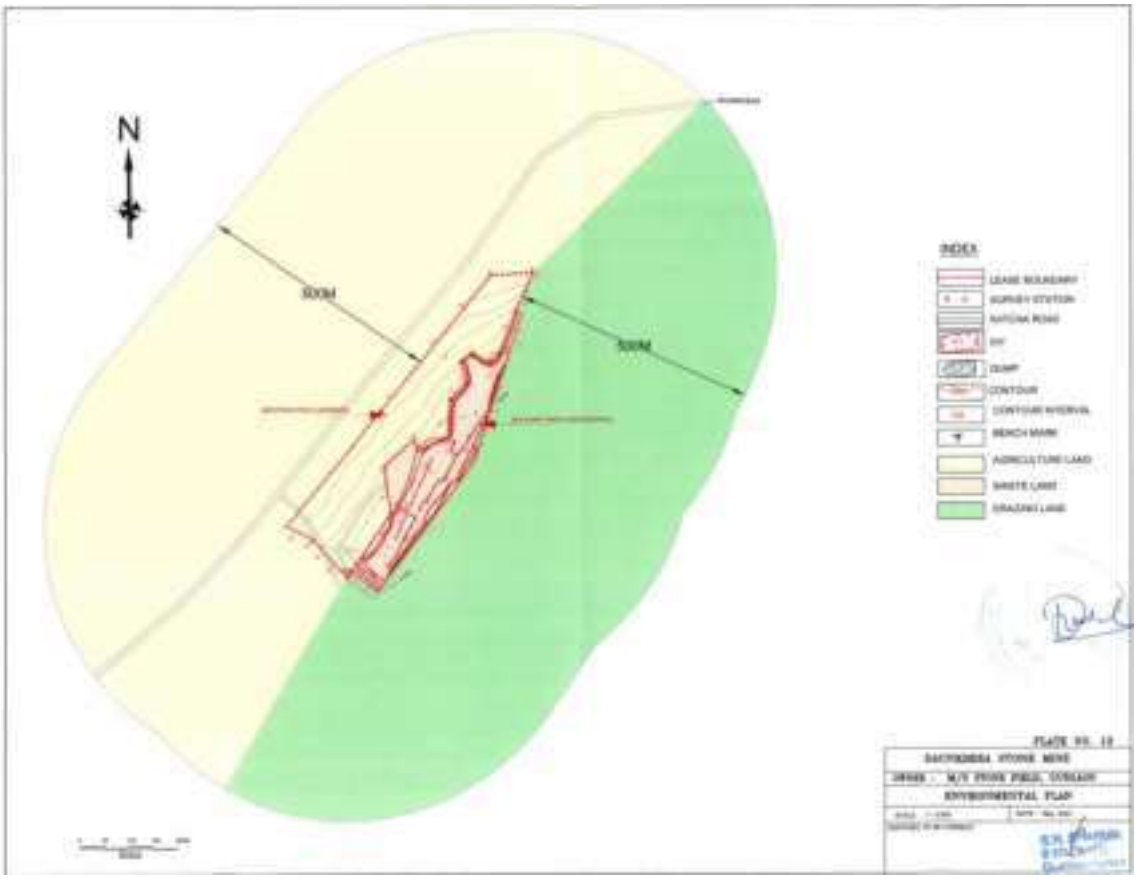
Table 10-6: Plantation Details

Year	Plantation Proposed	Survival 80%	Gap Plantation	Species	Place of Plantation
I	3,147	2,517	-	Neem, Peepal, Mango, Shisham, Sirish, Babool, Gulmohar and other local fruity plants	Along the roads, in barren area, surrounding office & rest shelter and other social forestry programme.
II	3,147	2,517	630		
III	-	-	630		
IV	-	-	-		
V	-	-	-		
Total	**6,294**	**5,034**	**1260**		

Table 10-7: Post Plantation Care

Particular	Description / Management
Protection from Grazing and Fire	Fencing will be provided around the area where mass plantation has been proposed. This will help in preventing cattle from entering such area and will protect unauthorized entry of out-side person. Due to care will be taken to protect plantation as well as the fencing by the guards.
Watering During Dry Season	During dry season, water will be sprinkled using private water tanker as per plant requirement.
Manuring	Initially fertilizer/ manure will be given to the plants before and after plantation. Thereafter, manuring will be continued on reduced scale till the plant attains growth of 2 to 3m height. Provision of utilizing bio-manure will also be made within the lease area.
Weeding and Soil Working	Man, power will be engaged in mulching the soil frequently along with removal of weeds and other unwanted species.

Figure 10.1: Environmental Plan



10.8. Socio-economic Assurance

The project proponent is aware of his duty and responsibility towards the socio- economic development of the local community where the project activities will be carried. The proponent is also bound by the national policies and is vigorously passionate to carry out some initiative towards the society by improving their quality of life and fostering sustainable and integrated development in the communities in the vicinity of the lease area.

This objective of social responsibility is equally well-entrenched in the minds of the project proponent which is manifest from some of the ESR activities included in the mine plan. The project proponent wishes to play an active part in providing financial support and empowering rural communities to chart their own development.

10.8.1. Environmental & Social Responsibility

The activities to be carried out under Environment & Social Responsibility initiatives will have a positive impact on socio economic fabric of the region. The Project Proponent may promote local NGO, ask the communities to prepare their micro level plans based on genuine needs. It is, therefore, proposed to have ESR plan focusing on following broad areas of activities that addresses the problems and needs of the community in the project area in a holistic manner:

- ✓ **Livelihood and Entrepreneurship:** Helping rural communities in Donkhera near the project vicinity to become self-sufficient and sustainable by providing training in self-employment and supporting entrepreneurship and implement rainwater harvesting in the villages.
- ✓ **Skill Development:** A driving social change in rural areas by empowering local people through education and training and promoting their Self-Help Groups (SHG) and micro finance for group, individual and community income generation activities such as tailoring/embroidery classes for women; and Orientation programs for self-employment in collaboration with District Industries Centre and District Rural Development Agencies.
- ✓ **Education:** Empowering children and adults can be done by bringing quality education to remote rural areas. Under the plan it is proposed to help local schools and scholarship.
- ✓ **Sports:** Under the plan it is proposed to promote sports in the school as well as villages for which sports material shall be supplied to the schools / panchayats.
- ✓ **Environment:** Promotion of environmental awareness and responsibility amongst rural, socially backward, and poor communities should be encouraged. In the light of "Swachh Bharat Abhiyan" it is proposed to construct separate toilets for boys and girls in gram panchayat and schools. It is also proposed to provide safe/ treated drinking water in villages by installing RO Plant in village Panchayat Bhawan.
- ✓ **Health:** Provide affordable, quality healthcare to villages by giving community level health care training through village workers especially women. Under the plan it is proposed to provide drinking and sanitation facility to local panchayat.
- ✓ **Energy Saving Devices:** It is proposed to install roof top solar panel in gram Panchayat Bhawan and in other government building for their lighting as well as street lighting.

10.8.2. Litigations against the Project Proponent

No tree cutting will be proposed in the proposed stone mining project. Lease is allotted by state govt, and no litigation is pending toward project proponent.

10.8.3. Occupational Health and Safety

Occupational Health and Safety professionals develop and coordinate safety and health systems and strategies within organizations. They identify workplace hazards, assess risks to employee health and safety, and recommend solutions. Increasingly, Health and Safety Professionals are also responsible for many of the environmental aspects of their workplace.

Stone mining does not contain any toxic element. Therefore, the likelihood of any health hazard does not arise due to the mined product per se. However, the process of excavation / quarrying leads to some health hazards. The dust generated due to loading / unloading and movement on haul road creates air borne dust which has silica contents. The dust is the main pollutant of concern for the workers engaged in the mining activities. The most significant occupational health impacts are Noise Induced Hearing Loss (NIHL) and Occupational Lung Disease (OLD) like allergic rhinitis and asthma due to inhalation of dust. Working in open during summer can expose workers to the direct sun rays causing heat strokes, cramps and burns besides leading to exhaustion. In extreme windy conditions the dust particles forcing way into the eyes can create itching as well as allergic conjunctivitis of eye. As per Mines Rules, 1955, Chapter – IV-A, Section 29B, medical examination of employees at the initial stage and periodically, shall be done by a team of qualified medical officers provided by the project proponent.

Table 10-8: Budget for Occupational Health & Safety

S. No.	Description	Annual Budget
1	Health check-up camps	₹ 1,00,000
2	Insurance cover of workers	₹ 1,00,000
3	Assistance to local schools, scholarship to students at Govt. school in Donkhera Village	₹ 1,00,000
4	Computer Lab for Govt. school in Donkhera Village	₹ 1,00,000
5	Solar Street Lights on Panchayat & Govt. school in Donkhera Village	₹ 30,000
6	Sanitations (Toilets) and drinking water facility of Govt. school in Donkhera Village	₹ 1,00,000
7	Vocational training to persons for income generation	₹ 50,000
8	Assistance to self-help groups	₹ 50,000
	Total	**₹ 6,30,000**

As this profession matures there is an increased emphasis on risk management strategy and on the development of workplace culture. Occupational Health and Safety professionals in the minerals industry may perform the following tasks:

- ✓ The collection of minor minerals does not cause any occupational ill effects.
- ✓ Except fugitive dust generation there is no source which can show a probability for health-related diseases and proper dust suppression will control dust generation and dispersion.
- ✓ Dust masks will be provided to the workers working in the dust prone areas as additional personal protective equipment.
- ✓ Earmuffs will be provided for the workers avoid any noise induced hearing loss.
- ✓ There will be regular health camps for all workers and nearby rural people.
- ✓ Awareness program will be conducted about likely occupational health hazards to have preventive action in place.

- ✓ Any workers health related problem will be properly addressed.
- ✓ Periodical medical check-up will be conducted.
- ✓ Promote occupational health and safety within their organization and develop safer and healthier ways of working.
- ✓ Coordinate emergency procedures, mine rescues, firefighting and first aid crews.
- ✓ Communicate frequently with management to report on the status of the health and safety strategy and risk management strategy, and develop occupational health and safety strategies and systems, including policies, procedures, and manuals.

10.9. Financial Assurance

Total 7.46 ha area will be put in use up to the end of the plan period. Details of area put in use as given below (As per circular No.4/2006 issued by CCOM, Nagpur following table has been considered for calculation for financial assurance). As per terms of Haryana Minerals Rules, 2012, lessee must deposit financial assurance in the form of the Bank Guarantee to Department of Mines & Geology, Haryana for the complete lease hold area at the rate of Rs. 15,000/- per hectare, which is arrived as (Rs.15,000/- x7.46 ha = Rs1,11,900/. This will be given by lessee as per rule no 70 (1) (6) amended in 2012 as surety bond / bank guarantee. Total project cost is about INR 13.66 crores and CA certificate is enclosed as **Annex 10.1**.

Table 10-9: Financial Assurance Calculation

S. No.	Item	Area Present	End of Plan	Total Area	Fully Reclamation	Net Area Calculated
		(A)	-	(B)	(C)	D = (B-C)
1.	Area to be excavated	0.0	6.66	6.66	0.0	6.66
2.	Storage for topsoil	0	0	0	0	0
3.	Overburden/ dumps	0	0	0	0	0
4.	Mineral storage, infrastructure, Ancillary area etc.	0	0	0	0	0
5.	Infrastructure (Workshop, Adm. Building & Road)	0.12	0.08	0.20	0	0.20
6.	Green belt	0	0.60	0.60	0	0.60
9.	Backfilled	00	0.0	0.0	0.0	0.0
10.	Water Body	0.0	0.0	0.0	0.0	0.0
11.	Others to specify	0	0	0	0	0
Total		**0.0**	0	7.46	**0**	**7.46**

10.10. Environment Management Protection Plan (EMP)

Following provisions will be adopted for improving, controlling, and monitoring of environment protection measures. Management will also be monitoring the related concerns and its implementation. All the activities will be done by Environment Monitoring Cell (EMC).

Table 10-10:Environment Management Budget (5 Years)

S. No.	Particulars	Capital	Recurring	Total
1	Pollution monitoring – Air, Water, Noise	-	₹ 60,000	₹ 3,00,000
2	Pollution Control – Water sprinkling	₹ 5,00,000	₹ 2,00,000	₹ 15,00,000
3	Wire fencing at plantation sites	₹ 2,00,000	₹ 50,000	₹ 4,50,000
4	Plantation including maintenance	₹ 3,00,000	₹ 1,00,000	₹ 8,00,000

S. No.	Particulars	Capital	Recurring	Total
5	Rainwater harvesting	₹ 2,00,000	₹ 20,000	₹ 3,00,000
6	Haul road and other roads repair and maintenance	₹ 2,00,000	₹ 50,000	₹ 4,50,000
	Total	**₹ 14,00,000**	**₹ 4,80,000**	**₹ 38,00,000**

10.11. Rehabilitation and Resettlement (R&R)

There is no displacement of the population within the project area. However Social development of nearby villages will be considered as per social activities.

10.12. Summary

As per above discussion there is no major impact on the environment as the suggested mitigation measures will be adopted. The adequate preventive measures will be adopted to contain the various pollutants within permissible limits. It is proposed to plant about 6,296 saplings and gap plantation about 1,260 saplings considering cost of INR 8,00,000 including maintenance. It will prove an effective pollution mitigate technique and help avoid soil erosion during monsoon season. Employment opportunities will be provided to the locals only as providing extraction of minerals from the mine site is the only prevailing occupation for them for their livelihood. Plantation development will be carried out in the mine premises, along the approach roads, around Govt. buildings, schools etc.

CHAPTER – 11

SUMMARY & CONCLUSION

11. Summary & Conclusion

11.1. General

The Letter of Intent has been issued to M/s Stone Field, through Ashwani Khurana, R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon by Director Mines & Geology, Panchkula Haryana for Mining of Stone (Minor Mineral) in "Donkhera" having tentative area of 7.46 hectares in Nangal Chaudhary Tehsil of District Mahendragarh, Haryana via e-auction held on 27.03.2022 for a period of 10 years. The NOCs and approvals have been obtained from the various respective authorities and briefed in Table 1.1.

Table 11-1: Approvals / Permissions from Concerned Authorities

Item	Permission / Approval Details
Letter of Intent	The Letter of Intent has been issued to M/s Stone Field, through Ashwani Khurana, R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon by Director Mines & Geology, State of Haryana Govt., Chandigarh vide memo no. **DMG/ HY/ ML/ DONKHERA/ 2022/ 2713, Panchkula Dated 20-04-2022** for Mining of Stone (Minor Mineral) in Donkhera village over an area of 7.46 hectares in Nangal Chaudhary Tehsil of District Mahendragarh, Haryana for a period of 10 years.
Approved Mining Plan	As per rule 70 of Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Presentation of Illegal Mining Rule, 2012, the mining plan was approved vide memo no. **DMG/ HY/ MP/ DONKHERA/ 2022/ 2732-2735 Panchkula Dated 19.05.2023.**
Cluster Letter	Department of Mines and Geology, Narnaul confirms one more mine (XANDY Stone Mines& Minerals – Area 4.80 Ha) is available within 500m radius from lease for form cluster vide letter **Memo No./1795 dated 01.06.2023**.
Forest NOC	The lease area land is owned by gram panchayat as no forest land involved in lease area. The NOC has been asked from department vide **SARAL ID: HFLC/2023/00355 Dated: 27/07/2023**. The acknowledgement letter is enclosed.
Tehsildar NOC	The clarification has been obtained from the Tehsildar about no habitat is coming within 500m from the lease area and no forest land involved within 500m and cluster status on dated 09.06.2023.
DSR	District Survey Report of Mahendragarh District is available and enclosed.
Panchayat NOC	No objection letter from the Panchayat Donkhera has been obtained on dated 29.06.2023 for the mining operation.
Water Supply	Water will be supplied via hired private water tankers for dust suppression, plantation, and domestic use.
Electricity Supply	Electrical supply is available in all nearby villages. The permission will be taken from concerned department for the electricity use.

Table 11-2: Salient Features of Mine

S. No.	Parameters	Description
20.	Name of the project	Mining of Stone (Minor Mineral) from Donkhera Stone Mine by M/s Stone Field
21.	Nature & category of Mine	Non-Coal Mining Category 'B' of Activity 1(a)
22.	Project Proponent	M/s Stone Field
23.	Khasra No.	59//1.10/1,10/2, 60//4 min ,7/1min,7/2 min ,6/1, 6/2, 5 min 13/1 min, 13/2 min, 14/1 min,14/2. 15/1, 15/2, 17, 18/1, 18/2 min 19 min, 22 min, 23, 24, 62//6 min,

S. No.	Parameters	Description		
		min,16,17 min, 25, 63//1 min, 2,3,9,10 min,11,20,21, 64//1, 65//5.		
24.	Total Lease area	7.46 Ha (Gram Panchayat Land)		
25.	Location of the project	Village- Donkhera, Tehsil- Nangal Chaudhary, District- Mahendragarh, Haryana		
26.	Toposheet No.	G43E1 – Project Site G43D13, G43D14, G43E1 & G43E2 - Study Area.		
27.	Maximum Production Capacity	15,00,000 MTPA		
28.	Geological Mineral Reserve	1,95,54,155 MT		
29.	Mineable Reserve	1,56,43,324 MT		
30.	Geographical co-ordinates	**Point**	**Longitude**	**Latitude**
		A	76^0 02’ 43.626”	27^0 50’ 17.355”
		B	76^0 02’ 47.056”	27^0 50’ 21.258”
		C	76^0 02’ 46.7”	27^0 50’ 24.6”
		D	76^0 02’ 49.1”	27^0 50’ 26.6”
		E	76^0 02’ 49.1”	27^0 50’ 25.8”
		F	76^0 02’ 51.5”	27^0 50’ 26.6”
		G	76^0 02’ 51.6”	27^0 50’ 29.1”
		H	76^0 02’ 52.9”	27^0 50’ 30.5”
		I	76^0 02’ 52.2”	27^0 50’ 31.4”
		J	76^0 02’ 53.4”	27^0 50’ 32.5”
		K	76^0 02’ 54.2”	27^0 50’ 31.7”
		L	76^0 02’ 55.6”	27^0 50’ 32.5”
		M	76^0 02’ 58.4”	27^0 50’ 38.4”
		N	76^0 02’ 55.143”	27^0 50’ 38.322”
		O	76^0 02’ 46.407”	27^0 50’ 28.549”
		P	76^0 02’ 39.682”	27^0 50’ 20.958”
		A	76^0 02’ 43.626”	27^0 50’ 17.355”
		B	76^0 02’ 47.056”	27^0 50’ 21.258”
		C	76^0 02’ 46.7”	27^0 50’ 24.6”
		D	76^0 02’ 49.1”	27^0 50’ 26.6”
		E	76^0 02’ 49.1”	27^0 50’ 25.8”
		F	76^0 02’ 51.5”	27^0 50’ 26.6”
		G	76^0 02’ 51.6”	27^0 50’ 29.1”
31.	Topography of ML area	The general slope of the land of southern most part of the district Mahendragarh is from south to north. The lease area is consisting of slightly undulatory agriculture land. The highest point in the lease area is recorded to be 355 mRL and the lowest point recorded is 350 mRL. The lease area does not have any water body. The area sloping towards west in which water flows during rains for a short duration, otherwise they remain dry for the rest of the months. The rainwater from fields drains either into local johars or in agriculture fields.		
32.	Mining Method & Technology	**Proposed Method of Mining:** The present mining operations are designed to be carried out by mechanized		

<table>
<tr><th>S. No.</th><th>Parameters</th><th>Description</th></tr>
<tr><td></td><td></td><td>open cast mining method. The entire operations proposed are mechanized. Apart of mining, the loading and transportation up to stack yard shall be done mechanically. It is proposed to load in the trucks/ dumpers directly to the destinations and mineral is not usually put up in this stack yard to avoid the double handling. In the present operation the bench height and width shall be 10m x 10m. Each bench will advance one by one. While carrying out the mining operations in accordance with the above provision the overall pit slope shall be maintenance the 49^0 the mineral bearing rocks being hard and compact.
The mining operations shall be carried out by fully mechanized opencast method utilizing Heavy Earth Moving Equipment (HEMM) in conjunction with deep hole drilling dry crawler mounted DTH drills and blasting. To start with benches shall be kept along dip and advanced along the strike to give a well-blended material in each bench. The direction may be varied in due course based on experience gained, to give wider benches, longer faces and proper alignment along haul roads/ ramps.
It is proposed to be adopted mechanized opencast mining method for exploitation of the mineral. Drilling and blasting shall be required to dislodge the mineral. The mining method involves breaking the rocks with explosives, loading the material with excavators and haulage with dumpers.</td></tr>
<tr><td>33.</td><td>Ultimate depth of Mining</td><td>90.0 m BGL</td></tr>
<tr><td>34.</td><td>Ground water level</td><td>The ultimate depth of the mining area will be 90 m at end of life. The general water table around the lease area is at 80 - 100 m BGL.</td></tr>
<tr><td>35.</td><td>GWT intersection</td><td>Mining will be done above ground water level. So, ground water table will not be intersected.</td></tr>
<tr><td>36.</td><td>Drainage pattern/ water courses</td><td>The areal is mainly sloping both west and north direction. Mining shall be mainly below the general ground level with only one slicing of each bench one by one. Such situation may warrant any water accumulation at the lower parts of the pit. However, as the mine progresses and mining continue below the general ground level as envisaged during lease period, the mining area will become a depression, which may warrant accumulation of water during rainy season. A scheme is proposed to prevent the accumulation of such water.</td></tr>
<tr><td>37.</td><td>Water requirement & source</td><td>The source of water is private water tankers. The break-up of water requirement is as follows:
<table>
<tr><th>S. No.</th><th>Description</th><th>Demand</th></tr>
<tr><td>1</td><td>Dust Suppression</td><td>5.7</td></tr>
</table></td></tr>
</table>

S. No.	Parameters	Description		
		2	Greenbelt Development	6.3
		3	Domestic Requirement	2.7
			Total	**14.7 KLD**
38.	Cost of project	The capital cost for the project will be Rs. 11 Crores including proposed lease area and machinery will be hired on contract bases.		

Source: Approved Mining Plan & Project Feasibility Report

Table 11-3: Mining Cluster Details (Mines within 500m radius)

S. No.	Lease Name	Area
1	Stone Mine by M/s XANDY Mines & Minerals	4.80 Ha
2	Stone Mine by M/s Stone Field	7.46 Ha
Total		**12.26 Ha**

Source: Cluster NOC from Mining Department

11.2. Analysis of Alternative

It is case of fresh quarry lease. The mineral is site specific, so no alternative site was identified. Lease approval from concerned authority has been obtained and enclosed in report.

11.3. Description of Baseline Environment

Environmental data has been collected during pre-monsoon season i.e., March to May 2023 in accordance with the guidelines for preparation of EIA studies.

Table 11-4: Baseline Status

Parameters	Baseline Status
Ambient Air Quality	PM_{10} was varying from 42 µg/m^3 to 82 µg/m^3. $PM_{2.5}$ was observed 15 µg/m^3 to 34 µg/m^3. SO_2 was varying from 5.8 µg/m^3 to 11.6 µg/m^3. NOx was observed 10.1 µg/m^3 to 16.0 µg/m^3 in study area. CO was observed from 0.41 mg/m^3 to 1.12 mg/m^3 in study area.
Noise Level	The Sound Pressure Level recorded during the daytime on all locations varies from 38.6 dB(A) to 56.4 dB(A) & in time it varies between 29.3 dB(A) to 40.2 dB(A).
Ground Water	pH (7.2 to 7.7), TDS (723 mg/l to 1361 mg/l), alkalinity (160.0 mg/l to 360.0 mg/l), Total Hardness (295.7 mg/l to 472.8 mg/l), Calcium as Ca (62.4 mg/l to 89.3 mg/l), Magnesium as Mg (34.0 mg/l to 60.8 mg/l), Chloride (209.3 mg/l to 451.0 mg/l) & Sulphate (54.0 mg/l to 120.0 mg/l) parameters were analysed. Water was also analysed for heavy metal. Fluoride level is very high and not good for health.
Surface Water	The pH was varying between 7.2 to 7.8, denotes water meeting to the Class A. Dissolved Oxygen was varying between 6.2 to 7.1, denotes water quality meeting to Class A. Total Coliform is meeting to Class B (<500 MPN/100 ml).
Soil Quality	The soil was predominantly Sandy Loam. The pH (6.8 to 7.8), Conductivity (257 µmhos/cm to 314 µmhos/cm), Organic carbon (0.99% to 1.08%), Nitrogen (259 kg/ha to 313 kg/ha), Phosphorous (15 kg/ha to 22 kg/ha), Potassium (71 kg/ha to 89 kg/ha) and another parameter were analysed. Overall, the soil quality was found good in terms of fertility.
Meteorology	The maximum temperature was 43.1°C in May and the minimum temperature was 14.6°C in March. The highest RH was 83.2% in May, while RH was 46.3% in April. The average wind speed was 3.0 m/sec. Predominant wind direction was North-West to South-East and west to east.

11.4. Anticipated Environmental Impact and Mitigation Measures

The proposed mining operations are not anticipated to raise the concentration of the pollutants beyond prescribed limits. The identified impacts and mitigation measures are detailed below.

- ✓ Total 1200 PCU/ day will increase in the existing traffic due to this mining activity hence vehicle collation may occur unwanted sound and can also cause impact on human health of villagers near to transportation route like effect on breathing and respiratory issues. Accidents may occur due to fast movement of vehicles. The truck movement will be from suggested transportation route only. It is proposed about 6,294 nos. of plants in plan period and water sprinkling will be done twice in a day to reduce the impact.
- ✓ The machinery will be maintained in good running condition so that noise will be reduced to minimum possible level. Vehicles with PUC certificate will be hired. Regular maintenance of vehicles will be done to ensure smooth running of vehicle. Awareness will be imparted to the workers about the permissible noise level and effect of maximum exposure to those levels. In addition, truck drivers will be instructed to make minimum use of horns in the village area and sensitive zones.
- ✓ There will be no impact on water environment as the mining will be limited before the water level. So, no impact on water was identified. Only 0.54 KLD domestic wastewater will be generated from the proposed mining activity which will be treated in septic tanks and will be used for plantation purpose.
- ✓ The mine worker will generate municipal solid waste of about 22 Kg per day, which will have an adverse impact on human health. There will be 4 Nos. of dustbin for domestic solid waste collection.
- ✓ The mining activities will be done in a systematic manner by maintaining the road infrastructure and vehicle transport, which will be a protective measure for preserving the topography and drainage in the area.
- ✓ No settlement is proposed. Local manpower will be preferred.
- ✓ The mining will likely increase the per capita income of local people by which the socioeconomic status of the people will be improved. The local people have been provided with either direct employments or indirect employment such as business, contract works and development work like roads, etc. and other welfare amenities such as medical facilities, conveyance, free education, drinking water supply etc.
- ✓ Except dust generation, there is no source which can show a probability for health-related diseases. Regular water sprinkling will be done with sprinkles mounted tankers and dust masks will be provided to the workers.
- ✓ Personal protective equipment will provide to prevent the noise exposure. Personal Protective Equipment will be provided during mining activity. Regular Health check-up camps will be organized. All the workers will be insured by employer.

11.5. Environmental Monitoring Program

To maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will have complied as per conditions. For

this the lessee has taken decision to formulate an Environment Policy of the mine and constitute an Environmental Management Cell and committed to operate the proposed mine with the objectives mentioned in approved Environment Policy. A budget for monitoring of Air, water, Noise and Soil will be Rs. 60.0 thousand annual which is to be incurred by the project proponent for undertaking pollution prevention measures during the mining activity.

11.6. Additional Studies

As per proposal made under the mining plan the area will be developed by means of opencast mining method. Water table will not be touched during the mining process. No high-risk accidents like landslides, subsidence flood etc. have been apprehended.

The Safety Health and Environmental (SHE) policy is existing and accessible to all at site and to other stakeholders. The policy has been framed considering legislative compliance, stakeholder involvement, continual improvement, and management by objectives.

To minimize the health impacts PPE like dust masks, ear plugs/ muffs and other equipment will be provided for use by the work personnel. All workers will be subjected to Initial Medical Examination as per Mines Rule 1955 at the time of appointment. Periodical Medical Examination will be conducted at least once in five years. Medical camps will be organized Six Monthly by proponent.

There is no displacement of the population within the project area and adjacent nearby area. This working of mine will offer more employment, chances to some of the nearby population, it is always obvious that the safe mining activity will help to improve socio-economic conditions of the inhabitants.

11.7. Project Benefit

The project proponent is conscious of its social responsibility and as any good corporate citizen; it is proposed to undertake the need specific (skilled & non-skilled) employment. This Project will provide employment to local people directly and indirectly. Indirect employers are shopkeepers, mechanic, drivers, transporters etc. About 89 persons will get direct employment and 20 persons will get indirect employment form nearby villages. The workers will be mostly skilled.

The developer will also adopt the ESR program as per norms and will provide vary facilities the nearby villages. The salient features of the programme are as follows:

- ✓ Social welfare program like provision of medical facilities educational facilities, water supply for the employees as well as for nearby villagers will be taken.
- ✓ A well laid plan for employment of the local people has been prepared by giving priority to local people.
- ✓ Supplementing Govt. efforts in health monitoring camps, social welfare, and various awareness programs among the rural population.
- ✓ Assisting social plantation program.
- ✓ Development of facilities within villages like roads, etc.

11.8. Environment Management Plan & Budget

The detailed activity-wise has been calculated which are ₹14,00,000 as a Capital Cost and ₹4,80,000 per annum as a Recurring cost, respectively. Total budget of ₹38,00,000 for environmental measurements has been ensured by the developer.

11.9. Conclusion

As per above discussion there is no major impact on the environment due to mining except fugitive emission during loading, unloading of mineral & transportation. The adequate preventive measures will be adopted to contain the various pollutants within permissible limits. It is proposed to plant about 6,294 saplings and gap plantation of about 1,260 saplings considering cost of INR 8,00,000 including maintenance. It will prove an effective pollution mitigate technique and help avoid soil erosion during monsoon season. Employment opportunities will be provided to the locals only as providing extraction of minerals from the mine site is the only prevailing occupation for them for their livelihood. Plantation development will be carried out in the mine premises, along the approach roads, around Govt. buildings, schools approx.

CHAPTER – 12

DISCLOSURE OF THE CONSULTANT

12. Disclosure of Consultant

12.1. Organizational Profile

PARIVESH ENVIRONMENTAL ENGINEERING SERVICES (PEES), is a NABET accredited firm at 5/916, Viram Khand, Gomti Nagar, Lucknow, Uttar Pradesh-226010.

PEES is accredited by QCI/ NABET as Category-A EIA consultancy organization. The objective of PEES is to revive, support, strengthen and promote the traditional and unconventional technologies, which have survived through ages. These technologies meet our target of achieving the eco-friendly environment in this modern age. For the same cause we, at PEES, take initiatives in associating with national and international institutions, working for the same cause.

PEES is also dedicated to collect, analyze, and disseminate the scientific, technical, and socioeconomic information and knowledge for the benefit of the masses. The advance technology like the Information Technology tools is positively used for a better perspective. In achieving the desired objective in each project, the vital factor of socioeconomic information collation and analysis always plays an indispensable role. PEES have always stood in the front lines in this important area.

To summarize PEES is a group which is inspired and guided by the nature and finds immense pleasure in working on scientific lines with a role of activator between the decision makers and the locals. The active participation of locals through the development of self-help groups is always on top of the main agenda. PEES is dedicated to work in the field of research, development and exploration of traditional technologies and unconventional energy resources. The benefit of these activities is propagated to the end users.

PEES is associated with Asia Enviro Lab, which is NABL Accredited, and MoEF&CC recognized covering vast scope of environmental testing.

12.2. Consultancy Services

• Environmental Impact Assessment	• HAZOP Study
• Air Quality Assessment and Control Measures	• EHS & Occupational Safety Management Consulting
• Water and Wastewater Quality Assessment, Treatment and Management	• Socioeconomic & Impact Assessment
• Soil Quality Assessment	• Solid Waste Management Services
• Remediation Construction & Site Restoration	• Consent Management
• Source apportionment Study	• Environmental Legal Advice
• Carrying Capacity Study	• ETP & STP Establishment and Operation
• Environmental Management Plan	• Natural resource management
• Training and Skill Development	• Environmental Research and Development

12.3. Disclosure of Consultants Engaged

Declaration by Experts contributing to the EIA of Proposed Mining project of Stone (Minor Mineral) from Donkhera Stone Mine with production capacity 15,00,000 MTPA over an area of 7.46 ha located at Donkhera (Gram Panchayat) Village, Nangal Chaudhary Tehsil, & Mahendragarh District of Haryana of M/s Stone Field.

I hereby, certify that I was a part of the EIA team in the following capacity that developed the above EIA.

Table 12-1: EIA Co-ordinator Details

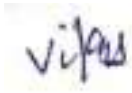
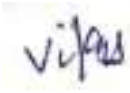
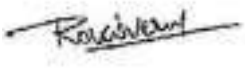
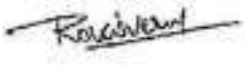
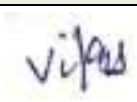
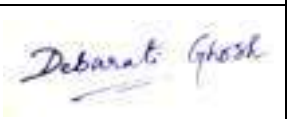
EIA Coordinator		**Signature & Date**
EIA Coordinator	Vikas Tripathi	 25.07.2023
Period of Involvement	January 2023 to till date	
Contact Information	9990156652 / 9819893405	

Table 12-2: List of Functional Experts

S. No.	**Functional Areas**	**Name of Expert/s**	**Involvement (Period & Task**)**	**Signature & Date**
1	AP	Vikas Tripathi	➢ Selection of AAQ stations in compliance with CPCB/ MoEF&CC guidelines ➢ Interpretation of baseline data w.r.t CPCB standards ➢ Identification of sources of pollution and its Inventorization. ➢ Preparation of Management plan with budgetary provision for all the sources of pollution. ➢ Suggestion of Operational monitoring program to verify and keep the levels well within the norms from time to time.	
2	WP	Ram Sushil Mishra	➢ Selection of water monitoring locations in line with CPCB norms ➢ Interpretation of baseline data w.r.t to CPCB standards ➢ Identification of pollution sources with relevant Inventorization. ➢ Preparation of Water Balance. ➢ Prediction of water pollution and its management plan.	
3	SHW	Ashish Kumar Vikas Tripathi	➢ Identification of nature of waste, categorization, and quantity of generated waste. ➢ Prediction of waste pollution and preparation of its management.	
4	SE	Kripna Shukla	➢ Collection of Secondary data (Census of India & District Handbook) ➢ Collection of primary data of the study area through Questionnaire method	

S. No.	Functional Areas	Name of Expert/s	Involvement (Period & Task**)	Signature & Date
			➢ Compilation and analysis of primary & secondary data to identify the various activities required on need basis. ➢ Identification and prediction of Socio-economic impacts ➢ Enumerating the benefits of the project in terms of employment, development, etc. ➢ Preparation of Environmental Social Responsibility activities based on the need basis with budgetary provisions in compliance with Companies act and MoEF&CC guidelines	
5	EB	Shilpi Anand Ram Sushil Mishra	➢ Identification of samples and its size based on the present land use and land cover pattern. ➢ Collection of primary data of flora and fauna for the study area with standard methodology and guidelines ➢ Collection of secondary data for cross verification of the primary data ➢ Inventorization and compilation of biological aspects of the study area ➢ Identification and prediction of various impacts on Ecological and biodiversity ➢ Preparation of management plan including greenbelt development plan with budgetary allocation	 
6	HG	Ravindra K. Verma	➢ Collection of secondary data (Ground water Authority) ➢ Interpretation of Water resource evaluation of the area. ➢ Interpretation of Pre-monsoon & Post-monsoon water levels & quality data.	
7	GEO	Ravindra K. Verma	➢ Collection of secondary data with respect to regional and local geology from Ground water Department. ➢ Interpretation of collected data in the report	

S. No.	Functional Areas	Name of Expert/s	Involvement (Period & Task**)	Signature & Date
8	AQ	Vikas Tripathi	➢ Collection of primary data ➢ Quantification of Air pollution sources (point and line sources) ➢ Impact prediction using AERMOD View Modelling and its interpretation. ➢ Delineating the Incremental load on the existing scenario ➢ Suggesting management plan with budgetary provision ➢ Suggestion of Operational monitoring program to verify and follow up to keep the levels well within the norms from time to time	
9	NV	Om Krishna Tarun Saharan	➢ Identification and selection of NAAQ monitoring locations. ➢ Collection of primary data (noise quality of the study area) ➢ Identification of Noise pollution sources. ➢ Impact prediction of noise pollution sources and its interpretation ➢ Preparation of management plan with budgetary provision ➢ Suggestion of Operational monitoring program to verify and follow up to keep the levels well within the norms from time to time	
10	LU	Debarati Ghosh	➢ Collection of Primary and secondary data (Topo sheet, satellite imaginary, coordinates of known vectors, etc.) ➢ Geo-referencing the primary data with secondary data using AutoCad, ERDAS, GIS software. ➢ Preparation of Land use and Land cover map ➢ Identification and its Impact prediction (if any)	
11	RH	Ram Sushil Mishra	➢ Identification of risk and hazards ➢ QRA study and prediction of risks involved. ➢ Management of Hazard controls due to chemical storage	

S. No.	Functional Areas	Name of Expert/s	Involvement (Period & Task**)	Signature & Date
			➢ Preparation of Disaster Management Plan with Onsite and Offsite Emergency Plan ➢ Delineating firefighting facilities and system ➢ Preparation of Occupational Health and Safety Management Plan with budgetary allocations.	
12	SC	Shilpi Anand Ram Sushil Mishra*	➢ Collection of primary data ➢ Interpretation of existing quality of soil. ➢ Prediction of Impact and its management (if any).	

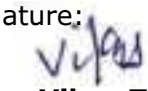
Team member *

12.4. Declaration by the Head of Organization

I, Vikas Tripathi, hereby, confirm that the above-mentioned experts prepared the EIA of Proposed Mining project of Stone (Minor Mineral) from Donkhera Stone Mine with production capacity 15,00,000 MTPA over an area of 7.46 ha located at Donkhera (Gram Panchayat) Village, Nangal Chaudhary Tehsil, & Mahendragarh District of Haryana of M/s Stone Field.

I also confirm that I shall be fully accountable for any misleading information mentioned in this statement.

Signature:



Name: **Vikas Tripathi**

Designation: **Managing Partner**

Name of the Organization: **Parivesh Environmental Engineering Services, Lucknow**

NABET Certificate No. **NABET/EIA/2124/IA 0092(Rev.01)**

Validity: **11-11-2024**

ANNEXURES

ANNEXURES – 1.1

LEASE GRANT LETTER

Speed/Registered Post

From

The Director General,
Mines and Geology Haryana,
Plot No. 9, I.T. Park, Sector-22, Panchkula.

To

M/s Stone Field,
Through Sh. Ashwani Khurana,
R/o Gh-18, Celebrity Homes, Palam Vihar, Gurgaon.

Memo No. DMG/HY/ML/Donkhera/2022/ 2713
Dated Panchkula, the 20-4-22.

Subject: Acceptance of the highest bid in respect of minor mineral mine of Stone at village "Donkhera" having tentative area of 7.46 hectares in the district Mahendergarh, offered in e-auction held on 27.03.2022/issuance of Letter of Intent (LoI)- regarding.

You participated in the e-auction held on 27.03.2022 on the e-Auction web portal (https://minesharyana.c1auctions.com/) for grant of mining lease of minor mineral stone after accepting the terms and conditions of the auction notice issued vide notification no. DMG/HY/e-Auction/MGR/2021/1293 dated 25.02.2022 in order to obtain mining lease of minor mineral stone mine of the district Mahendergarh.

2. You offered the highest bid of Rs. 21,46,00,000/- (Rs. Twenty One Crores Forty Six Lakhs only) per annum against the Reserve Price of Rs. 8,81,00,000/- for obtaining the Mining Lease of Minor Mineral Mine namely 'Donkhera' for extraction of 'Stone' having total area of 7.46 hectares falling in Khasra number 59//1,10/1, 10/2, 60//4 min 7/1min,7/2 min ,6/1, 6/2, 5 min 13/1 min, 13/2 min, 14/1 min, 14/2, 15/1, 15/2, 17, 18/1, 18/2 min 19 min, 22 min, 23, 24, 62//6 min, 15min,16,17 min, 25, 63//1 min, 2,3,9,10 min,11,20,21, 64//1, 65//5 of village Donkhera, district Mahendergarh.

3. You are hereby informed that the State Government has accepted the highest bid of Rs. 21,46,00,000/- per annum offered by you in respect of 'Donkhera Stone mine' under the provision of Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Prevention of Illegal Mining Rules, 2012 (State Rules, 2012). Accordingly, you have become the successful bidder in respect of above said mine.

4. The State Government having accepted the aforementioned highest bid of Rs. 21,46,00,000/- offered by you. The Department is pleased to issue this Letter of Intent (LoI) in your favour in respect of the Mining Unit/area namely 'Donkhera Stone mine' subject to the following terms and conditions:

4.1 The period of the contract shall be 10 years and the same shall commence w.e.f. the date of grant of Environmental Clearance by the competent authority and the Consent to Operate (CTO) by the State Pollution Control Board, whichever is later, or on expiry of the period of 12 months from the date of issuance of LoI, whichever is earlier;

4.2 You may note that the detail of the area of the mining unit is tentative and was notified on "as is where is basis" (refer condition no. (iv) of 21 of the auction notice). In case of any inadvertent mistake in the area detail/Khasra number etc., the same shall be got rectified/corrected before execution of the contract agreement (refer condition no. (iii) of 21 of the auction notice);

4.3 No request regarding reduction in bid amount on account of reduction in land/area of the Mining Block/ Unit, on any other account including that of change in description of Khasra numbers / location etc. at any stage will be entertained on any ground. This shall also include any loss/reduction of area for actual mining for want of compliance of applicable laws/restrictions for mining or part of the leased area had already been operated in the past. Needless to state that this also includes the changes, if any, as per condition no. (iv) of 21 of the auction notice.

4.4 You offered bid after having gone through the terms and conditions of auction notice and also the applicable Acts and Rules for undertaking mining. The State Government shall not be responsible for any kind of loss to you being the highest bidders/lessee at any point of time (before or after grant of lease) on any account including on account of reduction of land/ area/ production/ non grant of permission for mining in part area or otherwise on account of any condition stipulated for undertaking mining by any competent authority.

4.5 The amount of the highest bid i.e. 21,46,00,000/- (Rs. Twenty One Crores Forty Six Lakhs only) per annum shall be the "Annual Dead Rent" payable by you as the Dead Rent in the manner prescribed in the Lease Deed to be executed on form ML-1 appended to State Rules.

4.6 The above said annual Dead Rent shall be increased at the rate of 10% on completion of each block of three years. Accordingly, the year-wise amount of the annual Dead Rent shall be as per details given below:

Sr. No.	Year of the contract Period	Annual Dead Rent [in Rs.]
1	First Year	21,46,00,000
2	Second Year	21,46,00,000
3	Third Year	21,46,00,000
4	Fourth Year	23,60,60,000
5	Fifth Year	23,60,60,000
6	Sixth Year	23,60,60,000
7	Seventh Year	25,96,66,000
8	Eighth Year	25,96,66,000
9	Ninth Year	25,96,66,000
10	Tenth Year	28,56,32,600

4.7 As per the terms and conditions of the grant, you are liable to deposit Rs. 5,36,50,000/- i.e. equal to 25% of the annual bid amount as "Security", out of which you have already deposited an amount of Rs. 2,14,60,000/- (Rs. Two Crore Fourteen Lakhs Sixty Thousand only) i.e. equal to 10% of the annual bid amount as 'initial bid security' after the conclusion of e-auction. The balance amount of Rs. 3,21,90,000/- (Rs. Three Crores Twenty One Lakhs Ninety Thousand only) of the bid security i.e. 15% of the annual bid amount shall be deposited before commencement of the mining operation or before expiry of the period of 12 months from the date of issuance of Letter of Intent (LoI), whichever is earlier;

Provided that in case having taken all steps on your part, if you fails to obtain required Environmental Clearance and Consent To Operate (CTO) for undertaking mining operations within the said period of 12 months from the date of issuance of LoI, such Letter of Intent holder/lessee on a specific application submitted to the Director, at least thirty days prior to the end of the period mentioned above, giving details of the action already taken may seek additional time up to another twelve months, over and above the time of 12 months already allowed for commencement of the period of lease, on payment of a non-refundable fee as per the following:-

1	Extension of further period up to six months	On payment of a non-refundable fee at the rate of one percent per month of the annual bid for each month of requested extension period
2	Extension for a second period up to six months	On payment of a non-refundable fee at the rate of two percent per month of the annual bid for each month of requested extension period
Note: Extension shall be allowed only in month (s) and any request for period less/part of the month shall be summarily rejected and shall apply along with advance amount of the fee for such requested period of extension.		

4.8 **You are directed to execute the Lease Deed in Form ML-1 appended to the State Rules, 2012 within a period of 90 days from the date of order of issuance of this LoI.**

NOTE: 90 days period is for execution of Lease Deed. Therefore, it is advised to submit draft agreement along with all relevant documents preferably within 45 days, so that agreement could be executed within 90 days after completing all the formalities of scrutiny and verification.

4.9 In case of the Partnership Deed (where bidding entity is a partnership firm) or Articles of Association (where bidding entity is a registered Company) or an Affidavit (where bidding entity is a sole proprietorship firm and the bidder is participating as an Individual), no transfer or addition or deletion of the Partners/Directors will be permissible before execution of the agreement;

4.10 The Lease Deed executed shall be got duly Registered under relevant laws with concerned Registering Authority and you will be liable to pay applicable stamp duty and registration fee etc. as per the applicable rates and as demanded by the Registering Authority/Revenue Department at the time of Registration.

4.11 In case of failure to execute the lease deed, after issuance of this acceptance of bid/LOI within the prescribed period of 90 days, this LoI shall be deemed to have been revoked and 10% amount of the highest bid deposited as initial bid security shall be forfeited and you, will be debarred from participation in any future auctions/tenders/competitive bidding process in respect of any area for obtaining mineral concession in the State for a period of 5 years.

4.12 For execution of lease deed, you are also required to furnish a solvent surety for a sum equal to the amount of the annual dead rent. **The documents of the properties to be submitted in support of solvency of the surety shall be dully evaluated by the concerned Revenue Authority along with Non Encumbrance Certificate from the concerned Revenue Authority.**

Surety will submit an affidavit to the effect that the property in question has not been offered as surety to the department of Mines and Geology, Haryana in some other case.

4.13 After execution of deed, either before commencement of the mining operation or before expiry of the time allowed, if any, as per condition No. 4.7 above, in case of failure to deposit the balance 15% amount towards security (as required under clause 4.7 above), the acceptance of bid/issuance of LoI/execution of deed shall be deemed to have been revoked and 10% amount deposited towards as initial bid security after the conclusion of auction shall stand forfeited. Further, such bidder shall debarred from participation in any future auctions/tenders/ competitive bidding process in respect of any area for obtaining mineral concession in the State for a period of 5 years.

4.14 You shall be liable to deposit the lease money in advance at monthly intervals as per provisions of Lease Deed i.e. from the date of commencement of the lease period.

4.15 You shall also deposit/ pay an additional amount equal to 7.5% of the due dead rent along with the monthly instalments towards the 'Mines and Mineral Development, Restoration and Rehabilitation Fund.

4.16 You shall also deposit/pay an additional amount equal to 2.5% of the due dead rent along with the monthly instalments towards the 'District Mineral Fund'.

4.17 You shall also be liable to pay advance Income Tax as per provisions of Section 206(c) of Income Tax Act in addition to contract money, payable as per terms and conditions of contract agreement.

4.18 On enhancement of the dead rent with the expiry of every three years period, you shall deposit the balance amount of security so as to upscale the security amount equal to 10% of the revised annual dead rent as applicable for one year with respect to the next block of three years. No interest, whatsoever, shall be payable on the security amount deposited under the prescribed security head of the government;

4.19 You shall prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) from the Recognized Qualified Person as per chapter 10 of the State Rules, 2012 for the "Mining Unit" and shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorised by the Director, Mines & Geology, in this behalf.

4.20 Further, the actual mining will be allowed to be commenced only after prior Environment Clearance is obtained by you as the LoI holder/ Mining contractor for the Mining Unit from the Competent Authority as required under EIA notification dated 14/09/2006 issued by Ministry of Environment, Forests and Climate Change, Government of India or as amended from time to time and also other required approvals for mining including Consent to Establish and Consent to Operate from the Haryana State Pollution Control Board before commencement of actual mining operations.

4.21 You will also be liable to pay the following to the landowners to undertake mining operations:

(a) Annual rent in respect of the land area blocked under the concession but not being operated; and

(b) Rent Plus compensation in respect of the area used for actual mining operations.

4.22 The amount of annual rent and the compensation shall be settled mutually between the landowner and the mining lessee. In case of non-settlement of the rent and compensation, the same shall be decided by the District Collector concerned in accordance with the provisions contained in Chapter 9 of the "State Rules, 2012";

4.23 The total mineral excavated and stacked by the concession holder within the area granted on mining lease shall not exceed two times of the average monthly production as per approved Mining Plan and/or quantity approved under Environmental Clearance, at any point of time.

4.24 The mining lessee shall not stock any mineral outside the concession area granted on mining contract, without obtaining a valid Mineral Dealer Licence as per provisions contained in Chapter 14 of the State Rules, 2012.

4.25 The lessee shall not carry out any mining operations in any reserved/ protected forest or any area prohibited by any law in force in India, or prohibited by any authority without obtaining prior permission in writing from such authority or officer authorized in this behalf. In case of refusal of permission by such authority or officer authorised in this behalf, lessee(s) shall not be entitled to claim any relief in payment of dead rent on this account;

4.26 No mining operation shall be allowed in the urbanize zone of area notified by Town and Country Planning Department. Further, in case of the agriculture zone notified by Town and Country Planning Department mining shall be permissible only after obtaining prior permission from the competent authority;

4.27 The lessee shall not undertake any mining operation in the area granted on mining lease without obtaining requisite permission from the competent authority as required for undertaking mining operations under relevant laws;

4.28 The lessee shall be under obligation to carry out mining in accordance with all other provisions as applicable under the Mines Act, 1952. Mines and Minerals (Development and Regulation) Act, 1957, Indian Explosive Act, 1884, Forest (Conservation) Act, 1980 and Environment (Protection) Act, 1986 and the rules made there under, Wild life (Protection) Act, 1972, Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981;

4.29 All other terms and conditions shall remain as per auction notice and the provisions of the Mines and Minerals (Development and Regulation) Act, 1957 and Rules made there under shall prevail over all the terms and conditions.

5. Accordingly, you are advised to submit the Draft Lease Deed along with other requisite documents including a solvent surety(s) for a sum equal to the amount of the annual bid for execution of the agreement, within a period of 90 days from the date of issue of this bid acceptance letter and the LoI.

State Mining Engineer
for Director General, Mines & Geology,
Haryana, Panchkula.

Speed/Registered Post

Endst. No. DMG/HY/ML/Donkhera/2022/ 3714 Dated: 20-4-22

A copy is forwarded to the following for information and necessary action please:-

1. The Principal Secretary to Government Haryana, Mines and Geology Department.
2. The Chairman, Haryana State Pollution Control Board, Panchkula.
3. The Deputy Commissioner, Mahendergarh.
4. The Mining Officer, Mines & Geology Department, Mahendergarh. He is directed to ensure that proper and complete 'Draft Lease Deed Documents' as required are submitted within stipulated period.

State Mining Engineer
for Director General, Mines & Geology,
Haryana, Panchkula.

ANNEXURES – 1.2

APPROVED MINING PLAN

From

The Director,
Mines and Geology Haryana,
Plot No. 3, I.T. Park, Sector 22,
Panchkula.

To

M/S Stone Field,
Through Sh. Ashwani Khurana,
R/o GU 30,Celebrity Home,
Palam Vihar, Gurugram (Haryana).

Memo No. DMG(HQ)/MP/Doukhera/2022/ 2732 - 2735
Dated Panchkula the 19-05-2023

Subject: **Submission of Mining Plan including Progressive Mine Closure Plan of Doukhera Minor Minerals Mine of stone in District Mahendergarh comprising an area of 7.46 hectares of M/S Stone Field, Gurugram (Haryana).**

Reference to your letter dated 27.02.2023 on the subject noted above.

2. Vide letter under reference, the Mining Plan along with Progressive Mine Closure Plan in respect of an area of 7.46 hectares of land in village Doukhera, district Mahendergarh was submitted for approval.

3. In exercise of the powers conferred by Rule 69 of the Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012, I hereby approve the above said Mining Plan along with Progressive Mine Closure Plan in respect of Doukhera Minor Minerals Mine of stone over an area of 7.46 hectares of land situated in village Doukhera of district Mahendergarh. This approval is subject to the following conditions:-

(i) That this Mining Plan along with Progressive Mine Closure Plan is approved without prejudice to any other laws applicable to the mine/area from time to time whether made by the Central Government or State Government or any other authority.

(ii) That this approval of the "Mining Plan along with Progressive Mine Closure Plan" of Mining does not in any way imply the approval of the State Government in terms of any other provisions of the Mines and Minerals (Development & Regulation) Act, 1957 or Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012 or any other law including Forest (Conservation) Act, 1980 and Environment Protection Act, 1986 and rules framed there under;

(iii) That this "Mining Plan along with Progressive Mine Closure Plan" is being approved on the basis of data provided by you. In case, at any point of time any ambiguity in the same is found, the approval will be revoked with suspension of the mining operations and will be allowed to resume operation only after modification/rectification of the same, if so required.

(iv) That this "Mining Plan along with Progressive Mine Closure Plan" is approved without prejudice to any other order or direction from any court of any competent jurisdiction and is for a period of five years only and shall not be make you entitled for any extension of the lease period.

(v) That all the norms and provisions as envisaged in the Mining Plan would be adhered to during the working of mine; and

(vi) That the Financial Assurance of Rs. 1,11,930/- (Rs. One lac Eleven thousand Nine hundred only) as required under the provisions of Rule 71(6) of "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Prevention of Illegal Mining Rules, 2012" shall be furnished within a period of 60 days or before start of mining operations, whichever is earlier.

4. As per condition no. 4.20 of the LoI dated 20.04.2022, the actual mining will be allowed to be commenced only after Prior Environmental Clearance from the Competent Authority as required under EIA notification dated 14/9/2006, as amended from time to time by the MoEF&S, GoI and guidelines/ circulars issued in this behalf.

5. Further, mining will be allowed after Prior Approval from Director Mines Safety for Amalgamation of the both areas.

Encl: Mining plan & Progressive
Mine Closure Plan (2 copies)

State Geologist,
for Director, Mines and Geology,
Haryana.

Registered Post

Endst. No. DMG/HY/MP/Donkhera /2022/ Dated:

A copy along with a copy of the duly approved Mining Plan and Progressive Mine Closure Plan is forwarded to the Director Mines Safety, Room No. 201-203, 2nd Floor, B-Block, CGO Complex-II, Hapur Road, Ghaziabad for information and necessary action.

Encl: Mining Plan & Progressive
Mine Closure Plan

-Sd-
State Geologist,
for Director, Mines and Geology,
Haryana.

Registered Post

Endst. No. DMG/HY/MP/Donkhera /2022/ Dated:

A copy along with a copy of the duly approved Mining Plan and Progressive Mine Closure Plan is forwarded to the Mining Officer, Mines and Geology Department, Mahendergarh for information and necessary action.

Encl: Mining Plan & Progressive
Mine Closure Plan

-- Sd -
State Geologist,
for Director, Mines and Geology,
Haryana.

Endst. No. DMG/HY/MP/Donkhera /2022/ Dated:

A copy is forwarded to Sh. S.N.Sharma, House No. 202, Sector 11 D, Faridabad – 121 001 (Haryana) w.r.t. his letter dated 27.02.2023 for information.

-Sd-
State Geologist
for Director, Mines and Geology,
Haryana.

MINING PLAN AND PROGRESSIVE MINE CLOSURE PLAN OF STONE IN VILLAGE: DONKHERA

(Area-7.46 Hectares) Non Ferest

DISTRICT: MOHIDERGARH, STATE: HARYANA.

(Submitted under Rule 70(1) of Haryana Minor Mineral Concession Rules 2012)

DMG/HY/MP/Donkhera

APPROVED
With Conditions
Vide Letter No. 2-2/2321-2735
Dated 19-05-2023
State Geologist

APPLICANT

M/s Stone Filed, Through Sh. Ashwani Khurana,R/o GH-18,Celebrity Homes,Palam Vihar , Gurgaon

PREPARED BY

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Submitted to:

Director General Mines and Geology
Haryana Plot No.9,IT Park,Sector-22, Panchkula (Haryana)

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CHAPTER -1

INTRODUCTION

1.0 Introduction

M/s Stone Field, Through Sh.AshwaniKhurana,R/o GH-18,Celebrity Homes, PalamVihar, Gurgaon stood the highest bidder for the auction of the mine held on 27-03-2022 for Stone (Minor Mineral) of Donkhera , Nangal Chaudhary-Tehsil, District : Mohidergarh (Haryana)

The Letter of intent has been issued toM/s Stone Field, Through Sh.AshwaniKhurana,R/o GH-18,Celebrity Homes, PalamVihar, Gurgaon by Director of Mines & Geology. State Govt. of Haryana, Chandigarh vide Memo No. DMG/HY/MI/Donkhera /2022/2713 dated 20-04-2022 for Mining of Stone , in Donkhera over an area of 7.46 hectares in Tehsil Narnaul district Mohidergarh,Haryana for a period of 10 years (Annexure - I).

The applicant is involved in the mining business for last many years. The applicant can invest necessary funds for the scientific and systematic development of mines including land rejuvenation and progressive reclamation programme and other measures necessary to protect the quality of the environment and human health etc.

The objective of preparation of this Mining Plan and Progressive Mine Closure Plan is to futfill the conditions stipulated by the Department of Mines & Geology, Haryana required under Haryana Minor Mineral Concession Rules, 2012.

Furthermore, mining of mineral is no doubt essential for industrial growth and for providing better standard of living. But, in order to maintain the balance in the eco-system and sustainability of the mining area and the nearby areas a scientific mining scheme and progressive mine closure plan is required. Therefore, the same is prepared as per the guidelines for the mining plan/mining scheme covering all-important aspects required in respect of minor minerals.

CHAPTER -2

GENERAL DETAILS

1.0. General:

1.1 Name and address of the Applicant: M/s Stone Field, Through Sh.AshwaniKhurana,R/o GH 18,Celebrity Homes, PalamVihar, Gurgaon

1.2 Status of the Applicant:- It is a Private Limited Company.

1.3 Mineral or Minerals for which the Applicant has a mining lease:

Stone

1.4 Details of the land covered in the 'M.L. Area' is as under: -

District: Mohindergarh

State: Haryana.

Taluka: Nangal Chaudhary.

Village	Khasra no.	Area in hect.	Ownership
Donkhera	2/1,10/1,10/2, 60//4 min ,7/1min,7/2 min ,6/1, 6/2, 5 min 13/1 min, 13/2 min, 14/1 min,14/2. 15/1, 15/2, 17, 18/1. 18/2 min 19 min, 22 min, 23. 24. 62//6 min, min,16,17 min, 25, 63//1 min, 2,3,9,10 min,11,20,21. 64//1, 65//5	7.46	Gram Panchayat

Boundary Pillar

Donkhera Stone Mine GPS Readings of Boundry Pillars.		
Pillar No.	Latitude	Longitude
A	27^0 50' 17.355"	76^0 02' 43.626"
B	27^0 50' 21.258"	76^0 02' 47.056"
C	27^0 50' 24.6"	76^0 02' 46.7"

D	27° 50' 26.6"	76° 02' 49.1"
E	27° 50' 25.8"	76° 02' 49.1"
F	27° 50' 26.6"	76° 02' 51.5"
G	27° 50' 29.1"	76° 02' 51.6"
H	27° 50' 30.5"	76° 02' 52.9"
I	27° 50' 31.4"	76° 02' 52.2"
J	27° 50' 32.5"	76° 02' 53.4"
K	27° 50' 31.7"	76° 02' 54.2"
L	27° 50' 32.5"	76° 02' 55.6"
M	27° 50' 38.4"	76° 02' 58.4"
N	27° 50' 38.322"	76° 02' 55.143"
O	27° 50' 28.549"	76° 02' 46.407"
P	27° 50' 20.958"	76° 02' 39.682"

These co-ordinates have been indicated on Plate No. 2.

Present Land use pattern in the proposed area

Sl. No.	Type of Land Use	Value (in Ha)
1	Quarry Area	0.0
2	Infrastructure	0.00
3	Road	0.0
4	Plantation	0.00
5	Water body	0.00
6	Habitation	0.00
7	OB dump	0.00
8	Undisturbed land	7.46
	Total	**7.46**

1.5 Period for which mining lease is granted: 10 years w.e.fthe date of grant of Environmental Clearance by competent authority and consent to operate(CTO) by Haryana State Pollution Control Board whichever is later, or on expiry of 12 months from date of issuance of LOI , whichever is earlier (Annexure-1)

1.6. Name, Address and registration number of the person who Prepared this plan.-

The applicant assigned the work of preparation of Mining Plan to

D.C. Yadav ROP & S.N. Sharma QP,

(Consent letter enclosed as Annexure -2 and certificates as annexure-3)
(Registration No D.C.Yadav-ROP/DMG/HRY/2018/03.)
House No. 282 Sector 11-D Faridabad (Haryana)
Phone no. 094162 14247
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(Consent letter enclosed as Annexure -3)

Location and accessibility

The mine is located in the revenue estates of Villages Donkhera inDistt. Mohidergarh. Haryana and is about 10Kms from Nangal Chaudhary ,District Mohidergarh, The lease area lies between the Latitude 27° 50' 17.355" to 27° 50'38.4"and Longitude76°02'39.682" to76°02' 58.4" falling in the survey of India Topo Sheet No. 54 A/1. The lease area is located on the katcha road and then a metalled road upto village Donkhera and is easily approachable from Nangal Chaudhary, Mohidergarh and other important towns.

A general location and vicinity map are attached as Plate no.1

Key plan: key plan on 1: 50,000 scale covering an area in a radius of 5 km showing salient features as per Rule 28(5) (a)of MCDR, 1988 has been prepared on Toposheet no. 54 A/1 (Plate no. 2)the area is marked on the enclosed key map. The deposit lies between Latitude 27° 50' 17.355" to 27° 50'38.4"and Longitude76° 02'39.682" to76° 02' 58.4 (Plate no. 2)

Infrastructure facilities are as detailed below

Nearest railway station	Nizampur (20 km)
Police station	Nangal Chaudhary
Post office	Donkhera
Medical facilities	Nangal Chaudhary and Narnaul.
Electricity	Electrical supply is available in all nearby villages.
Education facilities	Most of the nearby villages have secondary schools and for higher education institutes are available at Nangal Chaudhary, Narnaul, Mohidergarh, Rohtak& other nearby towns
Modeof transportation of mineral	Mineral stone will be transported by tippers/ trucks. Loaded trucks will travel on Kuccha road made for plying of trucks up to the crushers in the nearby area. Village Donkhera is connected with metaled roadwhich is further joins the Nangal Chaudhary and nearby villages.

PART-A

CHAPTER -3

GEOLOGY, LITHOLOGY& RESERVES

3.0 GEOLOGY, LITHOLOGY& RESERVES:

3.1.1 Physiography, Drainage and Climate

The general slope of the land of southern most part of the districted Mohindergarh is from south to north. The Krishnawati River which passes through the district originates from the hillocks of Sikar district of Rajasthan This is a seasonal river which remains dry except during rainy days. Physiographicaly the district consists of flat and level plain interrupted from place to place by clusters of sand dunes, isolated hillocks and rocky ridges. A few isolated rocky ridges elevated sharply from the plain occur in the southern most portion of the district.

The lease area is consists of slightly undulatory agriculture land. The highest point in the lease area is recorded to be 355 mRL and the lowest point recorded is 350 mRL.

The lease area does not have any water body. The area sloping towards west in which water flows during rains for a short duration, otherwise they remain dry for the rest of the months. The rain water from fields drains either into local Johars or in agriculture fields.

3.1.2 Hydrogeology

The geological formation met within the district arephyllites, mica schist and quartzite of Delhi system. Ground water occurs in alluvium and Aeolian sands and under lying jointed and fractured hard rock formations also form the aquifers, in alluvium, sands, silt, and hard bed rock. In shallow aquifers zones, ground water occurs under water table conditions where as in the deeper zones, confined/semi - confined condition exist, hard rock's comprising of Aravalli group of rocks, Malani suite of volcanics and Alwar Quartzite's of Delhi system are water bearing but have yet not been explored thoroughly. The depth of water table varies from 80 m to max.of 130m in hard rocks in the district. The water table is deeper in the south part of the district where as it is shallow in the north of the district.

3.1.3 CLIMATE & Rainfall:

The climate of Mohindergarh district can be classified as tropical steppe, semi -arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. There are four seasons in a year. The hot weather season starts from mid March to last week of the June followed by the south- west monsoon which lasts up to September. The transit ion period from September to October forms the post –monsoon season. The winter season starts late in November and remains up to first week of March. The normal annual rainfall of the district is 499 mm which is unevenly distributed over the area 22 days. The south west monsoon sets in from last week of June and withdraws in end of September, contributed about 85% of annual rainfall. July and August are the wet test months. Rest 15% rainfall is received during non-monsoon period in the wake of western disturbances and thunder storms. Generally rainfall in the district increases from southwest to northeast.

Normal Annual Rainfall: 499 mm

Temperature

Mean Maximum: 41oC (May & June)

Normal Rain days: 22

3.2 REGIONAL GEOLOGY OF THE AREA

Regionally the area belongs to the Alwar Series of Delhi Super Group. The regional stratigraphic sequence in and around Mohidergarh District is as follows:

	Ajabgarh series	Biotite-schist, phyllites, quartzite and impure biolitic limestones and calciphyres.
Delhi System	*Alwar series*	Quartzites, arkoses, conglomerates and mica-schist with bedded lavas.
	Rialo series	Rialo limestone and Rialo marble, quartzite

3.3 LOCAL GEOLOGY: Detailed surface geological mapping was carried out in order to evolve an overall picture in respect of reserves and grade of Building stone. Mapping on 1:1000 scales was done for the entire proposed area comprising of 7.32 hectares. Geological cross sections on 1:1000 scales were also drawn to ascertain the nature of the deposit. (Plate no.3) and sections (Plate no.4) are prepared on 1:1000 scales.

DESCRIPTION OF FORMATION

The different formations of the area belong to Alwar Series of Delhi Super Group.

The following sequences have been observed in the area.

- Alluvium
- Quartzite (Stone ,)

The description of different formation found in the area is as under

Soil: The surface of the proposed area is almost barren and there is a thin soil on the upper levels of the lease area. There is a thin soil cover of about 0.30 to 0.50m thick in the proposed area . Soil is mixed, fine grained, grey to light brown in color and is not very fertile/ good for agriculture.

QUARTZITE (BUILDING STONE)

This type of formation covers the major part of the area.

It is reddish, bluish and gray in color, semi friable to hard and fine grained in nature. Quartzite occurs mostly as building stone extending over the entire length and width of the lease area.

The Quartzite is overlain by a thin soil cover ranging from 30 cm to 50 cm. There are no pits existing in the area. It is totally virgin area, but the nearby in the eastern face/edge adjacent to this area is actively worked for stone/ dolomite up to about 30m depth from surface.

STRUCTURE

The general strike of quartzite is N 25° 30° E to S 25°-30° W with dips of 85° to 89° due west as shown in the nearby mines of Donkhera.

ORIGIN AND CONTROL OF MINERALISATION

Quartzite is a metamorphosed product of sand stone, which have undergone low degree metamorphism.

3.3 DETAILS OF EXPLORATION

(A) ALREADY CARRIED OUT IN THE AREA

The allotted area is an agriculture land in the vicinity of existing stone mine of nearby lessee Xandy Mines and Minerals which is about 50m deep from ground level. Mineral is very well exposed in the entire area. The mineral is exposed in the entire eastern edge of the proposed are and the nearby working clearly reveal the occurrence of mineral in the whole area so, there is no need of further prospecting in this area before start of mining.

(B) PROPOSED TO BE CARRIED OUT

The mineral is exposed up to the lowermost level of 300mRL in the east side of nearby mine& the top most part of the proposed area is at about 355mRL. However to augment the production and confirm the continuity of the further depth it is proposed to do at least 6 exploratory bore wells to ascertain the further depth continuity. These exploratory bores are proposed to be drilled up to 100m from ground level. Therefore bores are proposed up to 250mRL.

3.4 METHOD OF RESERVE ESTIMATION

Methods of estimation of reserves of quartzite:

1) The total mineral resources and reserves have been calculated by cross-sectional area method. In this method the cross-sectional area of section line is multiplied by the influence of the section line to arrive at volume.
2) The reserves are calculated on the basis of established width, thickness and strike length/influence of the mineralized formation in the area where good pits are available such area in put under proved category.
3) In the allotted area, the mineral is exposed at the lowermost level of 315mRLon the lease boundry.. So, the occurrence of mineral is considered for total thickness of mineral exposed under proved category of reserve up to and above 300 mRL.Mineral is exposed for about 50m . Therefore further25m (between 300 mRL to 275mRL is considered as probable reserves and further between 275 to 250 mRLdepth is considered as possible category.

4) The bulk density of Stone ,(quartzite) is considered 2.5 which is further multiplied by volume to arrive at the tonnage

1. The Section wise reserves for road metal and masonry stone(quartzite) are summarized here below: -

Section Line	Cross sectional area M^2	Influence length in mtrs	Bulk density	Proved reserves In MT	Probable reserves In MT	Possible reserves In MT
A-A'	5725	134	2.5	1917875		
	2806	134	2.5		940010	
	2806	134	2.5			940010
B-B'	4543	100	2.5	1135750		
	2143	100	2.5		535750	
	2143	100	2.5			535750
C-C'	742	100	2.5	1857250		
	3572	100	2.5		893000	
	3572	100	2.5			893000
D-D'	5308	100	2.5	1329000		
	2607	100	2.5		650500	
	2602	100	2.5			650500
E-E'	9764	152	2.5	3710320		
	4694	152	2.5		1783720	
	4694	152	2.5			1783720
Total Reserves of all category				9948195	4802980	4802980
Total Geological reserves				19,55,4155 MT or 19.55 Million MT		
Reserves blocked in 7.5m lease boundary				6 75,250 MT	TotalBlocked	
Reserves blocked in last benches				3735580 MT	Reserves=39,10,830 MT	
Mineable reserves				15,64,3325	or 15.64 Million MT	

The mineral reserves are computed as per UNFC.

Resources	Geological MT	7.5m barrier MT	Other barrier MT	Infrastructure barrier MT	Mineable MT
111	99,48,195	368280	17,64,684	Nil	78,15,231
121	48,02,980	153485	7,35,448	Nil	39,14,047
122	48,02,980	153485	7,35,448	Nil	39,14,047
211	21,32,964	Nil	Nil	Nil	Nil
221	8,88,933	Nil	Nil	Nil	Nil
222	8,88,935	Nil	Nil	Nil	Nil
331	Nil	Nil	Nil	Nil	Nil
332	Nil	Nil	Nil	Nil	Nil
333	Nil	Nil	Nil	Nil	Nil
334	Nil	Nil	Nil	Nil	Nil

A.

B. **Details of UNFC classification**

UNFC is a three digit code based system, the economic viability axis representing the first digit, the feasibility axis the second digit and the geological axis the third digit. Each digit provided.

Codes 1, 2 and 3 in decreasing order. The highest category of resources under UNFC system has code (111) and for lowest category the code is (334).

Code (111): This code is provided for the economically mineable part of the measured mineral resources (proved category reserves).

Code (121): This code is provided for the economically mineable part of the indicated mineral resources (probable category reserves).

Code (211): The part of the measured mineral resources (proved category), which as per feasibility study has not found economically mineable. The reserves blocked in 7.5 meters buffer zone and 45 meters from permanent structure.

Code (222): The part of the indicated mineral resources (probable category), which as per feasibility study has not found economically mineable. The reserves blocked in 7.5 meters buffer zone and 45 meters from permanent structure.

Code (333): Tonnage, Grade and mineral contents can be estimated with low level of confidence and resources are also inferred from geological.

Life of mine

The area for Stone and associated minorminerals has been consented for a period of 10 years from the date of registration. Accordingly, the annual production targets have been planned, the average proposed production (ROM) will be about 15.00 lakh MT/year and life of the mine will be 10 years..

CHPATER 4

MINING

4.1 Site Appreciation

Our experts (Geologist, Mining Engineer) visited the mine site and found that the allotted area comprised building stone deposit which was never mined in the past. No excavated old pits exist in the allotted area revealing that the area has not been worked for building stone in the past. Now it is proposed to undertake systematic and scientific mining for excavation of road metal and masonry stone/building stone during the lease period.

4.2 Pre-production Activities:

As a pre-production activity, a thin cover of soil about 30 cm to 50 cm will be scrapped in advance and shall be stacked separately to be used for plantation purpose . As mining operations advance to lower levels, larger face lengths and width shall be available. Face management, which is a continuous process, shall be taken into account to secure shortest (average) lead distance up to crushers / dump yard as also to prevent clustering of dumpers. Following activities shall be undertaken during quarry development phase:

- Mineral is overlain by a thin soil cover of about 0.30 to 0.50m thick layer. Which will be scraped and stacked properly.It will be removed ahead of mining and will be used for plantation purpose in the first year itself.
- To make the access road to the mine working area.
- Provision and construction of access roads from ground level to mines office complex, workshop, entrance to mine faces
- Construction of mine office, first aid station, crèche, canteen, workshop and other ancillary infrastructural facilities shall also be undertaken during fir

4.3 MINING OPERATIONS:

The mining operations will comprise of following activities for excavation of mineral.

a) Drilling of "Down-the-Hole" holes as per specified pattern.

b) Blasting of holes

I) Primary Blasting

II) Secondary Blasting

c) Loading of blasted material by deploying hydraulic excavators

d) Transportation of material to Crusher (Transportation of the material is arranged by users/crusher owners at their own. Lease holders in the area produce the mineral and same is loaded in the trucks supplied by crusher owners. Although it is the responsibility of the lease holder to follow the traffic rules/ safety guide lines given by DGMS in operation of dumpers/trucks

Thus, these mining operations shall be carried out by fully mechanized opencast method utilizing Heavy Earth Moving Equipment (HEMM) in conjunction with deep hole drilling by crawler mounted DTH drills and blasting. To start with benches shall be kept narrow and then gradually widened. To the extent possible, benches shall be kept along dip and advanced along the strike to give a fairly well blended material in each bench. The direction may be varied in due course based on experience gained, to give wider benches, longer faces and proper alignment along haul roads / ramps.

As the mineral is very well exposed on the east face of the proposed mine, workings will start from this side and will advance from east to west direction. It is further informed by lessee that the proposed mining contract for stone in Donkhera village which happens to be in immediate vicinity of the existing dolomite and stone mine. The management of these both mines has decided to work the common 7.5m buffer one on each side of leases. Therefore In view of the common consent of both the mines, they are planning to obtain the permission to mine the common lease boundary of 7.5m +7.5m=15.0m of both the leases from the Directorate of mines safety/competent Authority. The same is very necessary and safer to amalgamate the common boundary of the both the leases. To make the mine safe from the safety point of view, it is necessary to work the common lease boundary systematicallywith due permission from Competent Authority. A copy of consent for working of common buffer zone(7.5m+7.5m)) to keep the mines safe as well as optimum utilization of available resources is in the interest of both the lessees.(Consent enclosed as annexure.-4)

In view of the above it is proposed to start the mine from the edge of the dolomite mine and the benches/working will move from east to west side by making benches

of 10m height. By doing this the existing mine face of the Xandy mie will also become safer.

It is proposed to adopt mechanized opencast mining method for exploitation of the mineral. Drilling and blasting shall be required to dislodge the mineral. The mining method involves breaking the rocks with explosives, loading the material with excavators and haulage with dumpers.

Present breakup of land use in the lease area

Sr.no	Details	Area in hectares
1	Pits (Broken Area)	0.0
2	Dump	0.0
3	Road	0.0
4	Plantation	0.0
5	Infrastructure	0.0
6	Undisturbed land	7.46
	Total	7.46

4.1 Pit Design Parameters:-

In view of the geological setting of the deposit it is proposed to work the mine by mechanized open cast method using shovel and dumper combination. The rate of production is proposed 15,00,000 MT/year (5000 T per day) by the following mentioned parameters so that not only the production is achieved but mine also takes a proper / regular shape and size .

Sr.no	Particulars	Dimensions with unit
1	Final Bench Height and width	10mx10m (with intermediate safety berm of 8 m)
2	Working Bench Width	15-20m
3	Overall Ultimate pit slope	49^{0}
4	Bench Alignment and bench slope	Parallel to each other; 80^{0}
5	Face length	All along the strike length
6	Depth of pit at the end of 5th year (Below General Ground)	64 m
7	Blast hole diameter	100-110mm
8	Inclination of blast hole	Vertical
9	Width of Haul Road	12m

10	Gradient of haul Road	1 In 16

i) Ultimate Pit slope

ii) Bench Height and width

iii) Face length

iv) Bench Alignment

v) Direction of face advance

vi) Depth of pit.

4.1.i Ultimate pit slope: -

Quartzite rock is hard and compact. Once the pit reaches the ultimate limit which is proposed 220mRL, it is necessary that it does not start collapsing due to weathering and other effects. This can be achieved by planning ultimate pit slope at a maximum of 49 degree to avoid collapse of the pit sides. There is no overburden except a thin sol cover. Entire mineral produced will be useful.

4.1.ii Bench height and width

Since the host rock quartzite is hard and compact, the same parameters are considered for making benches. In view of mechanized method of mining to be adopted, the bench height is proposed 10.0mtrs. Operating bench width will be 15-20 mtrs which will finally reduce to 6.5 mtrs while working bench below with intermediate safety berm of 8 m. Formation of benches in this manner will result in an overall safe slope of 49^{0} or less in the ultimate pit position.

4.1.iii Face length :-

The following parameters have been followed to arrive at the face length to facilitate the required production of 15,00,000 MT mineral

Since one pit is planned to develop in the area to obtain targeted production, the optimum face length available along the strike length is sufficient to cater to the optimum production required. The face length will attain the maximum length at the end of 1 st year.

4.1. iv Bench alignment: -

The benches are gradually aligned to give a regular shape. In general the benches will advance in three directions west, north and south parallel to each other. Since geological formation in the area is of simple nature, there will not be difficulty in maintaining the proposed bench alignment.

4.1.V Depth of pit:

The reserves up to 220mRL are proposed to be worked. The surface level reserves will be depleted during the lease period. The workings will start at 350 MRL and will reach up to 260 mRL at the end of 5th year as detailed in the year wise plans Plate no.5-9 and Sections plate no.10.

4.3 Development during the First five years:

As the area has not been worked in the past.It will be worked systematically; certain pre-production development work is required. No mineral and waste dump yard is proposed as the entire mineral produced is salable.

Working area occupied at the end of 5th year will be : 6.66 Hectares

Approach road from mine to mineral stack yard, soil stack yard and dump yard and site services shall also be made.

4.4 Year wise Production &Development for the first five years

It is proposed to work the mine from top down ward for which a mine road is proposed between 220 MRL to 285 mRL. The position of benches at the end of each year and the quantum of mieral produced is proposed as under:

Year	Bench level At the end of each year	Total Production during year in lakh Tones
1t	350 mRl to 300 mRL	15,00,000
2nd	350 to 290 mRL	15 ,00,000
3rd	350 to 280 mRL	15 ,00,000
4th	350 to 270mRL	15 ,00,000
5th	350 to 260 mRL	15 ,00,000

During the plan period the benches will be advanced in north,west and south directions as shown in plat No. 5-9 and sections plate no.10 to achieve the targeted production.

4.4.2 Proposed rate of production when the mine fully developed

The proposed rate of production of 15, 00,000 MT/year shall be achieved by the end of 1st year. The rate of production shall be maintained up to the end of life of mine.

4.4.3 Mine able Reserves and Anticipated Life of the mines

As discussed In the chapter of geology, the insitu geological reserves are calculated 19,55,4155 MT .As per the proposed method of mining and occurrence of mineral 80 % geological reserves 15,64,3324 MT are mineable. The life of the mine is therefore assessed as 10 years at the proposed rate of 15,00,000 tons of mineral / year.As the mining will proceed further depth wise the working will be kept 3 m above the water table. If the water table is found to be more than 80 m below ground working can go more deeper. And life will be increased accordingly.

4.4.4 Proposed Method of Mining

The present mining operations are designed to be carried out by mechanized open cast mining method. The entire mining operations proposed are mechanized. Apart

of mining, the loading and transportation up to stack yard shall be done mechanically. It is proposed to load in the trucks/dumpers directly to the destinations and mineral is not usually put up in this stack yard to avoid the double handling. In the present operation the bench height and width shall be 10m x 10 m. Each bench will advance one by one. While carrying out the mining operations in accordance with the above provision the overall pit slope shall be maintained the 49° the mineral bearing rocks being hard and compact.

4.5 Conceptual Mine Plan Parameter

The detailed mining plan has been prepared with a project life of 10 years. The mining is conceived as one long open mine pit. The opencast mechanized mining method has been considered feasible for exploitation of the deposit.

The aspects of geotechnical behavior of quarry rocks have also been taken into consideration to ascertain the suitable mine pit slopes. The major rock of the quarry is quartzite with clay intercalations and could be classified in the category of harder rock strata. The conceptualized mine pits are based on appropriate overall slope angle broadly confirming to prevailing norms of mine safety department for harder rock strata. The broad configurations of mine pit slope are shown in the enclosed drawing (Plate2) and the broad details are as follows –

- Overall Slope - 49 degree
- Bench Height – 10 meters
- Bench Width – Operating width 15-20 mtrs which will finally reduce to 10 meters at the end of working with intermediate safety berm of 8 mtrs width.
- Individual Bench Slope - 80 degree
- Burden of Holes - 4 meters
- Spacing of Holes - 5 meters

The breakup of present land use and at the end of 5th year

Breakup of land use in the lease area (In Hectares)

Sr.no	Details	Existing land use (ha)	At the end of 5th year (ha)
1	Pits (Broken Area)	0.0	6.66
2	Dump	0.0	0.0
4	Infrastructure	0.12	0.20
5	Plantation	0.0	0.60
6	Back filled	0.0	0.0
7	Water body	0.0	0.0
	Undisturbed land	7.34	0.0
	Total	7.46	7.46

4.5.0 Extent of Mechanization:

Description for the calculation of adequacy and type of machinery and equipment proposed to be used in different mining operations are enumerated below:-

Targeted Production- 15,00,000 MT per Annum

Working days per annum = 300

Production per day = 5000 MT

4.5.1 Drilling

a) Tonnage of mineral excavated per hole = 10 m x 4m x 5m x 2.5= 500 T

b) No. of holes required per day= 5000 MT/500 T = 10.0

c) Total meterage of drilling/day - 10 holes x 10 m = 100 m

d) Capacity of each drill machine= 10 m per hour or 80 m per shift or 160 m per day

e) Hence no of drill machines= Drilling required per day/capacity of drilling per day = 100/160 = 0.626 or say 1Nos of drill machine

Thus, it is proposed to use one drill machine of 100 - 110mm dia. As per the production target of about 5000 MT (2000 M^3per day) it is estimated that about 10 holes of 10 m depth per day (100 m per day) will be required to maintain the proposed production targets. Therefore at least 1 drill machines of higher drilling rate (10 m/hour) with availability of 75% of time as well and 80 % utilization hours will be required.

The details of machinery and performance will be as under

Sr.no	Details	
1	A machine can drill total of meters in a shift	100-110m
2	Total drill meters required per day	100 m
3	Total no of machines required per day	0.62
4	20% consideration for maintenance and spare capacity	0.12
5	Total no of machines required (4.80 say 5)	1

4.5.2 Loading Equipment, Haulage and Other Mining Machinery

Hydraulic Excavator:

The productivity of excavator is decided based on the following consideration i.e. Two shifts per day working and 300 days in a year

	Excavator Category	Capacity
A	Diesel Hydraulic shovel	3.2 m^3
B	Fill Factor	90 %
C	Tonnage Factor	2.50
D	Availability of excavator	80 %
E	Utilization of excavator	80%

For arriving at the rate of production per hour in case of the mine under reference, the following formula is applicable:

Q= C x F x T x BD x Bf/Tc

Where Q= Per hour handling of excavator in T

C= Bucket Capacity in cubic metres = 3.2 cum

F = 0.90

T = Time in seconds = 3600

Bf = Operating efficiency = 0.90

BD = Blasted Mass = 1.4

Tc = Time cycle per pass at 90 degree swing = 45 seconds

Thus Q = 3.2 x 0.9 x 3600 x 1.4 x 0.90/45 290 T per Hour

Per Excavator Per Day Output = Hourly capacity of excavator x effective hour per day = 290 x 12 = 3480 T

Therefore No of Excavators required = Total Handling per day/Handling by excavator per day = 5000 / 3480 = 1.43or say 2 Nos + 1 excavators will be ready standby. Therefore total 3 nos of excavators are required for this project.

Hauling Equipment:

For calculation of number of dumpers, it is the lead from the mine to the destination which will determine the no of dumpers. Based on calculations, it is established that total 36 Nos of 35 MT capacity dumpers would be sufficient to execute the rated production at an average lead of 15 Km (one way with average speed of dumper 20 Kmph). As the nearby crusher are about 10 to 15 km away from the mine. Each dumper can make at least 4 trips. However all the dumpers/ transportation arrangement is being done by crusher owners in the area. This is a very sound practice including the standby equipment; total requirement of dumper works out to be 42 Nos. of 35 MT capacities.

Hydraulic Rock Breaker:

To minimize the secondary blasting and to contain the accidents due to fly rocks, it is proposed to deploy Hydraulic rock breakers for breaking of big boulders generated consequently upon primary blasting, at working face site.

Thus, the total population of the equipment and other ancillaries as per above assumptions and calculations, are summarized in below table:-

S.No.	Equipment	Size	Nos
1	Hydraulic Excavator for loading of mineral	3.2cu.m	2
2	Rock breaker (Hydraulic Excavator) as substitute to secondary blasting	1.6 cum	1
3	Rear dumpers for transportation of mineral from mine to destination	35 T	36
4	Drill Machine with compressor of 365 cfm capacity.	100-110mm	1
5	Track chain Dozer	350 HP	1
6	Pay loader (General Purpose, loading etc.)	145 HP	1
7	Water sprinkler	10 KL	1
8	Mobile Maintenance van		1
			44

Requirement of Diesel for operations of Heavy Earth Moving Machines and ancillary equipment :

Quantity of Diesel / Energy fuel Consumption per day: -

S. No.	Machine	Details of Diesel requirements	Consumption of Diesel (in ltr.)
1.	Dumper (provided by third party)	(Considering diesel consumption by the dumper is 3 km / ltr.)ie 50ltr for 150 km Total Diesel consumption / 36 Dumper = 36 x 50 1800ltr.	1800
2.	Excavator and rock breaker	Hourly Consumption. – 15ltr / Shovel/ excavator	720

		16hour diesel consumption – 15x 16x 3= 480 ltr.	
3.	Dozer&Payloader	Diesel consumption 12ltr / hr 10 hrs diesel consumption = 12 x10 = 120ltr x2= 240	240
4.	Wagon Drill/ Air Compressor	No. of Compressor 1 compressors Diesel consumption by 1 compressors in 10 hour working = 1 x15 x 10 = 150 ltr.	150.
6.	Explosive Van		40
7.	Maintenance Van		60
8.	Water Tanker		30
9.	Light Vehicles		30
		Total Diesel requirements	3070

CHAPTER 5

BLASTING

5.1 Drilling and blasting Parameters:-

5.1 Blasting Parameters:-

Following parameters were considered for proper and adequate blast design.

- Drilling
- Selection of Hole Diameter
- Required Production
- Terrain
- Material Characteristics
- Type and Size of Excavating and Hauling Equipment
- Bench Height
- Explosives Type and Size
- Burden and Spacing
- Stemming
- Timing/Delays
- Scaled Distance (Peak Particle Velocity)
- Weather and Atmospheric Conditions
- Time of Day

For mining of building stone drilling and blasting is required. The job of drilling and blasting is of continues nature

Considering the time frame of mining and total requirement of material, the daily mineral production works out to be 5000 MT (2000 cum) The above target will be utilized to frame the pattern and size of blast. The blasting parameters are described as below.

Item	Values
Bench height (m)	10
Hole depth (m) (including sub-grade drilling)	9.5
Burden (m)	4.0
Spacing (m)	5.0
Volume (m^3)	4x5x10 = 200
Tonnage yield (t)	200x2.5=500 t
Powder Factor (assumed)	8t/kg of explosive

Charge per hole (kg)	500 T/8 = 62.50 Kg
Total quantity of rock to be Broken per day (ton)	15,00,000 t/ 300 days = 5000 TPD
Explosive required for blasting per day	5000/8 =625 kg
Blasting Frequency (Every day)	1
Explosive required per blast per day	625 kg
No. of holes per day	5000 t (Production/day)/500 t (Tonnage per hole)=10.0 Holes
No of holes per blast	10

5.2 Type of Explosives

Emulsion Primer charge (20% of charge per hole)

ANFO column charge 80 % of charge per hole

5.2.1 Initiation System and minimum charge per delay

Delay milliseconds delay detonators

Drilling pattern staggered

Firing pattern V pattern

5.3 Secondary Blasting

Large sized fragments should be reduced to acceptable size by drilling shallow holes (0.75-1.2m). The pattern will be as follows

Depth of hole 0.75 -1.2m

Diameter of holes 38 mm

Diameter of explosive 25 mm

Quantity of explosive 120 gms

Firing pattern Instantaneous

Secondary blasting is proposed but it will be minimized by deploying hydraulic rock breaker for breaking large size stone/boulders.

5.4 Storage of explosive

Both primary / mass blast and secondary blasting will be carried out in the mines.Keeping in view the availability of explosive from authorized source/ supplier

for use Tie up will be done with a explosive supplier who maintains an explosive magazine with License to Purchase, Sell and Use. This agency can bring explosives (sell) as per requirement and use in the project premises. This system will avoid construction of explosive magazine in mine premises

Relevant Provisions under MMR-1961 regarding blasting

Regulation160. Blasters –

1. The preparation of charges and the charging and stemming of holesshall be carried out by or under the personal supervision of a competent person, in these regulations referred to as a 'blaster'. The blaster shall fire the shots himself.
2. No person shall be appointed to be a blaster unless he is the holder of Manager's, Foreman's Mate's or Blaster's certificate.
3. The manger shall fix, from time to time, the maximum number of shots that a blaster may fire in any one shift; and such number shall not unless the Regional Inspector by an order in writing and subject to such conditions as he may specify therein otherwise permits, exceed 80 in case they are fired electrically or by means of an igniter cord and 50 in other cases, and shall be based upon –
    - the time normally require to prepare and fire a shot in accordance with the provisions of these regulations;
    - the time required for that blaster to move between places where shots are fired;
    - the assistance, if any, available to him in the performance of his said duties; and
    - any other duties assigned to him, whether statutory or otherwise:

    Provided that the Director General of Mine Safety may, by an order in writing and subject to such conditions as he may specify, permit the manager to fix the maximum number of shots to be fired by a blaster differently fromthe limits specified in this sub-regulation.
4. The number of detonators issued to, and in the possession of, a blaster during his shift shall not exceed the maximum number of shots that he is permitted to fire under sub -regulation (5).

Regulation: 161Shotfiring tools –

1 a) every blaster on duty shall be provided with –

b a tool, made entirely of wood, suitable for charging and stemming shot holes;
c a scraper made of brass or wood suitable for cleaning out shot holes;
d where fuses are used, a knife for cutting off fuses an, unless machine capped fuses are provided, also a pair of suitable crimpers for crimping detonators; and
e where detonators are used, a picker made of wood or a non-ferrous metal for priming cartridges.

2 No tool or appliance other than that provided as above shall be used by a blaster.

Regulation 162. Drilling, charging, stemming and firing of shot holes –

1 No drill shall be used for boring a shot hole unless it allows a clearance of at least 0.3 centimeter over the diameter of the cartridge of explosive which it is intended to use.
2 No shot hole shall be charged before it is thoroughly cleaned.
3 Before any shot hole is charged, the direction of the hole shall, where practicable, be distinctly marked on the roof or other convenient place.
4 No detonator shall be inserted into a priming cartridge until immediately before it is to be use. Detonators once inserted into a priming cartridge shall not be taken out.
5 Unless otherwise permitted by the Chief Inspector by an order in writing and subject to such conditions as he may specify therein, the charge in any shot hole shall consist of one or more complete cartridges of the same diameter and the same type of explosive.

6 The blaster shall, to the best of his judgment, ensure that no charge in a shot hole is over-charged of under-charged, having regard to the task to be performed.

7 No shot hole shall be fired by a fuse less than 1.2 meters in length.

8 Every shot hole shall be stemmed with sufficient an suitable non- inflammable stemming so as to prevent the shot from blowing out. Only sand loosely filled in, or soft clay lightly pressed home, or a compact but not hard mixture of sand and clay or water shall be used as stemming.

9 In charging or stemming a shot hole, no metallic tool, scraper or rod shall be used; an no explosive shall be forcibly pressed into a hole of insufficient size.

10 No shot shall be fired except in a properly drilled, charged and stemmed shot hole.

12 All surplus explosives shall be removed from the vicinity of a shot hole before a light is brought near it for the purpose of lighting the fuse.
13 As far as practicable, a shot shall be fired by the same blaster who charged it.

14 In any mine in which explosives other than gunpowder are used, every shot shall, if so required by the Regional Inspector, be fired electrically.

15 No more than 10 holes shall be fired in one round unless they are fired electrically or by means of an igniter cord.

16 No shot hole shall be charged except those which are to be fired in that round; and all shot holes which have be charged shall be fired in one round.

17 Where a large number of shots has to be fired, a shot firing shall, as far as practicable, be carried out between shifts.

18 No person shall remove any stemming otherwise than by means of water or an approved device, or pull out nay detonator lead or remove any explosive from any charged shot hole.

Regulation 163 Electric Shot firing.– Where shots are fired electrically, the following provisions shall have effect, namely :-

1

A No shot shall be fired except by means of a suitable shot firing apparatus; and the number of shots fired at any one time by the apparatus shall not exceed the number for which it is designed.

B Every electrical shot firing apparatus shall be so constructed and used that –

i it can only be operated by a removable handle or plug. This handle or plug shall not be placed in position until a shot is about to be fired and shall be removed as soon as a shot has-been fired; and

ii the firing circuit is mace an broken either automatically or by means of a push-button switch.

C

(i) No apparatus shall be used which is defective; an every apparatus shall m once at least in every three months, be cleaned an thoroughly overhauled by a competent person.

2 No current from a signaling, lighting or power circuit shall be used for firing shots.

3 The blaster shall –

(a) retain the key of the firing apparatus in his possession throughout his shift;

(b) use a well- insulated cable of sufficient length to permit him to take proper shelter, and in no case, shall this cable be less than 20 meters in length;

(c) Before coupling the cable to the firing apparatus, couple ups the cable himself to the detonator leads;

(d) Take care to prevent the cable from coming into contact with any power or lighting cable or other e ectrical apparatus;

(e) Take adequate precautions to protect electrical conductors and apparatus from injury;

(f) Himself couple the cable to the firing apparatus; an before doing so, see that all persons in the vicinity have taken proper shelter as provided under regulation 264; and

(g) After firing the shots and before entering the place of firing, disconnect the Cable from the firing apparatus.

4 Where more than one shot are to be fired at the same time:-

(a) Care shall be taken that all connections are properly made;

(b) all shots if fired belowground shall be connected in series;

(c) the circuit shall be tested either for electrical resistance or for continuity before connecting it to the firing apparatus. Such a test shall be made with an apparatus specifically designed for the purpose and after the provisions of regulation 164 have been complied with; and

(d) the cable to the shot firing apparatus shall be connected last.

CHAPTER 6

MINE DRAINAGE

6.1 GENERAL:

Open cast mining projects requires effective arrangements for drainage and provision of adequate dewatering capacity in the pits under mining. In the area under mining water can reach the workings from surface drainage, rainwater and due to seepage through joints and fissures. Therefore, the problem can be solved by preventing drainage water from entering the pits on one hand and pumping out the percolated and direct rain water from the pits on the other hand. The general water table around the lease area is at 80 to 100 meters below ground.However the water table is reported more than 100mtrs in rocky terrain of southern Part of Nan gal Chaudhary Tehsil..

6.2 Drainage Around and Within Mine:

The areal is mainly sloping both west and north direction. Mining shall be mainly below the general ground level with only one slicing of each benches one by one. Such situation may warrant any water accumulation at the lower parts of the pit. However, as the mine progresses and mining continue below the general ground level as envisaged during lease period, the mining area will become a depression, which may warrant accumulation of water during rainy season. A scheme is proposed to prevent the accumulation of such water.

1) Garland drainage as shown in the mine plan (Plate no 5-9) shall be made all round the pit to prevent the entry of surface/ rain water inside the pits.

2) All the benches will be provided with mild inward slope to keep the benches in drained condition. Provision of sumps is provided as shown in Plate No 5-9. The lowest bench shall be slightly sloped towards the sump so that the entire drain water goes to the sump.

3) The working faces will be advanced with a mild upward gradient to facilitate the drainage. The water shall be gradually drained from the upper most bench to the lowest bench and then ultimately to the sump.

4) Similarly in the ultimate pit position, large sump will be provided at the pit bottom to accumulate drained water as well as direct rain water.

5) Following measures shall be taken to prevent fall of side as per mine statute.

Provisions under MMR 1961 regarding Mine Workings (Slope angle, fall of sides, overhangs etc)

Regulation 106. Opencast workings --

In opencast workings, the following precautions shall be observed, namely: -

1 In alluvial soil, morrum gravel, clay, debris or other similar ground

(a)

(i) the sides shall be sloped at an angle of safety not exceeding 45 degrees from the horizontal or such other angle as the Regional Inspector may permit by an order in writing and subject to such conditions as he may specify therein; or

(ii) the sides shall be kept benched and the height of any bench shall not exceed 1.5 meter and the breadth thereof shall not be less than the height:
Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify therein, exempt from the operation of this clause any working in the case of which special difficulties exist, which in his opinion make compliance with the provisions thereof not reasonably practicable; and

(2)

(a) Where 'float' or other similar deposit is worked by manual means on a sloping face, the face shall be benched and the sides shall be sloped at an angle of not more than 60 degrees from the horizontal. The height of any bench shall not exceed six meters and the breadth thereof shall not be less than the height Provided that where the ore-body consists of comparatively hard and compact rock, the Regional Inspector may, by an order in writing an subject to such conditions as he may specify therein, permit theheight of the bench to be increased up to 7.5 metres while its width is not less than six metres:Provided further that in case of a mine or part where special difficulties exist, the Chief Inspectormay, by an order in writing an subject to such conditions as he may specify therein, relax the provisions of this sub-regulation.

(b) Where in any mine or part it is proposed to work by a system of deep hole blasting and/or with the help of heavy machinery for its digging, excavation and removal in such manner as would not permit o fcompliance with the requirement of sub-regulation (1) the owner, agent or manager shall, not less than 60 days before starting such work, give notice in writing of the method of working to the Chief Inspector and the Regional Inspector; and no such work shall be commenced or carried out except in accordance with such conditions as the Chief Inspector may specify by an order in writing. Every such notice shall be induplicate. and shall give the details of the method of

working including the precautions that are proposed to be taken against the anger from falls of sides and material.

3 In an excavation in any hard and compact ground or in prospecting trenches or pits, the sides shall be adequately benched, slopped or secured so as to prevent danger from fall of sides.

4 No tree, loose stone or debris shall unless otherwise permitted in writing by the Chief Inspector be allowed to remain within a distance of three metres from the edge or side of the excavation.

5 No person shall undercut any face or side or cause or permit such undercutting as to cause any overhanging.

6.3 DEWATERING:

Since the working are proposed below general ground levels at the start of the mining below the valley level and water table in the area is 80m to 100 below the general ground surface, there will be no chance of encountering the ground water table during the mining operations. Hence normal pumping operations will be required during the monsoon season only. The water accumulates within the pits will be due to direct rainfall over the pit and seepage from adjoining areas, if any.

Further if the conditions so warrants and ground water intersection is needed the proponent would seek permission under Haryana Water Resource Authority Gazette Notification No.191-2020/Ext dated 23rd Dec . 2020. The Mining projects are location specific, there is no ban on grant of NOC for abstraction of ground water and hence all mining projects are required to obtain NOC for water abstraction, and it is mandatory for all mining projects/industries to ensure that water available from dewatering activity/ operations is properly treated and should be gainfully utilized for supply of irrigation, dust suppression, mining process, recharge in downstream.

6.4. The average rainfall of the district during all these years is 420 mm only.

6.4.1 An examination of the above reveals that the rainy season extends from June to September. Although in the above period under consideration there has been rainfall in other months also, but it can be considered as stray occurrence and will not after all proposed pumping scheme.

6.4.2 The water to be pumped out from the open pits will be contributed both by direct precipitation over the open pits and seepage. The water due to direct precipitation will depend upon the rainfall and the area of the pit.

6.4.3 Based on the rainfall records, the sumps of the sizes as shown plate No. 5-9 shall be provided at the bottom most benches. During the monsoon period a continuous process of dewatering the sumps shall be there to facilitate the mining at the lower benches.

6.4.5 Based on the Rainfall data it is proposed to have a diesel engine operated water pump of 30 H.P which may dewater 100 m^3/hour from the pit. The water will be sent to the natural drain .This water will finally go into the natural nallah.

CHAPTER 7
STACKING OF MINEAL REJECTS AND DISPOSAL OF WASTE

7.1 Disposal of Waste

Soil: There is a thin soil cover 30 – 50 cms . Soil and powder of quartzite will be stacked and spread on the 7.5m buffer zone and will be used for plantation purpose

Rejects: - Entire mineral produced is usable/salable.

7.2 Maximum Height and Slope of Dumps

In the present case soil generated will be used for plantation purpose only the same shall be sorted out and spread over the lease boundry of 7.5m. A minor quantity of soil will be generated during the first year only shall be used for plantation.

7.3 Dump Yard for mineral

Entire mineral produced will be supplied to crushers. But at times there could be slump in the market Around 10-15% of material shall be temporarily stored in the mine itself to avoid double handling. Rest of the material will be supplied to near bye crushers those are in the nearby area.

As no dump/ waste will remain without sale. No provision of dump yard is proposed.

CHAPTER 8

USE OF MINERAL

Road metal and masonry stone

The entire mineral produced will be used in the building industry as road metal, crushed metal and dust etc after crushing by the crushers. The mineral will be sold to buyers in raw form in and around Haryana, Delhi and other states of north India.

CHAPTER 9

MINERAL BENEFICIATION& PROCESSING

In view of the availability of direct market for building stone R.O.M., presently there is no proposal of beneficiation. R.O.M. Mineral will be sold to various crushers located in the area. Part of the building stone product will be sold in the form of lumps to the crusher owners.

CHAPTER 10

SURFACE TRANSPORT

The transportation of mineral from pit head / stock yard to the consumer end crushers / traders will be carried out by the trucks deployed by the customer/purchaser and will be generally of 35 MT Capacity. There is all weather metalled road and then a kaicha road right up to mines to dispatch the material from mines to the market. Material is proposed to be sold to the customers/ at mine site and transported by them through their own arrangement of trucks. The practice is quite sound in the area and ensure continuous lifting of the material. Customers/purchasers come with transport arrangement of their own. However necessary arrangement of trucks can be done from the nearby truck operators union available at Nangal Chaudhary. The nearby mining lessee namely M/s Xandy Mines and minerals has made a by pass for his mine. That road is well maintained. Arrangements will be made to use that road by both lessees. That road bypass the village and there bye will not create any sort of problem to the near bye villagers.

To accommodate and to ensure smooth production and its transport to the tune of 143 dumpers/Day, the following points shall be considered:

1. Existing Kachcha road which joins mine to metalled road shall be strengthened and shall be maintained regularly.
2. Proper traffic control shall be done at road crossings.
3. Road crossings shall be wide enough to ensure that dumpers plying on the roads are safe to cross/overtake, where ever necessary.
4. Along the both side of kachchca road, plantation shall be done as it will arrest the dust and will act as sound barrier to larger extent

CHAPTER -11
SITE SERVICE

11.0 Site Services:-

11.1 Manager's Office:-

As detailed in the preceding chapter the mines are designed to produce some 15,00,000 tons of building stone. The activities shall be supervised by one competent person as overall manager. In addition one mining mate cum blaster is proposed to supervise the drilling and blasting operation. Main administrative office is proposed to be set up in nearby locality on rental accommodation. However, at site one office of Manager is proposed of about 5 x 3 mtrs Size which shall also provide accommodation for key supervisory staff as well.

11.2 Canteen -cum-rest shelter:-

In order to provide the rest shelter for the personnel working in the mine and also to provide tea/refreshment etc.as per the Mines Act, 1952. The arrangement shall be made to install a rest shelter-cum-canteen as shown in plate no.4 and shall be utilized by the workers. The rest shelter will be for having rest during the lunch hours by the operators/ labour. The size of rest shelter shall be about 15 x 3 meter to accommodate the working labours.

11.3 Store

Since the mining operation will involve heavy earth moving machinery, a small storeroom will be provided for day to day operations. No provisions for a separate workshop are being made as the heavy repairs will be carried out elsewhere. Workshop will be made outside the lease area after talking land on lease or rent.

11.4 First Aid Room:

To provide the first aid for any sort of injuries encountered during the mining operation, one small first aid room shall be provided. First aid kit and sufficient stock of material / medicines needed for first aid shall be provided as per requirement. As the mining engineer / Manager and mining mates are qualified first aiders they can provide first aid to the labor on the spot. More over the Govt. Hospitals is there at

the Nangal Chaudhary which is just 6 km. From the mine and necessary medical aid can be provided from there.

11.5 Crèche :

At present, provision of crèche is not provided, however in future if women workers are employed, arrangement for a small crèche shall be made as per the requirement.

11.6 V.T. Centre

Necessary arrangement shall be made for conducting refresher course as laid down in Mines vocational training rules.

11.7 Magazine:

Explosiveis proposed to be purchase from authorized source/ authorised agency for use in mine than there will not be need of construction of magazine.

11.8 Electricity Supply:

Presently there is no arrangement for supply, at the mine but it is proposed to take an extension of the electricity line from the nearby point which is jus 0.2 Km from mines site.

11.9 Water Supply

The water supply for drinking& dust suppression purpose will be made available by hired tractor tanker. The water will be taken from the village Pubric water supply which is just 0.5 km. away from the mine site and is controlled by the public health department of the state Govt . The water form supply tube well is used for the entire village Donkhera. Therefore the same arrangement shall continue for the mines as well.

CHAPTER 12
EMPLOYMENT POTENTIAL

12.1 General Consideration

In this project the mechanized mining is proposed for production of building stone. The proposed organizational structure for the project is worked out in view of the type of mining system adopted and the need of effective environment Management Plan. The requirement of various technical and non technical personnel is determined while adopting the following norms:-

1. The mine will be worked in two shifts.

2. In estimating the requirement of statutory personnel, and provision of competent person, mines foreman, mates, blaster etc. due consideration has been given to the statutory provisions.

12.2 Man power requirement and its distribution.

The mine shall be worked in two shifts with following manpower deployment.

S.No.	Designation	Category	Nos
1	Mines manager first class	Highly skilled	1
2	Assistant Managers/Foreman	Highly skilled	2
3	Mining Mate cum Blaster	Highly skilled	2
4	Security Guard & Water man	Semi-skilled	3
5	Environment Assistance	Skilled	1
6	Diesel hydraulic shovel operator& back hoe operator	Highly skilled	6
7	Dumpers operators	Highly skilled	70
8	Drill operators	Highly skilled	2
9	Track chain Dozer operators	Highly skilled	1
10	Water sprinkler	Skilled	1
	Total		89

In addition to the above mentioned staff rest of the function i.e. supply of explosives, preparation and amendment of plans etc. security personnel shall proposed to be performed from the professional on lease/job work basis.

CHAPTER- 13

ENVIRONMENT IMPACT ASSESSMENTAND ENVIRONMENT MANAGEMENT PLAN

13.1 Base line information

13.1.i Existing& at the end of 5th Year and at the close of mining Land Use Pattern :-

At present the area is almost barren.

Sr.no	Details	Existing land use (ha)	At the end of 5th year (ha)	At the end of lease period
1	Pits (Broken Area)	0 0	6.66	0.0
2	Dump	0.0	0.0	0.0
4	Infrastructure	0.12	0.20	0.20
5	Plantation	0.0	0.60	5.18 on benches and along Lease boundary
6	Back filled	0.0	0.0	0.0
7	Water body	0.0	0.0	2.08
	Undisturbed land	7.34	0.0	0.0
	Total	7.46	7.46	7.46

13.1.ii Water Regime

There is no perennial water drainage on the ground. As the surface is undulated only seasonal Nallahs(rivulets) developed in the area.

13.1.iii Human Settlement :

Area covered under mining plan is uninhabited. The nearest villages:

Located 2 to 5 km.

Sr no.	Name of villages	Distance in km	direction	Population
1	Donkhera	0.3	NE	2091
2	Bedanty	2.5	NE	1189
3	Dostpur	3.5	NE	1427
4	Said Alipur	4.0	N	1390
5	Gangutana	3.5	N	600
6	Golwa	2.5	W	1653
7	Rawtan KI DhaniBayal	4.0	W	3517
8	Dil Pura	1.0	E	2812
9	Mothuka	4.0	SE	2820
10	Rampura	3.0	S	460
11	Mina KaNangal	2.0	SW	847

13.1.iv Public Building , Places and Monuments :

There are no permanent public buildings within the lease area. The permanent human settlement is about 0.5 to 5 kms. From the lease area. There are no other public places or monuments within or around the lease area.

Infrastructure Facilities

The following facilities already exist in the village mentioned above

(A) Roads :

All the village are well connected by public roads with nearby town of NangalChaudhary . Buses of Haryana Road ways ply regularly in these village.

(B) Power supply

All the villages have got power supply from the State Electricity Board.

(C) Water Supply

Water is supplied by the Public Health Department Haryana through water supply scheme to the entire village.

(D) Medical, educational, Post & Telegraphs Facilities:

A Govt. Hospital is available at Nangal Chaudhary which is Just 6 Km from the Mine site. All the nearby villages have Middle schools & Sub Post Office. College, I.T.I and other facilities are available at Nangal Chaudhary.

13.1.v Quality of water

There are no water sources in the lease area except dry nallahs (rivulets). The precipitated water flows along the slope of quartzite. The water table in the area isreported about 80mtr.to 100m below the 350m RL. No water samples could be collected in absence of any well/tube well in the lease area.

13.1.vi Number and Type of Trees :

The area under reference has no growth of vegetation . The trees in the nearby area are mainly JungliKikar, The height of these trees are generally smaller then 3mtrs. In the neighboring villages and nearby fields tress of Neem, KikarJund trees, Kanji (peganiceclabra) etc. are observed. No rare species exist in the area. There are a number of small plants. The Av. density of vegetation is 50/hect, which are mainly xerophytes.

13.2 Environment Impact Assessment Statement

13.2A Land Environment:

13.2.A.i Land Scape

Entire lease area is virgin The dwelling houses of the nearby villages are about 0.5 to 5km away from the lease area.

13.2.A.ii Aesthetic Environment

The panoramic view of the lease hold area reveals that the area has only one ridge. Since the present mining plan envisages the proper and systematic development of working and future alignment of the pits, the area will look nice.

13.2.A.iii Soil and Land Use Pattern

The area under reference has thin soil cover or a very thin cover, with soil embodied in the joints. The soil has to be excavated first and properly stacked. This Mining Plan envisages remarkable change in the present land use pattern, which will be more uniform and systematic at the end of 5th year due to proper mining and stocking the dumps at the earmarked places.

13.2.A.iv Agriculture.

There is no involvement of agriculture land where, mining is proposed. Therefore no impact on agriculture is envisaged in this mine plan.

13.2.A.v Forest :

There is no forest land in the lease hold area . Therefore, there is no impact of mining on the forestation except the proposal for additional plantation program which will enrich the aesthetic beauty of the area.

13.2.A.vi Vegetation and Wild life :

There is no vegetation in the area as already explained. The mining activities has no adverse impact on the vegetation in the nearby area as the same shall be taken care of by growing additional vegetation, which is suspected to be destroyed due to mining. The same shall be compensated by planned plantation over lease boundry. Since the present vegetation is of very poor quality the adverse impact will be negligible. However the proposed plantation will ameliorate the vegetation.

The area is not inhabitant by any significant wild life except stray existence of animals like Jungle rat, mangoes jackals etc. reptiles like snakes, lizard and birds like pigeon, bet etc and insects like scorpion spider etc. Due to stray population of wild life there will be no significant effect on the wild life due to mining. Moreover, the growth of vegetation of dumps etc. shall provide additional home for these stray animals.

By adopting the proposed reclamation plan, envisaging liberal plantation of vegetation of mixed species, it is expected to provide congenial habitant to promote wild life. After abandoning the mining operations the area can be converted into a bird sanctuary or a fish farm by having the close liaison with the state Govt. authorities.

13.2.A.vii Public Buildings, places and Monuments.

As already described at 13.1.IV. There are no permanent buildings, places or monuments in the lease area

13.2.B Water Environment :

13.2.B.i Surface Water and Ground Water.

There is no perennial drainage system in the mining area and while planning due care for drainage has been given. No significant effect on surface water regime is expected. The water table in this area occurs below 80m to 100m below general surface.Hence there will be no effect on the hydrology of the area as the working will not reach the water table. However, there may be some affect on the seasonal nallahs, which drain the precipitated water flowing from the area.

Further it is proposed to make necessary arrangements for developing rainwater harvesting of the mine water during rainy season. It is proposed to develop necessary bores and pits for this purpose. Thus rain water harvesting will ameliorate the ground water of the area.

13.2.B.ii Water quality

There is no water courses in the area except dry nallahs .The precipitated water also flows along the depressions formed in between the outcrop of country rocks. The water table in the area is about 60-65mtrs below the ground surface.

13.2.C. Air Environment

13.2.C.i Noise :

No test has been carried out to determine the present noise level. However, since this is an isolated area without any habitation industry the existing noise level in this area is well below the level at which normal speech communication may be interfered .The creation of vegetation barrier around the workings on both the sides of the roads and office buildings will also out sound barriers.

13.2.C.ii Air

Since the area is not worked at present. The area is basically unpolluted and fresh. Therefore, no air sampling and analysis is carried out.

Since mechanized mining is proposed for removal of mineral/ winning of mineral there are chances of environment Pollution in due to mechanized mining. The quartzite/ building stone mining will be done by drilling with the help of Jack Hammer drills and blasting by using explosives like ANFO, ordinary detonators &substitutes. The proposed mining will not deteriorate the air quality except generation of dust .The dust with air borne may affect the quality of air

Dust

The dust generation during drilling will be reduced by wet drilling. The dust generated during blasting will be minimized by water spay at the working faces before and after the blasting. The dust generated by excavation will also be controlled by spraying of water at the working faces. Dust generated due to plying of vehicles on mine roads will be dealt with by regular sprinkling of water on the roads . The sprinkling water will be done at short intervals using only a small quantity of water at each time. just sufficient to wet the surface. Further the vehicles used for transportation of the mineral will not be overloaded to prevent generation of airborne dust during their movement.

The speed of the movement of the vehicles will also be controlled to minimize generation of excess dust. Further as far as possible transport of mineral from the mines will not be done during the evening hours of summer season when the relative humidity is low and wind speed is high. The volume of airborne dust raised from the waste dumps will be kept under control by growing grass and vegetation.

13.2.C.iii Climate Condition

The climate of Mohidergarh district can be classified as tropical steppe, semi -arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. There are four seasons in a year. The hot weather season starts from mid-March to last week of the June followed by the south west monsoon which lasts up to September. The transit ion period from September to October forms the post –monsoon season. The winter season starts late in November and remains up to first week of March. The normal annual rainfall of the district is 420 mm which is unevenly distributed over the area 22 days. The south west monsoon sets in from last week of June and withdraws in end of September, contributed about 85% of annual rainfall. July and August are the wet test months. Rest 15% rainfall is received during non-monsoon period in the wake of western disturbances and thunder storms. Generally rainfall in the district increases from southwest to northeast.

Normal Annual Rainfall:	420 mm
Normal monsoon Rainfall:	355 mm
Temperature	
Mean Maximum:	41oC (May & June)
Normal Rain days:	22

The general direction of wind in summer season is west to east and in winter it is northwest to southeast (Plate no.14)

13.2.D Socio Economic Environment

13.2.D.i DEMOGRAPHIC STRUCTURE

Details of the Mohidergarh District primary census Abstract (2011) has been given in table.

PRIMARY CENSUS ABSTRACT DISTRICT MOHIDERGARHAt A GLANCE

Sr. No.	Item	Value			Rank In the Districts in Haryana
		Total	Rural	Urban	
1.	Population	1475022	1154629	270393	4
2.	No. Of households	246742	197505	49237	3
3.	Share in total population (%) (Haryana)	6.74	7.68	4.47	4
4	Decadal growth rate (5)	22.49	19.42	37.56	14
5	Child population age (0-6) % to total district population	15.73	16.11	14.13	7
6	Sex ratio (female per 1000 males)	879	884	859	5
7	Child sex ratio (0-6)	841	849	827	7
8	Urban population (%)	18.97			16
9	Literacy rate (%)	67.45	65.25	76.62	13
10	Female literacy rate (%)	53.00	49.72	66.90	13
11	Male female gap in literacy (%)	20.64	29.38	18.12	
12	Share of SC population (%) to total population in district.	90.61	19.54	19.90	10
13	Workers to total population	42.76	45.65	30.39	7
14	Main workers to total workers	69.78	67.27	85.88	16
15	SC literacy	56.26	55.59	59.05	12
16	Density of population	298	244	5256	18
17	Permanent houses (%) of total census houses.	70.53	68.1	8.67	8
18	Condition of houses good (%)	43.95	41.69	53.36	16
19	Households having no exclusive room or one room (% of total households).	19.5	18.09	25.70	5
20	Household with availability of electricity (% of total household)	83.19	18.76	93.24	12
21	Household having tap water (% of total households)	55.4	48.55	84.01	6
22	Households having bathroom with houses (%)	55.05	45.0	70.93	13
23	Household having kitchen within houses (%)	62.33	60.18	71.37	5
24	Household having television	42.19	34.26	69.94	17
25	Household having telephone (%)	6.92	3.85	19.69	18
26	Household having bank accounts (%)	44.44	44.21	45.41	11
27	Household having radio (%)	42.63	42.35	43.79	5

28	Household having car, jeep (%)	2.34	1.90	4.14	17
29	Household having scooter, motorcycle (%)	10.35	7.38	22.65	19
30	Household having bicycle (%)	34.41	27.68	62.31	19
31	Household having no drainage of Wastewater (%)	36.3	41.54	14.55	6
32	Household having no lateron (%)	64.52	73.93	25.51	6
33	Household having none of assets (%)	33.8	38.21	15.58	18
34	Electricity available, latrine no available (%)	50.19	57.28	20.81	5
35	Electricity not available, latrine available (%)	2.48	2.59	2.05	11

Due to mining activities significant changes are expected in the daily life of the inhabitants as mining activities will open new avenues of employment generation for local people. The favorable changes are expected in the terms of more employment opportunities, better infrastructure facilities like power linkage, medical facilities, water supply etc.

13.2.D.ii Occupational health and safety :-

The people/labour those are associated with mining activities are generally exposed for pollution related diseases which on prolonged exposure to the same environment become chronic. In order to check the above, regular check up of the labour and other persons working in the same environment shall be made.Preventive measures viz. Use of respiratory masks, helmets etc. shall be adjusted to avoid the adverse impact of mining / pollution on the health of the labour.

13.2.D.III Recreational Facilities:

After eight hours of hard work the labour/workers/operators badly need some kind of entertainment to ease them. It is therefore proposed, to organize a cultural and educative program at least once in month. Some additional programs shall be organized,especially on the family welfare and

other fields to entertain them as well as to educate them. This will include program on alcohol addiction etc.

13.3 Environment Management Plan:

To check the adverse effect likely to be caused to the proposed mining on the environment and ecology of the area environmental control measures are to be followed. Based on the environmental impact assessment made the following measures shall be taken into account for the betterment of the environment and ecology.

13.3.i Temporary storage and Utilization of top soil :

The topsoil will be removed separately in advance of the mining of other overburden and will be stocked separately. The locations of the soil stack yard are shown in year wise plans. To prevent erosion of the stacked top soil the height of the stacks will be restricted to 6mtrs above ground level. The retaining wall will also be erected along the lower edges of the topsoil of stacks, as they will be prone to erosion. The width of these walls will be 0.5 mtrs. at top and 1 meter at the bottom with a height of about 6 mtrs. Further plantation of grass is proposed on the surface of the dump slopes to improve its quality and to restrict soil erosion.

13.3.ii Proposal for reclamation of land affected by mining activities during and at the end of mining lease period.

Land reclamation is the single broad environmental protection system which will provide protection and control of most of the adverse environmental impacts of mining and also have improvement of aesthetic beauty of the area which will be denuded due to mining activity. As a result of mining of this deposit the original ground profile will be lowered and deep depressions will be created. Besides this the hydrographic system may be affected due to wash-off. Based on these conditions it is proposed to improve the effected land wherever possible for better land use, so as to support forestry and creation of water reservoir etc. Accordingly, the land reclamation portion

shall be done by planting trees on the dumps along the roads surroundings the office building on the waste barren land and in the open pits when they reach their ultimate stage.

Plantation Along the roads.

In order to barricade the dust generated during the movement of the trucks and also to restrict noise level a forestation is proposed along the approach roads to pits . This will improve the aesthetic beauty of the area by a screening visual intrusion of the quarry workings. For this purpose the soil produced from the mine will be brought and spread in the layer along both sides of the roads.

Surrounding the office buildings :

A vegetation barrier will be provided around the office buildings and on the waste barren land.

In open pits :

As the mineral is going to be depleted during lease period plantation is proposed on the final benches at the closure of mine only.About 0.62 hectare area will be planted on the 7.5m lease boundry **Afforestation/ Green belt**

The lease area is hilly terrain devoid of any vegetation. Mining activities will not cause any harm to riparian vegetation cover as the working will not extend beyond the lease area. Land outside is the private agriculture land. Link road from the crusher zone pass through the areas. It is proposed to have plantation on both sides of the roads as greenbelt to provide cover against dust dissemination. Plantation will also be carried out as social forestry programme in villages, school and the areas allocated by the Panchayat/ State authorities.

Native plants like Neem, Pipal, Khejri, Ber and other local species will be planted. A suitable combination of trees that can grow fast and also have good leaf cover shall be adopted to develop the greenbelt. It is proposed to plant 1500 no's of native species along with some fruit bearing and

medicinal trees during the plan period.

Table: Greenbelt Programme

Year	Saplings to be planted	Survival 70 %	Species	Place of Plantation
I	300	210	Neem, Peepal, Ber, Shisham, Sirish, Babool, Gulmohar	Along the roads, in barren area, surrounding office & rest shelter and other social forestry programme.
II	300	210		
III	300	210		
IV	300	210		
V	300	210		
Total	1500	**1050**		

The tree plantation is proposed at spacing of 3m x3 mtr. The size of the pits will be 40cm x 40 cm .filled with manures . The intervening space between the trees will be covered with bush varieties. Taking a survival rate of 70% , about 300 no. of trees will be planted year wise during plan period:-

Post plantation care :

This will include the following measures :-

a) Protection from grazing and fires.

b) Watering at least once a week during dry spells.

c) Manu ring

d) Weeding and soil working.

e) Mulching

f) Replacement of causalities.

g) Protection form pests.

The maintainance system will include:-

a) Examination of signs of slopes failure and excess erosion.

b) Collection of water samples.

c) Keeping and effective track of vegetation established.

d) Checking the quality of air near mine site by air sampling and getting it analyzed.

c) Collection and analysis of regular soil samples from reclaimed areas to monitor the improvement in soil characteristics.

Equipment for Environmental Restoration Plan :

i Water tankers will be used for the sprinkling of water on the mining faces regularly .

ii A tractor with trolley will be used to transport the seeds, saplings, fertilizers and other agricultural tools. The same tractor will be used for water spray, work also. Other miscellaneous agricultural tools will be required for seedbed preparation, terracing of dumps, mulching, plantation and roast post plantation care.

Manpower and Organization:

Regular man power will be required to be deployed for supervision, sample collection, assistance in reclamation works, monitoring system of post plantation care. For carrying out the actual work of a forestation, sapling plantation,mulching, construction of drains and tanks and other maintenance work, casual labor will be deployed as and when necessary.

13.3.iii Program of A Forestation

The a forestation will be done proposed earlier. Plant saplings will be obtained from private/ Govt nurseries. During the forestation work the combination of different type of species will be done on the area ear marked for plantation in green belt & in the surrounding areas.

The area is demarcated on the plan plat No 5-0. The tree plantation will be made all along the mine approach roads surrounding the site services. This will cover about 0.62 ha land. About 300 trees per year will be planted on the above area. The annual area covered will be 0.16 hectares. The survival rate is expected 70% therefore the saplings / plats which dies will be replace in addition to the plants proposed above.

13.3.iv Stabilization and Vegetation of Dumps :-

The same is already described in chapter 7 at para no. 7.3

13.3.v Treatment and Disposal of water from Mine :-

There is no regular disposal of water form mines except during rainy season. The water pumped out from the mines during rainy season shall be disposed through water garland ditches where settlement tanks are provided at regular interval to settle down the UN-dissolved matter/ sediments before finally depositing of the purposed out water through the natural nallah which is situated within the lease hold area.

Since the rainy water and the ground water do not contain any toxic material, this does not need any chemical treatment before disposal.

13.3.vi Measure for minimizing adverse effects on water regime:

It is proposed to make necessary arrangements for developing rainwater harvesting of the mine water during rainy season. It is proposed to develop necessary bores and pits for this purpose. This will help in recharging th ground water at a faster rate.

13.3.vii Socio Economic benefits arising out of mining: -

The socio economic benefits in the form of labour employment for mining transportation and other ancillary activities pertaining to mining shall benefit the local people also in the activities like transportation, milk supply and workshop, repair and maintenance, will also better the socio-economic status of the local inhabitants.

13.4 MEASURES TAKEN AND TO BE TAKEN FOR THE CONTROL OF WATER, NOISE AND AIR POLLUTION

Air Pollution:

Emission of gases and dust takes place due to movement of vehicles. Spraying of water and plantation along the road side prevents the spread of dust. Plantation also acts as barrier for restricting pollution. Impact on air environment has been assessed

taking in to consideration the proposed production and increase emissions. The sources of air pollution are given below:

- Operation of mining machinery/ loading operations
- Transportation of mineral
- Wind erosion from barren area and nearby area

Air pollutants released during production can be checked by:

- Dust suppression system/ water spraying would be adopted at mine working and loading points
- Excavation operations to be suspended during very strong wind conditions
- Afforestation will be carried out for control of dust
- Plantation with wide canopy trees along approach road will help in dust suppression
- Persons to be provided with dust mask and other personal protective equipment, particularly during summer months and dust storm periods.

The following table indicates the concentration of Ambient Air as per the CPCB guidelines. (For reference purpose)

National Ambient Air Quality Standards

S. No.	Pollutants	Time weighted Average	Concentration of Ambient Air	
			Industrial, Residential, Rural and Other Areas	Ecologically Sensitive Area (notified by central Government)
1.	2.	3.	4.	5.
1	Sulphur Dioxide (SO_2), µg/m³	Annual*	50	20
		24 hours**	80	80
2	Nitrogen Dioxide (NO_2), µg/m³	Annual*	40	30
		24 hours**	80	80
3	Particulate Matter (Size less than 10 µm) or PM_{10} µg/m³	Annual*	60	60
		24 hours**	100	100
4	Particulate Matter (Size less than 2.5 µm) or $PM_{2.5}$ µg/m³	Annual*	40	40
		24 hours**	60	60
5	Ozone (O_3), µg/m³	8 hours**	100	100
		1 hour**	180	180
6	Lead (Pb), µg/m³	Annual*	0.50	0.50
		24 hours**	1.0	1.0
7	Carbon Monoxide (CO), mg/ m³	8 hours**	02	02
		1 hour**	04	04

8	Ammonia (NH_3), $\mu g/m^3$	Annual*	100	100
		24 hours**	400	400
9	Benzene (C_6H_6), $\mu g/m^3$	Annual*	05	05
10	Benzo(O) Pyrene Particulate Phase only, ng/m^3	Annual*	01	01
11	Arsenic (As), ng/m^3	Annual*	06	06
12	Nickel (Ni), ng/m^3	Annual*	20	20

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be compiled with 98% of the time in a year. 2% of the time, they may exceed the limits but not on to two consecutive days of monitoring.

(Source: CPCB notification Dated 18th November 2009)

Transportation

- Regular water spraying on haulage roads during mineral transportation by water sprinklers,
- Avoid over loading of tippers & consequent spillage on the roads,
- Mineral carrying trucks will be effectively covered by tarpaulin to avoid escape of fines to atmosphere,
- Air quality shall be regularly monitored both in the core zone and the buffer zone.

Controlling of NOx level

The source of NOx is due to vehicular emission. This can be controlled by proper maintenance and servicing of vehicles. Only P.U.C. certificated vehicles will be permitted

Noise Pollution

There is drilling and blasting for mineral extraction. Noise pollution due to drilling, blasting &transportation will cause some problem to the inhabitants of this area because there are human settlement in close proximity to the link roads in lease area. Effective steps will be taken to keep the noise level well below the DGMS prescribed limit of 85 dBA.

Noise control is achieved by the following:

- Proper care and maintenance of the equipment will be carried out.

- Personal protective equipment will be provided to the workers.

13.5 DETAILS OF HEALTH CHECKUP AND INSURANCE OF ALL THE EMPLOYED PERSONS (FOR EXISTING LEASE)

All workers will be subjected to medical examination as per Mines Rule 1955 both at times of appointment and at least once in five years. Medical camps will be organized for this activity. Insurance of all employees as per the rules will be carried out.

13.6 Corporate Social Responsibility

As a corporate responsibility following measures along with budget provision is proposed for improving the conditions of persons in and around the project area:

Sr. No.	Description	Amount (in lacs)
1	Health check up camps	2.50
2	Surveillance programme of the workers	2.0
3	Insurance cover of workers	5.0
4	Assistance to local schools, scholarship to students	3.0
5	Sanitations and drinking water facilities	5.0
6	Vocational training to persons for income generation	2.5
7	Assistance to self help groups	5.0
Total		**25.00**

13.7 Fund Provision for Environmental Management

It is proposed to create an Environment Management Fund. The case shall deposit/pay an amount equal to 10% of the due lease money along with instalments towards the 'Mines and Minerals Development, Restoration and Rehabilitation fund.

13.8 Fund Provision for EMP Measures

Following provisions are proposed to be taken for improving, control and monitoring of environment protection measures

Sr. No.	Particulars	Amount (in lacs)
1	Pollution monitoring – Air, Water, Noise	3.0

2	Pollution abatement – Water sprinkling	3.0
3	Wire fencing at plantation sites	1.0
4	Plantation including maintenance	1.0
5	Rainwater harvesting	2.0
6	Haul road and other roads repair and maintenance	2.5
	Total	12.50

The protection measures will be dynamic and subject to periodic review so that measures remain effective and appropriate.

PART –II

PROGRESSIVE MINE CLOSURE PLAN

1.0 Introduction:-

Vide notification GSR 330(E) date 10-04-2003, MCDR, 1988 has been amended incorporating preparation of Mine Closure Plan. Corresponding amendments has been made in MCDR, 1960. Accordingly Haryana Government has also amended the mineral concession rules which requires the Mine Closure Plan (Progressive & Final) as per chapter 10 of the "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012".In the present case as it is a new mine a progressive mine closure plan, as a component of the mining plan is required. The present position of the deposit does not permit to close any part of the pits. At the proposed pace of work in the next coming years it will not be possible to close down any part except doing protective works like fencing and making of a drain, plantation etc.

(A) Name & address of the lessees

M/s Stone Field. Through Sh. AshwaniKhurana. R/o GH-18, Celebrity Homes,PalamVihar,Gurgaon

(B) LOCATION OF THE LEASE AREA

District:	Mohildergarh
State:	Haryana.
Taluka:	Nangal Chaudhary.
Village:	Donkhera

(C) EXTENT OF THE LEASE AREA

The mine is located in the revenue estates of Villages DonkherainDistt. Monidergarh, Haryana and is about 6 Kms from Nangal Chaudhary ,District Mohidergarh. The lease area lies between the latitudinal parallel falling in the survey of India Topo Sheet No. 53-D/2. The total lease area granted is 7.46 hectares (valid for 10 years from date of Environmental Clearance or One Year from the date of issue of LOI, whichever is earlier). The details of extent of area is as follows –

Village	Khasra no.	Area in hect.
Donkhera	118 m in	7.46hectares

The lease area is located on the katcha road and then a metalled road upto village Donkhera and is easily approachable from Nangal Chaudhary, Mohidergarh and other important towns.

(D) PRESENT LAND USE PATTERN and land use at various stages

Details are given below:

Sr.no	Details	Existing land use (ha)	At the end of 5th year (ha)	At the end of lease period
1	Pits (Broken Area)	0.0	6.66	0.0
2	Dump	0.0	0.0	0.0
4	Infrastructure	0.0	0.08	0.08
5	Plantation	0.0	0.62	4.02 on benches and along Lease boundary
6	Back filled	0.0	0.0	0.0
7	Water body	0.0	0.0	1.22
	Undisturbed land	7.46	0.0	0.0
	Total	7.46	7.46	7.46

(E) METHOD OF MINING:

(Details are given in Chapter 4 of the main Mining plan)

The present mining operations are designed to be carried out by open cast mining means. The entire mining operations proposed are mechanized. A part from mining, the loading and transportation up to stack yard shall be done mechanically. It is proposed to load in the trucks/dumpers directly to the destinations and mineral is not put up in this stack yard to avoid the double handling. In the present operation the bench shall be 9x10m mtrs. Each bench will advance one by one. While carrying out the mining operations in accordance with the above provision the overall pit

slope shall be maintained the 49^{0}as the mineral bearing rocks being hard and compact.

(F) MINERAL PROCESSING OPERATION:

Entire stone produced is proposed to be sold in the form of lumps to the crusher owners.

1.1 Reasons for closure:

The progressive mine closure plan has been prepared in compliance of Rule 70 (1) of Haryana Minor Mineral Concession Rules 2012 under MMCR 1986.This is reproduced as under:

Rule 70.(1) Every mineral concession holder shall prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) and shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorized by the Director in this behalf.

As the mineral is not going to be depicted during the plan period no immediate closure is planned as sufficient reserves are available to carry on the activities. Also there is good market potential in domestic market.

1.2 Statutory Obligations:

The lessee is bound to submit the Progressive Mine Closure Plan either with Mining plan or Scheme of Mining Lessee is bound to follow the terms and conditions as will be stipulated in the lease deed /LOI.

In addition to it the rules pertaining to the Protection of Environment i.eEnvironment Act. Environment Rules and other associated rules for the protection of environment will have to be followed during the course of mining.Therules stipulated in Mines Act, Mines rules Metalliferous Mines Regulation 1961 and RMMCR.1986 will be followed.

1.3 Closure plan preparations

Name, address and registration number of the recognized persons who prepared the progressive closure plan and name and address of the executing agency who is involved in the preparation of progressive mine closure plan.

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Lessee will himself implement the closure plan; no outside agency will be involved.

2.0 MINE DESCRIPTION

2.1 General Geology and Local Geology

2.1.1 Regional Geology

(Details are given in the Chapter 3 of main mining plan)

2.1.2 Local Geology

(Details are given in the Chapter 3 of main mining plan)

2.2 Reserves

(Details are given in the Chapter 3 of main mining plan

2.3 Mining Method:

Mining method to be followed is described in Chapter 4 of mining plan

2.4 Mineral Beneficiation

(Details are given in the Chapter 9 of main mining plan)

3 Review of implementation of mining plan including five years progressive closure plan upto the final closure plan

Mining Plan and Progressive mine closure plan are being submitted for the first time. It will be reviewed after five years and review of implementation will be given with next mining scheme.

4.0 CLOSURE PLAN

4.1 Mined - out land

At the end of mining plan period,about6.66 ha area will be mined out. Land use at various stages is given in the table below:

Table 11: Land Use at the end of plan period

Sr.no	Details	Existing land use (ha)	At the end of 5th year (ha)	At the end of lease period
1	Pits (Broken Area)	0.0	6.66	0.0
2	Dump	0.0	0.0	0.0
4	Infrastructure	0.0	0.08	0.08
5	Plantation	0.0	0.62	4.02 on beaches and along Lease boundary
6	Back filled	0.0	0.0	0.0
7	Water body	0.0	0.0	1.22
	Undisturbed land	7.46	0.0	0.0
	Total	7.46	7.46	7.46

4.2 Water quality management

There are no water courses in the area except dry nallahs .The precipilated water also flows along the depressions formed in between the outcrop of country rocks. The water table in the area is about 80-100 mtrs. below the ground surface .There is no flow of water in the lease in post monsoon period.Area is having 420 mm rainfall in a year. During rainy season, water will be accumulated the pit which will be drained out and finally it will be sent in to natural drain. A settling tank will be provided so that the finer sediments are settled down. These finer sediments will be collected after rain is over. There will be no intersection of water table as working will be carried above the water level which is 80-100 m below the general surface of area. *Further if the conditions so worrants and ground water intersection is needed the proponent would seek permission under Haryana Water Resource Authority Gazette Notification No.191-2020/Ext dated 23rd Dec . 2020. The Mining projects are location specific, there is no ban on grant of NOC for abstraction of ground water and hence all mining projects are required to obtain NOC for water abstraction, and it is mandatory for all mining projects/industries to ensure that water available from dewatering activity/ operations is properly treated and should be gainfully utilized for supply of irrigation, dust suppression, mining process, recharge in downstream.*

4.3 Air Quality Management:

The proposed mining method is not likely to produce much of dust and fugitive emissions to cause damage to ambient air quality of the area. Workers will be provided with personnel protective equipment like face mask, ear plug/ muffs.

For air pollution management at the progressive mine closure of mine, green belt will be developed to prevent and control air pollution.

4.4 Waste Management:

As stated in mining method, entire produced mineral is salable. Therefore there will not be any waste dump in this project.

4.5 Top Soil Management

There is a very thin soil/ top soil which will be scraped and used for plantation.

4.6 Talling dam management

There is no proposal of beneficiation of mineral No tailing dam is envisaged.

4.7 Infrastructure:

The infrastructure facilities like site office ,first-aid station,rest shelter/ store, drinking water etc. will be established.

4.8 Disposal of mining machinery:

It is propose to deploy heavy earth moving machineries in the mine As this plan is for 5 years period and hence during plan period no disposal or decommissioning of machineries is proposed. But at the end of the lease period, office complex shall be maintained even after expiry of lease, to look after the plantation and other proposed reclamation measures.

4.9 Safety & Security:

Safety measures will be implemented to prevent access to excavation area by un-authorized persons as per Mine Act 1952, MMR 1961.

i. Safety measures will be implemented as per Mine Act1952, MMR 1961, MinesRules 1955.
ii. Provisions of MMR 1961 shall be followed strictly and all roads shall be 12 m wide and have a gradient of not more than 1 in 16.
iii. The bench height will be 9.0m.

iv. Width of working bench will be kept around 10-15 m for ease of operations and provide sufficient room for the movement of equipment.

v. Protective equipment like dust masks , ear plugs/ mutts and other equipment shall be provided for use by the work persons.

vi. Notices giving warning to prevent in advertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.

vii. Danger sign shall be displayed near the excavations.

viii. Security guards will be posted.

ix. In the event of temporary closer, approaches will be fenced off and notice displayed.

4.10 Disaster Management and Risk Assessment:

This should deal with action plan for high risk accidents like landslides, subsidence, flood, inundation in underground mines, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of lessee to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the hilly area may involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.
- The complete mining operation will be carried out under the Management and control of experienced Manager Grade 1,and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, RMMCR 1986 and other laws applicable to mine will strictly be complied with.
- During heavy rainfall the mining activities will be suspended
- All persons in supervisory capacity will be provided with proper communication facilities.

Competent persons will be provided FIRST AID kits which they will always carry.

4.11 Care and Maintenance during Temporary Discontinuance:

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:

  Mine roads and approach roads,

  Fencing on approach roads,

  Checking and maintenance of machines and equipment.

  Drinking water arrangements,

  Mine office, first aid stations etc.

- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

5.0 ECONOMIC REPERCUSSION OF CLOSURE OF MINE AND MANPOWER RETRENCHMENTS

Lease area will be granted for a period of 10 years only. As per the production programme envisaged, the lease may continue about 7 years Hence, no closure is planned during first plan period. There will be no effect on the man power as the persons belong to nearby viliages and will have an option either to be available for employment for the next lease/ lease or do the agriculture in their fields.

6.0 TIME SCHEDULING FOR ABANDONMENT

The lease area has enormous potential for continuance of operations even after the first plan period. The details of time schedule of all abandonment will be given at the time of final closer plan.

7.0 ABANDONMENT COST

As at present mining is not going to be closed during this plan period so abandonment cost could not be assessed. However based on the progressive mine closure activities during the plan period, cost is assessed as given below:

Table: **Abandonment Cost**

ACTIVITY	YEAR					Rate	Amount (InRs.)
	First	Second	Third	Fourth	Fifth		
Plantation (in no.)	300	300	300	300	300	@100 Rs per sapling Including maintenance	1,50,000
Plantation cost	30,000	30,000	30,000	30,000	30,000		
Wire fencing (meter)	50,000	50,000	50,000	50,000	50,000	@ of 120Rs per meter	2,50,000
Drain(m) 500m	5,00,000	-	-	-	-	@ Rs 1000/m	5,00,000
	total						7,50,000

8.0 FINANCIAL ASSURANCE

Total 7.46 ha area will be put in use up to the end of the plan period. Details of area put in use as given below (As per circular No.4/2006 issued by CCOM, Nagpur following table has been considered for calculation for financial assurance).

Table: Calculation for Financial Assurance

S. No.	Item	Area put on use at start of plan (Ha) (A)	Requirement at the end of plan period (Ha)	Total area put to use (Ha) (B)	Area considered as fully reclaimed & rehabilitation (Ha) (C)	Net area considered for calculation (Ha) D = (B-C)
1.	Area to be excavated	0.0	6.66	6.66	0.0	6.66
2.	Storage for topsoil	0	0	0	0	0
3.	Overburden/ dumps	0	0	0	0	0
4.	Mineral storage	0	0	0	0	0
5.	Infrastructure (Workshop, Adm. Building & Road)	0.12	0.08	0.20	0	0.20
6.	Green belt	0	0.60	0.60	0	0.60
7	Back filled	00	0.0	0.0	0.0	0.0
8	Water body	0.0	0.0	0.0	0.0	0.0
7.	Others to specify	0	0	0	0	0
Total		0	7.46	7.46	0	7.46

As per terms of Haryana Minerals Rules, 2012, lessee has to deposit financial assurance in the form of the Bank Guarantee to Department of Mines & Geology, Haryana for the complete lease hold area at the rate of Rs. 15,000/ per hectare, which is arrived as (Rs.15,000/- x7.46 ha = Rs1,11,900/. This will be given by lessee as per rule no 70 (1) (6) amended in 2012 as surety bond / bank guarantee.

S.N. SHARMA
B.E(MINING)
Qualified Person

9.0 CERTIFICATE

It is enclosed with the report.

10.0 PLAN AND SECTION

Plan and section are prepared and enclosed with the mining plan.

Sr.no.	Description	Plate no.
1	Location plan	1
2	Key Plan	2
3	Surface Geological plan	3
4	Geological cruss sections	4
5	Plan & section showing the position of mine Working and dump at the end of 1st Year	5
6	Plan & section showing the position of mineWorking and dump at the end of 2nd Year	6
7	Plan & section showing the position of mine Working and dump at the end of 3rd Year	7
8	Plan& section showing the position of mine Working and dump at the end of 4th Year	8
9	Plan & section showing the position of mine Working and dump at the end of 5th Year	9
10	Progressive mine closure plan	10
11	Conceptual mining plan	11
12	Environmental Plan	12

S.N. SHARMA
B E (MINING)
Qual... ...erson

Speed/Registered Post

From

The Director General,
Mines and Geology Haryana,
Plot No. 9, IT. Park, Sector-22, Panchkula.

To

M/s Stone Field,
Through Sh. Ashwani Khurana,
R/o Gh-18, Celebrity Homes, Palam Vihar, Gurgaon.

Memo No. DMG/HY/ML/Donkhera/2022/ 2713
Dated Panchkula, the 20-4-22

Subject: Acceptance of the highest bid in respect of minor mineral mine of Stone at village "Donkhera" having tentative area of 7.46 hectares in the district Mahendergarh, offered in e-auction held on 27.03.2022/issuance of Letter of Intent (LoI)- regarding.

You participated in the e-auction held on 27.03.2022 on the e-Auction web portal (https://minesharyana.eauctions.com/) for grant of mining lease of minor mineral stone after accepting the terms and conditions of the auction notice issued vide notification no. DMG/HY/e-Auction/MGR/2021/1293 dated 25.02.2022 in order to obtain mining lease of minor mineral stone mine of the district Mahendergarh.

2. You offered the highest bid of Rs. 21,46,00,000/- (Rs. Twenty One Crores Forty Six Lakhs only) per annum against the Reserve Price of Rs. 8,81,00,000/- for obtaining the Mining Lease of Minor Mineral Mine namely 'Donkhera' for extraction of 'Stone' having total area of 7.46 hectares falling in Khasra number 59//1,10/1, 10/2, 60//4 min 7/1min,7/2 min ,6/1, 6/2, 5 min 13/1 min, 13/2 min, 14/1 min, 14/2, 15/1, 15/2, 17, 18/1, 18/2 min 19 min, 22 min, 23, 24, 62//6 min, 15min,16,17 min, 25, 63//1 min, 2,3,9,10 min,11,20,21, 64//1, 65//5 of village Donkhera, district Mahendergarh.

3. You are hereby informed that the State Government has accepted the highest bid of Rs. 21,46,00,000/- per annum offered by you in respect of 'Donkhera Stone mine' under the provision of Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Prevention of Illegal Mining Rules, 2012 (State Rules, 2012). Accordingly, you have become the successful bidder in respect of above said mine.

4. The State Government having accepted the aforementioned highest bid of Rs. 21,46,00,000/- offered by you. The Department is pleased to issue this letter of Intent (LoI) in your favour in respect of the Mining Unit/area namely 'Donkhera Stone mine' subject to the following terms and conditions:

4.1 The period of the contract shall be 10 years and the same shall commence w.e.f. the date of grant of Environmental Clearance by the competent authority and the Consent to Operate (CTO) by the State Pollution Control Board, whichever is later, or on expiry of the period of 12 months from the date of issuance of LoI, whichever is earlier;

4.2 You may note that the detail of the area of the mining unit is tentative and was notified on "as is where is basis" (refer condition no. (iv) of 21 of the auction notice). In case of any inadvertent mistake in the area detail/Khasra number etc., the same shall be got rectified/corrected before execution of the contract agreement (refer condition no. (iii) of 21 of the auction notice);

4.3 No request regarding reduction in bid amount on account of reduction in land/area of the Mining Block/ Unit, on any other account including that of change in description of Khasra numbers / location etc. at any stage will be entertained on any ground. This shall also include any loss/reduction of area for actual mining for want of compliance of applicable laws/restrictions for mining or part of the leased area had already been operated in the past. Needless to state that this also includes the changes, if any, as per condition no. (iv) of 21 of the auction notice.

4.4 You offered bid after having gone through the terms and conditions of auction notice and also the applicable Acts and Rules for undertaking mining. The State Government shall not be responsible for any kind of loss to you being the highest bidders/lessee at any point of time (before or after grant of lease) on any account including on account of reduction of land/ area/ production/ non grant of permission for mining in part area or otherwise on account of any condition stipulated for undertaking mining by any competent authority.

4.5 The amount of the highest bid i.e. 21,46,00,000/- (Rs. Twenty One Crores Forty Six Lakhs only) per annum shall be the "Annual Dead Rent" payable by you as the Dead Rent in the manner prescribed in the Lease Deed to be executed on form ML-1 appended to State Rules.

4.6 The above said annual Dead Rent shall be increased at the rate of 10% on completion of each block of three years. Accordingly, the year-wise amount of the annual Dead Rent shall be as per details given below:

Sr. No.	Year of the contract Period	Annual Dead Rent (in Rs.)
1	First Year	21,46,00,000
2	Second Year	21,46,00,000
3	Third Year	21,46,00,000
4	Fourth Year	23,60,60,000
5	Fifth Year	23,60,60,000
6	Sixth Year	23,60,60,000
7	Seventh Year	25,96,66,000
8	Eighth Year	25,96,66,000
9	Ninth Year	25,96,66,000
10	Tenth Year	28,56,32,600

4.7 As per the terms and conditions of the grant, you are liable to deposit Rs. 5,36,50,000/- i.e. equal to 25% of the annual bid amount as "Security", out of which you have already deposited an amount of Rs. 2,14,60,000/- (Rs. Two Crore Fourteen Lakhs Sixty Thousand only) i.e. equal to 10% of the annual bid amount as 'Initial bid security' after the conclusion of e-auction. The balance amount of Rs. 3,21,90,000/- (Rs. Three Crores Twenty One Lakhs Ninety Thousand Only) of the bid security i.e. 15% of the annual bid amount shall be deposited before commencement of the mining operation or before expiry of the period of 12 months from the date of issuance of Letter of Intent (LoI), whichever is earlier;

Provided that in case having taken all steps on your part, if you fails to obtain required Environmental Clearance and Consent To Operate (CTO) for undertaking mining operations within the said period of 12 months from the date of issuance of LoI, such Letter of Intent holder/lessee on a specific application submitted to the Director, at least thirty days prior to the end of the period mentioned above, giving details of the action already taken may seek additional time up to another twelve months, over and above the time of 12 months already allowed for commencement of the period of lease, on payment of a non-refundable fee as per the following:-

1	Extension of further period up to six months	On payment of a non-refundable fee at the rate of one percent per month of the annual bid for each month of requested extension period
2	Extension for a second period up to six months	On payment of a non-refundable fee at the rate of two percent per month of the annual bid for each month of requested extension period
Note: Extension shall be allowed only in month (s) and any request for period less/part of the month shall be summarily rejected and shall apply along with advance amount of the fee for such requested period of extension.		

4.8 **You are directed to execute the Lease Deed in Form ML-1 appended to the State Rules, 2012 within a period of 90 days from the date of order of issuance of this LoI.**

NOTE: 90 days period is for execution of Lease Deed. Therefore, it is advised to submit draft agreement along with all relevant documents preferably within 45 days, so that agreement could be executed within 90 days after completing all the formalities of scrutiny and verification.

4.9 In case of the Partnership Deed (where bidding entity is a partnership firm) or Articles of Association (where bidding entity is a registered Company) or an Affidavit (where bidding entity is a sole proprietorship firm and the bidder is participating as an individual), no transfer or addition or deletion of the Partners/Directors will be permissible before execution of the agreement;

4.10 The Lease Deed executed shall be got duly Registered under relevant laws with concerned Registering Authority and you will be liable to pay applicable stamp duty and registration fee etc. as per the applicable rates and as demanded by the Registering Authority/Revenue Department at the time of Registration.

4.11 In case of failure to execute the lease deed, after issuance of this acceptance of bid/LOI within the prescribed period of 90 days, this LoI shall be deemed to have been revoked and 10% amount of the highest bid deposited as initial bid security shall be forfeited and you, will be debarred from participation in any future auctions/tenders/competitive bidding process in respect of any area for obtaining mineral concession in the State for a period of 5 years.

4.12 For execution of lease deed, you are also required to furnish a solvent surety for a sum equal to the amount of the annual dead rent. **The documents of the properties to be submitted in support of solvency of the surety shall be dully evaluated by the concerned Revenue Authority along with Non Encumbrance Certificate from the concerned Revenue Authority.**

Surety will submit an affidavit to the effect that the property in question has not been offered as surety to the department of Mines and Geology, Haryana in some other case.

4.13 After execution of deed, either before commencement of the mining operation or before expiry of the time allowed, if any, as per condition No. 4.7 above, in case of failure to deposit the balance 15% amount towards security (as required under clause 4.7 above), the acceptance of bid/issuance of LoI/execution of deed shall be deemed to have been revoked and 10% amount deposited towards as initial bid security after the conclusion of auction shall stand forfeited. Further, such bidder shall debarred from participation in any future auctions/tenders/ competitive bidding process in respect of any area for obtaining mineral concession in the State for a period of 5 years.

4.14 You shall be liable to deposit the lease money in advance at monthly intervals as per provisions of Lease Deed i.e. from the date of commencement of the lease period.

4.15 You shall also deposit/ pay an additional amount equal to 7.5% of the due dead rent along with the monthly instalments towards the 'Mines and Mineral Development, Restoration and Rehabilitation Fund.

4.16 You shall also deposit/pay an additional amount equal to 2.5% of the due dead rent along with the monthly instalments towards the 'District Mineral Fund'.

4.17 You shall also be liable to pay advance Income Tax as per provisions of Section 206(c) of Income Tax Act in addition to contract money, payable as per terms and conditions of contract agreement.

4.18 On enhancement of the dead rent with the expiry of every three years period, you shall deposit the balance amount of security so as to upscale the security amount equal to 10% of the revised annual dead rent as applicable for one year with respect to the next block of three years. No interest, whatsoever, shall be payable on the security amount deposited under the prescribed security head of the government;

4.19 You shall prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) from the Recognized Qualified Person as per chapter 10 of the State Rules, 2012 for the "Mining Unit" and shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorised by the Director, Mines & Geology, in this behalf.

4.20 Further, the actual mining will be allowed to be commenced only after prior Environment Clearance is obtained by you as the lot holder/ Mining contractor for the Mining Unit from the Competent Authority as required under EIA notification dated 14/09/2006 issued by Ministry of Environment, Forests and Climate Change, Government of India or as amended from time to time and also other required approvals for mining including Consent to Establish and Consent to Operate from the Haryana State Pollution Control Board before commencement of actual mining operations.

4.21 You will also be liable to pay the following to the landowners to undertake mining operations:

(a) Annual rent in respect of the land area blocked under the concession but not being operated; and

(b) Rent Plus compensation in respect of the area used for actual mining operations.

4.22 The amount of annual rent and the compensation shall be settled mutually between the landowner and the mining lessee. In case of non-settlement of the rent and compensation, the same shall be decided by the District Collector concerned in accordance with the provisions contained in Chapter 9 of the "State Rules, 2012";

4.23 The total mineral excavated and stacked by the concession holder within the area granted on mining lease shall not exceed two times of the average monthly production as per approved Mining Plan and/or quantity approved under Environmental Clearance, at any point of time.

4.24 The mining lessee shall not stock any mineral outside the concession area granted on mining contract, without obtaining a valid Mineral Dealer Licence as per provisions contained in Chapter 14 of the State Rules, 2012.

4.25 The lessee shall not carry out any mining operations in any reserved/ protected forest or any area prohibited by any law in force in India, or prohibited by any authority without obtaining prior permission in writing from such authority or officer authorized in this behalf. In case of refusal of permission by such authority or officer authorised in this behalf, lessee(s) shall not be entitled to claim any relief in payment of dead rent on this account;

4.26 No mining operation shall be allowed in the urbanize zone of area notified by Town and Country Planning Department. Further, in case of the agriculture zone notified by Town and Country Planning Department mining shall be permissible only after obtaining prior permission from the competent authority;

4.27 The lessee shall not undertake any mining operation in the area granted on mining lease without obtaining requisite permission from the competent authority as required for undertaking mining operations under relevant laws;

4.28 The lessee shall be under obligation to carry out mining in accordance with all other provisions as applicable under the Mines Act, 1952, Mines and Minerals (Development and Regulation) Act, 1957, Indian Explosive Act, 1884, Forest (Conservation) Act, 1980 and Environment (Protection) Act, 1986 and the rules made there under, Wild life (Protection) Act, 1972, Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981;

4.29 All other terms and conditions shall remain as per auction notice and the provisions of the Mines and Minerals (Development and Regulation) Act, 1957 and Rules made there under shall prevail over all the terms and conditions.

5. Accordingly, you are advised to submit the Draft Lease Deed along with other requisite documents including a solvent surety(s) for a sum equal to the amount of the annual bid for execution of the agreement, within a period of 90 days from the date of issue of this bid acceptance letter and the LoI.

State Mining Engineer
for Director General, Mines & Geology,
Haryana, Panchkula.

Speed/Registered Post

Endst. No. DMG/HY/ML/Donkhera/2022/ 2714 Dated: 20-4-22

A copy is forwarded to the following for information and necessary action please:-

1. The Principal Secretary to Government Haryana, Mines and Geology Department.
2. The Chairman, Haryana State Pollution Control Board, Panchkula.
3. The Deputy Commissioner, Mahendergarh.
4. The Mining Officer, Mines & Geology Department, Mahendergarh. He is directed to ensure that proper and complete 'Draft Lease Deed Documents' as required are submitted within stipulated period.

State Mining Engineer
for Director General, Mines & Geology,
Haryana, Panchkula.

STONE FIELD

Ground Floor, Plot No. 6, Sector 44, Near Pal Dairy, Gurgaon - 122002, Distt. Gurgaon

CONSENT LETTER

We Mining Plan in respect of Silicate stone mine in Village Dookhera , 7.46 Hectares ; District- Mahendergarh, State- Haryana of M/S Stone Field. Through Sh. Ashwani Khurana, S/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon is being prepared by D.C.Yadav RQP/BMG/HRY/2018/CB & Sh. S.N.Sharma (QP).

I request The Director Mines and Geology, Haryana to make further correspondence regarding modification of the mining plan with the said RQPs on the following address.

S.N. Sharma
#282, 1st floor , Sector 11-D (Haryana) 121006
+91-9560848579, +91-9958214247.

I also authorize Shri. S.N. Sharma to make correspondence with your office.

I hereby undertake that the mining plan in respect of the area prepared by RQP be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

Place: Narnaul

Dated:

Signature of the applicant

Certificate.

The Mining plan and Progressive Mine Closure Plan complies all Statutory Rules,Regulations, orders made by the Central or State Government, statutory organizations, court etc. have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities. It is also undertaken that all the measures proposed in the Progressive Mine Closure Plan will be implemented in a time bound manner as proposed.

S.N. SHARMA
B.E.(Mining)
Qualified Person

(QP)

Certificate

i) Certified that the provisions of Mines Act, Rules & Regulations made there under have been observed in this Mining Plan and whenever specific permission is required the applicant will approach the Director General of Mines Safety.

ii) it is also certified that the information furnished in the above Mining Plan are true and correct to the best of my knowledge. In case of default, the approval would be withdrawn.

S.N. SHARMA
B.E(MINING)
Qualified Person

Declaration

The Mining Plan and Progressive Mine Closure Plan complies all statutory Rules, Regulations, orders made by the Central or State Government, statutory organizations, court etc. have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities. It is also undertaken that all the measures proposed in the Progressive Mine Closure Plan will be implemented in a time bound manner as proposed in the Mining Plan.

Applicant

No. 1[illegible]

THE UNIVERSITY OF JODHPUR

PROVISIONAL CERTIFICATE

Roll No. 16 Enrolment No. Ju 76 167.

It is certified that SATYA NARAYAN SHARMA

Son/Daughter of KRISHNA CHANDRA - had pursued a course of study in this University for the Degree of Bachelor of Engineering (MINING.) and found qualified for the degree on having passed the Final Examination held in Oct 1981.

He/~~She~~ secured 2052 marks out of 3170 marks in the aggregate and was placed in FIRST Division.

JODHPUR, the 13 Mar 1982

REGISTRAR

NOTE : The printed certificate/diploma on passing the examination will be issued to him/her in due course at the Convocation.

GOVERNMENT OF HARYANA

DIRECTORATE OF MINES AND GEOLOGY, HARYANA, 30-BAYS BUILDING, SECTOR 17, CHANDIGARH.

CERTIFICATE OF RECOGNITION AS A QUALIFIED PERSON TO PREPARE MINING PLAN/SCHEME OF MINING FOR MINOR MINERAL MINES

(Under Rule 67 of Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012)

Shri Duli Chand Yadav S/o Shri Ramji Lal, resident of village Dhani Bania Wali, PO Nangal Chaudhary, District Mahendergarh having given satisfactory evidence of his qualifications and experience, is hereby granted recognition under Rule 67 of the Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012, as a "Qualified Person" to prepare Mining Plans/Scheme of Mining in respect of minor minerals mines in the State of Haryana.

2. His registration No. is DMG/HRY/QP/2018/03.

3. This recognition shall be valid for a period of ten years ending on 26.04.2028

Place : Chandigarh
Dated : 26.04.2018

(Sanjay Goel, IAS)
Director,
Mines & Geology, Haryana,
Chandigarh.

STONE FIELD

We have been issued a Letter of Intent dated 20.04.2022, against an auction for a Mining Lease situated in Village Dokhera, District Mahendergarh spread over an area of 7.46 Hectares.

Consequently, we had submitted a Mining Plan for the said area, for approval.

A Mining Lease under the name and style of M/S Xandy Mines and Minerals, is being operated adjoining to the Mining area allotted to us.
M/S Xandy Mines & Minerals has no objection to the fact that a buffer zone is not being provisioned for as it would create a potential hazardous situation with an unstable 7.5 mtrs. rock wall standing between the two Mining areas.
In view of the imminent danger, M/S Xandy Mines and Minerals have logically supported our cause.

You are requested to kindly approve the Mining Plan with the above considerations.

Best Regards

For Scone Field

Authorized Signatory

We have been issued a Letter of Intent dated 20.04.2022, against an auction for a Mining Lease situated in Village Dokhera, District Mahendergarh spread over an area of 7.46 Hectares.

Consequently, we had submitted a Mining Plan for the said area, for approval.

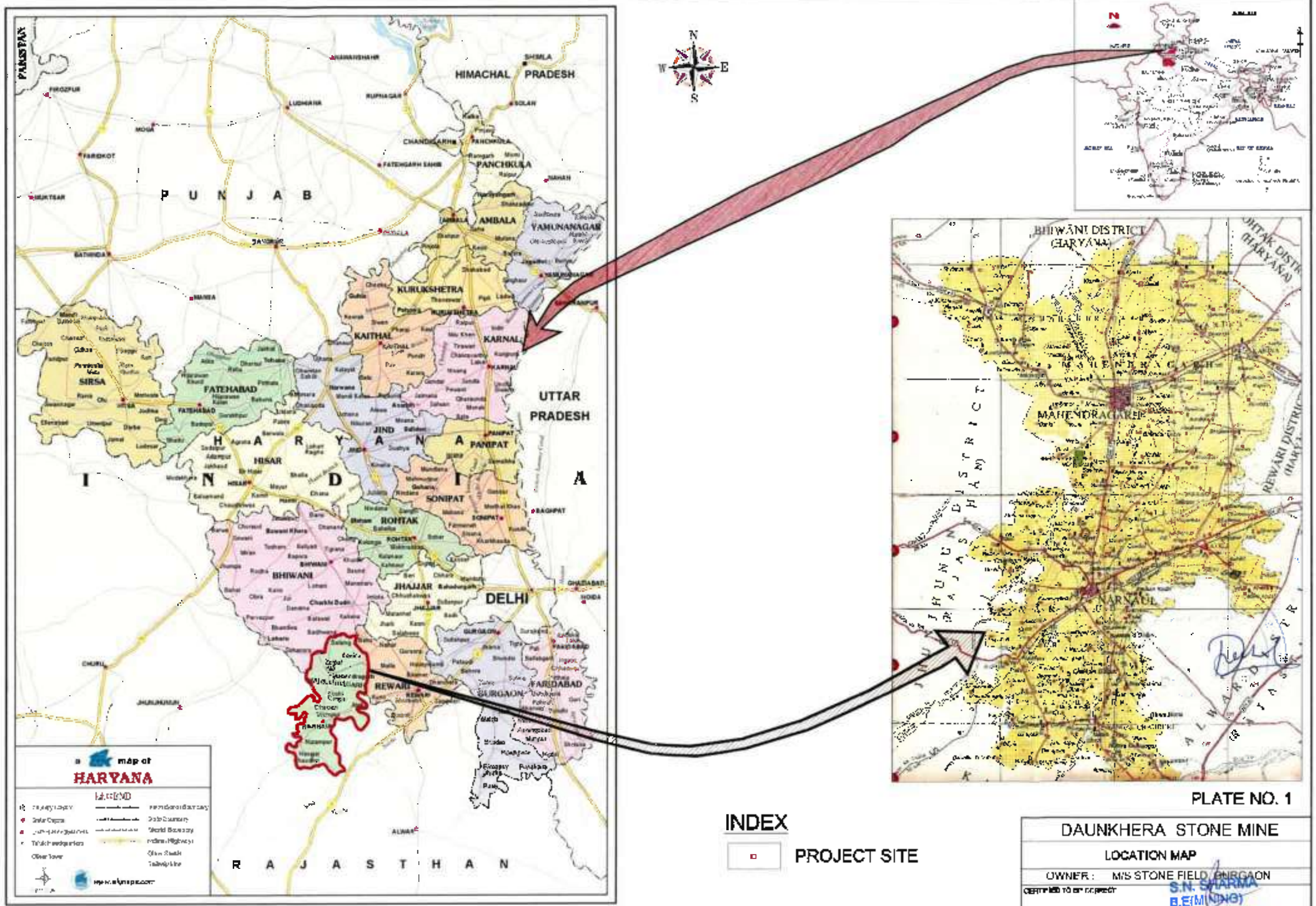
A Mining Lease under the name and style of M/S Xandy Mines and Minerals, is being operated adjoining to the Mining area allotted to us.
M/S Xandy Mines & Minerals has no objection to the fact that a buffer zone is not being provisioned for as it would create a potential hazardous situation with an unstable 7.5 Metre wall standing between the two Mining areas.
In view of the legal position, M/S Xandy Mines and Minerals have logically supported our case.

You are requested to kindly approve the Mining Plan with the above considerations.

Best Regards

For Scotia Field

Authorised Signatory



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PROJECT SITE

PLATE NO. 1

DAUNKHERA STONE MINE

LOCATION MAP

OWNER : M/S STONE FIELD, GURGAON

CERTIFIED TO BE CORRECT

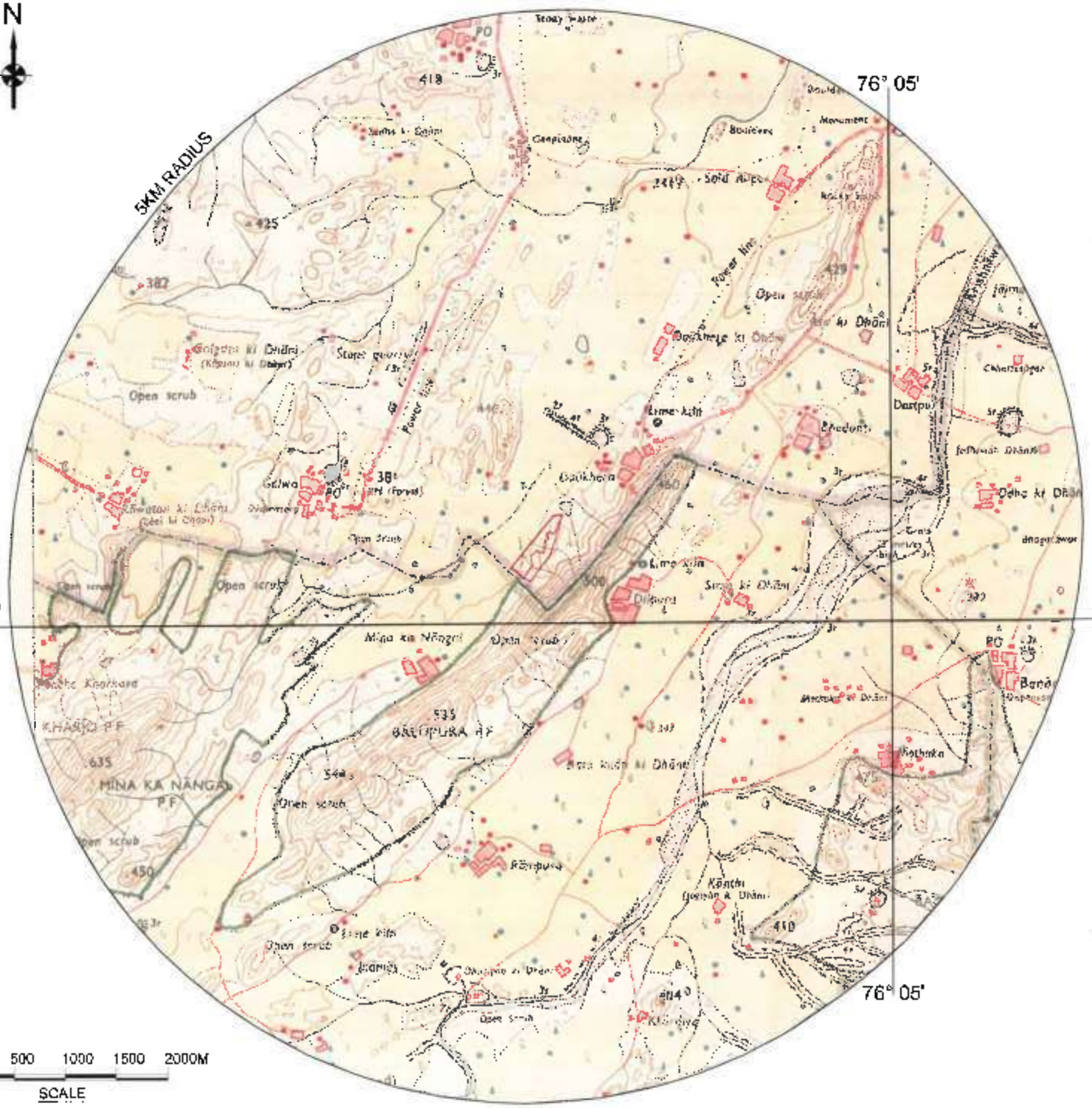
S.N. SHARMA
B.E(MINING)
Qualified Person

N

5KM RADIUS

76° 05'

27° 50'



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TREES	
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WELLS LINED/UNLINED	
HUTS PERMANENT/TEMPORARY	
DEGREES TRIANGULATION POINT (T.S.)	
BENCH MARK GEODETIC/TERTIARY	
POWER LINE & TELEPHONE LINE	
CONTOUR INTERVAL	10 mtr.

SOURCE: SOI TOPOSHEET NO. 54A/1

PLATE NO. 2

DAUNKHERA STONE MINE

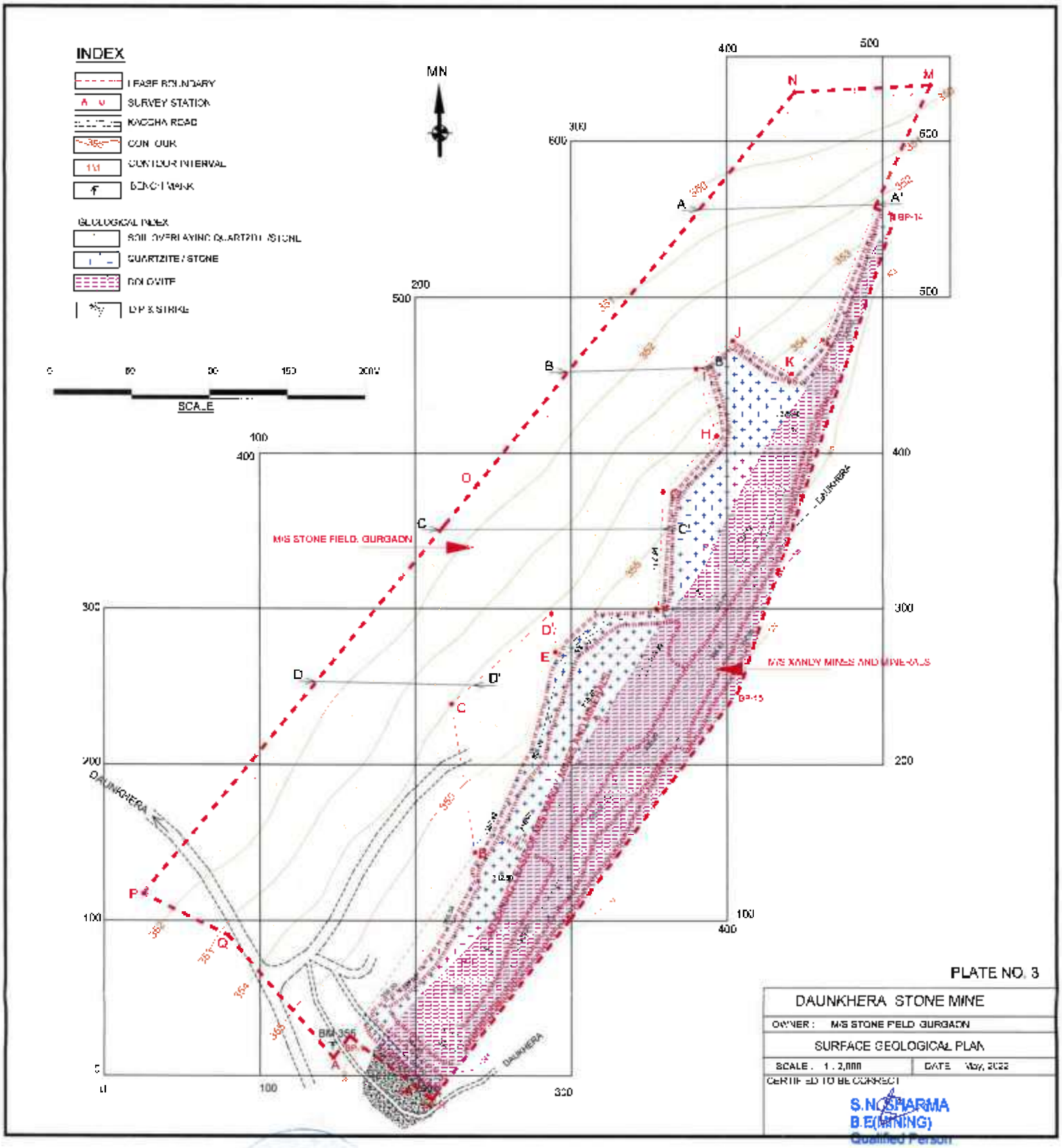
OWNER : M/S STONE FIELD, GURGAON

KEY MAP 5KM RADIUS

SCALE 1 : 50,000 | DATE OF SURVEY : May, 2022

CERTIFIED TO BE CORRECT

S.N. SHARMA
B.E(MINING)
Qualified Person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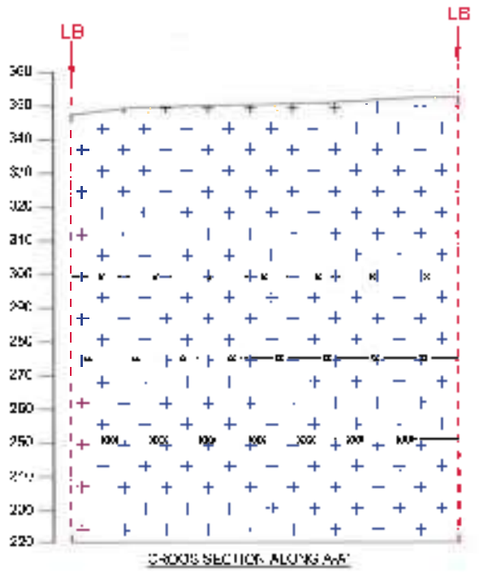
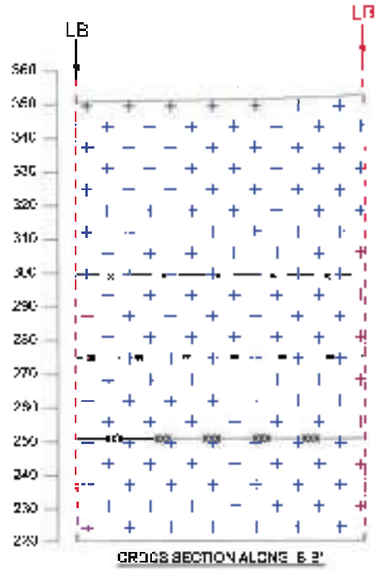
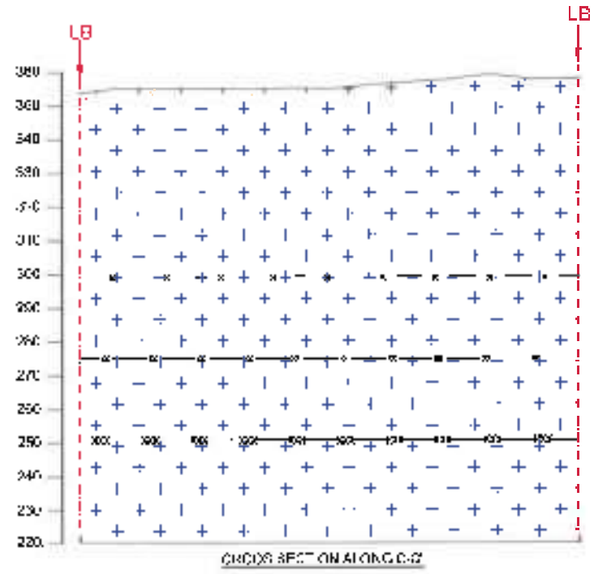
DAUNKHERA STONE MINE
OWNER : M/S STONE FIELD GURGAON
SURFACE GEOLOGICAL PLAN
SCALE : 1 : 2,000
DATE : May, 2022
CERTIFIED TO BE CORRECT
S.N.SHARMA
B.E(MINING)
Qualified Person



CROSS SECTION ALONG A-A'



CROSS SECTION ALONG B-B'



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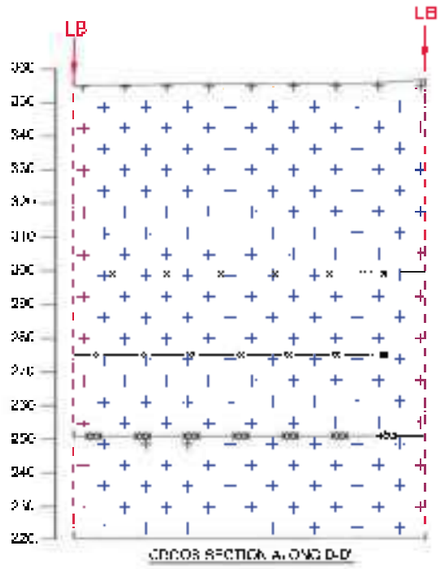
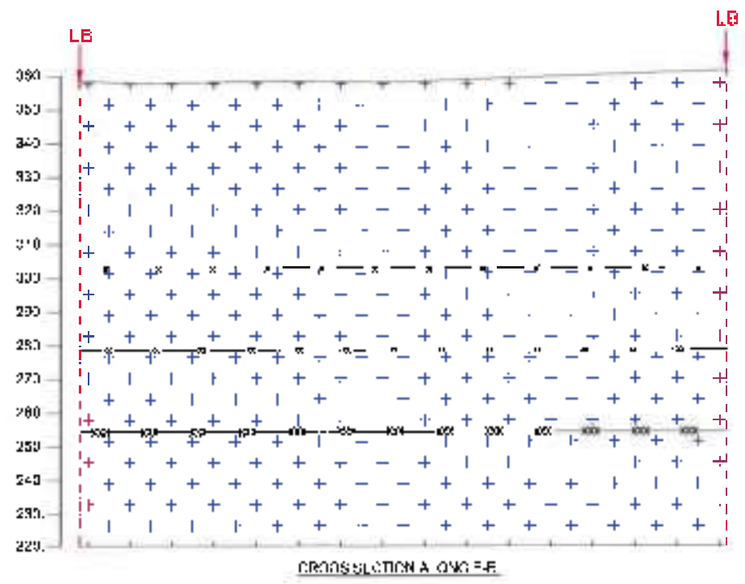


CROSS SECTION ALONG D-D'



CROSS SECTION ALONG E-E'

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PLATE NO. 4

DAUNKHERA STONE MINE

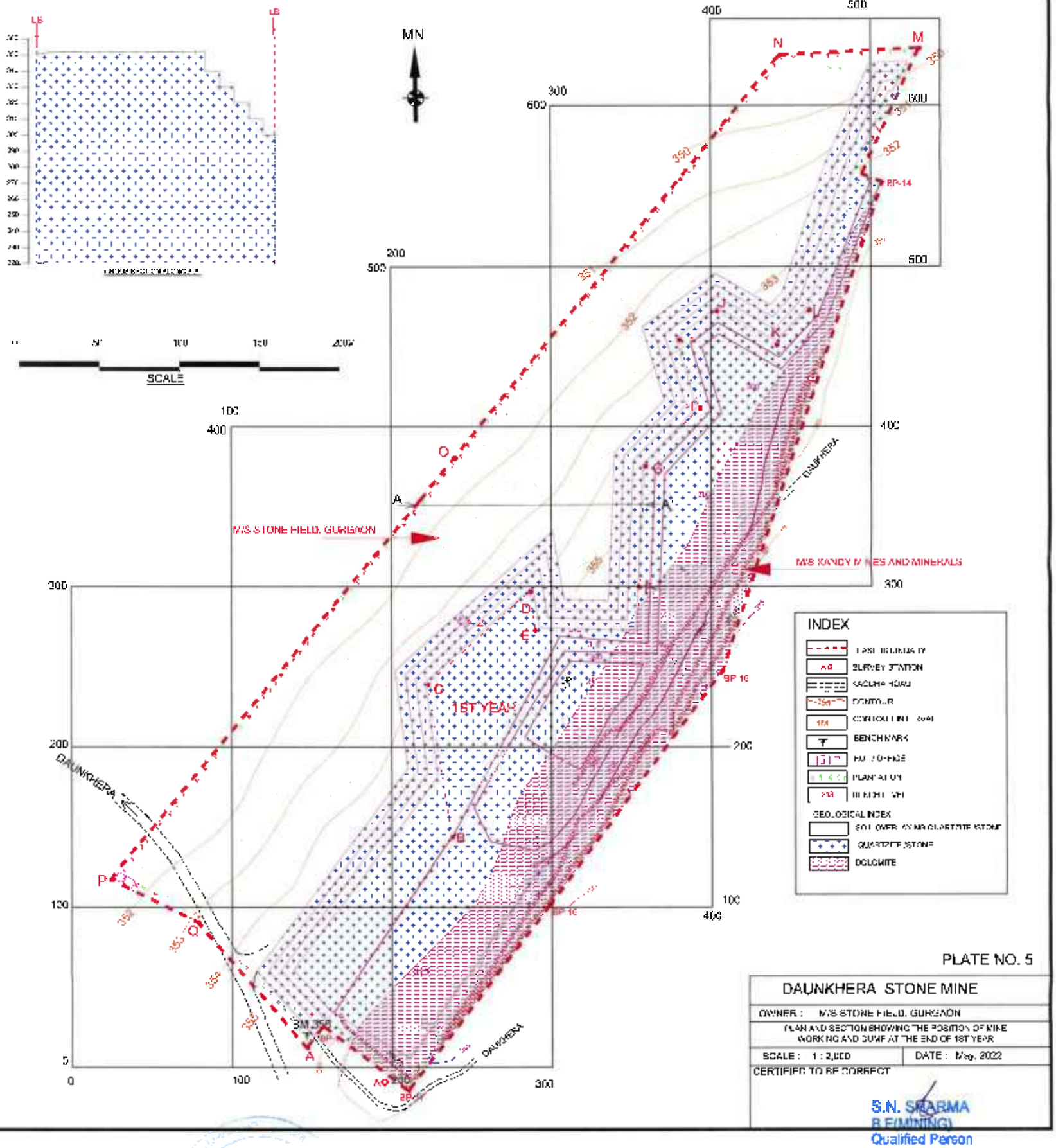
OWNER : M/S STONE FIELD, GURGAON

GEOLOGICAL SECTIONS

SCALE : 1 : 2,000 | DATE : May, 2022

CERTIFIED TO BE CORRECT

S.N. SHARMA
B.E(MINING)
Qualified Person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1ST YEAR
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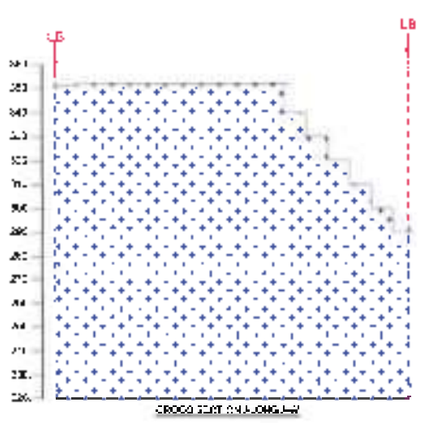
OWNER : M/S STONE FIELD, GURGAON
PLAN AND SECTION SHOWING THE POSITION OF MINE WORKING AND DUMP AT THE END OF 1ST YEAR
SCALE : 1 : 2,000
DATE : May, 2022
CERTIFIED TO BE CORRECT
S.N. SHARMA
B.E(MINING)
Qualified Person



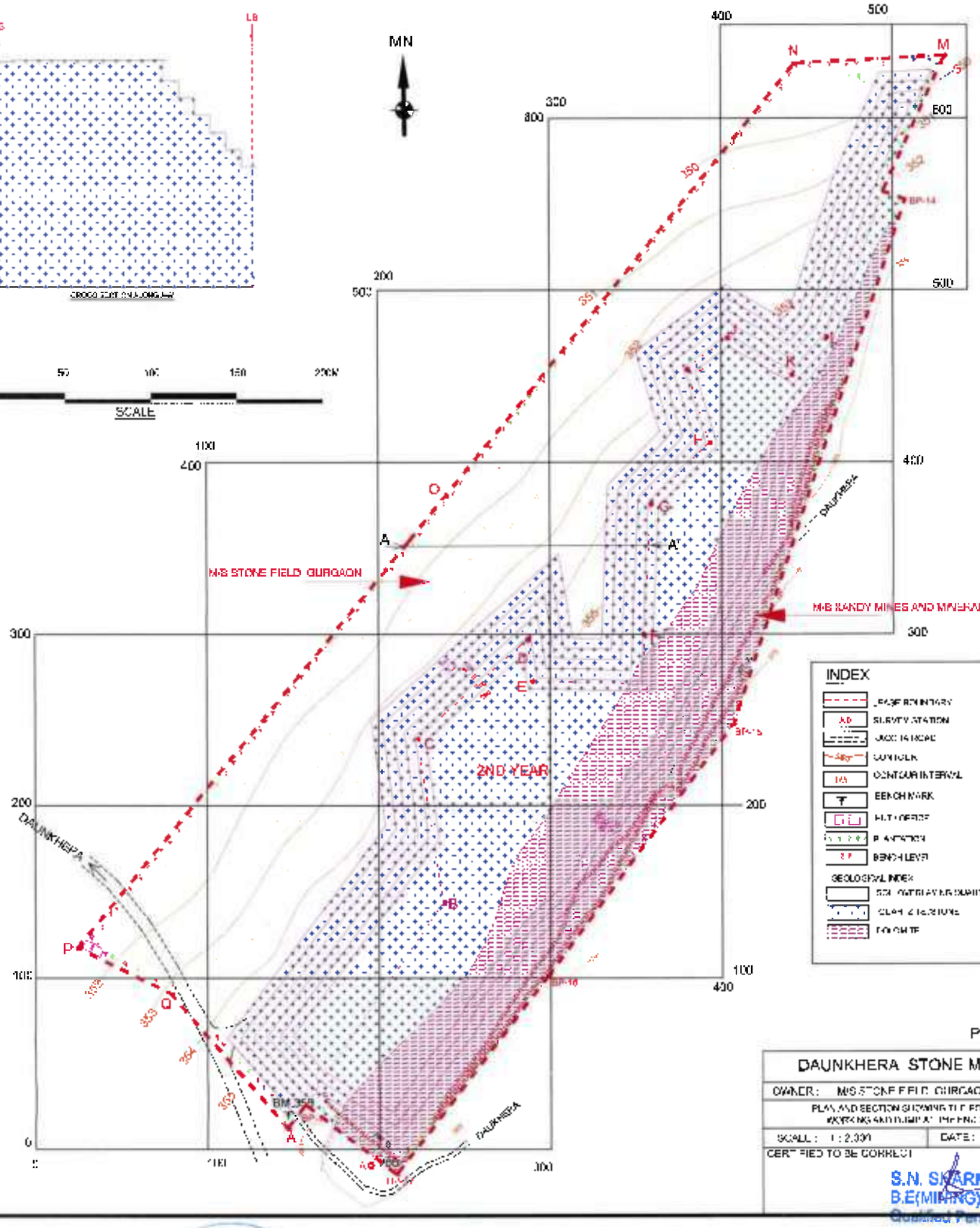
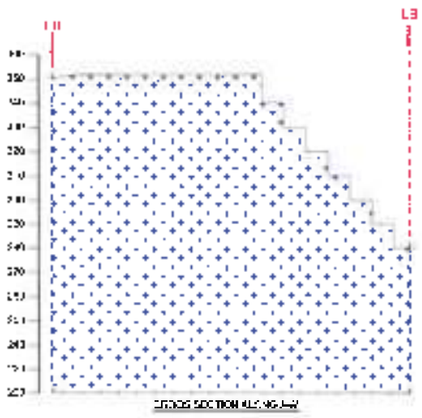


PLATE NO. 6

DAUNKHERA STONE MINE	
OWNER : M/S STONE FIELD GURGAON	
PLAN AND SECTION SHOWING THE POSITION OF MINE WORKINGS AND DISPOSAL TIP END OF 2ND YEAR	
SCALE : 1 : 2,000	DATE : Nov. 2022

CERTIFIED TO BE CORRECT

S.N. SHARMA
B.E(MINING)
Qualified Person



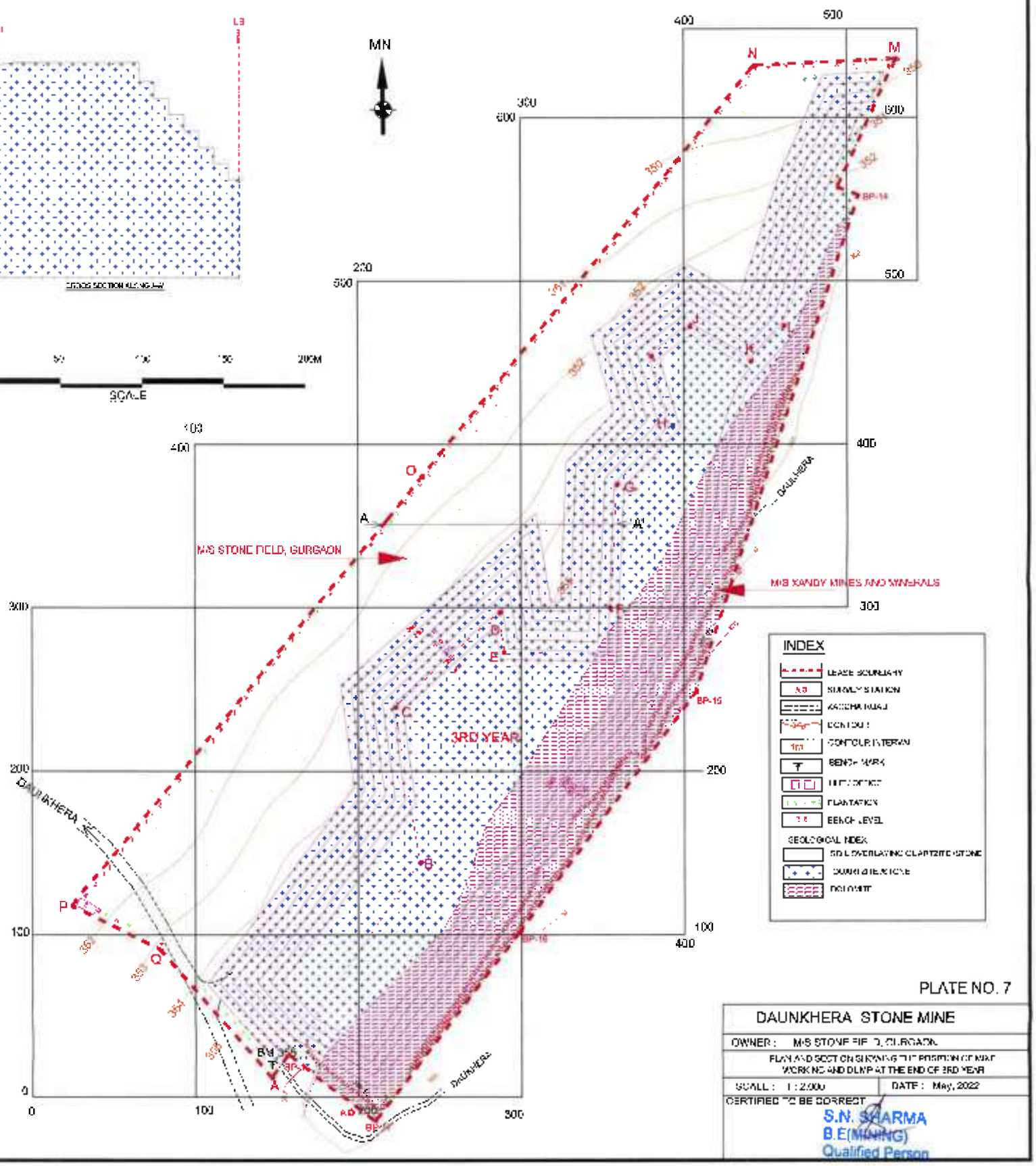


PLATE NO. 7

DAUNKHERA STONE MINE

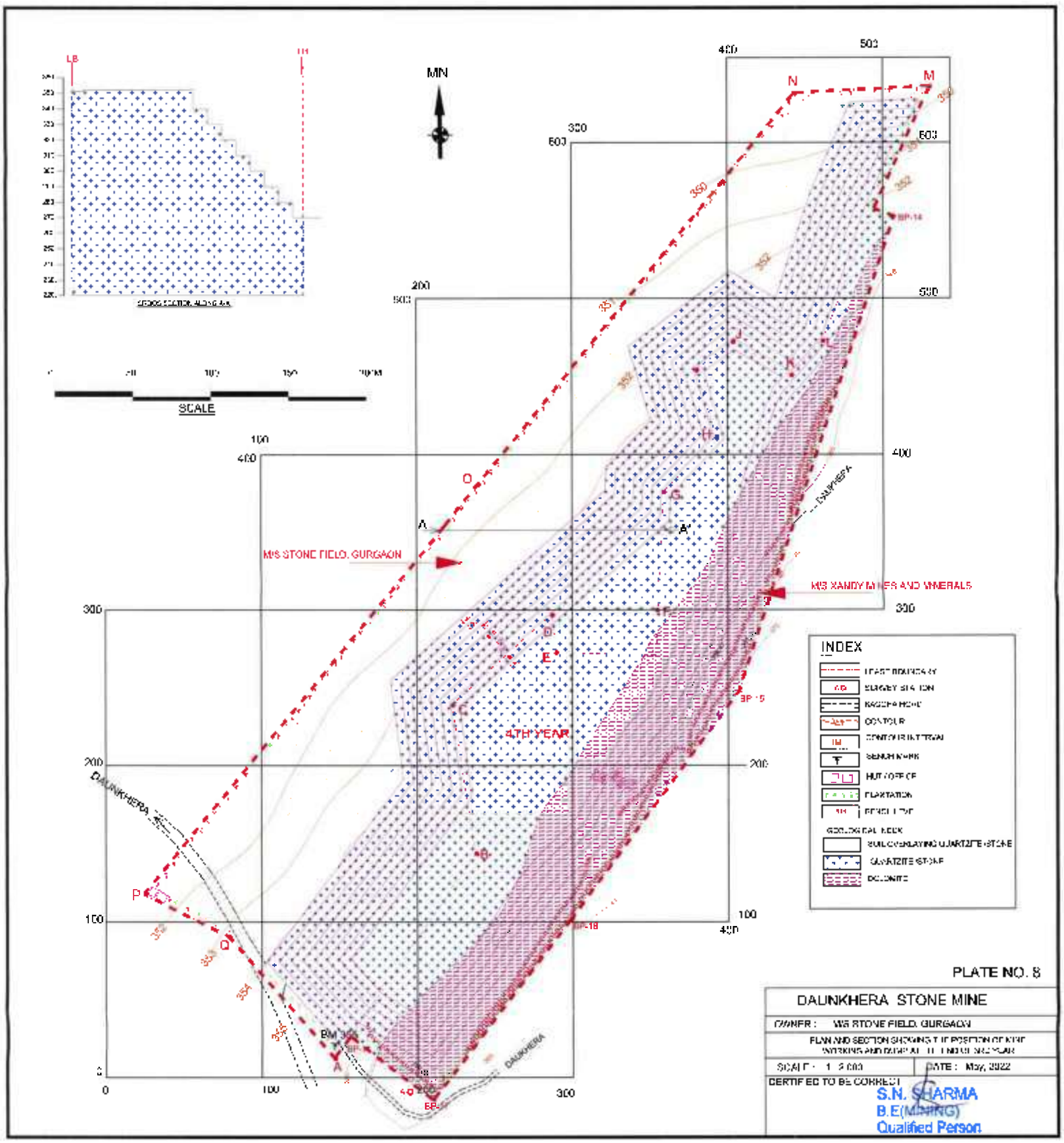
OWNER : M/S STONE FIELD, GURGAON

PLAN AND SECTION SHOWING THE POSITION OF MINE WORK NO AND DUMP AT THE END OF 3RD YEAR

SCALE : 1 : 2,000 DATE : May, 2022

CERTIFIED TO BE CORRECT

S.N. SHARMA
B.E(MINING)
Qualified Person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M/S XANDY MINES AND MINERALS
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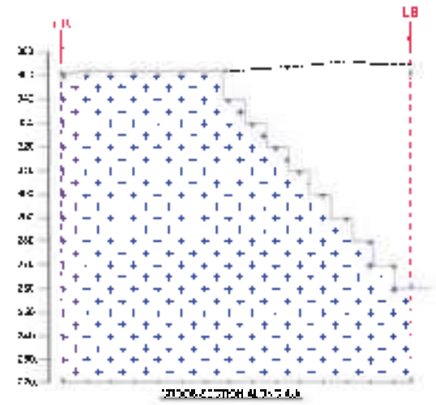
OWNER : M/S STONE FIELD, GURGAON
PLAN AND SECTION SHOWING THE POSITION OF MINE WORKING AND DISPOSAL OF OVERBURDEN
SCALE : 1 : 2,000
DATE : May, 2022
CERTIFIED TO BE CORRECT
S.N. SHARMA
B.E(MINING)
Qualified Person



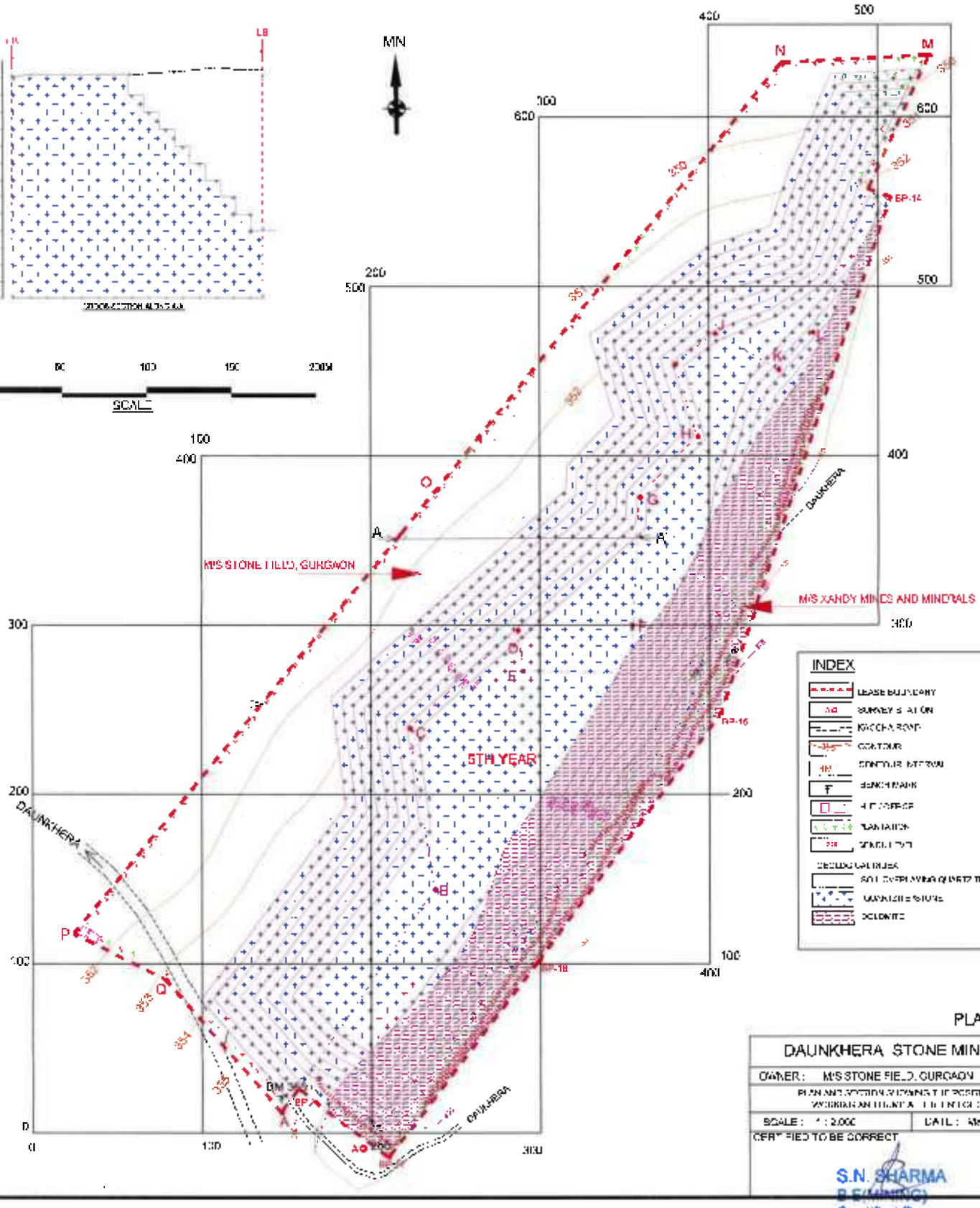
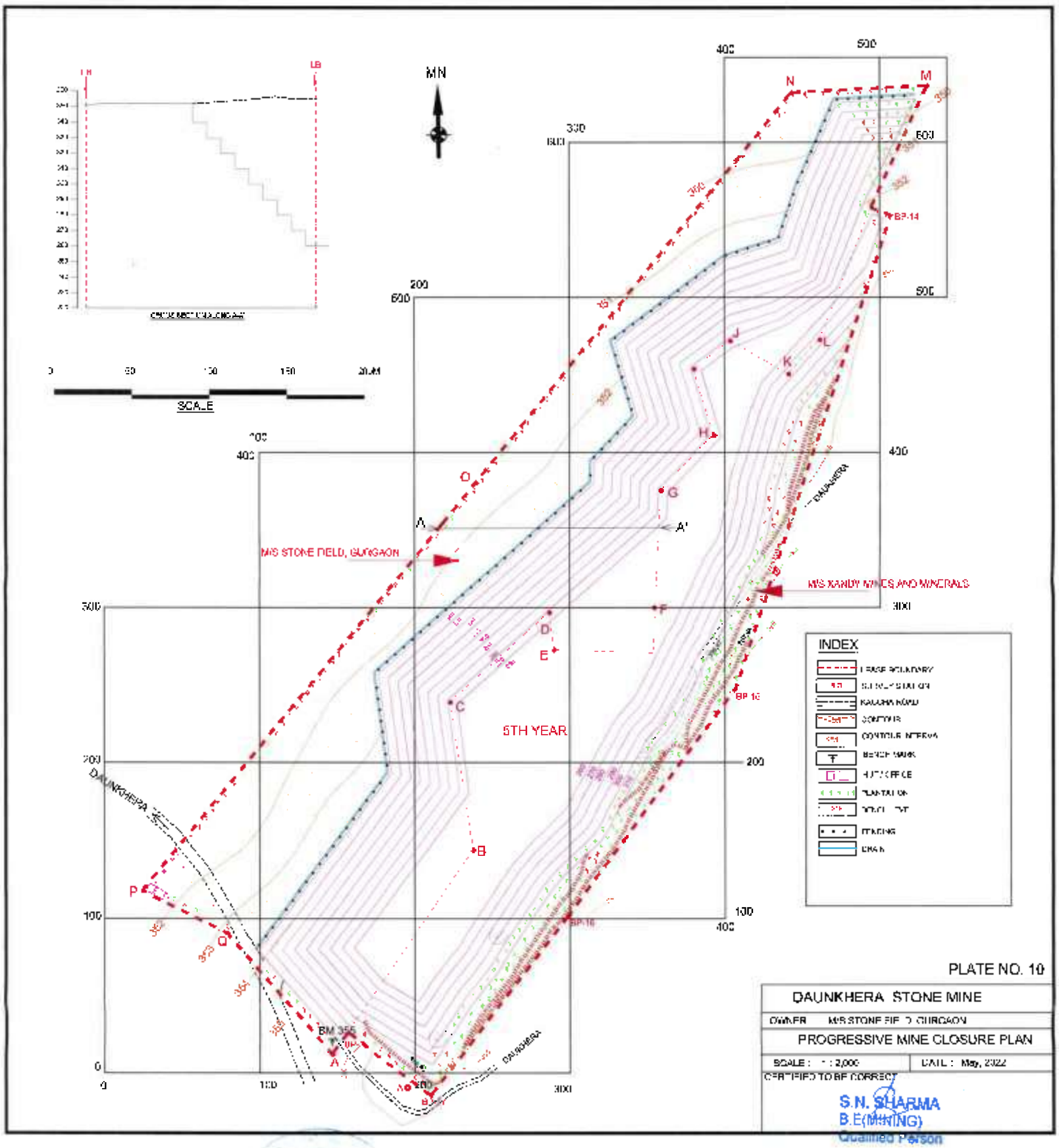


PLATE NO. 9

DAUNKHERA STONE MINE	
OWNER : M/S STONE FIELD, GURGAON	
PLAN AND SECTION SHOWING THE POSITION OF MINE WORKINGS AT THE END OF 5TH YEAR	
SCALE : 1 : 2,000	DATE : May, 2022

CERTIFIED TO BE CORRECT

S.N. SHARMA
B.E.(Mining)
Qualified Person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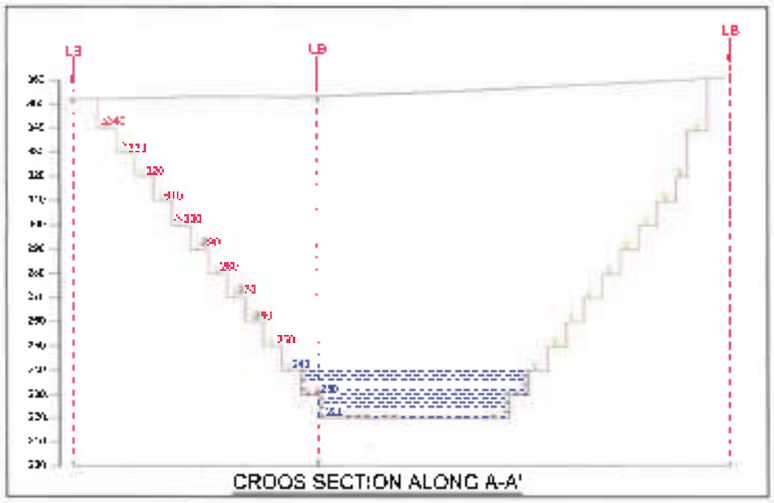
PROGRESSIVE MINE CLOSURE PLAN
SCALE : 1 : 2,000
DATE : May, 2022
CERTIFIED TO BE CORRECT
S.N. SHARMA
B.E(MINING)
Qualified Person



SCALE

MN

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- CONTOUR
- CONTOUR INTERVAL
- STONE MASS
- HUT / OFFICE
- PLANTATION
- DEVELOPED
- FENCING
- TRAIN

M/S STONE FIELD, GURGAON

M/S XANDY MINES AND MINERALS

DAUNKHERA

DAUNKHERA

PLATE NO. 11

DAUNKHERA STONE MINE	
OWNER : M/S STONE FIELD GURGAON	
CONCEPTUAL MINING PLAN	
SCALE 1:2000	DATE : May, 2022

CERTIFIED TO BE CORRECT

S.N. SHARMA
B.E(MINING)
Qualified Person

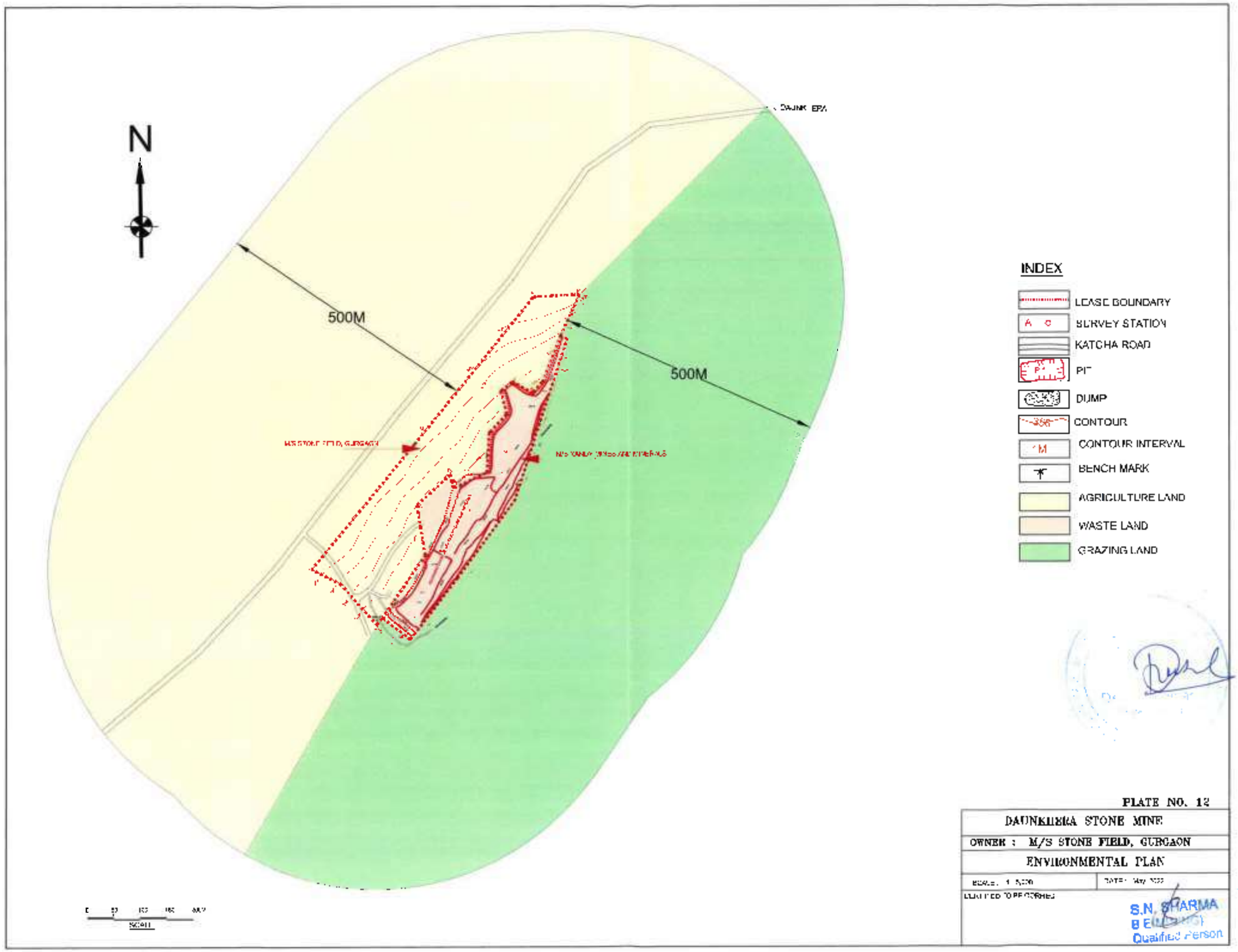

PLATE NO. 12

DAUNKHERA STONE MINE	
OWNER : M/S STONE FIELD, GURGAON	
ENVIRONMENTAL PLAN	
SCALE : 1:5000	DATE : May 2022

CERTIFIED TO BE CORRECT

S.N. SHARMA
B.E. (MINING)
Qualified Person

ANNEXURES – 1.3

CLUSTER NOC (500M)

कार्यालय खान एवं भूविज्ञान विभाग, नारनौल
Office of Mines & Geology Department, Narnaul

To,

M/s Stone Field
Through Sh. Ashwani Khurana
R/O GH-18, Celebrity Homes,
Palm Vihar, Gurgaon.

Memo No. 1795 Dated. 01/06/23

Subject: **No Objection Certificate for Cluster.**

Reference: Status of other Mining Leases Situated within 500 m radius from our Stone mining project of area 7.46hectares in the District Mahendergarh, Haryana, awarded by Department of Mines and Geology Haryana vide letter no. DMG/HY/ML/Donkhera/2022/2713

In reference to your subject, it is intimated that one Mining Leaseis present within 500 m of your project site that is M/s Xandy mines and minerals (Area-4.80 ha).

Mining Officer,
Department of Mines & Geology
Narnaul.

निजामपुर रोड, इन्डीस्ट्रीयल एरीया, जिला उद्योग केन्द्र भवन, नारनौल
Nizampur Road, Industrial Area, District Industiries Centere Building, Narnaul
E-Mail : monarnaul@gmail.com ☎ **01282-252395**

ANNEXURES – 1.4

ACKNOWLEDGEMENT OF APPLICATION TO FOREST DEPARTMENT

Government of Haryana

Acknowledgement

SARAL ID : HFLC/2023/00355	Receipt Date : 26/07/2023
Department Name:	Forest Department
Service Name:	NOC in respect of PLPA or Forest or Restricted lands
Name:	Sh Ashwani Khurana
Mobile No:	9897463853
Email ID:	akashalkhaniya@gmail.com
Permanent Address:	R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon, Gurgaon, Gurgaon
Category:	Individual
Forest Land Division:	Mahendragarh
Service Due Date	11/09/2023

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How can I track status?	Go to SARAL portal and login with registered username and password. On the left side you have to click "Track Application Status" under "View Status of Application".
How will I know that my application has been processed?	You will receive a notification from the department through SMS which will include SARAL ID and department Service Request Number (SRN).
From where can I download the output certificate?	Visit http://www.saralharyana.gov.in and download the certificate using SARAL ID.
In case of any query please contact us :	Email ID: **saral.0172-3968400 @gov.in** or Helpline Number: **0172-3968400**, Monday to Saturday (8:00 A.M to 8:00 P.M)

ANNEXURES – 1.5

TEHSILDAR NOC

सेवा में,

श्रीमान तहसीलदार साहब,

नांगल चौधरी

विषयः– **खनन एवं भू–विभाग द्वारा निलाम की गई भूमि का सत्यापन करवाने हेतु।**

श्रीमान जी,

दरख्वास्त इस प्रकार हैः–

1. यह कि मैसस स्टोन फिल्ड, GH-18 सैलेब्रेटी होम, पालम विहार गुरूग्राम बजरिये अश्वनी खुराना निवासी GH-18 सैलेब्रेटी होम, पालम विहार गुरूग्राम का निवासी हूं।
2. यह कि दिनांक 27.03.2022 को ग्राम दोखेंरा तहसील नांगल चौधरी जिला महेन्द्रगढ हरियाणा में स्थित खसरा नम्बरान 59//1, 10/1, 10/2, 60//4मिन, 7/1मिल, 7/2मिन, 6/1, 6/2, 5मिन, 13/1मिन, 13/2मिन, 14/1मिन, 14/2, 15/1, 15/2, 17, 18/1, 18/2मिन, 19मिन, 22मिन 23, 24, 62//6मिन, 15 मिन, 16, 17मिन, 25, 63//1मिन, 2, 3, 9, 10मिन, 11, 20, 21, 64//1, 65//5 की खनन बोली विभाग द्वारा लगाई गई थी, जो हमने LOI No. DMG/HY/ML/Donkhera/2022/2713 Dated 20-04-2022 Panchkula द्वारा 7.46 हैक्टेयर की छुडवाई थी। जिसमें खनिज करना है।

लिहाजा दरखवास्त पेश करके विनती है कि उपरोक्त खसरा नम्बरान की LOI No. के आधार पर सत्यापन करने का कष्ट करे। आपकी अति कृपा होगी।

दिनांक–07.06.2023

प्रार्थी

मैसस स्टोन फिल्ड, GH-18 सैलेब्रेटी होम, पालम विहार गुरूग्राम बजरिये अश्वनी खुराना

हल्का पटवारी नियमानुसार
कार्यवाही करें

तहसीलदार, नांगल चौधरी
7/6/23

SEIAA
पंचकूला, हरियाणा
सन्दर्भः–

उपरोक्त विषयान्र्गत मैसस स्टोन फिल्ड, GH-18 सैलेब्रेटी होम, पालम विहार गुरूग्राम द्वारा खनिज पत्थर क्षेत्रफल (हैक्टेयर में) 7.46 है में माईनिंग के लिए लीज अवधि 10 वर्ष खसरा नम्बरान 59//1, 10/1, 10/2, 60//4मिन, 7/1मिल, 7/2मिन, 6/1, 6/2, 5मिन, 13/1मिन, 13/2मिन, 14/1मिन, 14/2, 15/1, 15/2, 17, 18/1, 18/2मिन, 19मिन, 22मिन 23, 24, 62//6मिन, 15 मिन, 16, 17मिन, 25, 63//1मिन, 2, 3, 9, 10मिन, 11, 20, 21, 64//1, 65//5 ग्राम दोखेंरा तहसील नांगल चौधरी जिला महेन्द्रगढ हरियाणा हेतु पूर्व प्र्यावरण अनुमति के लिए परिशिष्ट–1 में बिन्दू कमांक 1 से 11 तक की जानकारी निम्नानुसार हैः–

क.	निर्धारित बिन्दू	हा/नही	जानकारी विवरण
1	क्या 500 मीटर की दूरी के अन्दर कोई मकान स्थित है	नहीं	
2	क्या 500 मीटर की दूरी के अन्दर कोई नदी स्थित है	नहीं	
3	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान स्थित है	नहीं	
4	क्या 500 मीटर की दूरी के अन्दर कोई राज्य राजमार्ग स्थित है	नहीं	
5	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय राजमार्ग स्थित है	नहीं	
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय स्थित है	नहीं	
7	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्वीय महत्व के स्थल स्थित है	नहीं	
8	क्या 500 मीटर की दूरी के अन्दर कोई ओर खदान स्थित है यदि है तो उसका कुल क्षेत्रफल तथा खनिज का नाम	हाँ	VANOY Mines & MINERALS, 4.80 Hectare
9	क्या 500 मीटर की दूरी के अन्दर कोई वन्यजीव अभ्यारण स्थित है	नहीं	

उपरोक्त सिंह नंबर कार्ड धारक से पेड़ाई

(हस्ताक्षर आवेदक)
Shekhar Nangal Choudhary
दिनांक– 9/6/23

9/8/2023

ANNEXURES – 1.6

PANCHAYAT NOC

सुशीला सरपंच

।। श्री गणेशाय नमः ।।

Mob.-8307567043
8307737479

सरपंच ग्राम पंचायत – दौंखेरा

(खण्ड - नांगल चौधरी)
तह. नांगल चौधरी, जिला महेन्द्रगढ़(हरि०) पिन नं. 123023

क्रमांक:

दिनांक : 29/6/2023

प्रमाणित किया जाता है कि ग्राम दोखेंरा त० नागल चौधरी जिला महेन्द्रगढ हरियाणा मे स्थित खसरा नम्बरान 59//1, 10/1, 10/2, 60/4 मिन, 7/1 मिन, 7/2 मिन, 6/1, 6/2 मिन, 13/1 मिन, 13/2 मिन, 14/1 मिन, 14/2, 15/1, 15/2, 17, 18/1, 18/2 मिन, 19 मिन 22 मिन, 23, 24, 62/6 मिन, 8 मिन, 16, 17 मिन 25; 63/1 मिन 2, 3, 9, 10 मिन, 11, 20, 21, 64/1, 65/15 की खनन बोली विभाग द्वारा लगाई गई थी जो LOI No. D mn/HY/ml/ Donkhera 2022/273 date 20/4/2022 panchkula द्वारा 7.46 हैक्टेयर की खनन के लिए छुड़वाई थी, इस बाबत ग्राम पंचायत को किसी तरह की कोई आपत्ति नहीं है।

Sushila
Sarpanch
Garam Panchayat
Dokhera (N.Chodhary)

ANNEXURES – 1.7

DISTRICT SURVEY REPORT

STONE FIELD

Ground Floor, Opp State Warehouse, Kotputli Road, Narnaul Chaudhary – 123023, Distt- Mahendergarh

To,
The Mining Officer,
Mines and Geology Department,
Narnaul, Haryana

Date: June 26th, 2023

Subject: Regarding approved District Survey Report (DSR) for "Donkhera Minor Minerals of Stone Mine Lease Area – 7.46 ha Village-Donkhera, District-Mahendergarh, State-Haryana by M/s. Stone Field.

Dear Sir,

This is reference to the above-mentioned project for which approved DSR from the Mining Department is being required for the Environment Clearance Process.Khasra nos. of the mining lease area are given in below table for your reference:

Name of village	Details of Khasra Nos./Kila nos.	Area (ha.)
Donkhera	59//1, 10/1, 10/2, 60//4 min ,7/1min, 7/2 min, 6/1, 6/2, 5 min 13/1 min, 13/2 min, 14/1 min, 14/2, 15/1, 15/2, 17, 18/1, 18/2 min, 19 min, 22 min, 23, 24, 62//6 min, 15 min, 16, 17 min, 25, 63//1 min, 2, 3, 9, 10 min, 11, 20, 21, 64//1, 65//5	7.46

You are requested to kindly give us approved DSR report for the above-mentioned project.

Thanking You,

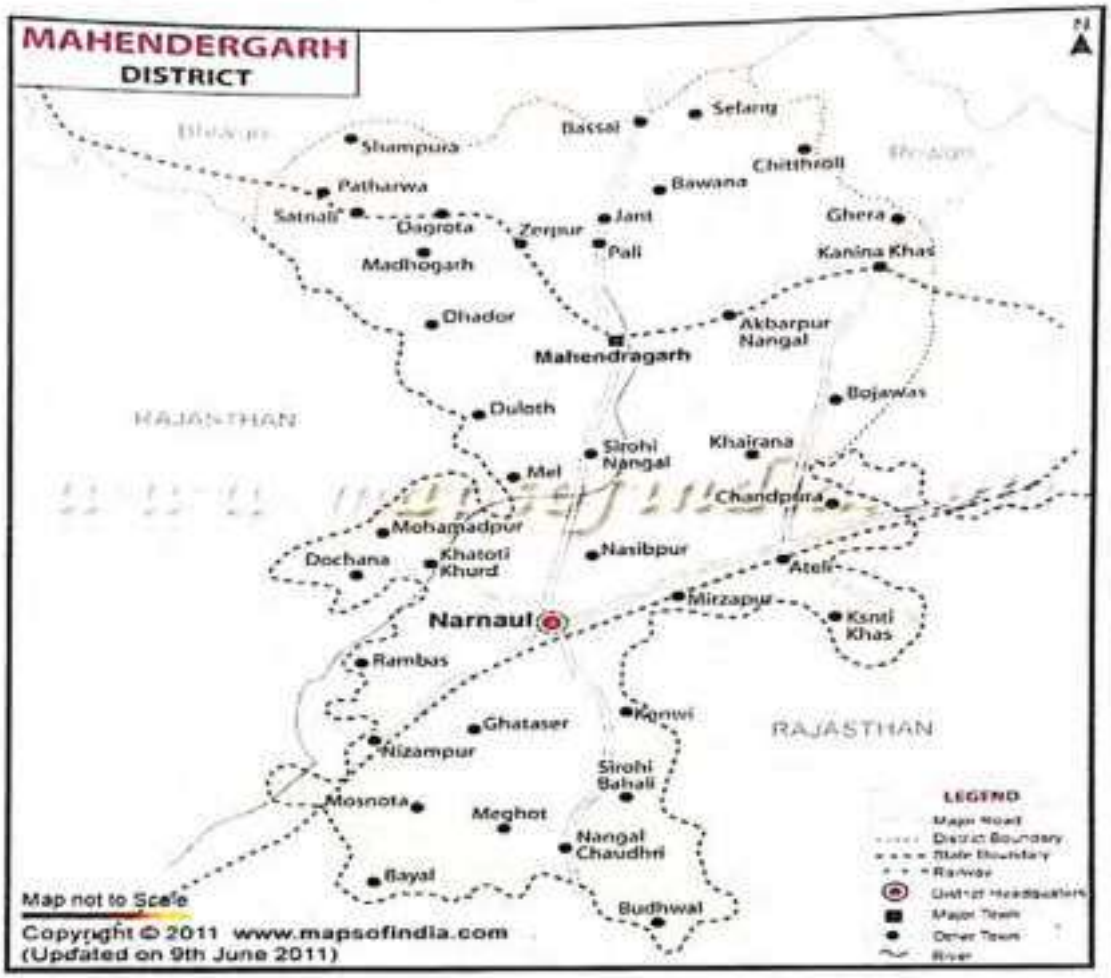
For Stone Field

Authorized Signatory

Enclosed: Letter of Intent

DISTRICT SURVEY REPORT

FOR MINING OF MINOR MINERALS OF DISTRICT MAHENDRAGARH, HARYANA



District Survey Report is prepared in accordance with Para 7 (iii) of S.O.3611 (E) dated 25th July 2018 of Ministry of Environment, Forest and Climate

Prepared By:-

Niranjan Lal.
Mining Officer,
Narnaul

Approved District Survey Report Mahendergarh

OUTLINE OF THE DISTRICT SURVEY REPORT OF MINERALS IN DISTRICT MAHENDERGARH, HARYANA

Approved
District Survey
Report
Mahendergarh

PREFACE

In Compliance to the Notification Issued by the Ministry of Environment, Forest and Climate change S.O. 3611(E) Dated 25.07.2018, the preparation of District survey report of minor minerals is in accordance appendix 10 of the notification. It is also mentioned here that the procedure of preparation of District Survey Report is as per notification guidelines. Every efforts have been made to minor minerals mining locations, areas & overview of Mining activity in the district with all it's relevant features pertaining to geology & mineral wealth sources. This report will be a model and guiding document which is a compendium of available mineral resources, geographical set up, environmental and ecological set up of the District and is based on data of various departments, published reports and websites.

1. INTRODUCTION:-

Mahendragarh district occupies the southern extremity of the Haryana state jointly with Rewari and Gurgaon districts of Haryana. It has a total geographical area of 1776 sq. km. and falls between Latitudes 27°48'10" and 28°8'30" and Longitudes 75°54'00" and 76°51'30". Mahendragarh district is bounded by Dadri and Jhajjar districts in its north, Rewari in its east and Alwar and Jhunjhunu (Rajasthan) districts in its south and west respectively. Administratively, the district is divided into three sub divisions, namely Mahendragarh, Narnaul and Kanina. The district, located in the semi-arid region of the state, has its head quarter at Narnaul. The district forms a part of Haryana Plains which itself is an integral part of Indo-Gangetic alluvial plain, has vast stretch of almost flat land. There are eight development blocks in the area namely Ateli, Kanina, Mahendragarh, Nangal Chaudhary and Narnaul, Sihma, Nizampur and Satnali. The district is comprised of 370 villages and 5 towns with the population of 9,21,680 souls as per 2011 census.

The district lies between north latitude 27° 47 to 28° 26 and east longitude 75° 56' to 76° 51'. It is bounded on the north by Dadri and Jhajjar districts, on the east by Rewari district and Alwar district of Rajasthan, on the south by Alwar, Jaipur and Sikar districts of Rajasthan, and on the west by Sikar and Jhunjhunu districts of Rajasthan.

In district Mahendergarh of Haryana, there are so many types of mineral such as Dolomite, Baraytes, Quartz, Quartzite, Road Metal and Masonry Stone, Lime Stone, Calcite, Iron Ore, Slate Stone, Granite, Felspar, Bajri/ Sand etc. are available in district Mahendergarh. Eight Mines of Road Metal and

Masonry stone, quartz and bajri in the district are already in operation and few are in queue likely to be come into operation.

Minerals are classified into two groups, namely (i) Major minerals and (ii) Minor minerals. Amongst these two groups minor mineral have been defined under section 3 (e) of Mines and Minerals (Regulation and development) Act, 1957; Quartz & Felspar were included in major mineral.

With subsequent notification dated 10.02.2015, 31 minerals (as notified in the Act) have been declared as Minor Minerals. Therefore, minerals namely Quartz & Felspar for which lease was granted now have fallen under category of Minor Minerals and shall be under the purview and provisions of the "Haryana Minor Mineral Concession, Stocking, Transportation and Prevention of Illegal Mining Rule, 2012".

As per Gazette notification of dated 15.01.2016 passed by Ministry of Environment, Forest and Climate Change prior Environmental clearance for the mining of minor minerals has now become mandatory in the area of mining lease.

According to the guidelines of this Gazette notification, an district survey report for mining of minor mineral have been prepared for necessary and future requirement to provide the Environment Management Plan for the purpose of mining of minor minerals in district.

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2. OVERVIEW OF MINING ACTIVITY IN THE DISTRICT:-

In district Mahendergarh, Aravalli hills exists with different type of minerals such as quartz, felspar, baraytes, dolomite, road metal and masonry stone, *sandi* bajri, slate stone, lime stone, calcite, granite, iron ore, kyanites and quartzite stonel mineral. Aravalli hill range inselbergs and scattered in different locations of the district. Aravalli hills which scattered through different villages of the district such as Garhi Khudana, Zerpur, Mandola, Rajawas, Ushmapur, Sohla, Basai, Digrota, Madhogarh, Pali, Narnaul, Pachnota, Rasulpur, Jakhani, Khatoti, Lehroda, Khampura, Khaspur, Dhanota, Rambas, Karoli, Maroli, Naya Gaon, Musnota, Bayal, Gangutana, Golwa, Jainpur, Antri Biharipur, Morund, Berundla, Sareli, Ghataser, Bakhrija, Sehlong, Mudandpura, Basirpur, Amarpur Jorasi, Bazar etc. Minerals like fluvial *Sandi* Bajril Ordinary *clayl* brick earth are available throughout the river bed area of Krishnawati and Dohan rivers which are passed through the villages such as Deroli Jat, Kherki, Baproli, Mehrampur, Khatoti, Badopur, Jadupur, Bamanwas, Dhani Jajma, Nolayaja, Antri, Biharipur, Kojinda, Mandi, Dhani Bhathotha, Nangal Pipa, Nangat Kaliya etc. The area of Mahendergarh district is marked by the Indo-gangetic Alluvial Plains with outcrops of Arava"i Ranges and overlain by Eolian Sand Dunes at isolated places. In addition, Brick earth is excavated at scattered places. The list of mining leasesl contracts in district Mahendergarh which are in operation/ temporary closed due to some personal reasons/likely to be in operations.

3. GENERAL PROFILE OF THE DISTRICT:-

3.1 Haryana State Profile

Haryana is a state in north India. It was carved out of the state of Punjab in 1966. It is bordered by Punjab and Himachal Pradesh to the north and Rajasthan to the west and

south. Eastern border to Haryana & Uttar Pradesh is defined by river Yamuna. Haryana also surrounds Delhi on three sides, forming the northern, western and southern borders of Delhi. Consequently, a large area of Haryana is included in the National Capital Region. The capital of Haryana is Chandigarh which is administered as a union territory and is also the capital of Punjab.

Haryana is a landlocked state in northern India. It is located between 27°37' to 30°35' N latitude and between 74°28' and 77°36' E longitude. The altitude of Haryana varies between 700 to 3600 ft. (200 metres to 1200 metres) above sea level. Haryana has four main geographical features.

- The Yamuna-Ghaggar plain forming the largest part of the state
- The Shivalik Hills to the northeast
- Semi-desert sandy plain to the southwest
- The Aravalli Range in the south

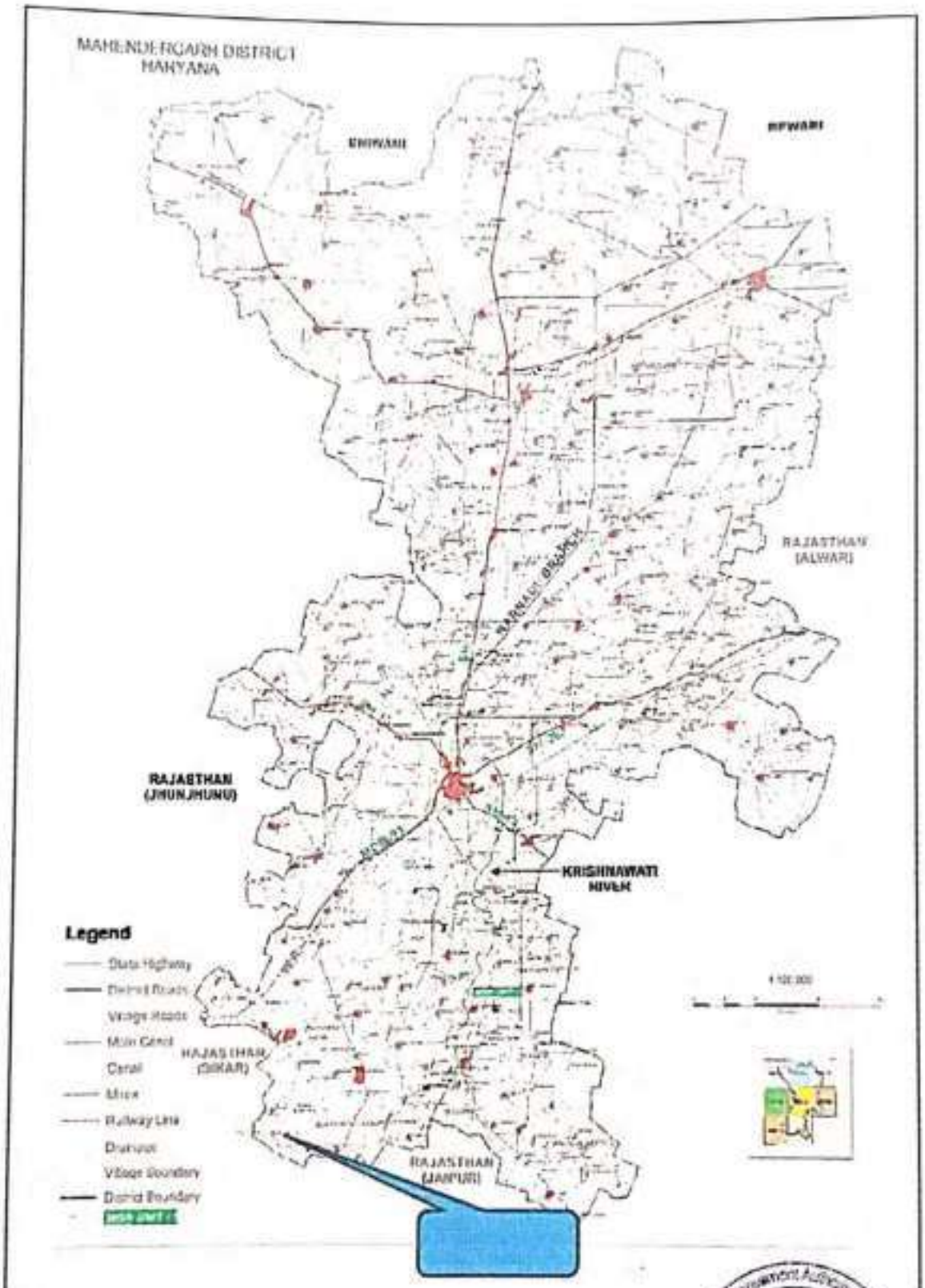
3.2 Mahendragarh District Profile

Mahendergarh district occupies the southern extremity of the Haryana state jointly with Rewari and Gurgaon districts of Haryana. It has a total geographical area of 1776 sq. km. and falls between latitudes 27°48'10" and 28°8'30" and longitudes 75°54'00" and 76°51'30". Mahendergarh district is bounded by Dadri and Jhajjar districts in its north, Rewari in its east and Alwar and Jhunjhunu (Rajasthan) districts in its south and west respectively. Administratively, the district is divided into three sub divisions, namely Mahendergarh, Narnaul and Kanina. The district, located in the semi-arid region of the state, has its head quarter at Narnaul. The district forms a part of Haryana Plains which itself is an integral part of Indo-Gangetic alluvial plain, has vast

stretch of almost flat land. Broadly speaking the district can be divided into five distinct landscapes with elevation varying from 200 mean above sea level (mtrs) to 634 mtrs, in Aravalli hills near Bayal village, foot hilts flood plains, Aeolian plains and sand dunes Alluvium deposits. There are eight development blocks in the area namely Ateli, Kanina, Mahendergarh, Nangal Chaudhary and Narnaul, Sihma, Nizampur -and Satnali. The district is comprised of 370 villages and 5 towns with the population of 9, 21,680 souls as per 2011 census. The district lies between north latitude 27° 47 to 28° 26 and east longitude 75° 56' to 76° 51'. It is bounded on the north by Dadri and Jhajjar districts, on the east by Rewari district and Alwar district of Rajasthan, on the south by Alwar, Jaipur and Sikar districts of Rajasthan, and on the west by Sikar and Jhunjhunu districts of Rajasthan.

3.3 Administrative

There are 4 Vidhan Sabha constituencies in this district: Ateli, Mahendergarh, Narnaul and Nangal Chaudhry. All of these are part of Bhiwani-Mahendergarh Lok Sabha constituency. The district has an area of 1899 sq.kms. The population density of the district is 921,680 (Census 2011) in which 486 Thousands are male over 435 thousands of female, over all rural population is 78,8,000 , 14.61% are percent5age of Urban population to total population. The District is 165 km away from Delhi and well connected to National highway 08 through Rewari the district lies between the Latitude 76.15° East to Latitude 28.28° North. The District Administrative map is epitomized in below Figure.



District Administrative Map

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3.4 General Characteristics of the District

Mahendergarh district was formed in 1948 by grouping different tracts of erstwhile princely states; Narnaul and Mahendergarh tehsils from Patiala State, Dadri (Charkhi Dadri) from Jind State and a part of Bawal nizamat from Nabha State. It became a part of Patiala and East PunjabStates Union (PEPSU) state. On November 1, 1956, with the merger of PEPSU with Punjab, it became a part of Punjab state and with the formation of Haryana state in 1966; it became a part of the newly formed state. Rewari tehsil of Gurgaon district was added to it in 1972 but Rewari tehsil was made a separate district in 1989.

4.0 GEOLOGY AND MINERAL WEALTH OF THE DISTRICT :-

In district Mahendergarh, Aravalli hills exists with different type of minerals such as quartz, felspar, baraytes, dolomite, road metal and masonry stone, sandl bajri, slate stone, lime stone, calcite, granite, iron ore, kyanites and quartzite stonel mineral. Aravalli hill range inselbergs and scattered in different locations of the district. Aravalli hills which scattered through different villages of the district such as Garhi Khudana, Zerpur, Mandola, Rajawas, Ushmapur, Sohla, Basai, Digrota, Madhogarh, Pali, Narnaul, Pachnota, Rasulpur, Jakhani, Khatoti, Lehroda, Khampura, Khaspur, Dhanota, Rambas, Karoli, Maroli, Naya Gaon, Musnota, Bayal, Gangutana, Golwa, Jainpur, Antri Biharipur, Morund, Berundla, Sareli, Ghataser, Bakhrija, Sehlong, Mudandpura, Basirpur, Amarpur Jorasi, Bazar etc. Minerals like fluvial Sandl Bajril Ordinary clayl brick earth are available throughout the river bed area of Krishnawati and Dohan rivers which are passed through the villages such as Deroli Jat, Kherki, Baproli, Mehrampur, Khatoti, Badopur, Jadupur, Bamanwas, Dhani Jajma, Nolayaja, Antri, Biharipur, Kojinda, Mandi, Dhani Bhathotha, Nangal Pipa, Nangal Kaliya etc. The area of Mahendergarh district is marked by the Indo-gangetic Alluvial Plains with outcrops of Aravalli Ranges and overlain by Eolian Sand Dunes at isolated places. In addition, Brick earth is excavated at scattered places.

Geologically above mentioned minerals are available under the earth as well as above the surface of earth and their modification forms are useful in different type of needs of human being such as construction of building, roads, bridges, railway lines, crockery utensils, glasses used in different type of vehicles, plasters which are used for medical purposes etc.

5.0 DRAINAGE OF IRRIGATION PATTERN

There is no perennial river in the district. The general slope of the district is from south towards north in which direction rain fed streams of the district flow. The Dohan and the Kasaunti or Krishnawati are the main seasonal streams of the district running parallel to each other from south west to north east and pass through middle of the district. In the past, these streams flooded the district but now due to construction of large number of bunds in 12 Rajasthan catchment area, no flooding takes place. Third one, which is also tributary of Krishnawati is Guili Nadi or Nallah which covers about 13 kilometres to join Krishnawati. From Jorasi Dam, this nallah runs from west to east and joins Krishnawati river near Shekhpura village. Three main nallahs entering Jorasi Dam are, first from Basirpur village hills, second from Hasanpur village hills and third from Khalra hills in southern part of the district. Small hill slope torrents like Dhani China, Panchnota, Mosnota, Meghot Binza, Ganwari Jat, Nangal Durgo, Ateli mandi, Kheri and many more also drain the Aravalli slopes in the district. These torrents originate on local hills and are active only during rainy days. Kasaunti or Krishnawati originates in Jaipur hills of Rajasthan near Nim Ka thana. Flowing in a northerly direction, it enters Narnaul tahsil near Bhadanti and Dostpur villages. It covers 31 kilometres upto Dublana village with clear bed. After Dublana village, it converts into Krisnawati Nallah. Passing near Narnaul town, the stream completes the 49 kilometres course, then it is not visible as the water

flows through depression and ultimately falls into drain number 8 near Ratanthal village of Rewari district. Dohan also takes off in Jaipur hills of Rajasthan near Nim Ka Thana, enters Narnaul tahsil near Jadupur village and terminates near Akoda village in Mahendergarh district. It is an important source of drinking water for areas of both the tahsils of the district. It runs a course of about 50 kilometres with clear bed in the district in northerly direction. Some small nallahs join it from both sides at different places.

The crops grown in the district are divided into two main categories viz. kharif and rabi, locally called as sawani and sadhi. The former is the summer season harvest and the latter the winter season harvest. Any crop which does not strictly fall within these two harvests is known as a zaid crop and its harvest is called the zaid kharif or zaid rabi, according to the harvest with which it is assessed. Toria (an oilseed) is cultivated as zaid kharif and vegetables, melon and green fodder as zaid rabi. The major kharif crop of the district is bajra. The minor ones include cotton and kharif vegetables. The major rabi crops of the district include wheat, gram and mustard oilseeds. Minor ones include rabi vegetables and barley. The district is deficient in irrigation facilities; hence crops requiring smaller quantities of water or barani crops are dominant. It is a dry farming district. The farmers have tremendously changed the cropping pattern from mono-culture to multi-culture with the help 16 of sprinkler and drip irrigation techniques. In this direction some co-operative societies and banks have played an effective role in providing economic help in the district. Cultivation of green fodder like jowar, kasani, barseem, etc. has been started both in kharif and rabi seasons. The farmers of those villages which lie near the urban centres have started cultivation of vegetables such as tomato, carrot, cauliflower, ladyfinger, raddish, spinach, methi, etc throughout the season. The farmers have started cultivation of commercial crops also. In the past decades, only subsistence type of

agriculture was practised but now-a-days mustard is cultivated commercially over large tracts of land. Due to declining water table, farmers have started cultivating those crops which require lesser water. Cultivation of moong, toria and lobia during kharif season and gram, barley, etc. during rabi season have either decreased to the minimum or totally stopped.

6.0 LAND UTILISATION PATTERN IN THE DISTRICT: AGRICULTURAL, HORTICULTURAL, ETC.;

BASIC STATICS OF DISTRICT MAHENDRAGARH FOR THE YEAR 2010-11

"Area in Hectare"

.No.	Particulars	Narnaul	Mahendragarh	Total
1	Geographical Area	95446	98714	194160
2	Cultivable Area	75122	80364	155486
3	Net Irrigated Area	46664	76184	122848
	By Canal	412	1355	1767
	By Tubewell	46252	74829	121081
4	Gross Irrigation Area	48210	90993	139203
	By Canal	412	1442	1854
	By Tubewell	47798	89551	137349
5	Land put to Non-Cultivable Area	20324	18350	38674
6	Total Cropped Area	130045	150335	280380

TYPES OF MAJOR CROPS AND SOIL IN THE DISTRICT:-

1. Major Crops (Rabi):- Wheat, Mustard, Barley, Gram etc.
2. Major Crops (Kharif):- Cotton, Bajra, Guar etc.
3. Type of Soil: - Alkaline and Saline.

7. SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT

GROUND WATER SCENARIO OF THE DISTRICT: The district is underlain by alluvium and blown sand of Recent to sub recent age which are overlying the rocks of post Delhi and Delhi system. The alluvium in the area belongs to older alluvium stage comprising of sand, silt, clay and calcareous nodules. The alluvium is the fresh water deposit of Indo- Gangetic river system. In alluvium the granular zones exist down to entire thickness, which is negligible near the out crop of Delhi system to about 150m in the northern part of district. The average thickness of the alluvium in the district is more than 50m. Exploratory drilling has been carried out at 19 exploratory sites in alluvial formation and 35 in Hard rock areas. In alluvial formations the successful exploratory tube well tapped aquifer zones down to the depth of 170m & 235 m yielding 220 lpm to 1200 lpm for 6 to 23m drawdown. The transmissibility value ranges from 150 to 810 m 2 /day in alluvial formations and between 370 and 1685 m 2 /day in hard rocks. The lateral hydraulic conductivity ranges from 1.5 to 20 m/ day. In hard rock area the depth of bore holes ranges between 50 to 135 m and the water bearing zones in weathered fractured quartzite and limestone were tapped. The discharge of tube wells varies between 100 to 1325 lpm with 3 to 15m draw down in lime stone aquifers. The discharge of tube wells constructed in quartzite formation ranges between 22 and 820 lpm for reasonable drawdown.

The water supply of the district is mainly based on ground water through tube wells. The water supply of the villages is met out through installation of hand pumps and construction of and dug wells by the local villagers. Water for irrigation in the district is also based mainly on ground water. Two numbers of artificial recharge schemes were

implemented in the district in collaboration with the state agencies in order to create awareness in the district.

Stage of Development: The block wise ground water resource potential in the district has been assessed as per GEC 97. The stage of ground water development in the district ranges between 49% (block –Narnaul) to 178% (block –Kanina). The total repleneshable ground water resource in the district is 21435Ham. The net ground water draft is 22778 Ham, thus over exploiting 1343 Ha.m of ground water. The stage of ground water development in the district is 104%. Source: http://cgwb.gov.in/District_Profile/Haryana/Mahendragarh.pdf

SURFACE WATER SCENARIO OF THE DISTRICT: The main streams of the district are Dohan & Krishnawati which flow from south to north. These streams are known to carry copious supply of water to inundate large part of the district during monsoon and remain dry for major part of the year. The climate of Mahendragarh district can be classified as semi-arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. Therefore the surface water bodies are mainly seasonal with lower order stream.

8. RAINFALL OF THE DISTRICT AND CLIMATIC CONDITION

The climate of Mahendergarh district can be classified as tropical steppe, semi-arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. There are four seasons in a year. The hot weather season starts from mid March to last week of the June followed by the south-west monsoon which lasts up to September. The transition period from September to October forms the post-monsoon season. The

winter season starts late in November and remains up to first week of March.

The normal annual rainfall of the district is 500 mm which is unevenly distributed over the area 26 days. The south west monsoon sets in from last week of June and withdraws in end of September, contributed about 84% of annual rainfall. July and August are the wettest months. Rest 16% rainfall is received during non-monsoon period in the wake of western disturbances and thunder storms. Generally rainfall in the district increases from southwest to northeast.

Normal Annual Rainfall	500 mm
Normal Monsoon Rainfall	420
Temperature	
Mean Maximum	41° C (May, June)
Mean Minimum	5.6° C (January)
Normal Rainy Days	26

9. Detail of Mining Leases in the District with location, area and period of validity

Name of Quarry	Name of Firm	Revenue Record of the quarry	Name of Mineral	Area	Period	Remarks.
Mukandpura	Shri Satish Kumar Garg S/o Shri Ajudhya Parshad Garg, C/o Royal Marble & Mines, 22-A, Industrial Estate, Narnaul	Khasra No. 211/3/2	Quartz.	3.7275 Ha.	50 Years	In Operational
Rambas Dhanota	Sh. Kuldip Yadav S/o Sh. Kanwar Singh, Village Kalwari, P.O. Dongra Ahir, Tehsil & District Mahendergarh	Khasra No. 718,719,744,717 895/718,896/719 894/717	Feldspar	128.95 Ha.	50 Years	Non-operationa
Dhonkhera	M/s Xandy Mines & Minerals, GH-18A, Celebrity Homes, Palam Vihar, Gurgaon	Khasra No. 109 Min.	Barites & Dolomites	4.80 Ha.	50 Years	Operational
Rasulpur	M/s Rattan Singh & Co. through Shri Rattan Singh S/o Shri Multan Singh, Village Dhanaunda Via Kanina, District Mohindergarh	Khasra Nos. 69min, 69/5 & 69/6	Quartz & Calcite	4.35 Ha.	50 Years	Non-operationa
Garhi	M/s Haryana Mining Company	Khasra No. 7	Stone	6.70 Ha.	10 Years	Non-operationa
Musnota	M/s Satish Kumar Garg & Co., 22-A, Industrial Estate, Narnaul	Khasra Nos. 599, 600, 601, 626, 627, 628, 648 & 649	Barytes, Feldspar, Quartz& Quartzite Stone	79.32 Ha.	50Years	Environment clearance pendir
Bakhrija Plot No. 2	M/s Tirupati Viniyoge Pvt. Ltd., 63/3B, Sarat Bose Road, 5th Floor, Kolkata (West Bengal)–700025	Khasra Nos. 67, 68, 73, 74, 75, 76, 77min, 78min, 79min	Stone	21.65 Ha.	10 Years	Operational
Bakhrija Plot No. 1	M/s Madaan Associates Through Sh. Raj Kumar Madaan, B-9/901, ITL Twin Tower, Netaji Subhash Place, Pitampura, New Delhi – 110034.	Khasra Nos. 69, 70, 71, 72, 80min, 81min	Stone	11.26 Ha.	10 Years	Close

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Rajawas	M/s R.S. Joint Ventures, 70-1, D.T. Pearls Business Park, Pitampura, Delhi - 110034	Khasra Nos. 91, 96, 97, 98, 99, 102, 103	Stone	53.03 Ha.	15 Years	Close
Berundla	Shri Satish Kumar S/o Shri Ajudhya Parshad, R/o Purani Mandi, Narnaul	Khasra No. 53,54	Quartz	18.775 Ha.	20 Years	Non-operationa
Narnaul	M/s A.N.E. Industries Pvt. Ltd., Chandigarh road, Nawanshahar, Punjab – 144514	Khasra No. 387	Stone	19.89 Ha.	12 Years	Operational
Amarpur Jorasi	M/s RM secure services private limited through Mr. Rohit Phore, 15-A-55, 1st floor, west Extn area, Karol Bagh, Near Saki Hotel, Delhi-110005	Khasra No. 145	Stone	10.72 Ha.	10 Years	Environmental Clearance pendir
Golwa	Sh. Ashok Kumar S/o Sh. Ram Avtar, Village Chhapra Bibipur, P.O. Kamania, Tehsil Narnaul, District Mohindergarh	Khasra No. 14	Quartz & Kyanite	111 Ha.	50 Years	Non-operationa
Pachnota, Musnota, Roopar Sarai	Shri Sushil Malpani, 25-A, Citizen Enclave, Sector-14, Ext., Rohini, Delhi	Khasra Nos. 176 to 186] 189] 190] 193 to 200] 203 to 211] 215] 216] 218] 219] 226 to 230] 232 to 234] 237 to 240] 244 to 247] 249 to 251] 258] 261 to 268] 273] 275 Musnota:- Khasra No. 476 Roopar Sarai:- Khasra Nos. 57 to 63] 65 to 68] 74 to 79] 81 to 86	Mica, Quartz, Felspar & Calcite	400 Ha.	50 Years	Non-operationa
Ropar Sarai, Panchnota	Sh. Ajay S/o Sh. Murari Lal, VPO Koshli, District Rewari	Khasra no. Ropar Sarai: 184,331/188,315/135 Panchnota: 159,160	Quartz.	69.05 Ha.	50Years	Non-operationa
Bayal	Sh. Manmohan Bhadana S/o Sh. Kartar Singh Bhadana, VPO Anangpur, District Faridabad	Khasra No. 201, 223 & 224	Quartz & Felspar	76.75 Ha.	50 Years	Operational
Bakhrija Plot No. 4	M/s Gradient Business Consulting Pvt. Ltd., 6/92, Vidhyadhar Nagar, Jaipur Rajasthan – 302039	Khasra No. 89min, 90, 91, 92, 93, 101min, 102min, 103	Stone	34.64 Ha.	10 Years	Non-operationa
Karota	M/s H.G.E.L. Integrated Pvt Ltd. 2, Om Heera	Khasra No. 61min.	Stone	9.55 Ha.	10 Years	Non-operationa

	Panna Mall, 2nd Floor, Oshiwara, Andheri (West), Mumbai – 400053					
Bazar	Shri Jitender Kumar S/o Shri Phool Chand Gupta, Khajanchi Building, Bhatwara, Narnaul	Khasra Nos. 13/26, 17/26, 31/26, 32, 33, 34, 35, 38/27, 43, 44, 45, 46, 47, 50, 51, 76 & 79	Slate stone	81.35 Ha.	50 Years	Non-operationa
Musnota	M/s Maa Santoshi Khanij Udyog, Old PNB Building, Kutubpur, Rewari (Haryana)	Khasra No. 550	Calcite and Stone	8.107 Ha.	50 Years	Operational
Ghataser	Shri Hari Ram S/o Shri Sunder Lal, Near Railway Station, Narnaul	Khasra No. 174	Quartz.	22.82 Ha.	50 Years	Non-operationa
Panchnota	Shri Ram Kumar Saini S/o Shri Mam Chand Saini, VPO Nangal Chaudhary, Tehsil Narnaul, District Mohindergarh	Khasra Nos. 212, 213, 221, 222, 223, 235 & 236	Quartz & Felspar	48.48 Ha.	50 Years	Non-operationa
Dostpur	Shri Bhupinder Singh S/o Shri Madan Pal Singh, VPO Bapora, Distt. Bhiwani	47 B (South)	Lime Stone	4.90 Ha.	50 Years	Non-operationa
Bhedanti	Shri Sunil Yadav S/o Shri Sher Singh, VPO Duloth Ahir, District Mahendergarh	Khasra Nos. 8/15/2, 16, 24/2, 25/1, 25/2 9/2/1, 2/2, 3, 4/1, 4/2, 5, 6/1, 6/2, 7/1, 7/2, 8, 9, 10, 11, 12, 13/1, 13/2/1, 13/2/2, 14/1, 14/2, 14/3, 15, 16, 17/1, 17/2, 18, 19, 20/1, 20/2, 21/1, 21/2, 22, 23/1, 23/2, 24 & 25 21/1/1, 2, 3, 4, 5/1, 5/2, 5/3, 6/1, 6/2, 7, 8, 9, 10, 11/1, 11/2, 12/2, 13/3, 12/4, 13/1, 13/2, 13/3, 14/1, 14/2, 15, 16, 17/1, 17/2, 18, 19/1, 19/2, 19/3, 20/1, 20/2, 21, 22/1, 22/2, 23, 24/1, 24/2, 25. 22/4/2/1, 4/2/2, 4/3, 5/1, 5/2, 6/1, 6/2, 7, 13/1, 13/2, 14/1/2, 14/1/1, 14/2/2, 15/1, 15/2, 15/3, 16, 17, 18, 23, 24, 25/1, 25/2, 23/5/1, 5/2 25/3, 4, 5, 26, 26/1, 2/1, 2/2, 3/1, 3/2, 4,	Lime Stone	32.1 Ha.	50Years	Non-operationa

		5, 27/1, 2 /1 37, 38, 42, 68				
Dostpur	M/s Om Parkash Sharma & Co., Mohalla Missar Wala, Narnaul	Khasra No. 47A (North)	Lime Stone	4.92 Ha.	50 Years	Non-operationa
Dostpur	Shri Rama Kant Bhardwaj S/o Shri Nitya Nand Bhardwaj, VPO Kund, Tehsil & District Rewari	Khasra No. 46	Lime Stone	4.932 Ha.	50 Years	Non-operationa
Berundla	Shri Nemi Chand Agarwal C/o M/s Hindustan Minerals and Chemical Products Ltd., B-7, Industrial Estates, Nizampur Road, Narnaul	Khasra No. 55	Quartz.	3.32 Ha.	50 Years	Non-operationa
Usmapur	M/s Astha Infra Developers Pvt. Ltd., Through Shri Shobit Agarwal, B-154, Kamla Nagar, Agra	Khasra No. 46 Min.	Stone	31.10 Ha.	10 Years	To be operationa
Mahendergarh Unit-1 (Sand/ Bajri)	M/s Om Minerals Through Sh. Sunil Mittal, BM-31 (West), Shalimar Bagh, Delhi-110088.	Khasra Nos. 84, 85, 86, 87 in village Azmabad Mokhuta & Khasra No. 108 in Brahmanwas Village	Sand/ Bajri	43.36 Ha.	7 Years	Closed
Mahendergarh Unit-2 (Sand/ Bajri) (11 Villages)	M/s Om Minerals Through Sh. Sunil Mittal, BM-31 (West), Shalimar Bagh, Delhi-110088.	Jadupur, Hamidpur, Khatoti Khurd, Jakhani, Mehrampur, Khorma, Baproli, Nangal Katha, Gehli, Khatoti Sultanpur, Kherki, Kuksi, Deroli Ahir, Deroli Jat, Kothal Kalan, Kothal Khurd, Chamdhera, Mahendergarh, Majra Kalan, Majra Khurd, Bhagdana	Sand/ Bajri	719.46 Ha.		Closed
Mahendergarh Unit-3 (Sand/ Bajri) (17 Villages)	M/s Om Minerals Through Sh. Sunil Mittal, BM-31 (West), Shalimar Bagh, Delhi-110088.	Shahbajpur, Lujota, Naulaija, Nangal Chaudhary, Jainpur, Mosampur, Biharipur, Antri, Nangal Kaliya, Sirohi Bahali, Nangal Pipa,	Sand/ Bajri	364.54 Ha.		Closed

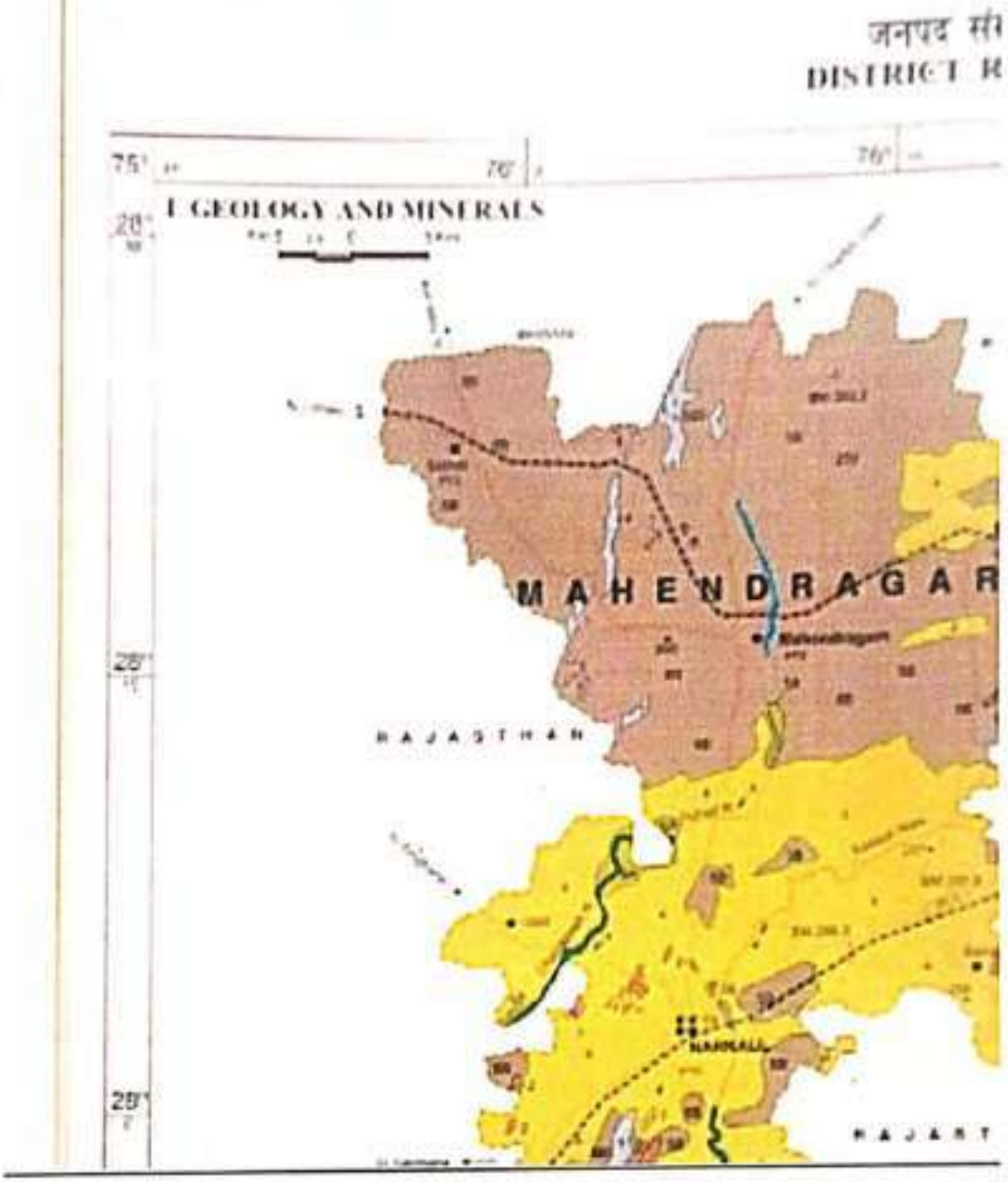
		Akbarpur Sirohi, Totaheri, Dhani Bhathotha, Mandi (Shahpur Avval), Kojinda & Patikara				
Bakhrija Plot No. 3	M/s Nimawat Granites Private Limited, Through Smt. Sangeeta Nimawat, Fatehpur Shekhawat, District Sikar (Rajasthan) – 332301	(Khasra) No. 77min,78min, 79min, 80,min, 81min, 86min, 87 and 88	Stone	40.62 Ha.	10	Operational
Bhedanty & Dostpur	M/s Gandhi Lime Traders, Through Shri Satish Kmar Garg S/o Sh. Ajudhya Prashad, 22A, Industrial Area, Nizampur Road, Narnaul	Bhedanti : 13//7, 14/1/1, 14/1/2, 14/2, 15/1, 15/2, 16, 17/1, 17/2, 24/1, 24/2, 25/1, 25/2, 26 14//11, 20, 21/1, 21/2, 22/1, 22/2, 23/1/1, 23/1/2, 23/2, 24/1, 24/2 15//10, 20, 21 16//1/1,1/2, 2/1,2/2, 3/1, 3/2, 4/1, 4/2, 5, 6/1, 6/2, 7/1,7/2, 8/1, 8/2, 9/1, 9/2, 10/1, 10/2, 11/1, 11/2, 12/1, 12/2, 13, 14/1, 14/2, 15, 16, 17, 18, 19, 25, 17//4, 5, 6, 7/1, 7/2, 14/1, 14/2, 15/1, 15/2, 17, 24/1, 24/2, 24/3 29//6/1, 6/2, 7/1, 7/2/1, 7/2/2, 7/2/3, 8/1, 8/2, 13, 14/1, 14/2, 14/3, 15, 16 30//1/1, 1/2, 1/3, 10, 11, 20 Dostpur: 28//16, 17/1, 17/2, 18/1, 18/2, 19, 20, 21/1, 21/2, 21/3, 22/1, 22/2, 22/3, 23/1, 23/2, 24, 24/1, 25/2, 25/3 29//7/1, 7/2, 14/1, 14/2, 15, 16/1, 16/2, 17, 24/1, 25 32//2/1, 2/2, 3, 4/1, 4/2, 5/1, 5/2, 6, 7/1 33//1, 1/1, 1/2, 2, 3/1, 3/2, 4/1, 4/2, 5, 6/1, 6/2,	Lime Stone	33.215 Ha.	50years	Non-operationa

			7, 8/1, 8/2, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24, 25 34//5, 67, 68				
	Bayal	Shri Satish Kumar S/o Shri Ajudhya Parshad, R/o Purani Mandi, Narnaul	Khasra No. 212	Marble	3.35 Ha.	20	Operational
	Dochana	M/s Phoenix International Ltd.	17,18,19,20,31,32, 33,34	Limestone	14.45 Ha.	50	Non-operationa
	Dhani Bathotha	M/s Phoenix International Ltd.	288/286,287/7/3, 23/1,4/1,4/2,7 50/4/1,5/2,6,52/7/6, 6/2,57/7/2,5/1,4/4, 5/2 6/1,2/14/1,17/2,17/3, 8/16,17/1,23/2,24, 25/1,4/3,5/1	Limestone	9.87 Ha	50	Non-operationa
	Jainpur	M/s Govinda Gopal Infra solutions Pvt. Ltd., sector 74A, Gurgaon	11//6,7,8,9,12,13, 14,15,16,17,18,19 12//9,10,11,12	Stone	5.26	10	Environment Clearance pendir
	Bakhrija & Meghot Binja	M/s Rudra mines and Minerals, Deroli Jat, Mahendergarh	Bakhrija: 15//3,4,5,6,7min,12,13,14 ,17,18,23,24 2,3,4,7,8,9, 11min,12min, 13min Meghot Binja: 8//1min,2min,7min,8min, 9,10,11,12,13,14,15min,1 6min,17,18,19,20,21,22,2 3,24,25min 9//6,15,16,25, 10//4,5,6,7,14min,15min 11//1,2,3,4,5min,7min,8, 9,10,11min,12min,13min, 14min	Stone	19	10	Environment Clearance pendir
	Dokhera	M/s Stone Field Through Sh. Ashwani Khurana, Celeberity Homes, Palam Vihar, Delhi	Khasra No. 59//1,10/1, 10/2, 60//4 min 7/1min,7/2 min ,6/1, 6/2, 5 min 13/1 min, 13/2 min, 14/1 min, 14/2, 15/1, 15/2, 17, 18/1, 18/2 min 19 min, 22 min, 23, 24. 62//6 min, 15 min,16,17 min, 25, 63//1 min, 2,3,9,10 min,11,20,21 64//1,	Stone	7.46	10year	Environment Clearance Pendir

			65//5				
	Chapra-Bibipur Banihari, Kalba, Bhankhari, Bhendanty, Niajalipur, Nangal Dargu	M/s Ramsingh S/o Omparkash, Narnaul	Chapra-Bibipur: 670, Banihari: 111/1 Kalba: 490 Naina: 408,429 Bhankhari: 483 Bhendanty: 329,324,375 Niajalipur: 71,72,123,138 Nangal Dargu: 1161	Limestone & Dolomite	38.29	50	Old lease/ Non Operational
	Bayal	M/s Ramsingh S/o Omparkash, Narnaul	229/28,232	Stone	22.60	50	Old lease/ Non Operational
	Ropar Sarai, Pachnota	M/s Ramsingh S/o Omparkash, Narnaul	Ropar Sarai: 184,331/188, 315/135 Pachnota: 159,160	Quartzite (Lumps)	69.05	50	Old lease/ Non Operational
	Nangal Dargu	Sh.Rajkumar Ganda S/o Pahalwan Raj, Sirsa	73/2,74,75,76,84,155,156	Marble	45.72	50	Old lease/ Non Operational
	Ganiar	Sh.Anil Yadav S/o Randhir Singh, Ganiar	91	Slate Stone	10	50	Old lease/ Non Operational
	Musnota	Sh. Omparkash Gupta, Jalberia Niwas, Narnaul	427,428,429,430/1,433,484,485,486,487,488,551	Calcite	40.56	50	Old lease/ Non Operational
	Dokhera	Sh. Sandeep limestone, Nangal Choudhary	101	Lime stone	4.055	50	Old lease/ Non Operational
	Nangal Dargu, Musnota	M/s Poonam Mining Through Prop. Sanjay Kumar Jhunjhunwala	Nangal Dargu:26/13/1,14/1,14/2, 14/3,26/17 Musnota:46/5/1,46/4,6,7, 15,175,155,335,336	Marble & Limestone	165Kanal 18Marla	50	Old lease/ Non Operational
	Dhanota, Dhancholi	M/s Haryana Minerals Limited, Narnaul	Dhanota:140/116,57,59,60 Dhancholi:77/68,177min, 95min,96 to 100,101min	Iron Ore	86.20	50	Old lease/ Non Operational
	Bazar	M/s Yadav Minerals Through Sh.Hari Parkash S/o Sh. Hansraj, Bazar	36/26,37/26	Slate Stone	14.48	50	Old lease/ Non Operational
	Panchnota	Panchnota	Khasra no. 12//17(2-8),18/1 (2-4),18/2(5-16), 19(8-0),22(8-0), 23(8-0), 24 (2-0) 14//1Min(8-0), 2/1(1-0), 2/2(7-0), 3(9-0),8(8-0), 9(8-0),10min(8-0), 11(8-0),12(8-0), 13(6-12), 18/1(0-10), 18/2(4-2), 19/1(0-3), 19/2(7-7),	Stone	11.570366	To be Auctioned	To be Auctioned

		20/1(0-13), 20/2(7-7),21(8-0), 22(8-0),23(3-14) 15//15/1min(7-12),15/2min(8-0), 16/1min(0-13), 16/2min(7-7) 22//5min(8-0),6min(8-0),14min(8-0), 15min(8-0), 16min(8-0) 23//1(8-0),2(8-0), 3(1-8),9(7-14), 10(8-0),11(8-0), 12(5-10),19(3-6),20(8-0), 21(8-0),22(1-2)				

10. MINERAL MAP OF THE DISTRICT:-



Approved
District Survey
Report

11. QUALITY /GRADE OF MINERAL AVAILABLE IN THE DISTRICT

Mahendergarh district has rich mineral deposits. It enjoys unique position in the state but it is irony of the fate that these deposits have not been tapped to the desired extent and add negligible contribution to the district economy. The important minerals found in the district are lime stone, marble, sandstone, iron ore, silica sand, feldspar, quartz, calcite, quartzite, dolomite, baraytes etc. at different locations.

12. USE OF MINERAL

Mining Industry plays an important role in economic sector in india. Haryana is rich in mineral wealth. The state is endowed with major and minor mineral resources. The regions, where the project is situated is mostly is mostly dependent on agriculture and mineral resources. The developments of mining are provide direct and indirect employment opportunities, infrastructure development, communication and socio-economic infrastructure.

Limestone:- it is the raw material for the manufacture of quicklime (Cacium oxide), slaked lime (calcium Hydroxide), Cement and mortar.

Marble: - it is used in Construction as building material, making of sculptures.

Quartz: - quartz crystals are used to make oscillators for watches, clocks, radios, televisions, electronic games, computers, cell phones, electronic meters, and GPS equipment. A wide variety of uses have also been developed for optical-grade quartz crystals.

Quartzite: - Quartzite is a decorative stone and may be used to cover walls, as roofing tiles, as flooring, and stair steps. Its use for countertops in kitchens is expanding rapidly. It is harder and more resistant to stains than granite. Crushed quartzite is sometimes used in road construction.

Silica Sand: - it is used for water purification and manufacture of glass, synthetic foundry moulding catalysts, disodium ultramarine etc. it is also used for acid heat resistant ceramics, refractories, pottery glaze, enamel etc.

Barytes: - It is a principal mineral of barium and is also used as a feedstock for producing various barium compounds, and is utilised as filler, extender and aggregate. Barytes after converting to barium carbonate, is used in the manufacture of ceramic and glass.

Calcite: - It is used as a building material, abrasive, agricultural soil treatment, construction aggregate, pigment, pharmaceutical, and other applications.

Feldspar: - The term feldspar encompasses a whole range of materials. Most of the products we use on a daily basis are made with feldspar: glass for drinking, glass for protection, fiberglass for insulation, the floor tiles and shower basins in our bathrooms, and the tableware from which we eat.

Dolomite: - It is used as a source of magnesium metal and of magnesia (MgO), which is a constituent of refractory bricks. Dolostone is often used instead of limestone as an aggregate for both cement and bitumen mixes and also as a flux in blast furnaces.

13. IMPACT ON THE ENVIRONMENT (AIR, WATER, NOISE, SOIL, FLORA & FAUNA, LAND USE, AGRICULTURE, FOREST ETC.) DUE TO MINING ACTIVITY

Environmental impact arising out of mining operations may be defined as an alteration of environmental conditions. The purpose of identifying and assessing the existing environmental parameters is to know the basic conditions prevailing before getting the targeted production. Depending on the nature of activities and existing status the impacts are assed for their importance. On the basis of the impact analysis the mitigative action and future monitoring requirement are focused in the Environmental Management Plan for counting or minimizing adverse impacts.

The environmental impact on Air, Water, Noise, Soil, Flora & Fauna, land use, agriculture and forest arising out of mining operations need be assessed and thereafter mitigation measures are to be adopted. Impact due to mining on each parameter of environment like to be affected. The parameters, which are relevant in the context, are given below.

Land Environment

Air Quality

Water quality

Noise Level and ground vibration

Biological Environment

The Environmental impact can be categorised as either primary or secondary impacts can be attributed directly to the mining projects. The secondary impacts due to miming projects are indirect or induced & induced changed pattern of social & economic activities likely to be stimulated or induced by the improvement in economy of the region caused by increased money circulation amongst the population.

The different activities involved before & before & during the mining are narrated below, which helps to assess the impact on environment.

Exploration

A mining project can only commence with knowledge of the extent and value of the mineral ore deposit. Information about the location and value of the mineral ore deposit is obtained during the exploration phase. This phase includes surveys, field studies and drilling test boreholes and othe exploratory excavations. The exploratory phase may involve clearing of wide areas of vegetation (typically in lines), to allow the entry of heavy vehicles mounted with drilling rigs, many country require a separate EIA for the exploratory phase of a mining project because the impact of this phase can be profound and because further phases of mining may not ensure if exploration fails to find sufficient quantities of high-grade minerals ore deposits of economical values.

Development

If the mineral ore exploration phase proves that there is a large enough mineral ore deposit, of sufficient grade, then the project proponent may begin to plan for the development of the mine. This phase of the mining project has several district components.

Site Preparation

If a mine site is located in remote, undeveloped area, the project proponent may need

to begin by clearing land for the construction of staging areas that would house project personnel and equipment, even before any land is mined, activities associated with site preparation and clearing can have significant environment impacts, especially if they are within or adjacent to ecologically sensitive areas. The EIA must assess, separately, the impacts associated with site preparation and clearing.

Impact of Mining project on Air Quality: -

The largest sources of air pollution in mining operations are particulate matter transported by the winds a result of excavations, blasting, transportation of materials, wind erosion (More frequent in open-pit mining) fugitive dust from tailing facilities, stockpiles, waste dumps and haul roads, Exhaust emission from mobile sources (Cars, trucks, heavy vehicles) raise these particulate levels: and gas emission from the combustion of fuel in stationary and mobile sources, explosions and mineral processing. Once pollutants enter the atmosphere, they undergo physical and chemical changes before reaching a receptor. These pollutants can cause seriously effects to people's health and to the environment.

Air quality is adversely affected by mining operations. Unrefined materials are released when material deposits are exposed on the surface through mining. Wind erosion and nearby vehicular traffic cause such material to become airborne. Lead, Arsenic, Cadmium and other toxic elements are often present in such particles. These pollutants can damage the health system of people living near the mining site. Diseases of the respiratory system and allergies can be triggered by the inhalation of such airborne particles.

Impact on water

Mining also causes water pollution which includes metal contamination, increased sedimentation in streams, and acid mine drainage. Pollutants released from processing plants, tailing ponds, underground mines, waste-disposal areas, active or abandoned surface or haulage roads etc., act as the top source of water pollution. Sediments released through soil erosion cause siltation or the smothering of stream beds. It adversely impacts irrigation, domestic water supply and other activities depended on such water bodies.

High concentrations of toxic chemicals in water bodies pose a survival threats to aquatic fauna & Flora and terrestrial species dependent on them for food. The acidic water released from metal mines or coal mines also drains into surface water or seeps below ground to acidity groundwater. The loss of normal PH of water can have disastrous effects on life sustained by such water.

Impact on Soil

Soil disruptions can contribute to the deterioration of the area's flora and Fauna. There is also a huge possibility that many of the surface features that were present before mining activities cannot be replaced after the process has ended. The removal of soil layers and deep underground digging can destabilize the ground which threatens the future of roads and buildings in the area.

Impact on Flora & Fauna

Often, the worst effects of mining activities are observed the mining process has ceased. The destruction or drastic modification of the pre-mined landscape can have a catastrophic impact on the biodiversity of the area. Mining leads to a massive habitat loss for a diversity of flora & fauna ranging from soil microorganism to large mammals. Endemic species are most severely affected since even the slightest disruptions in their habitat can result in extinction or put them at high risk of being wiped out. Toxins released through mining can wipe out entire populations of sensitive species.

14. REMEDIAL MEASURES TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT

To minimize the probable & possible impact on the environment due to mining activities an Environmental management plan is aimed at mitigating the possible adverse impact of project and for ensuring to maintain the existing environmental quality. The Environmental Management Plan (EMP) is a site specific plan to ensure that the project implementation is carried out taking appropriate mitigative measures to reduce adverse environmental impacts due to developing projects. The Environmental Plan aims to mitigative measures to restore and conserve the ecosystem of the possible adverse impacts due to proposed project. The mitigative

steps are used to minimize or prevent negative impacts on environment due to proposed project of mining. The EMP contains planned improvements with adopting some control measures viz. Fugitive dust reduction on roads & measures to alleviate problems in affected villages near project area and planning for the closure of mine.

Mitigation measures for Air Environment

I. Water spraying arrangement shall be done on haul roads in the mining area to suppress the dust.

II. Dust extraction shall be provided in drilling machines to suppress the dust, whenever possible wet drilling shall be done.

III. Controlled blasting techniques shall be adopted.

IV. Proper and regular maintenance of mining equipment's have to be undertaken.

V. Transportation of materials in trucks is to be covered with tarpaulin.

VI. Comprehensive greenbelt around overburden dumps and periphery of the mining project.

VII. Time to time air monitoring shall be done.

Mitigation measures for Water Environment

I. Construction of garland drains and settling tanks to divert surface runoff of the mining are to the natural drainage.

II. Retaining walls with weep hole are to be constructed around the mine boundries to arrest silt wash off.

III. The mined out pits shall be converted into the water reservoir at the end of mine life. This will be help in recharging ground water table by acting as a water harvesting structure.

IV. Periodic analysis of mine pit water and ground water quality in nearby villages are to be undertaken.

V. Domestic sewage from site office & urines is to be discharges in septic tank followed by soak pits.

Mitigation measures for Noise Environment

Periodic maintenance of machineries equipments shall be ensured to keep the noise generated within acceptable limit.

Adequate silencers will be provided in diesel engines of machineries, compressors, dumpers and trucks.

Development of thick greenbelt around mining/cluster area, haul roads to reduce the noise.

Provision of earplugs to workers exposed to high noise generating activities like blasting, excavation site etc. Worker and operators at work site will be provided with earmuffs.

Conducting a periodical medical checkup of all workers for any noise related effects.

Mitigation measures for Biological Environment

Development of greenbelt/gap filling sapling in the safety barrier left around the quarry area/cluster area.

Carrying out thick greenbelt with local flora species predominantly with long canopy laves on the inactive mined out upper benches.

Adoption of suitable air pollution control measures as suggested above.

Transportation of materials in trucks covered with tarpaulin.

15. RECLAMATION OF MINED OUT AREA (BEST PRACTICE ALREADY IMPLEMENTED IN THE DISTRICT, REQUIREMENT AS PER RULES AND REGULATION, PROPOSED RECLAMATION PLAN)

Mine reclamation is the process of restoring land that has been mined to a natural or economically usable state. Although the process of mine reclamation occurs once mining is completed, the planning of mine reclamation activities occurs prior to a mine being permitted or started. Mine reclamation creates useful landscapes that meet a variety of goals ranging from the restoration of productive ecosystem to the creation of industrial and municipal resources. Modern mine reclamation minimizes and mitigate the environmental effects of mining.

16. RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

Risk assessment is the determination of quantitative or qualitative value of risk related to a concrete situation and a recognized threat. Activities requiring assessment of risk due to occurrence of most probable instances of hazard an accident are both onsite and off-site.

It must be realized that any incident may develop into a major emergency even with the best safety measures and programmes in any industry. Hence, an emergency procedure will be planned properly and documented to help in reducing time loss, chaos and confusion at the hour of need by assigning person who will engage in meeting emergency smoothly and effectively. Any accident which has potential to develop into a major emergency can threaten large number of person or large area of industries on the site may affect safety of the public, property and environment. Hence it is absolutely essential that emergency procedures will be properly planned and documented. Any disastrous situation raised in the mining area must be reported to the concern authorities as soon as possible.

17. PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT

The greenbelt development plan aims to overall improvement in the environmental conditions of the region. The plan with a five- fold objective addresses issues such as prevention of land degradation due to activities during mining operation, enhancing the forest cover for increasing the biodiversity of the region, providing aesthetic value in the project area for enhancing the ecological equilibrium of the area and to a large proportion in combating soil erosion.

NEED FOR GREENBELT DEVELOPMENT PLANT EITH SCHEME FOR GREENBELT DEVELOPMENT

The implementation for development of greenbelt will be paramount importance as it will not only add up as an aesthetic feature, but also act as a pollution sink.

The scheme of plantation in-side cluster area is given as follows:

I. The species to be grown in the area should be dust tolerant and fast growing species so that permanent green belt is created.
II. The greenbelt development will be done along with the haul roads.
III. The greenbelt development will be done nearby the mining leases to minimize the pollution level.
IV. The greenbelt will be put under a protective regulatory framework to ensure that it is not degraded or disturbed. No ecologically disruptive activity will be allowed in this zone.
V. The greenbelt development should be approx 33% of the area of the mining lease.

3. PROCESS OF DEPOSITION OF MINERALS IN DISTRICT:-

The district with geographical area 1899sq km lies between north latitude 27°47 to 28°26 and east longitude 75°56' to 76°51'. It is bounded on the north by Bhiwani and Rohtak districts, on the east by Rewari district and Alwar district of Rajasthan, on the south by Alwar, Jaipur and Sikar districts of Rajasthan, and on the west by Sikar and Jhunjhunu districts of Rajasthan.

Physiographically Mahendragarh district has broadly five landforms viz. hill, pediplain, aeolin plain, fluvial plain and abandoned river course. Hills are barren and rocky with irregular shapes. The pediplain comprises of pediments and buried pediments, the aeolin plain consists of sand dune, interdune, sandy plain. Fluvial plain occurs along the course of ephemeral rivers and their

seasonal tributaries. The district is located in semi-arid region of the state. The study area has three landforms viz. Aravalli Hills, Aravalli Pediments and Fluvio – Aeolin Plains.

The Mahendragarh district is the domain of dry-land topography throughout. Presence of inland streams, sandy plain, shifting sand dunes devoid of vegetation, fixed or fossil sand dunes, dissected upland tract, and often barren, denuded rocky hill ranges and their outcrops provide an ensemble of terrain features truly associated with semi-arid to arid environment. In east-west traverse, many of the above referred features may be recognised. The features are morphologically symmetrical and provide rapid and often large variations in relief and slope characteristics. Consequently, the overall relief is undualtory with a regional south to north and west to east slope.

The area is located in semi-arid region of the state with landscape comprising of undulating plain, sand dunes and rocky surfaces. The area is geo-morphologically classified as Eolian Plain and Dome type residual hills. The mine lease area exhibits plain to undulated topography. The highest elevation of 635 masl exists in the Aravalli range near Kharjo forest in south – west direction whereas the lowest elevation of 287 masl exists near Rampura on north direction.

The lease area consists of ridges and valleys. The highest point in the lease area is recorded to be 480mRL and the lowest point recorded is 370 mRL.

The lease area does not have any water body. There are dry nallahs in which water flows during rains for a short duration, otherwise they remain dry for the rest of the months. The rain water from these nallahs drains either into local Johars or in agriculture fields.

4. GENERAL PROFILE OF DISTRICT:-

7.1 HARYANA STATE PROFILE

Haryana is a state in north India. It was carved out of the state of Punjab in 1966. It is bordered by Punjab and Himachal Pradesh to the north, and Rajasthan to the west and south. Eastern border to Haryana & Uttar Pradesh is defined by river Yamuna. Haryana also surrounds Delhi on three sides, forming the northern, western and southern borders of Delhi. Consequently, a large area of Haryana is included in the National Capital Region. The capital of Haryana is Chandigarh which is administered as a union territory and is also the capital of Punjab.

Haryana is a landlocked state in northern India. It is located between 27°37' to 30°35' N latitude and between 74°28' and 77°36' E longitude. The altitude of Haryana varies between 700 to 3600 ft. (200 metres to 1200 metres) above sea level. Haryana has four main geographical features.

- The Yamuna-Ghaggar plain forming the largest part of the state
- The Shivalik Hills to the northeast
- Semi-desert sandy plain to the southwest
- The Aravalli Range in the south

7.2 MAHENDRAGARH DISTRICT PROFILE

Mahendragarh district occupies the southern extremity of the

Haryana state jointly with Rewari and Gurgaon districts of Haryana. It has a total geographical area of 1776 sq. km. and falls between Latitudes 27°48'10" and 28°8'30" and Longitudes 75°54'00" and 76°51'30". Mahendragarh district is bounded by Dadri and Jhajjar districts in its north, Rewari in its east and Alwar and Jhunjhunu (Rajasthan) districts in its south and west respectively. Administratively, the district is divided into three sub divisions, namely Mahendragarh, Narnaul and Kanina. The district, located in the semi-arid region of the state, has its head quarter at Narnaul. The district forms a part of Haryana Plains which itself is an integral part of Indo-Gangetic alluvial plain, has vast stretch of almost flat land. Broadly speaking the district can be divided into five distinct landscapes with elevation varying from 200 mean above sea level (masl) to 634 masl, in Aravalli hills near Bayal village, foot hills flood plains, Aeolian plains and sand dunes Alluvium deposits. There are eight development blocks in the area namely Ateli, Kanina, Mahendragarh, Nangal Chaudhary and Narnaul, Sihma, Nizampur and Satnali. The district is comprised of 370 villages and 5 towns with the population of 9,21,680 souls as per 2011 census.

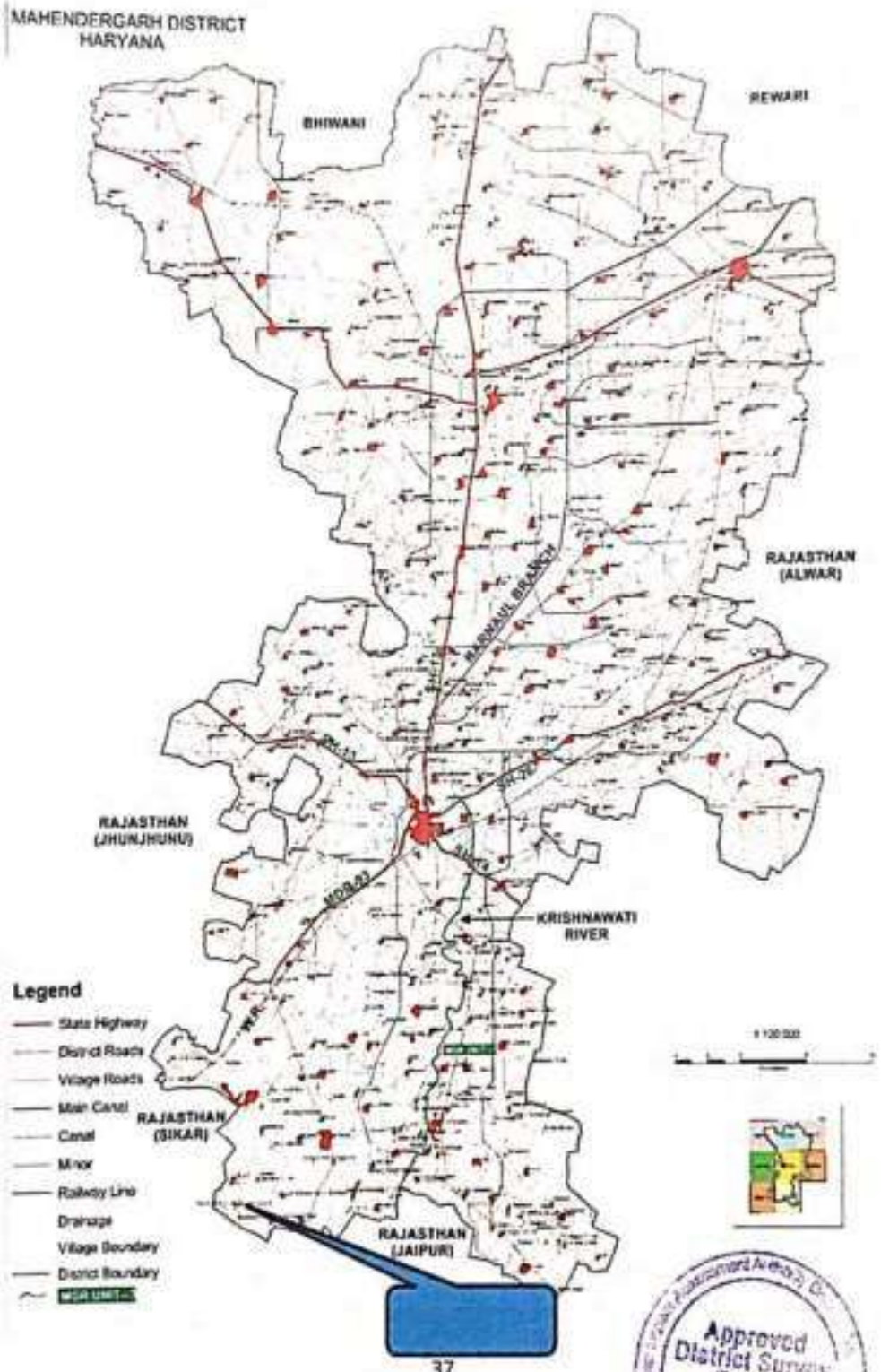
The district lies between north latitude 27° 47 to 28° 26 and east longitude 75° 56' to 76° 51'. It is bounded on the north by Dadri and Jhajjar districts, on the east by Rewari district and Alwar district of Rajasthan, on the south by Alwar, Jaipur and Sikar districts of Rajasthan, and on the west by Sikar and Jhunjhunu districts of Rajasthan.

i. Administrative

There are 4 Vidhan Sabha constituencies in this district: Ateli, Mahendragarh, Narnaul and Nangal Chaudhary. All of these are part of Bhiwani-Mahendragarh Lok Sabha constituency.

The district has an area of 1899 sq.kms. The population density of the district is 921,680 (Census 2011) in which 486 Thousands are male over 435 thousands of female, over all rual population is 78,8,000 , 14.61% are percent5age of Urban population to total population. The District is 165km away from Delhi and well connected to National highway 08 through Rewari the district lies between the Lattitude 76.15° East to Lattitude 28.28° Norththe.The District Administartive map is epitomized in **Figure 7-A.**

Figure 7-A: District Administrative Map



7.2.3 *General Characteristics of the District*

Mahendragarh district was formed in 1948 by grouping different tracts of erstwhile princely states; Narnaul and Mahendragarh tehsils from Patiala State, Dadri (Charkhi Dadri) from Jind State and a part of Bawal nizamat from Nabha State. It became a part of Patiala and East PunjabStates Union (PEPSU) state. On November 1, 1956, with the merger of PEPSU with Punjab, it became a part of Punjab state and with the formation of Haryana state in 1966; it became a part of the newly formed state. Rewari tehsil of Gurgaon district was added to it in 1972 but Rewari tehsil was made a separate district in 1989.

7.2.4 *Rainfall and Climate*

The climate of Mahendragarh district can be classified as tropical steppe, semi-arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. There are four seasons in a year. The hot weather season starts from mid March to last week of the June followed by the south- west monsoon which lasts up to September. The transition period from September to October forms the post-monsoon season. The winter season starts late in November and remains up to first week of March.

The normal annual rainfall of the district is 500 mm which is unevenly distributed over the area 26 days. The south west monsoon sets in from last week of June and withdraws in end of September, contributed about 84% of annual rainfall. July and August are the wettest months. Rest 16% rainfall is received during non-monsoon period in the wake of western

disturbances and thunder storms. Generally rainfall in the district increases from southwest to northeast.

7.2.5 *Hydrogeology*

The district is underlain by alluvium and blown sand of Recent to sub recent age which are overlying the rocks of post Delhi and Delhi system. The alluvium in the area belongs to older alluvium stage comprising of sand, silt, clay and calcareous nodules. The alluvium is the fresh water deposit of Indo- Gangetic river system.

In alluvium the granular zones exist down to entire thickness, which is negligible near the out crop of Delhi system to about 150m in the northern part of district. The average thickness of the alluvium in the district is more than 50m. Exploratory drilling has been carried out at 19 exploratory sites in alluvial formation and 35 in Hard rock areas. In alluvial formations the successful exploratory tube well tapped aquifer zones down to the depth of 170m & 235 m yielding 220 lpm to 1200 lpm for 6 to 23m drawdown.

The transmissivity value ranges from 150 to 810 m2/day in alluvial formations and between 370 and 1685 m2/day in hard rocks. The lateral hydraulic conductivity ranges from 1.5 to 20 m/ day. In hard rock area the depth of bore holes ranges between 50 to 135 m and the water bearing zones in weathered fractured quartzite and limestone were tapped. The discharge of tube wells varies between 100 to 1325 lpm with 3 to 15m draw down in lime stone aquifers. The discharge of tube wells constructed in quartzite formation ranges between 22 and 820 lpm for reasonable drawdowns.

7.2.6 *Meteorology*

The meteorological data recorded during the study period is very useful proper interpretation of the baseline information, surrounding area for air dispersion. Historical data on meteorological parameters will also play an important role in identifying the general meteorological regime of the region.

Mahendragarh has arid to semiarid climate and receives over 517.8mm of rainfall annually with most rains occurring during the monsoon months. Temperatures remain relatively high throughout the year, with the summer months of April to early July having average daily temperatures of around 30°C. During the monsoon there are frequent, heavy rains and thunderstorm. The winter months are mild and pleasant, with average temperatures ranging from 15–18°C. There are however occasional cold waves that lead to temperatures near freezing.

7.2.7 *Seismicity of the Mahendragarh District*

The major region of Mahendragarh district falls in least Active Seismic Zone – II. The prominent Mahendragarh-Dehradun Fault passes in the district. The Axis of Delhi Folding also passes under Mahendragarh towards Rohtak.

Eastern parts of Haryana along with Delhi lie in the Gangetic Plain. Most earthquakes in this region are shallow though a few earthquake of intermediate depth have been recorded in Haryana. The major earthquake with epic centre in Mahendragarh district was felt in 1998 with magnitude of 5.2 on Richter scale.

7.2.8 *Population*

In 2011, Mahendergarh had population of 921,680 of which population density of the district is 921,680 (Census 2011) in which 486,665 are male over 435,015 of female, over all rual population is 788,000, 14.61% are percentage of Urban population to total population

TABLE OF THE POPULATION OF DISTRICT

S. No.	Particulars	2011 census
1.	Population	921,680
2.	Male	486,665
3.	Female	435,015
4.	No. of Village	376

7.2.9 *Connectivity*

The district lies between north latitude 27^0 47 to 28^0 26 and east longitude 75^0 56' to 76^0 51'. It is bounded on the north by Dadri and Jhajjar districts, on the east by Rewari district and Alwar district of Rajasthan, on the south by Alwar, Jaipur and Sikar districts of Rajasthan, and on the west by Sikarand Jhunjhunu districts of Rajasthan. The District is 165km away from Delhi and well connected to National highway 08 through Rewari the district lies between the Lattitude 76.150 East to Lattitude 28.280 North.

7.2.10 *Railway and Road*

The nearest railhead (Broad gauge) is at Mahendergarh, Narnaul and Nizampur, within 15km. from different leases of the district. The nearest airport are Delhi and Jaipur.

7.2.11 *Road*

District Mahendergarh is bounded on the north by Dadri and Jhajjar districts, on the east by Rewari district and Alwar district of Rajasthan, on the south by Alwar, Jaipur and Sikar districts of Rajasthan, and on the west by Sikar and Jhunjhunu districts of Rajasthan. It has 3 tehsils of Narnaul, MahenderGarh and Kanina. Connectivity map of district Mahendergarh is emphasized in the following figure.

7.2.12 *Availability of Minerals*

Mahendragarh district has rich mineral deposits. It enjoys unique position in the state but it is irony of the fate that these deposits have not been tapped to the desired extent and add negligible contribution to the district economy. The important minerals found in the district are lime stone, marble, sandstone, iron ore, silica sand, feldspar, quartz, calcite, quartzite, dolomite, baraytes etc. at different locations.

CONNECTIVITY MAP OF DISTRICT MAHENDERGARH

LAND UTILIZATION PATTERN IN DISTRICT:-

8.1 *Land Use Pattern*

BASIC STATISTICS OF DISTRICT MAHENDERGARH FOR THE YEAR 2010-11

"Area in Hectare"

S. No.	Items	Narnaul	Mahendragarh	Distt. Total
1.	Geographical Area	95446	98714	194160
2.	Cultivable Area	75122	80364	155486
3.	Net Irrigated Area	46664	76184	122848
	By Canal	412	1355	1767
	By Tubewell	46252	74829	121081
4.	Gross Irrigation Area	48210	90993	139203
	By Canal	412	1442	1854
	By Tubewell	47798	89551	137349
5.	Land put to Non-Cultivable Area	20324	18350	38674
6.	Total Cropped Area	130045	150335	280380

TYPE OF MAJOR CROPS AND SOIL IN THE DISTRICT:-

1. Major Crops (Rabi):- Wheat, Mustard, Barley, Gram etc.
2. Major Crops (Kharif):- Cotton, Bajra, Guar etc.
3. Type of Soil:- Alkaline and Saline

8.2 *Forest and Forest Types*

The state Haryana lies at the meeting point of three vegetative zones: the western Himalayas to the north, the upper Gangetic Plains to the east, and West Indian Desert or Arid Zone which encompasses most of the State (Singh et al. 1994) The planned project falls in the Mahendragarh district whichis bounded on the north by Bhiwani and Rewari districts, on the east by Rewari district and Alwar district of Rajasthan, on the south by Alwar, Jaipur and Sikar districts of Rajasthan, and on the west by Sikar and Jhunjhunu districts of Rajasthan.

In accordance to the India State of Forest Report, 2015 (Forest Survey of India), the total forest cover of the project district Mahendragarh is 69 km2 which is only 3.71% of the total forest cover of the state of Haryana. The forest cover of Haryana is predominantly comprising of open forest (69 km2) followed by Moderate Dense Forest (16 km2). No recorded very dense forests are present in the project district. Further a total of 26 km2 area in the project district is under scrub land.

According to Champion and Seth's classification, the state has two forest type groups, viz. Tropical Dry Deciduous and Subtropical Pine. The forest vegetation of the Mahendragarh district comes under Tropical Dry Deciduous Forests and all the forest areas are categorized in Open and Scrub categories

24. Conclusion:- In district Mahendergarh a total lease out area is 2867.57 hectare out of which 170.78 hectare area are in operational in seven blocks and Non operational area 2696.78 hectare has been identified for mining of minor minerals under 49 mineral concessions (at para 11) through number of mineral concessions may change depending upon policy of the state from time to time. Further, use of mineral deposits and exploration/excavation in respect of minerals is an ongoing activity, therefore, as per requirements the area used for mining of minor minerals may have to be revised from time to time.

letter No. 1955 dated 07-02-2023 should be treated with due attention.

Mining Officer
Mahendergarh

Executive Engineer,
Irrigation Department
Mahendergarh
03.02.2023

District Forest Officer
Mahendergarh

03 Feb 2023
SDE EE
PWD (B&R)
Mahendergarh

Regional Officer,
HSPCB
Mahendergarh

Discussed & Approved

(Dr. Jai Krishan Abhir),IAS
Deputy Commissioner
Mahendergarh

Approved
District Survey
Report
Mahendergarh

ANNEXURES – 1.8

TERMS OF REFERENCE ISSUED BY SEIAA, MP

File No.SEIAA/HR/2023/364

Goverment of India

State Level Environment Impact Assessment Authority

Haryana

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To,

M/s RAAG KHURANA
GH-18, CELEBRITY HOMES, PALAM VIHAR, GURGAON, HARYANA, INDIA 122017,
Gurgaon-122017
Haryana

Tel.No.-; Email:stonefieldmines@gmail.com

Sub. Terms of Reference to the Environment Clearance for Mining of Stone (Minor Mineral) from Donkhera Stone Mine with production capacity 15,00,000 MTPA over an area of 7.46 ha located at Donkhera (Gram Panchayat) Village, Nangal Chaudhary Tehsil, & Mahendragarh District of Haryana, GH-18, CELEBRITY HOMES, PALAM VIHAR, GURGAON, HARYANA, INDIA 122017

Dear Sir/Madam,

This has reference to the proposal submitted in the Ministry of Environment, Forest and Climate Change to prescribe the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining Environmental Clearance in accordance with the provisions of the EIA Notification, 2006. For this purpose, the proponent had submitted online information in the prescribed format (Form-1) along with a Pre-feasibility Report. The details of the proposal are given below:

1. Proposal No.:	SIA/HR/MIN/435291/2023
2. Name of the Proposal:	Environment Clearance for Mining of Stone (Minor Mineral) from Donkhera Stone Mine with production capacity 15,00,000 MTPA over an area of 7.46 ha located at Donkhera (Gram Panchayat) Village, Nangal Chaudhary Tehsil, & Mahendragarh District of Haryana
3. Category of the Proposal:	Non-Coal Mining
4. Project/Activity applied for:	1(a) Mining of minerals
5. Date of submission for TOR:	01 Jul 2023

Date : 06-07-2023

Sh. Pardeep Kumar, IAS
(Member Secretary)

Office : **Bays No. 55-58, Ist Floor, Prayatan Bhawan, Sector-2, Panchkula, Haryana**
Phone No : Mobile : **9999593388**
Email id : **seiaa-21.env@hry.gov.in**

Note : This is auto tor granted letter.

In this regard, under the provisions of the EIA Notification 2006 as amended, the Standard TOR for the purpose of preparing environment impact assessment report and environment management plan for obtaining prior environment clearance is prescribed with public consultation as follows:

STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR PROJECTS/ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE

Terms of Reference (TOR) for preparation of Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) for "Mining of Minerals" as per the EIA Notification, 2006 has been devised to improve the quality of the reports and facilitate decision-making transparent and easy. TOR will help the project proponents to prepare report with relevant project specific data and easily interpretable information. TOR for mining of minerals is expected to cover all environmental related features.

Mining of minerals plays a positive role in the process of country's economic development. In addition to the contribution towards economic growth, mining can also be a major source of degradation of physical as well as social environment, unless it is properly managed. Environmental impacts can arise during all activities of the mining process. Minimizing the damage due to mining operations depends on sound environmental practices in a framework of balanced environmental legislation. The potential adverse effects of mining activities include air pollution, surface and groundwater pollution, noise and vibration, damage to local ecology, natural topography and drainage, depletion of water resources etc. All these environmental components are required to be considered while selecting a proper methodology of mining, mitigation measures to reduce pollution load, conservation of natural resources etc.

The projects of mining of minerals as stated in the schedule require prior environment clearance under the EIA notification, 2006. Category 'A' Projects are handled in the MoEF&CC and Category 'B' projects are being handled by the respective State Environment Impact Assessment Authorities (SEIAAs) notified by MoEF&CC and following the procedure prescribed under the EIA Notification, 2006. As per this Notification, as amended, the projects of mining of minor minerals with mining lease area equal to or greater than 50 hectare are to be handled at the level of the MoEF&CC for grant of EC. Such projects with mining lease area less than 50 hectare are to be handled by the respective State Environment Impact Assessment Authority (SEIAA).

1(a):STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR NON-COAL MINING PROJECTS AND INFORMATION TO BE INCLUDED IN EIA/EMP 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.

2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.

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.

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).

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.

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.

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.

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.

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) Land use of the study rea delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

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.

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.

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.

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.

15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

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.

17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlifeand copy furnished.

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.

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.

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).

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.

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.

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.

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.

25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

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.

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.

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.

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.

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.

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.

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.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

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.

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.

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.

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.

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.

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.

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.

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.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

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.

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.

****

ANNEXURES – 2.1

KHASRA & JAMABANDI DETAILS

नक्ल जमाबंदी (पढ़त पटवार)

गाँव : दौधेरा हदबस्त न. : 253 जिला : महेन्द्रगढ़ तहसील : नांगल चौधरी साल : 2018-2019

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रक्बा और किस्म जमीन	दर और लगान के स्यारे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अधिसूचित
							16-0 मै.मु.			
	267			मकबूजा हरिजनान		49// 6/1	2-0 मै. मु. हडा-रोडी 1			
	268			शरे आम		38// 13/1	0-7 मै. मु. रास्ता			
						49// 1/2/1	0-2 मै. मु. रास्ता			
						10/1/1	कागज बिस्वा मै. मु. रास्ता			
						10/2/1	0-2 मै. मु. रास्ता			
						54// 9/1/2	कागज बिस्वा मै. मु. रास्ता			
						12/2	0-8 मै. मु. रास्ता			
						72	26-15 मै. मु. रास्ता			
183धानू		धानू				73	21-17 मै. मु. रास्ता			
						74	10-11 मै. मु. रास्ता			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के स्थरि के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाक का हग	अभिदुकित
						75	18-2 गै. मु. रास्ता			
						76	17-3 गै. मु. रास्ता			
						77	15-19 गै. मु. रास्ता			
						78	19-6 गै. मु. रास्ता			
						79	6-18 गै. मु. रास्ता			
						155	2-6 गै. मु. रास्ता			
						156	0-8 गै. मु. रास्ता			
						157	0-11 गै. मु. रास्ता			
						158	0-13 गै. मु. रास्ता			
						159	0-13 गै. मु. रास्ता			
						160	0-13 गै. मु. रास्ता			
						161	0-18 गै. मु. रास्ता			
						167	2-10 गै. मु. रास्ता			
						169	5-5 गै. मु.			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर हदबस्त या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुजारा देना है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अक्रियुक्ति
183धानू		धानू								
						164	रास्ता 1-10 मै. मु.			
						165	रास्ता 2-15 मै. मु.			
						166	रास्ता 0-7 मै. मु.			
						167	रास्ता 1-5 मै. मु.			
						168	रास्ता 3-10 मै. मु.			
						169	रास्ता 4-8 मै. मु.			
						170	रास्ता 0-12 मै. मु.			
						171	रास्ता 0-8 मै. मु.			
						172	रास्ता 0-4 मै. मु.			
						173	रास्ता 4-15 मै. मु.			
						174	रास्ता 2-3 मै. मु.			
						175/2	रास्ता 4-2 मै. मु.			
						176/2	रास्ता 3-2 मै. मु.			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के स्थाई के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाट का ढंग	अभियुक्ति
						177	0-3 गै. मु. रास्ता			
						178	0-5 गै. मु. रास्ता			
183धानू		धानू				179	0-17 गै. मु. रास्ता			
						180	8-0 गै. मु. रास्ता			
						181	6-11 गै. मु. रास्ता			
						182	2-10 गै. मु. रास्ता			
						183	0-16 गै. मु. रास्ता			
						184	0-3 गै. मु. रास्ता			
						185	1-13 गै. मु. रास्ता			
						186	1-11 गै. मु. रास्ता			
						187	0-2 गै. मु. रास्ता			
						188	0-8 गै. मु. रास्ता			
						189	1-12 गै. मु. रास्ता			
						190	2-18 गै. मु.			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरक या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कास्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुआफ होता है	हिस्सा या इकौयत का पैमाना और बाद का इंग	अभियुक्ति
							रास्ता			
						191	0-8 मै. मु.			
							रास्ता			
						192	7-3 मै. मु.			
							रास्ता			
						193	2-16 मै. मु.			
							रास्ता			
						194	1-6 मै. मु.			
183धानू		धानू					रास्ता			
						195	1-0 मै. मु.			
							रास्ता			
						196	0-12 मै. मु.			
							रास्ता			
						197	0-12 मै. मु.			
							रास्ता			
						198	0-12 मै. मु.			
							रास्ता			
						199	0-12 मै. मु.			
							रास्ता			
						200	0-12 मै. मु.			
							रास्ता			
						201	0-12 मै. मु.			
							रास्ता			
						202	0-12 मै. मु.			
							रास्ता			
						किले 62	224-12			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुएं या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के स्थानों के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अभियुक्ति
							कुल गैर मजरुआ 224-12 224-12 गै.मु.			
			मिजान हकीयत			किले 383 खसरा 368 मिन 17 कुल मजरुआ 889-0 6-10 ग.मु. पा.प.जारी 79-4 पाही अव्वल 576-17 रोसनी अव्वल 226-9 रोसनी दोयम	5939-2 कुल गैर मजरुआ 5050-2 27-0 ब.कदीम 5023-2 गै.मु.		
183धानू		धानू								
35 //	44	पति हैमाराम्सरणनम्बर	रामअवतार पुत्र सुरजभान पुत्र	खुदकाश्त		25	5-16 रोसनी अव्वल		कब्जा पहला बयाइ खेवट	बकरी रपट न. 404 तिथी 29-04-2015 रात्रि
23		दारमान307-17सो रेट153-59	हजारी 1/4 भाग कैलाश पुत्र सुरजभान पुत्र			5 6	8-12 रोसनी अव्वल 3-16 रोसनी अव्वल		न.1	न.181 तिथी 29/04/2015 2:34:00 PM के अनुसार मिल जानिम रामनिवास पुत्र

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के स्थैरे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अभिमुक्ति
			हैजारी			3/1	2-17 रोसनी अम्बल			सुरजभान से खेवट न.
			3907/16828 भाग			11	8-0 रोसनी अम्बल			29 खतौनी 39 के खसरा
			मनोहा,			27//				न. 12//5, 12//6,
			घिसन्जी,			11/1	3-12 चाही अम्बल			19//11, 19//3/1,
			दाता राम,			20//				2//25, 27//11/1,
			रामेश्वर,			14	5-18 चाही अम्बल			28//14, 28//15,
			इन्दराज,			15	7-7 चाही अम्बल			28//19/2, 28//22/4,
			मक्खन पुत्रान		"	19/2	4-16 चाही अम्बल			28//23/1, 37//15/1,
			जीता राम पुत्र		"	22/4	1-14 चाही अम्बल			37//23/2, 38//11/1,
			अर्जन		"	23/1	0-15 चाही अम्बल			39//12, 39//13/2,
			हर छः समभाग			37//				39//18/1, 39//19/1,
			75/4207 भाग			15/1	1-2 रोसनी अम्बल			39//24/1, 40//1/3,
			रामनिवास पुत्र			23/2	2-13 रोसनी अम्बल			40//2/1, 40//3/2,
			सुरजभान पुत्र			38//				41//2/3, 41//3,
			हजारी			11/1	2-13 रोसनी अम्बल			41//9/1, 43//3/1,
			1669/8412 भाग			39//				59//1, 59//10/1,
			घेतराम,		हजारी वाला	12	5-10 चाही अम्बल			60//4, 60//5,
			वेदराम,			13/2	5-7 रोसनी अम्बल			60//6/1, 60//7/1,
			अमतराम पुत्रान			18/1	2-13 रोसनी अम्बल			60//8/1/1, 61//14/1,
			रामकुवार पुत्र		हजारी वाला	19/1	2-16 चाही अम्बल			61//15/2, 61//16/2,
			मुन्शी			24/1	4-17 रोसनी अम्बल			61//17/1, 61//25/1,
			हर तीन समभाग			40//				61//6/2, 61//7/2/1
			217/4206 भाग			1/3	5-8 रोसनी अम्बल			का 1669/8412 हिस्सा
			सरती देवी विधवा			2/1	6-0 रोसनी अम्बल			बदले रु. 439000 /-
			दयाराम पुत्र			3/2	4-10 रोसनी अम्बल			रु. से OBC Nangal
35धान्		धनि धान्	मुरजभान			41//				Choudhary के पास ता
			1/4 भाग		सरला	2/3	3-13 चाही अम्बल			अदायगी रकम रकबा आद

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	खुद या लिंघाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के बट्टे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अभियुक्ति
			बालीदेह			3	8-13 रोसनी अव्वल			रहन रहेगा व
						9/1	5-0 रोसनी अव्वल			बस्ती रपट न. 405
						43//				तिथी 29-04-2015 रजि
						3/1	4-17 रोसनी अव्वल			न.182 तिथी
						59//				29/04/2015 2:35:00
						1	4-16 रोसनी अव्वल			PM के अनुसार मिन
						10/1	0-12 रोसनी अव्वल			जानिम केलाश पुत्र
						60//				सुरजभान ने खेवट न.
						4	6-4 रोसनी अव्वल			29 खतौनी 39 के खसरा
						5	8-0 रोसनी अव्वल			न. 12//5, 12//6,
						6/1	2-9 रोसनी अव्वल			19//11, 19//3/1,
						7/1	2-9 रोसनी अव्वल			2//25, 27//11/1,
						8/1/1	0-12 रोसनी अव्वल			28//14, 28//15,
						61//				28//19/2, 28//22/4,
						6/2	6-14 रोसनी अव्वल			28//23/1, 37//15/1,
						7/2/1	1-17 रोसनी अव्वल			37//23/2, 38//11/1,
						14/1	2-0 रोसनी अव्वल			39//12, 39//13/2,
						15/2	1-10 रोसनी अव्वल			39//18/1, 39//19/1,
						16/2	7-4 रोसनी अव्वल			39//24/1, 40//1/3,
						17/1	4-8 रोसनी अव्वल			40//2/1, 40//3/2,
						25/1	4-0 रोसनी अव्वल			41//2/3, 41//3,
						किते 40	171-10			41//9/1, 43//3/1, 59//1, 59//10/1,
						कुल मजरआ				60//4, 60//5,
						171-10				60//6/1, 60//7/1, 60//8/1/1, 61//14/1, 61//15/2, 61//16/2, 61//17/1, 61//25/1,
						36-1 घाही अव्वल				

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाद का हक	अभियुक्ति
						135-9 दोखेरी अव्वल				61//6/2, 61//7/2/1
35थाम्		पंडित थाम्								का 3907/16828 हिस्सा बदले मु. 439000 /- रु. मे OBC Nangal Choudhary के पास ता अदायगी रकम रकबा अड रहन रहेगा ।ह —— पेंसिल आरम्भ—— रजिस्ट्रेशन विवरण ——— दस्ति न.15 तिथि:06-04-2021 राशि:900000 —शहिन का नाम— केशव —मुर्तहिन का नाम— पंजाब नेशनल बैंक **नारनल चौधरी** 39 बजाब -16 सरसा 9 बजाब -0 सरसा दस्ति न.580 तिथि:23-06-2021 राशि:300000 —शहिन का नाम— मनीष कुमार —मुर्तहिन का नाम—

876202306010458

नकल जमाबंदी (पट्टा पटवार)

मौजा : दोबेरा | हदबस्त न. : 253 | जिला : महेन्द्रगढ | तहसील : नांगल चौधरी | साल : 2018-2019

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पट्टी	विवरण सहित मालिक नाम	विवरण सहित कास्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किते का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का हक	अभियुक्ति
35धानू		पत्ति धानू								Union Bank India nangal choudhagry 21 कनाल -8 मरला 4 कनाल -17 मरला 0 कनाल -18 मरला रसि न.582 तिथी:23-06-2021 राशि:300000 ---दाहिन का नाम--- विकास ---मुर्तहिन का नाम--- Union Bank of India Nangal Choudhary 21 कनाल -8 मरला 4 कनाल -17 मरला 0 कनाल -18 मरला रसि न.61 तिथी:21-04-2022 राशि:495000 ---दाहिन का नाम--- बरजो देवी ---मुर्तहिन का नाम--- Union Bank of India Nangal Choudhary 35 कनाल -12 मरला खसरा न.12//5,12//6,18//11,19 //23/1,2//25,27//11/1,23 //14,23//15,23//13/2,23

नकल जमाबंदी (पट्टा पटवार)

मौजा : दोबेरा हदबस्त न. : 253 जिला : महेन्द्रगढ़ तहसील : नारनौल चौपड़ी साल : 2018-2019

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभियुक्ति
35चानू		चरित चानू								//22/4,28//23/1,37//15/1,37//23/2,38//11/1,39//12,39//13/2,39//19/1,39//15/1,39//24/1,40//1/3,40//2/1,40//3/2,41//2/1,41//3,41//9/1,43//3/1,59/1,59//10/1,60//4,60//5,60//6/1,60//7/1,60//8/1/1,61//14/1,61//15/2,61//16/2,61//17/1,61//25/1,61//8/2,61//7/2/1 —— नया आरम्भ—— 1481 विरासत ——नया समाप्त—— —— नया आरम्भ—— 1482 विरासत ——नया समाप्त—— —— नया आरम्भ—— 1483 विरासत ——नया समाप्त—— —— नया आरम्भ—— 1496 पारिवारिक **हस्तांतरण** ——नया समाप्त—— —— नया आरम्भ—— 1506 विरासत ——नया समाप्त—— —— नया आरम्भ——

खेवट या जमाबंदी न.	खतौनी न.	नाम हरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुर या लिखाई के अन्य शासन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के रुपये के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाछ का हक	अभियुक्ति
35बाद्		पत्ति चानू								—साल समाप्त— — साल आरम्भ— 1528 से —साल समाप्त— — साल आरम्भ— नोट- रपट न. 195 दिनी 03-01-2020 कि वह व सरली देवी पत्नी हमाराम की आराजी खेवट इजा का रकबा बदले रु. 485000/- में बहक PNB NCH के पास आर रजा हो चुकी है। — साल समाप्त— — साल आरम्भ— बकमे रपट न.440 दिनि Apr 5 2021 के अनुसार लिन आलिम कैलाश पुत्र सुरजभान ने खेवट न. 35 कुल रकबा 171-10-0 का 3907/16828 का ग बकाइ 38-16-3 खेवट न. 36 कुल रकबा

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किते का नम्बर	रकबा और किस्म जमीन	दर और लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अभियुक्ति
										38-17-0 का 3007/16428 भाग बकाइ 5-0-4 बदले रु 900000 बाबत PNB Nangal Choudhary के पास आइ रहन है। — साल समाप्त— — साल आरम्भ— बकये रकबा न.207 तिथि Dec 2 2021 के अनुसार रकबा न. 195 दिनांक Jan 3 2020 पर जिन जानिब सरजी देवी विधवा हनुमान का जो रकबा बाइक PNB Nangal Choudhary के पास बदले रु. 485000 में आइ रहन था अब वह चक हो चुका है। — साल समाप्त— — साल आरम्भ— बकये रकबा न.509 तिथि Apr 21 2021 के अनुसार
35धानू	पति धानू									

खेवट का जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के स्वरों के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का फैसला और शाख का ढंग	अभियुक्ति
										मिल आसिब सरसी देवी विधवा हजारा से खेवट न. 35 कुल रकबा 171-10-0 का 285/1372 भाग बकदर 35-12-5 बदले मु 495000 बाहक Union Bank of India Nangal Choudhary के पास आह रहन है। — आह समाप्त—
37 //	46	पत्ति हैमारामसहारणनम्बर	जगदीश पुत्र सुलतान पुत्र	खुदकाश्त		12// 21	3-4 रोशनी अम्बल		कब्जा पहला बशरह खेवट	नोट-बस्ते रपट न.619 मिति 29-7-05 से खेवट हजा का
38		दारमान307-17मी रेट153-59	हजारी 3796/20855 भाग लखमीचन्द, सीताराम, सुभाषचन्द पुत्रान सुलतान पुत्र हजारी हर तीन समभाग 3/5 भाग भगीरथ, पिरन्जी, दातराम,			13// 7 14/1 16/2/2 25 15// 12/2 37// 23/1 36// 11/2 12	7-11 रोशनी अम्बल 2-3 रोशनी अम्बल 2-8 रोशनी अम्बल 7-11 रोशनी अम्बल 7-15 रोशनी अम्बल 2-5 रोशनी अम्बल 3-15 रोशनी अम्बल 1-12 रोशनी अम्बल		न.1	1/5 भाग रकबा बकदर 41-14 बदले मु.100000/-मे बहक सीताराम हिस्सेदार बहक PNB N/Ch.के पास आह रहन है। नोट– बस्ते रपट न. 657 मिती 23-8-2005 से खेवट हजा का 1/5 भाग रकबा 41-14 मिन जानब लखमीचन्द हिस्सेदार बहक PNB N/ch बदले मु. 100000/- में आह रहन है। नोट रप दर. 471 मिती

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	खुंप या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किते का नम्बर	रकबा और किस्म जमीन	दर और संख्या के रूपों के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का हद्द	अभियुक्ति
			रामेश्वर,		छतरी वाला	13/2	6-6 चाही अव्वल			23-7-11 से अक्षयचन्द
			इन्दराज,		छतरी वाला	18/4	2-0 चाही अव्वल			पुत्र सुलतान हि. मे खेवट
			मखन पुत्रान		छतरी वाला	19	9-17 चाही अव्वल			हजा का किता 37 तादादी
			जीतराम पुत्र		छतरी वाला	21/1	2-15 चाही अव्वल			1/5 भाग 33-15 बदले मु.
			अर्जुन		छतरी वाला	22/1	3-16 चाही अव्वल			300000 मे OBC ASD NNL
			हर छः समभाग			39//				के पास आड रहन है।
			75/4171 भाग		हजारी वाला	21/2/2	3-17 चाही अव्वल			बकाये रपट न. _____
			पेतराम,		हजारी वाला	22/2	6-4 चाही अव्वल			तिथी _____ रजि
			वेदराम,		हजारी वाला	23/2	6-4 चाही अव्वल			न.1225 तिथी
			भगतराम पुत्रान			24/2	3-4 रोशनी अव्वल			01/10/2012 12:25:00
			रामकुवार पुत्र			40//				PM के अनुसार मिन
			मुन्नी			9/2	1-10 रोशनी अव्वल			जानिब सीताराम पुत्र
			हर तीन समभाग			10/2	2-14 रोशनी अव्वल			सुलतान ने खेवट न. 20
			31/834 भाग			11/2	9-18 रोशनी अव्वल			का 1/5 हिस्सा बदले
			सचिन पुत्र व			20/1	1-16 रोशनी अव्वल			मु. 200000 /- रू.
			रिन्कु पुत्री व			41//				मे PNB Nangal
			विमला देवी बिधवा		तलाब	1	7-15 चाही अव्वल			Choudhary के पास जा
37धालू		पत्ति धालू	नरेश पुत्र			41//				अदायगी रकम रकबा आड
			सुलतानसिंह			2/1				रहन रहेगा ।।
			हर तीन समभाग		तलाब	2/1	3-16 चाही अव्वल			बकाये रपट न.121
			679/4170 भाग			9/2	5-0 रोशनी अव्वल			रजि
			बासीढेढ़			59//				न.1226 तिथी
						10/2	1-0 रोशनी अव्वल			01/10/2012 12:28:00
						60//				PM के अनुसार मिन
						6/2	5-11 रोशनी अव्वल			जानिब सुभाषचन्द
						7/2	5-11 रोशनी अव्वल			पुत्र सुलतान ने खेवट
						8/1/2	3-6 रोशनी अव्वल			न. 20 का 1/5 हिस्सा

खेवट या जमाबंदी न.	खतौनी न.	नाम तरक या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कास्तकार	कुएं या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के स्वामि के हाथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभियुक्ति
						13/1 14/1 15/1 61/ 14/2 15/3 17/2 18 19 किले 37 कुल रजबजा 168-17 52-10 पाती अव्वल 116-7 रोसनी अव्वल	3-4 रोसनी अव्वल 3-4 रोसनी अव्वल 3-12 रोसनी अव्वल 6-0 रोसनी अव्वल 6-6 रोसनी अव्वल 3-12 रोसनी अव्वल 8-0 रोसनी अव्वल 4-15 रोसनी अव्वल 168-17			बदले मु. 200000 /- रु. में PNB Nangal Choudhary के पास तो अदायगी रकम रकबा आद रहन रहेगा । बरुये रपट न. 122 रजि न.1366 तिथी 22/10/2012 13:11:00 के अनुसार मिन जानिम जगदीश पुत्र सुलतान ने खेवट न. 20 का 3796/20855 हिस्सा बदले मु. 160000 /- रु. में PNB Nch के पास तो अदायगी रकम रकबा आद रहन रहेगा । बरुये रपट न. _____ तिथी _____ रजि न.1144 तिथी 24/08/2018 1:11:00 PM के अनुसार मिन जानिम जगदीश पुत्र सुलतान ने खेवट न. 31 खतौनी 41 के खसरा न.

37थान्

पत्ति थान्

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के स्थिर के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाद का हक	अभियुक्ति
										12//21, 13//14/1, 13//16/2/2, 13//25, 13//7, 19//12/2, 37//23/1, 38//11/2, 38//12, 38//13/2, 38//18/4, 38//19, 38//21/1, 38//22/1, 39//21/2/2, 39//22/2, 39//23/2, 39//24/2, 40//10/2, 40//11/2, 40//20/1, 40//9/2, 41//1, 41//2/1, 41//9/2, 59//10/2, 60//13/1, 60//14/1, 60//15/1, 60//6/2, 60//7/2, 60//8/1/2, 61//14/2, 61//15/3, 61//17/2, **61//18, 61//19 का 3796/20855 हिस्सा बदले मु. 300000 /- रु. में PNB Nangal Choudhary के पास ता अदायगी रकम रकबा ज्ञाह रहन रहेगा ।।** — पेसिल अदायगी — रजिस्ट्रेशन विभाग रजि न.5871 दिनांक:06-01-2022 राशि:617000

37धानू पति धानू

नकल जमाबंदी (पटवार)

गाँव : दौखेरा हदबस्त न. : 253 जिला : महेन्द्रगढ़ तहसील : नांगल चौधरी साल : 2018-2019

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का इंग	अभिमुक्ति

—राहिन का नाम—
लखमीचन्द
—मुर्तहिन का नाम—
पटवार सेसमल बैरु
नांगल चौधरी
33 कनाल -15 मरला
1 कनाल -9 मरला
खसरा
न.12//21,13//14/1,13//16/2/2,13//25,13//7,19//12/2,37//23/1,38//11/2,38//12,38//13/2,38//18/6,38//19,38//21/1,38//22//1,39//21/2/2,39//22/1,39//23/2,39//24/2,40//10/2,40//11/2,40//20/1,40//9/2,41//1,41//2/1,41//9/2,59//10/2,60//13/1,60//14/1,60//15/1,60//6/2,60//7//2,60//9//1//,61//14/2,61//15/1,61//17/2,61//18,61//19
—— बाद आरम्भ——
1481 विरासत
——बाद समाप्त——
,—— बाद आरम्भ——
1482 विरासत
——बाद समाप्त——
—— बाद आरम्भ——
1483 Dismiss

37बाद् पति बाद्

खेवट या जमाबंदी नं.	खतौनी नं.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभियुक्ति

—साल समाप्त—
— साल आरम्भ—
1506 दिसम्बर
—साल समाप्त—
— साल आरम्भ—
1510 वै
—साल समाप्त—
— साल आरम्भ—
बही एन्ट्र नं. 358
दिनांक 20-03-2020 रजि
नं.2456 दिनांक
20/03/2020 11:23:00
AM के अनुसार जिस
जारिज तहसील पुरा
मुकाम में बेखर नं. 37
खतौनी 46 के खसरा नं
12//21, 13//1/1,
13//16/2/2, 13//25,
13//7, 19//12/2,
37//23/1, 38//11/2,
38//12, 38//13/2,
38//18/4, 38//19,
38//21/1, 38//22/1,
38//21/2/2,
38//22/2, 38//23/2,
38//24/2, 40//10/2,
40//11/2, 40//20/1,
40//9/2, 41//1,
41//2/1, 41//9/2,
58//10/2, 60//12/1,
60//14/1, 60//15/1,

37धानू पत्नि धानू

खेवट का जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित साम्रिक नाम	विवरण सहित काश्तकार	कुएं या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के रूपों के साथ लगान जो गुजारा देता है	हिस्सा या हकीयत का पैमाना और बाक का ढंग	अभियुक्ति
										60//0/2, 60//7/2, 60/8/1/2, 61//14/2, 61//15/3, 61//17/2, 61//18, 61//19 का 1/6 हिस्सा बदले मु. 450000 /- रु. से jab nangal choudhary के पास हो अहातगी रकम रकबा आद रहन रहेगा । — साक्ष समाप्त— — साक्ष आरम्भ— बकये रपट न.227 दिनि Dec 14 2021 के अनुसार रपट न. 471 दिनांक 31 23 2011 थाः सिटि नारनौल गुडगांव का जो रकबा बाहक OIC ASI Narnaul के पास बदले मु. 300000 रु. में आड रहन था अब वह फक हो चुका है। — साक्ष समाप्त——

गाँव : डोबेरा हदबस्त न. : 253 जिला : महेन्द्रगढ़ तहसील : नारनौल चौपड़ी साल : 2018-2019

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पट्टी	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के रूपये के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का फैसला और बाछ का ढंग	अभियुक्ति
37धानू		पत्ति धानू								

— मात्र प्रतिलिपि —
बकये रपट न.283 दिनि
Jan 6 2021 के अनुसार
रपट म. 657 दिनांक Aug
23
2006 पर
सिंह अतिरिक्त
सबलीपुर पुर
सुलतान
का जो रकबा सड़क
PNB Nangal Choudhary
के पास बढ़ने से 100000
रु.
में आए रहन था
अब वह पक्का
हो चुका है।
— मात्र समाप्त —
— मात्र प्रतिलिपि —
बकये रपट न.287 दिनि
Jan 6 2022 के अनुसार
सिंह अतिरिक्त
सबलीपुर पुर
सुलतान से
खेवट न. 37 कुल रकबा
188-17-0 का 1/5 भाग
बकाद 33-15-4
खेवट न. 43 का न.ह.
61/111,61/77/2/2,(3)(15

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान जो मुआफ देता है	हिस्सा या हकीयत का पैमाना और बाछ का अंग	अधिसूचित
37खालू		पत्ति खालू								/2 ,13/16/2/1 कुल रकबा 21-17-0 मा 1/1 5 आम बकाइर 1-9-1 बदमे मु 517000 बाइक (NB Nangal Choudhary में पाम आम खास है) — आम इमारत— —— आम आदमन— 1481 तिरासठ
40 //	49	पत्ति हैमारांमसरणनम्बर	राजबीर पुत्र हनुमान पुत्र	खुदकाश्त		39// 11/2	4-6 रोशनी अम्बल		कब्जा पड़ता बसरह खेवट	—आम इमारत— —— आम आदमन— 1481 तिरासठ
33		दामाल307-17सी रेट153-59	हजारी 1/4 आम अगोता, दालाराम, रामेश्वर, घिरन्जी, इन्दराज, मखन पुत्रान जीताराम पुत्र अर्जन हर छः सगआन 19/1043 आम राजेन्द्र प्रसाद, रामकाम,		हजारी बाना हजारी बाना हजारी बाना हजारी बाना	18/2 19/2 20 21/1 21/2/1 22/1 23/1 25/2 43// 4 44// 17 19/1 22/3	5-7 रोशनी अम्बल 6-8 चाही अम्बल 5-16 चाही अम्बल 2-4 चाही अम्बल 0-19 चाही अम्बल 1-16 चाही अम्बल 1-16 चाही अम्बल 4-17 रोशनी अम्बल 5-9 रोशनी अम्बल 5-8 रोशनी अम्बल 3-11 चाही अम्बल 2-8 चाही अम्बल	न.1	—आम इमारत— —— आम आदमन— 1482 तिरासठ —आम इमारत— —— आम आदमन— 1483 तिरासठ —आम इमारत— —— आम आदमन— 1486 तिरासठ मुसतका खेवट —आम इमारत— —— आम आदमन— 1506 तिरासठ —आम इमारत—

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभिमुक्ति
			धर्मपाल,		खाटीया वाल	23	8-0 पड़ी अव्वल			---- बाद आराम----
			महेश कुमार,			46//				1510 से
			सत्यपाल पुत्रान			15/1	4-0 रोसनी अव्वल			----बाद समाप्त----
			बनवारी लाल पुत्र			16/2/1	1-12 रोसनी अव्वल			---- बाद आराम----
			घीसाराम			17/3	3-18 रोसनी अव्वल			1535 भविष्यिक
			हर पाँच समकाल			24/1/1	0-3 रोसनी अव्वल			हस्तांतरण
			379/4185 भाग			60//				----बाद समाप्त----
			चितम सिंह पुत्र			10/2	3-0 रोसनी अव्वल			---- बाद आराम----
			हनुमान पुत्र			11/2	7-11 रोसनी अव्वल			1536 से
			हजारी			12/2	4-19 रोसनी अव्वल			----बाद समाप्त----
			611/4172 भाग			13/2	6-8 रोसनी अव्वल			---- बाद आराम----
			श्रीमती रामकलादेवी			14/2	4-16 रोसनी अव्वल			1550 भविष्यिक
			पत्नी			15/2	2-18 रोसनी अव्वल			हस्तांतरण
			कैलाश पुत्र			18/2	3-12 रोसनी अव्वल			----बाद समाप्त----
			नन्दराम			19	7-4 रोसनी अव्वल			--- बाद आराम----
40धानू		पत्ति धानू	158/4185 भाग			60//				बकये रपट न.815 दिनि
			श्रीमती धर्मीलादेवी			20				Aug 21 2023 के अनुसार
			पत्नी			20	7-16 रोसनी अव्वल			जिम जानिब
			हजारी पुत्र			21/1	2-6 रोसनी अव्वल			श्रीमती कमला देवी पत्नी
			नन्दराम			61//				रिसराम से
			158/4185 भाग			6/1	0-16 रोसनी अव्वल			खेवट न. 40 का .न.स.
			खसीदेह			15/4	0-15 रोसनी अव्वल			60/10/2,61/6/1,61//15
			श्रीमती अनितादेवी			16/1	0-16 रोसनी अव्वल			/4
			पत्नी			----------	----------			/1,60//1//1/1,60//12/
			राजेन्द्र पुत्र			किते 31	120-7			2/
			नन्दराम			कुल रकबा				1
			53/1395 भाग			----------				कुल रकबा 16-0-0 का 1/1

खेवट का जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किते का नम्बर	रकबा और किस्म जमीन	दर और लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अभियुक्ति
			वासी ढाणी आशावाली वासी दौस्तपुर श्रीमती कमलादेवी पत्नी भगवानसिंह पुत्र नन्दराम 158/4185 भाग श्रीमती बिमलादेवी पत्नी शेरसिंह पुत्र नन्दराम 158/4185 भाग चेतराम, केदराम, भगतराम पुत्रान रामकुवार पुत्र मुन्शी हर तीन समभाग 52/1395 भाग		120-7 ---------- 32-10 घाही अग्वन 87-17 रोहली अग्वन				भाग बकदर 16-0-0 बदले मु 250000 बाहक UNION BANK OF INDIA NANGAL CHOUDHARY के पास आर रहन है) — साल समाप्त— — साल आरम्भ— नोट एन्ट्र न. 558 तिथी 27-4-2023 की रद्द से तथे इन्तकाल न. 1539 है। से श्रीमती अन्नू खुराना पत्नी अशवनी खुराना की आधी खेवट हुआ से बदले मु. 480000/- बाहक M/S Kandy Hoes and Minerals की जमानत पे है।
40चानू	पत्ति चानू	श्रीमती अनपनी पत्नी जगदीश पुत्र सुलतानसिंह 15/863 भाग पतंजीर पुत्र हनुमान पुत्र								— साल समाप्त— — साल आरम्भ— बदले एन्ट्र न.828 तिथि May 23 2023 के अनुसार सिर्फ तालिब पतंजीर पुत्र

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित सांकेतिक नाम	विवरण सहित कास्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभिमुक्ति
			इजारी 4807/2889324 भाग श्रीमती भागलीदेवी पत्नी इन्द्राज पुत्र कालू 181/8630 भाग श्रीमती कमलादेवी पत्नी शिवराम पुत्र मादुराम 181/8630 भाग मुकेश पुत्र हनुमान पुत्र इजारी 1067483/40293180 भाग श्रीमती कमला पत्नी पितराम पुत्र मान सिंह 320/2407 भाग बासीदेह						हनुमान से खेवट न. 39 का न.ख. 40//1/4,40//10/1,40/2/2, 40/R/1,41//4,16//5/2,16/ /4/2_61//15/4/2_60//1/ 2/2_60/12/2/2 कुल रकबा 34-8-0 का 253/ 1011 भाग रकबा 8-12-4 खेवट न. 40 का न.ख. 39//11/2_39//18/2_39//19/ 2_39//20_39//21/1_39//21/ 2/1_39//22/1_39//23/1_39/ /25/2,60//20,60//21/1,60/ /16/1,61//15/4/2_,60//1/ 2/2_,60//17/2/2,16//4/2_, 16//5/7 कुल रकबा 58-16-0 का 253
40कालू	पत्नि कालू									

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कास्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और मवाजा के स्थाँ के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाठ का ढंग	अभियुक्ति

/1011 साम

रकबा 14-5-0

खेवट न. 41 का न.ख.

17//1,16//4/2,16/5/2,

61

//15/4/2,,60/11/2/2,6

0/

/12/2/2

कुल रकबा 20-12-0 का

253

/1011 साम

रकबा 5-3-1

खेवट न. 42 कुल रकबा

21-17-0 का 1/12 साम

रकबा 1-15-4

बदले मु 660000 बाहर

Union Bank of India

Nangal Choudhary के पास

आम रहन है।

— साम समाप्त—

— साम आरम्भ—

नोट एपट न. 629 मिती

23-05-2023 की रह से

गुलेश पुत्र हनुमान

मालिक की आधाती खेवट हजा

से रकबा 79-18 से से

505/2022 डिक्री रकबा

19-19 बदले मु. 660000/-

बाहर Union Bank of India

40साम् पंडित साम्

07620230001040E

नकल जमाबंदी (पहला पटवार)

गाँव : दोबेरा हदबस्त न. : 253 जिला : महेन्द्रगढ़ तहसील : महेंद्र चौधरी साल : 2018-2019

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाध का ढंग	अभियुक्ति

Nangal Choudhary के नाम
रहन कर दी है।
— नाम समाप्त—
— नाम आरम्भ—
मौट रपट नं. 630 मिती
23-05-2023 की रूह से
हितम पुत्र हनुमान
मालिक की आराजी खेवट हजा
मे रकबा 79-18 मे से
505/2022 हिस्सा रकबा
19-19 बदले मू. 660000/-
बहक Union Bank of India
Nangal Choudhary के नाम
रहन कर दी है।
— नाम समाप्त—
— नाम आरम्भ—
मौट रपट नं. 631 मिती
23-05-2023 की रूह से
राजवीर पुत्र हनुमान
मालिक की आराजी खेवट हजा
मे रकबा 79-18 मे से
253/1011 हिस्सा रकबा
19-19 बदले मू. 660000/-
बहक Union Bank of India
Nangal Choudhary के नाम
रहन कर दी है।
— नाम समाप्त—

श्रीमान्
नकल मुताबिक असल है।
नकल.....राजा हसन.....पुत्र.....उस्मान.....
वासी.....को दी गई है।
खसरा खतौनी नं.....196.....पर दर्ज की गई।
30/6/2023

30/6/2023

Generated by rohit9580 from Web-Habla
Report Generation Date : 30/06/2023 12:46 PM
Total Charges: 505 Rupees Only (Fee: 235 + Computer Service Charges 270)

File Entered & Updated by Data
Master Name
Design: Comp. Operator, DTR, JHJ

नक्ल जमाबंदी (पड़ता पटवार)

गाँव : दोखेड़ा | हदबस्त न. : 253 | जिला : महेन्द्रगढ़ | तहसील : नारनौल चौधरी | साल : 2018-2019

1	2	3	4	5	6	7	8	9	10	11
खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाख का ढंग	अभियुक्ति
183 // 172	230		ग्राम पंचायत देह	खुदकाश्त बजरौनी बासीदेह पट्टेदार अज हा 23/09/2002 ब मकबूजा ग्राम पंचायत देह		3// 17 24 25 6// 21 8// 8 12/1 14 16 25 10// 20 21/1 11// 4 5 6 7 15 मिन 15/1 12// 4 7	2-6 रोसनी दोयम 5-8 रोसनी दोयम 8-0 रोसनी दोयम 0-19 रोसनी अव्वल 7-7 रोसनी अव्वल 4-3 रोसनी अव्वल 8-0 रोसनी अव्वल 2-18 रोसनी अव्वल 7-8 रोसनी अव्वल 7-12 रोसनी अव्वल 3-11 रोसनी दोयम 6-16 रोसनी अव्वल 8-0 रोसनी अव्वल 8-0 रोसनी दोयम 4-19 रोसनी अव्वल 0-18 रोसनी अव्वल 4-11 रोसनी अव्वल 4-2 रोसनी अव्वल 6-0 रोसनी अव्वल		कब्जा पड़ता बवारह खेवट न.1	—— रेजिस अदमम—— रजिस्ट्रेशन विवरण रसि न.2234 दिनी:29-03-2023 राशि:460000 —पट्टा देने वाला का नं Director Mines Geology Deptt. Haryana —पट्टा लेने वाला का नं Sandy Mines and Minerals 194 बलाक -B अरावा खनन न.109 - इलाका रेजिस है -

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और बंदया के रूपैं के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का इंग	अभियुक्ति
						17/1	6-0 रोसनी दोयम			
						24	8-0 रोसनी अव्वल			
						25/1	6-13 रोसनी अव्वल			
						22//				
						3 मिन	3-8 रोसनी दोयम			
						5	8-0 रोसनी दोयम			
183धानू		धानू				22//				
						6				
						6	8-0 रोसनी दोयम			
						23//				
						1	7-12 रोसनी दोयम			
						2	3-16 रोसनी दोयम			
						7	1-15 रोसनी दोयम			
						8	6-18 रोसनी दोयम			
						9	8-0 रोसनी दोयम			
						13	7-1 रोसनी दोयम			
						25//				
						23 मिन	1-0 रोसनी अव्वल			
						26//				
						4	8-0 रोसनी अव्वल			
						5/1	3-0 रोसनी अव्वल			
						28//				
						11/2	0-9 रोसनी अव्वल			
						12/2/2	0-4 रोसनी अव्वल			
					चैक सावा	26	1-8 न.मु. चा.p.जारी			
					दो आवा	27	1-4 न.मु. चा.p.जारी			
						36//				
						5 मिन	2-2 रोसनी अव्वल			
						22//				

खेवट या जमाबंदी न.	खतौनी न.	नाम शरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कास्तकार	कुएं या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संकेत के ब्यौरे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाड़ का ढंग	अभियुक्ति
						1	7-16 चाही अव्वल			
						17 मिन	2-18 रोसनी अव्वल			
						18/1	2-4 चाही अव्वल			
						19/1	3-11 चाही अव्वल			
						20	6-18 चाही अव्वल			
						26	1-9 मै. सु. चाह			
						48//				
183धानू		धानू				48//				
						22/2/2				
						22/2/2	0-1 रोसनी अव्वल			
						49//				
						21	3-10 ब.काश्तकार बंजड़			
					ऐक लाख	26	3-18 म.सु. चा.प.जारी			
						53//				
						1	8-0 ब.काश्तकार बंजड़			
						2	5-16 ब.काश्तकार बंजड़			
						7/1	4-1 मै. सु. इस्पताल			
						7/2	1-2 मै. सु. इस्पताल			
						9	3-2 ब.काश्तकार बंजड़			
						10/1	5-16 ब.काश्तकार			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के रूपये के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभियुक्ति
							कदीम			
						13	4-2 गै. मु. पंचायत			
						60//				
						17	4-19 रौशनी अव्वल			
						18/1	4-8 रौशनी अव्वल			
						21/2	4-16 रौशनी अव्वल			
						22	8-0 रौशनी अव्वल			
						23	8-0 रौशनी अव्वल			
						24	2-2 रौशनी अव्वल			
						52//				
						5/2	2-16 रौशनी अव्वल			
183धानू		धानू				62//				
						6				
						6	8-0 रौशनी अव्वल			
						15	8-0 रौशनी अव्वल			
						16	8-0 रौशनी अव्वल			
						25	7-4 रौशनी अव्वल			
						63//				
						1	7-19 रौशनी अव्वल			
						2	8-0 रौशनी अव्वल			
						3	9-11 रौशनी अव्वल			
						9	4-0 रौशनी अव्वल			
						10	8-0 रौशनी अव्वल			
						11	8-12 रौशनी अव्वल			
						20	9-8 रौशनी अव्वल			
						21	5-8 रौशनी अव्वल			
						64//				

खेवट या जमाबंदी न.	खतौनी न.	नाम तरक या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के भारी के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बांट का ढंग	अभियुक्ति
						1	0-16 ब.कदीम बंजरकदीम			
						5	2-3 रोहली दोयम			
						83	65-13 गै. मु. पहाड			
						84	11-3 गै. मु. पहाड			
						84/1	5-13 गै. मु. पहाड			
						85	37-10 गै. मु. पहाड			
						86	104-14 गै. मु. पहाड			
183धान्		धान्				87 सिंच	9-7 गै. मु. पहाड			
						88 सिंच	328-2 गै. मु. पहाड			
						89	162-13 गै. मु. पहाड			
						90	114-6 गै. मु. पहाड			
						91 सिंच	757-1 गै. मु. पहाड			
						92	11-4 गै. मु. पहाड			
						93	4-8 गै. मु.			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कब्जाकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अभिकुथित
						94	पहाड़ 30-9 मै. मु.			
						95	पहाड़ 17-10 मै. मु.			
						96	पहाड़ 4-0 मै. मु.			
						97	पहाड़ 22-17 मै. मु.			
						98	पहाड़ 35-16 मै. मु.			
						99	पहाड़ 44-10 मै. मु.			
						100	पहाड़ 191-3 मै. मु.			
						101	पहाड़ 81-10 मै. मु.			
						102	पहाड़ 5-14 मै. मु.			
183धानू		धानू				103 जिम	पहाड़ 672-1 मै. मु.			
						104	पहाड़ 18-12 मै. मु.			
						105	पहाड़ 18-16 मै. मु.			
						106	पहाड़ 12-11 मै. मु.			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कास्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभियुक्ति
						107	62-7 गै. मु. पहाड़			
						108	628-8 गै. मु. पहाड़			
						109 मिन	940-8 गै. मु. पहाड़			
						किले 104	4796-1			
						सालम 94 मिन 10				
						कुल मजरुआ	कुल गैर मजरुआ			
						350-1	4436-0			
						6-10 ग.मु. चा.प.जारी	27-0 बंजरीम			
						20-10 चाही अव्वल	4409-0 गै.मु.			
						233-3 रोसनी अव्वल				
						89-18 रोसनी दोयम				
231		मकबूजा				///				
		मकबूजा कानूनगो				10	3-10 रोसनी अव्वल			
		हल्काUnder 146 CRPC				11	8-0 रोसनी अव्वल			
						12	5-13 रोसनी अव्वल			
						18	1-0 रोसनी अव्वल			

खेवट या जमाबंदी नं.	खतौनी नं.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुएं या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के स्थाई के साथ लगान जो मुजारा देना है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अभियुक्ति
183धानू		धानू				777				
						19				
						19	8-0 रोसनी अव्वल			
						20	8-0 रोसनी अव्वल			
						21	8-0 रोसनी दोयम			
						22	8-16 रोसनी दोयम			
						80/				
						6	8-6 रोसनी अव्वल			
						222/				
						2	5-4 रोसनी अव्वल			
						11	8-0 रोसनी अव्वल			
						25//				
						7	8-0 रोसनी अव्वल			
						9	7-11 रोसनी अव्वल			
						10	7-11 रोसनी अव्वल			
						12	8-0 रोसनी अव्वल			
						14	8-0 रोसनी अव्वल			
						17	8-0 रोसनी अव्वल			
						18	8-0 रोसनी अव्वल			
						19	8-0 रोसनी अव्वल			
						22	8-0 रोसनी अव्वल			
						24	2-6 रोसनी अव्वल			
						26//				
						6	7-7 रोसनी अव्वल			
						7	7-8 रोसनी अव्वल			
						76//				
						6	8-0 चाही अव्वल			
						8	8-0 चाही अव्वल			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का फैसला और बाछ का इन्द	अभियुक्ति
						9/1	1-12 रौसली अव्वल			
						15	8-0 चाही अव्वल			
						16	8-0 चाही अव्वल			
183चालू		चालू				17//				
						10	8-0 चाही अव्वल			
						11	7-12 चाही अव्वल			
						12	8-0 चाही अव्वल			
						किले 31	221-3			
						कुल मजरआ				
						221-3				
						55-12 चाही अव्वल				
						148-15 रौसली अव्वल				
						16-16 रौसली दोयम				
	232			कालूराम, माधूराम पुत्रान मोहब्बत पुत्र मोहन हर दो समस्त बासिंदेह मौर मौल्लीयान		36// 5 बिघे सदर	5-16 रौसली अव्वल			
	233			जगन्नाथ पुत्र जीता पुत्र		8// 7//	4-0 रौसली अव्वल			

Total Charges: 505 Rupees Only (Fee: 235 + Computer Service Charges:270)

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कब्जाकार	कूंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संडवा के म्यारे के साथ लगान जो मुजारा देता है	हिस्सा या इकीयत का पैमाना और बाक का हस	अभियुक्ति
				किशना		15 मिन	4-4 रोसनी अव्वल			
				वासीदेह		21//				
				गैर मौरूसी		15/2	4-0 रोसनी अव्वल			
						22//				
						13/1	4-4 रोसनी अव्वल			
						किते 4	16-8			
						साजम 3				
						मिन 1				
183चानू		धानू				कुल मजरुआ				
						15-8				
						16-8 रोसनी अव्वल				
	234			बनवारी पुत्र		7//				
				मानसिंह पुत्र		25 मिन	4-15 रोसनी दोयम			
				वासीदेह						
				गैर मौरूसी						
	235			मनसा पुत्र		21//				
				अमदा पुत्र		6 मिन	4-16 रोसनी अव्वल			
				वासीदेह						
				गैर मौरूसी						
	236			धमाती पुत्र		4//				
				चूहा पुत्र		20/2	6-4 रोसनी अव्वल			
				वासीदेह		21	7-12 रोसनी अव्वल			
				गैर मौरूसी		किते 2	13-16			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कास्तकार	कूए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का डग	अभिकुथित
						कुल मजरुआ				
						13-16				
						13-16 रौसली अव्वल				
	237			बीरबल,		56//				
				धीसा पुत्रान		25/1	3-4 रौसली अव्वल			
				साहिया पुत्र		57//				
				हर दो समभाग		6/2	2-13 रौसली अव्वल			
				बासीदेह						
				गैर मौरुसीकाश्त		किते 2	5-17			
						कुल मजरुआ				
183क्षम्		पानू				5-17				
						5-17 रौसली अव्वल				
	238			नंगतू,		25//				
				बालाराम पुत्रान		23 मिन	7-0 रौसली अव्वल			
				गणेश पुत्र						
				पन्ना						
				हर दो समभाग						
				बासीदेह						
				गैर मौरुसीकाश्त						
	239			प्रभाती पुत्र		109 मिन	2-0 कै. मु.			
				रामेश्वर पुत्र			धर्मोथ			
				बासीदेह						

खेवट या जमाबंदी न.	खतौनी न.	नाम तरक या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और रकबा के ब्यौरे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अभिवुक्ति
	240			गैर मौरूसी प्रभाता, ग्यारसा, रामकुवार, रामेश्वर, खेमचंद पुत्रान जानू पुत्र हर पाँच समभाग वासीदेह	103 मिल	10-0 मै. मु. मकान व पक्की			
	241			हिस्सेदारान पार्विका पुत्र कपना पुत्र पदमा वासीदेह	371/ 17 मिल	2-16 रोसली अण्डल	बिलालगान बवजह होने सावकेहिस्सेदार		
	242		धानू	हिस्सेदार उमराव नाथ, फूलनाथ, जैयनारायणनाथ पुत्रान	68 मिल	24-0 रोसली दोयम	बिना बगान नौतोड़ कब्जह		
183धानू		धानू		फूलनाथ पुत्र हर तीन समभाग वासीदेह						
	243			गैर मौरूसीयान बसंन्ता पुत्र ब्योकरण पुत्र नौना वासीदेह	07 मिल	1-10 मै. मु. शिवास				
				गैर मौरूसी						

खेवट या जमाबंदी न.	खातौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अभियुक्ति
	244			भूरा, मौजी, भगवाना पुत्रान रघोकरण पुत्र नौना हर तीन समभाग वासीदेह गैर मौरूसीयान		87 मिन	1-0 गै. मु. मकान			
	245			भकरीया, माडिया पुत्रान गणेशा पुत्र हर दो समभाग वासीदेह गैर मौरूसीयान		87 मिन 88 मिन किते 2 मिन 2 कुल मजरुआ 24-0 24-0 रोसनी दोयम	8-0 रोसनी दोयम 16-0 रोसनी दोयम 24-0			
	246			रामौतार पुत्र मगंन पुत्र वासीदेह गैर मौरूसी		52// 10	3-4 कुल 1-4 रोसनी अव्वल 2-0 गै. मु. मकान			
183घान्		घान्								
	247		घान्	नाथीया, नाहड पुत्रान रामसहाय पुत्र		11// 15 मिन 16/2	7-2 रोसनी अव्वल 1-12 रोसनी अव्वल	बीता लगान बराबर हिस्सेदार		

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कास्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाब का इन्द्राज	अभियुक्ति
				आत्मा हर दो समभाग वासीदेह गैर मौरूसीयान		25 --- किले 3 सातम 2 मिन 1 कुल मजरआ --- 12-3 --- 12-3 रोशनी अव्वल	3-8 रोशनी अव्वल --- 12-3			
	248		भूपिया, धनन पुत्रान रामसहाय पुत्र आत्मा हर दो समभाग वासीदेह गैर मौरूसीयान			109 मिन	20-0 रोशनी अव्वल	बिला बसान बाबत साबकाहिस्सेदार		
	249		बलबीर, रामनिवास, रामेश्वर, नौहरसिंह पुत्रान सुलतान पुत्र हर चार समभाग 1/3 आग गैर मौरूसीयान रामजीलाल, हरलाल पुत्रान		36// 13/1 13/2 13/3 13/4 13/5 13/6 13/7 13/7/1 13/7/2	0-5 रोशनी अव्वल 0-3 रोशनी अव्वल 0-3 रोशनी अव्वल 0-3 रोशनी अव्वल 0-3 रोशनी अव्वल 0-3 रोशनी अव्वल 0-3 रोशनी अव्वल 1-2 रोशनी अव्वल 0-17 रोशनी अव्वल			

नकल जमाबंदी (पड़त पटवार)

गाँव : दोधेरा हदबस्त न. : 253 जिला : महेन्द्रगढ़ तहसील : नारनौल चौथी साल : 2018-2019

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित खातेदार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभियुक्ति
183घालू		घालू		हरीराम पुत्र		35//				
				हर दो समभाग		13/8				
				1/3 भाग		13/6	0-3 रोसनी अव्वल			
				गैर मौरूसीयान		13/9	0-3 रोसनी अव्वल			
				श्योकरण,		13/10	0-3 रोसनी अव्वल			
				केलाशचन्द,		13/11	0-3 रोसनी अव्वल			
				सुभाषचन्द,		13/12	0-3 रोसनी अव्वल			
				मेहरचन्द पुत्रान		13/13	0-3 रोसनी अव्वल			
				स्वारतीलाल पुत्र		13/14	0-3 रोसनी अव्वल			
				सीहनीया		13/14/1	0-15 रोसनी अव्वल			
				हर चार समभाग		13/15	0-2 रोसनी अव्वल			
				1/3 भाग		13/16	0-3 रोसनी अव्वल			
				वाली नौगज नौना		13/17	0-3 रोसनी अव्वल			
				गैर मौरूसीयान		13/18	0-3 रोसनी अव्वल			
						13/19	0-3 रोसनी अव्वल			
						13/20	0-3 रोसनी अव्वल			
						13/21	0-3 रोसनी अव्वल			
						13/21/1	0-14 रोसनी अव्वल			
						13/21/2	0-16 रोसनी दोयम			
						14/1	0-3 रोसनी अव्वल			
						14/2	0-3 रोसनी अव्वल			
						14/3	0-3 रोसनी अव्वल			
						14/4	0-3 रोसनी अव्वल			
						14/5	0-3 रोसनी अव्वल			
						14/6	0-3 रोसनी अव्वल			
						14/7	0-3 रोसनी अव्वल			
						14/8	0-3 रोसनी अव्वल			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किते का नम्बर	रकबा और किस्म जमीन	दर और संख्या के क्वीरे के साथ लगान जो मुआफ़ा देता है	हिस्सा या हकीयत का पैमाना और बाख का ढंग	अभिशुचित
						14/8/1	1-2 रोसली अव्वल			
						14/8/2	0-19 रोसली अव्वल			
						14/9	0-3 रोसली अव्वल			
						14/10	0-3 रोसली अव्वल			
183भानू		भानू				14/11				
						14/11	0-3 रोसली अव्वल			
						14/12	0-3 रोसली अव्वल			
						14/13	0-3 रोसली अव्वल			
						14/14	0-3 रोसली अव्वल			
						14/15	0-3 रोसली अव्वल			
						14/16	0-3 रोसली अव्वल			
						14/16/1	0-19 रोसली अव्वल			
						14/17	0-3 रोसली अव्वल			
						14/18	0-3 रोसली अव्वल			
						14/19	0-3 रोसली अव्वल			
						14/20	0-3 रोसली अव्वल			
						14/21	0-3 रोसली अव्वल			
						14/22	0-3 रोसली अव्वल			
						14/23	0-3 रोसली अव्वल			
						14/24	0-3 रोसली अव्वल			
						14/24/1	0-19 रोसली अव्वल			
						14/24/2	0-9 रोसली अव्वल			
						17/1	0-3 रोसली अव्वल			
						17/2	0-3 रोसली अव्वल			
						17/3	0-3 रोसली अव्वल			
						17/4	0-3 रोसली अव्वल			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संरचना के स्थीर के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभिदुक्ति
						17/5	0-3 रोसनी अग्वल			
						17/6	0-3 रोसनी अग्वल			
						17/7	0-3 रोसनी अग्वल			
						17/8	0-3 रोसनी अग्वल			
						17/8/1	0-3 रोसनी अग्वल			
						17/9	0-3 रोसनी अग्वल			
						17/10	0-3 रोसनी अग्वल			
						17/11	0-3 रोसनी अग्वल			
183चाह्		चाह्				17/12				
						17/12	0-3 रोसनी अग्वल			
						17/13	0-3 रोसनी अग्वल			
						17/14	0-3 रोसनी अग्वल			
						17/15	0-3 रोसनी अग्वल			
						17/16	0-3 रोसनी अग्वल			
						17/16/1	0-19 रोसनी अग्वल			
						17/17	0-3 रोसनी अग्वल			
						17/18	0-3 रोसनी अग्वल			
						17/19	0-3 रोसनी अग्वल			
						17/20	0-3 रोसनी अग्वल			
						17/21	0-3 रोसनी अग्वल			
						17/22	0-3 रोसनी अग्वल			
						17/23	0-3 रोसनी अग्वल			
						17/24	0-3 रोसनी अग्वल			
						17/24/1	0-19 रोसनी अग्वल			
						17/25	0-3 रोसनी अग्वल			
						17/26	0-3 रोसनी अग्वल			

नक्शा जमाबंदी (पड़ता पटवार)

गाँव : धौकेरा | हदबस्त न. : 253 | जिला : महेन्द्रगढ़ | तहसील : नारनौल चौपड़ी | साल : 2018-2019

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कास्तकार	कुएं या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रक्बा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुजारा देता है	डिस्ट्रा या हकीयत का पैमाना और बाछ का ढंग	अभियुक्ति
						17/27	0-3 रोसनी अव्वल			
						17/28	0-3 रोसनी अव्वल			
						17/29	0-3 रोसनी अव्वल			
						17/30	0-3 रोसनी अव्वल			
						17/31	0-3 रोसनी अव्वल			
						17/32	0-3 रोसनी अव्वल			
						17/33	0-7 रोसनी अव्वल			
						18/1	0-3 रोसनी अव्वल			
						18/2	0-3 रोसनी अव्वल			
						18/3	0-3 रोसनी अव्वल			
						18/4	0-3 रोसनी अव्वल			
						18/5	0-3 रोसनी अव्वल			
183धान्		धान्				18/6				
						18/6	0-3 रोसनी अव्वल			
						18/6/1	0-16 रोसनी अव्वल			
						18/7	0-1 रोसनी अव्वल			
						18/8	0-3 रोसनी अव्वल			
						18/9	0-3 रोसनी अव्वल			
						18/10	0-3 रोसनी अव्वल			
						18/11	0-11 रोसनी अव्वल			
						18/12	0-3 रोसनी अव्वल			
						18/13	0-3 रोसनी अव्वल			
						18/14	0-3 रोसनी अव्वल			
						18/15	0-3 रोसनी अव्वल			
						18/16	0-3 रोसनी अव्वल			
						18/17	0-2 रोसनी अव्वल			

नकल जमाबंदी (पहल पटवार)

गाँव : दोखेरा | इदबस्त न. : 253 | जिला : महेन्द्रगढ़ | तहसील : नागल चौधरी | साल : 2018-2019

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित सांकेतिक नाम	विवरण सहित कब्जाकार	कुएं या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का फैसला और बाद का हंग	अभिशुक्ति
						18/17/1	0-10 रोसनी अव्वल			
						18/18	0-3 रोसनी अव्वल			
						18/19	0-3 रोसनी अव्वल			
						18/20	0-3 रोसनी अव्वल			
						18/21	0-3 रोसनी अव्वल			
						18/22	0-16 रोसनी अव्वल			
						137/1	1-2 रोसनी अव्वल			
						किले 116 कुल मजकूरा	29-4			
						29-4				
						28-8 रोसनी अव्वल				
						0-16 रोसनी दोयम				
	250		पानू	श्रीमतीसरबती माता व		21//				
183पानू		पानू		देशराज,		21//				
				सावंत पुत्रान व		6 मिन				
				श्रीमती लीला,		6 मिन	3-4 रोसनी अव्वल			
				माया पुत्रियां व		शरक				
				श्रीमती शान्ती विधवा		22//				
				लीला राम पुत्र		3 मिन	6-8 रोसनी दोयम			
				बीरबल		जनूब				
				हर एक समभाग		4	8-0 रोसनी दोयम			
				वसीदेह		10	9-10 रोसनी अव्वल			
				गैर मौरूसीगान		22//				

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और मंडवा के रुपैं के साथ लगान जो गुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभिवुक्ति
						10 12	8-0 रोसली अव्वल 8-0 रोसली अव्वल			
						किते 6 सानग 4 मिल 2 कुल मजरुआ 43-2	43-2			
						28-14 रोसली अव्वल 14-8 रोसली दोयम 0/0				
	251		जीता राम, रामैलाल पुत्रान सूरजन पुत्र सोझा हर दो समसान डालीदेह गैर मौरूसीवान			14/2 17 किते 2 कुल मजरुआ 14-14	5-12 रोसली दोयम 9-2 रोसली दोयम 14-14			
183धानू		धानू				14-14 रोसली दोयम 0/0				
	252		धानू	ताराचन्द, विजय कुमार पुत्रान सुलतान पुत्र		15 मिल	3-16 रोसली अव्वल	बिना लगान बजाज होनेसबका हिस्सेदार		

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभियुक्ति
				रामनाथ हर दो समभाग बासीदेह गैर मौरूसीवान						
253				मूलतान पुत्र रामनारायण पुत्र ठणडू बासीदेह गैर मौरूसी		3// 15/2 16 3// 13/2 मिन 14 मिन किते 4 साजम 2 मिन 2 कुल मजरूआ 18-14 3-2 पाही अव्वल 5-11 रोझी अव्वल 10-1 रोझी दोयम	2-1 रोझी दोयम 8-0 रोझी दोयम 3-2 पाही अव्वल 5-11 रोझी अव्वल 18-14			
254				अहरिया, गाडीया पुरान पुत्र हर दो समभाग बासीदेह		11// 21/1 1// 1/1	1-16 रोझी अव्वल 2-14 रोझी अव्वल			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाक का हंग	अधिकृत
				हिस्सेदारान		किते 2	4-10			
183धानू		धानू				कुल मजरआ				
						4-10				
						4-10 रोसनी अव्वल				
	255			लाजूराम पुत्र चान्दा		29//				
				वासीदेह		15/1	0-17 रोसनी अव्वल			
				हिस्सेदार						
	256			तेजीया,		54//				
				हरदेवा,		24/1	3-16 रोसनी अव्वल			
				नैना पुत्रान व						
				श्रीमती मूली विधवा						
				गोपाल पुत्र						
				हर चार समभाग						
				वासीदेह						
				हिस्सेदारान						
	257			छितर पुत्र		22//				
				मंगल पुत्र		1/2	2-13 रोसनी अव्वल			
				1						
				वासीदेह						
				गैर मौरूसी						
	258			सुरजन,		20//				
				मणपत,		6	1-5 रोसनी अव्वल			
				महता पुत्रान व		15/1	0-6 रोसनी अव्वल			
				श्रीमती चौंची,						
				सरदारी पुरिया व		किते 2	1-11			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगान के ब्यौरे के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अधिभुक्ति
				श्रीमती दाखा विधवा रेखा पुत्र हर छः समभाग 1/2 भाग गैर मौरूसीबान		कुल मजरुआ 1-11 1-11 रौसली अव्वल				
183चानू		चानू		मंगतू पुत्र व श्रीमती बादनी, समरनी, बनारसी, सोहनी पुत्रियां व श्रीमती पारजी विधवा मानराज पुत्र हर छः समभाग 1/2 भाग बामौदेह गैर मौरूसीबान						
	259			लालचन्द, जितेश कुमार पुत्रान सुलतान पुत्र रामनाथ हर दो समभाग बामौदेह हिस्सेदारान		47// 7 14 किते 2 कुल मजरुआ 8-3	1-16 रौसली अव्वल 6-7 रौसली दोयम 8-3			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के ब्यौरे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाद का हक	अविवृक्षित
						1-16 रोशनी				
						अग्रवाल				
						6-7 रोशनी दोयम				
	260			जनन्नाथ पुत्र		6//				
				ओधा पुत्र		4	3-9 रोशनी अग्रवाल			
				किशना		7/1	4-0 रोशनी अग्रवाल			
				बारीदेह		13	8-0 रोशनी अग्रवाल			
				हिस्सेदार		21//				
						14	7-0 रोशनी अग्रवाल			
						15/1	1-0 रोशनी अग्रवाल			
						किले 5	23-9			
183धानू		धानू				कुल मजरुआ				
						23-9				
						23-9 रोशनी				
						अग्रवाल				
	261			जीता पुत्र		7//				
				अजैब पुत्र		17	4-10 रोशनी दोयम			
				बारीदेह		23	6-4 रोशनी दोयम			
				हिस्सेदार		24	8-0 रोशनी दोयम			
						22//				
						3 मिन	2-0 रोशनी दोयम			
						किले 4	20-14			
						शामत 3				
						तिरज 1				

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कब्जाकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और लगता के रूपे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का हद	अभियुक्ति
						कुल मजरुआ				
						20-14				
						20-14 रोसनी दोयम				
	262			मकबूजा अहलेहनूद		67	2-0 गै. मु. शमशान भूमि			
	263			मकबूजा बाशिन्दगान देह		80	53-19 गै. मु. आबादी			
						81	198-10 गै. मु. आबादी			
						82	6-19 गै. मु. आबादी			
						किले 3	257-8			
							कुल गैर मजरुआ			
183यानू		यानू					257-8			
							257-8 गै.मु.			
	264			रक्षाये आम		52// 8	1-16 गै. मु. टटीया			
						60	51-0 गै. मु. जोहड			
						63	8-0 गै. मु. जोहड			

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित कास्तकार	कुए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रकबा और किस्म जमीन	दर और संख्या के क्वीं के साथ लगान जो मुआफ होता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अभियुक्ति
						70 सिंह	12-5 गै. मु. जोहड			
						71	20-3 गै. मु. जोहड			
						किते 5	93-4			
						सालम 4				
						मिन 1				
							कुल गैर मजरुआ			
							93-4			
							93-4 गै.मु.			
	265		मकबूजा			251	2-8 गै. मु. खडी			
			मकबूजा गैर मालकान							
	266		मकबूजा			53//				
			महकमा तालीम			10/2	2-18 गै. मु. मैदान खेलकूद			
						11	6-14 गै. मु. मैदान खेलकूद			
183यानू		यानू				53//				
						14				
						14	6-8 गै. मु. स्कूल			
						किते 3	16-0			
							कुल गैर मजरुआ			
							16-0			

नक्ल जमाबंदी (पढ़त पटवार)

गाँव : दौधेरा हदबस्त न. : 253 जिला : महेन्द्रगढ़ तहसील : नांगल चौधरी साल : 2018-2019

खेवट या जमाबंदी न.	खतौनी न.	नाम तरफ या पत्ती	विवरण सहित मालिक नाम	विवरण सहित काश्तकार	कुंए या सिंचाई के अन्य साधन का नाम	नम्बर खसरा या मुरब्बे और किले का नम्बर	रक्बा और किस्म जमीन	दर और लगान के स्यारे के साथ लगान जो मुजारा देता है	हिस्सा या हकीयत का पैमाना और बाछ का ढंग	अधिसूचित
							16-0 मै.मु.			
	267			मकबूजा हरिजनान		49// 6/1	2-0 मै. मु. हडा-रोडी 1			
	268			शरे आम		38// 13/1	0-7 मै. मु. रास्ता			
						49// 1/2/1	0-2 मै. मु. रास्ता			
						10/1/1	कागज बिस्वा मै. मु. रास्ता			
						10/2/1	0-2 मै. मु. रास्ता			
						54// 9/1/2	कागज बिस्वा मै. मु. रास्ता			
						12/2	0-8 मै. मु. रास्ता			
						72	26-15 मै. मु. रास्ता			
183धानू		धानू				73	21-17 मै. मु. रास्ता			
						74	10-11 मै. मु. रास्ता			

ANNEXURES – 3.1

ON SITE (HOURLY) MICRO-METEOROLOGY DATA

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
01-03-2023	1	18.8	71.0	22.5	NNE	1.8	0.5	0.0	0.0
01-03-2023	2	18.6	66.0	67.5	ENE	1.8	0.5	0.0	0.0
01-03-2023	3	18.3	67.0	135.0	SE	1.8	0.5	0.0	0.0
01-03-2023	4	17.8	71.0	135.0	SE	1.8	0.5	0.0	0.0
01-03-2023	5	17.5	69.0	180.0	S	9.4	2.6	0.0	0.0
01-03-2023	6	18.3	64.0	112.4	ESE	9.4	2.6	0.0	0.0
01-03-2023	7	19.9	62.0	157.5	SES	9.4	2.6	0.0	0.0
01-03-2023	8	21.4	60.0	202.4	SSW	15.1	4.2	0.0	0.0
01-03-2023	9	24.1	58.2	270.0	W	13.3	3.7	0.0	0.0
01-03-2023	10	26.3	55.5	270.0	W	15.1	4.2	0.0	0.0
01-03-2023	11	27.4	53.7	45.0	NE	16.6	4.6	0.0	0.0
01-03-2023	12	28.5	52.8	315.0	NW	19.4	5.4	0.0	0.0
01-03-2023	13	30.4	51.7	315.0	NW	22.3	6.2	0.0	0.0
01-03-2023	14	31.3	51.3	315.0	NW	13.7	3.8	0.0	0.0
01-03-2023	15	33.2	50.8	292.4	WNW	15.5	4.3	0.0	0.0
01-03-2023	16	34.4	50.4	315.0	NW	7.9	2.2	0.0	0.0
01-03-2023	17	36.2	50.1	315.0	NW	9.4	2.6	0.0	0.0
01-03-2023	18	34.6	51.0	247.0	WSW	7.9	2.2	0.0	0.0
01-03-2023	19	32.2	53.0	225.0	SW	9.4	2.6	0.0	0.0
01-03-2023	20	29.4	55.6	202.0	SSW	7.9	2.2	0.0	0.0
01-03-2023	21	26.6	58.3	270.0	W	6.1	1.7	0.0	0.0
01-03-2023	22	23.6	60.2	333.0	NWN	2.2	0.6	0.0	0.0
01-03-2023	23	21.2	63.5	45.0	NE	4.7	1.3	0.0	0.0
01-03-2023	24	19.8	65.1	135.0	SE	2.1	0.6	0.0	0.0
02-03-2023	1	19.4	67.3	135.0	SE	2.9	0.8	0.0	0.0
02-03-2023	2	18.8	69.0	15.0	NNE	2.2	0.6	0.0	0.0
02-03-2023	3	18.3	71.0	18.0	NNE	4.7	1.3	0.0	0.0
02-03-2023	4	17.9	67.0	360.0	N	7.9	2.2	0.0	0.0
02-03-2023	5	17.7	64.0	360.0	N	9.7	2.7	0.0	0.0
02-03-2023	6	18.5	61.0	102.0	ESE	8.6	2.4	0.0	0.0
02-03-2023	7	21.1	59.0	108.0	ESE	8.6	2.4	0.0	0.0
02-03-2023	8	23.2	57.0	45.0	NE	15.1	4.2	0.0	0.0
02-03-2023	9	24.8	58.0	270.0	W	13.3	3.7	0.0	0.0
02-03-2023	10	27.2	56.0	270.0	W	9.4	2.6	0.0	0.0
02-03-2023	11	28.6	55.0	255.0	WSW	9.4	2.6	0.0	0.0
02-03-2023	12	30.3	53.0	315.0	NW	13.3	3.7	0.0	0.0
02-03-2023	13	31.6	51.0	45.0	NE	14.0	3.9	0.0	0.0
02-03-2023	14	33.1	50.6	315.0	NW	18.7	5.2	0.0	0.0
02-03-2023	15	33.9	50.3	315.0	NW	19.4	5.4	0.0	0.0
02-03-2023	16	34.3	50.0	315.0	NW	15.5	4.3	0.0	0.0
02-03-2023	17	33.7	53.0	315.0	NW	13.3	3.7	0.0	0.0
02-03-2023	18	31.2	55.0	288.0	WNW	10.1	2.8	0.0	0.0
02-03-2023	19	30.1	58.5	295.0	WNW	2.9	0.8	0.0	0.0
02-03-2023	20	28.6	60.0	135.0	SE	5.0	1.4	0.0	0.0
02-03-2023	21	26.8	63.0	135.0	SE	4.7	1.3	0.0	0.0
02-03-2023	22	24.8	64.0	345.0	NWN	1.8	0.5	0.0	0.0
02-03-2023	23	22.2	66.0	45.0	NE	0.7	0.2	0.0	0.0
02-03-2023	24	20.3	69.0	45.0	NE	2.5	0.7	0.0	0.0
03-03-2023	1	19.7	68.0	165.0	SES	7.9	2.2	0.0	0.0
03-03-2023	2	19.4	68.0	160.0	SES	9.4	2.6	0.0	0.0
03-03-2023	3	19.1	67.0	155.0	SES	13.3	3.7	0.0	0.0
03-03-2023	4	18.7	63.0	225.0	SW	1.4	0.4	0.0	0.0
03-03-2023	5	19.3	63.0	225.0	SW	6.5	1.8	0.0	0.0
03-03-2023	6	19.8	64.0	120.0	ESE	1.8	0.5	0.0	0.0
03-03-2023	7	21.1	61.0	166.0	SES	9.7	2.7	0.0	0.0
03-03-2023	8	22.7	59.0	115.0	ESE	5.0	1.4	0.0	0.0
03-03-2023	9	24.6	58.0	45.0	NE	1.8	0.5	0.0	0.0
03-03-2023	10	26.6	56.0	45.0	NE	12.6	3.5	0.0	0.0
03-03-2023	11	28.1	55.0	180.0	S	7.9	2.2	0.0	0.0
03-03-2023	12	29.4	53.0	270.0	W	15.1	4.2	0.0	0.0
03-03-2023	13	30.9	51.0	270.0	W	5.8	1.6	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
03-03-2023	14	31.7	51.0	240.0	WSW	13.0	3.6	0.0	0.0
03-03-2023	15	32.5	50.6	315.0	NW	9.0	2.5	0.0	0.0
03-03-2023	16	33.3	50.0	256.0	WSW	11.5	3.2	0.0	0.0
03-03-2023	17	32.6	50.6	315.0	NW	11.9	3.3	0.0	0.0
03-03-2023	18	31.2	51.0	180.0	S	16.2	4.5	0.0	0.0
03-03-2023	19	29.3	52.0	58.0	ENE	11.9	3.3	0.0	0.0
03-03-2023	20	27.4	53.0	69.0	ENE	0.7	0.2	0.0	0.0
03-03-2023	21	25.6	54.0	360.0	N	4.7	1.3	0.0	0.0
03-03-2023	22	23.2	55.0	225.0	SW	2.2	0.6	0.0	0.0
03-03-2023	23	21.4	58.0	155.0	SES	13.0	3.6	0.0	0.0
03-03-2023	24	20.3	60.0	165.0	SES	2.5	0.7	0.0	0.0
04-03-2023	1	19.9	64.0	135.0	SE	5.4	1.5	0.0	0.0
04-03-2023	2	19.6	64.0	15.0	NNE	1.6	0.5	0.0	0.0
04-03-2023	3	19.1	67.0	25.0	NNE	3.2	0.9	0.0	0.0
04-03-2023	4	18.7	67.0	180.0	S	9.0	2.5	0.0	0.0
04-03-2023	5	18.4	64.0	180.0	S	7.9	2.2	0.0	0.0
04-03-2023	6	19.3	61.0	180.0	S	6.5	1.8	0.0	0.0
04-03-2023	7	20.2	58.0	180.0	S	2.5	0.7	0.0	0.0
04-03-2023	8	21.3	55.0	60.0	ENE	12.6	3.5	0.0	0.0
04-03-2023	9	23.6	54.0	75.0	ENE	7.9	2.2	0.0	0.0
04-03-2023	10	25.5	52.0	360.0	N	12.2	3.4	0.0	0.0
04-03-2023	11	27.2	51.0	315.0	NW	13.3	3.7	0.0	0.0
04-03-2023	12	28.6	49.0	315.0	NW	15.1	4.2	0.0	0.0
04-03-2023	13	29.6	48.7	315.0	NW	15.5	4.3	0.0	0.0
04-03-2023	14	31.1	48.2	295.0	WNW	10.1	2.8	0.0	0.0
04-03-2023	15	32.1	47.7	45.0	NE	14.4	4.0	0.0	0.0
04-03-2023	16	32.7	47.4	45.0	NE	7.9	2.2	0.0	0.0
04-03-2023	17	32.4	47.0	245.0	WSW	8.6	2.4	0.0	0.0
04-03-2023	18	31.2	47.6	250.0	WSW	11.5	3.2	0.0	0.0
04-03-2023	19	29.8	48.8	180.0	S	13.3	3.7	0.0	0.0
04-03-2023	20	27.7	50.0	180.0	S	9.7	2.7	0.0	0.0
04-03-2023	21	25.4	54.0	180.0	S	9.4	2.6	0.0	0.0
04-03-2023	22	24.0	57.0	115.0	ESE	10.1	2.8	0.0	0.0
04-03-2023	23	21.8	62.0	225.0	SW	6.1	1.7	0.0	0.0
04-03-2023	24	21.1	65.0	180.0	S	1.8	0.5	0.0	0.0
05-03-2023	1	20.7	68.0	180.0	S	2.2	0.6	0.0	0.0
05-03-2023	2	20.4	68.0	180.0	S	5.6	1.5	0.0	0.0
05-03-2023	3	20.1	68.0	180.0	S	2.2	0.6	0.0	0.0
05-03-2023	4	19.6	67.0	180.0	S	6.5	1.8	0.0	0.0
05-03-2023	5	19.9	64.0	180.0	S	4.2	1.2	0.0	0.0
05-03-2023	6	21.3	61.0	59.0	ENE	6.5	1.8	0.0	0.0
05-03-2023	7	22.2	58.0	65.0	ENE	8.6	2.4	0.0	0.0
05-03-2023	8	23.0	55.0	270.0	W	8.3	2.3	0.0	0.0
05-03-2023	9	24.4	53.0	315.0	NW	12.2	3.4	0.0	0.0
05-03-2023	10	26.0	52.0	315.0	NW	14.0	3.9	0.0	0.0
05-03-2023	11	27.6	51.5	315.0	NW	12.2	3.4	0.0	0.0
05-03-2023	12	29.2	51.2	315.0	NW	13.0	3.6	0.0	0.0
05-03-2023	13	30.3	50.8	288.0	WNW	16.2	4.5	0.0	0.0
05-03-2023	14	30.9	50.4	315.0	NW	8.6	2.4	0.0	0.0
05-03-2023	15	31.7	49.6	315.0	NW	16.9	4.7	0.0	0.0
05-03-2023	16	32.9	49.2	240.0	WSW	20.2	5.6	0.0	0.0
05-03-2023	17	32.1	48.6	245.0	WSW	16.0	4.5	0.0	0.0
05-03-2023	18	31.4	49.5	315.0	NW	15.8	4.4	0.0	0.0
05-03-2023	19	29.5	52.0	90.0	E	13.3	3.7	0.0	0.0
05-03-2023	20	27.1	54.6	195.0	SSW	11.9	3.3	0.0	0.0
05-03-2023	21	24.7	57.0	45.0	NE	9.7	2.7	0.0	0.0
05-03-2023	22	23.2	59.0	360.0	N	1.4	0.4	0.0	0.0
05-03-2023	23	21.0	61.0	225.0	SW	1.4	0.4	0.0	0.0
05-03-2023	24	20.2	64.0	115.0	ESE	5.0	1.4	0.0	0.0
06-03-2023	1	19.4	63.0	165.0	SES	0.7	0.2	0.0	0.0
06-03-2023	2	18.9	64.5	155.0	SES	6.8	1.9	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
06-03-2023	3	18.5	67.0	270.0	W	9.7	2.7	0.0	0.0
06-03-2023	4	18.1	66.0	22.0	NNE	5.8	1.6	0.0	0.0
06-03-2023	5	18.9	63.0	360.0	N	9.4	2.6	0.0	0.0
06-03-2023	6	19.4	61.6	225.0	SW	4.0	1.1	0.0	0.0
06-03-2023	7	20.5	60.0	45.0	NE	7.9	2.2	0.0	0.0
06-03-2023	8	21.8	58.0	166.0	SES	13.0	3.6	0.0	0.0
06-03-2023	9	23.2	56.7	225.0	SW	15.8	4.4	0.0	0.0
06-03-2023	10	24.9	56.2	315.0	NW	20.5	5.7	0.0	0.0
06-03-2023	11	27.1	54.6	315.0	NW	23.8	6.6	0.0	0.0
06-03-2023	12	28.5	53.2	255.0	WSW	23.0	6.4	0.0	0.0
06-03-2023	13	29.8	52.1	315.0	NW	25.9	7.2	0.0	0.0
06-03-2023	14	31.1	51.4	285.0	WNW	24.8	6.9	0.0	0.0
06-03-2023	15	31.8	50.6	290.0	WNW	19.4	5.4	0.0	0.0
06-03-2023	16	32.1	48.7	295.0	WNW	13.3	3.7	0.0	0.0
06-03-2023	17	32.0	47.6	135.0	SE	7.9	2.2	0.0	0.0
06-03-2023	18	31.2	48.0	180.0	S	1.8	0.5	0.0	0.0
06-03-2023	19	29.2	49.0	65.0	ENE	12.6	3.5	0.0	0.0
06-03-2023	20	26.7	52.0	75.0	ENE	13.3	3.7	0.0	0.0
06-03-2023	21	24.3	57.0	360.0	N	19.1	5.3	0.0	0.0
06-03-2023	22	21.3	62.0	360.0	N	18.4	5.1	0.0	0.0
06-03-2023	23	19.6	68.0	115.0	ESE	19.4	5.4	0.0	0.0
06-03-2023	24	18.7	70.3	120.0	ESE	16.6	4.6	0.0	0.0
07-03-2023	1	18.2	71.0	116.0	ESE	9.0	2.5	0.0	0.0
07-03-2023	2	17.6	72.0	360.0	N	5.8	1.6	0.0	0.0
07-03-2023	3	17.2	72.5	360.0	N	3.2	0.9	0.0	0.0
07-03-2023	4	16.4	73.0	360.0	N	5.0	1.4	0.0	0.0
07-03-2023	5	15.8	73.5	360.0	N	13.3	3.7	0.0	0.0
07-03-2023	6	16.8	74.0	360.0	N	1.8	0.5	0.0	0.0
07-03-2023	7	18.9	74.0	225.0	SW	16.6	4.6	0.0	0.0
07-03-2023	8	22.1	72.6	225.0	SW	8.3	2.3	0.0	0.0
07-03-2023	9	24.1	71.0	45.0	NE	12.2	3.4	0.0	0.0
07-03-2023	10	26.3	70.0	155.0	SES	19.8	5.5	0.0	0.0
07-03-2023	11	27.4	68.6	270.0	W	17.6	4.9	0.0	0.0
07-03-2023	12	29.1	66.5	315.0	NW	19.1	5.3	0.0	0.0
07-03-2023	13	30.4	65.0	315.0	NW	23.8	6.6	0.0	0.0
07-03-2023	14	31.1	64.5	255.0	WSW	13.3	3.7	0.0	0.0
07-03-2023	15	31.6	64.0	315.0	NW	15.8	4.4	0.0	0.0
07-03-2023	16	33.1	63.5	315.0	NW	19.8	5.5	0.0	0.0
07-03-2023	17	32.7	63.3	255.0	WSW	13.3	3.7	0.0	0.0
07-03-2023	18	30.7	61.2	258.0	WSW	16.2	4.5	0.0	0.0
07-03-2023	19	29.1	58.8	180.0	S	12.6	3.5	0.0	0.0
07-03-2023	20	27.4	56.6	180.0	S	1.8	0.5	0.0	0.0
07-03-2023	21	26.1	59.4	65.0	ENE	1.1	0.3	0.0	0.0
07-03-2023	22	24.2	62.4	360.0	N	8.6	2.4	0.0	0.0
07-03-2023	23	21.9	64.3	360.0	N	1.4	0.4	0.0	0.0
07-03-2023	24	20.3	66.5	65.0	ENE	17.3	4.8	0.0	0.0
08-03-2023	1	19.1	67.6	111.0	ESE	9.4	2.6	0.0	0.0
08-03-2023	2	18.4	69.2	115.0	ESE	6.1	1.7	0.0	0.0
08-03-2023	3	17.8	70.3	45.0	NE	2.2	0.6	0.0	0.0
08-03-2023	4	17.3	71.0	360.0	N	7.2	2.0	0.0	0.0
08-03-2023	5	16.4	69.0	360.0	N	8.6	2.4	0.0	0.0
08-03-2023	6	17.9	70.0	115.0	ESE	2.9	0.8	0.0	0.0
08-03-2023	7	19.3	68.6	165.0	SES	7.9	2.2	0.0	0.0
08-03-2023	8	21.1	67.0	270.0	W	9.1	2.5	0.0	0.0
08-03-2023	9	23.2	65.0	270.0	W	14.4	4.0	0.0	0.0
08-03-2023	10	24.4	63.0	255.0	WSW	18.0	5.0	0.0	0.0
08-03-2023	11	26.2	60.0	45.0	NE	21.6	6.0	0.0	0.0
08-03-2023	12	28.1	58.0	315.0	NW	15.8	4.4	0.0	0.0
08-03-2023	13	30.2	57.0	315.0	NW	13.3	3.7	0.0	0.0
08-03-2023	14	31.4	55.6	315.0	NW	18.7	5.2	0.0	0.0
08-03-2023	15	32.2	54.3	315.0	NW	18.4	5.1	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
08-03-2023	16	32.7	53.2	315.0	NW	9.4	2.6	0.0	0.0
08-03-2023	17	32.0	56.0	315.0	NW	13.3	3.7	0.0	0.0
08-03-2023	18	30.3	58.9	135.0	SE	16.9	4.7	0.0	0.0
08-03-2023	19	28.2	61.0	135.0	SE	18.0	5.0	0.0	0.0
08-03-2023	20	26.5	63.6	135.0	SE	15.8	4.4	0.0	0.0
08-03-2023	21	24.1	66.6	20.0	NNE	13.3	3.7	0.0	0.0
08-03-2023	22	22.2	68.4	30.0	NNE	8.3	2.3	0.0	0.0
08-03-2023	23	20.1	70.6	180.0	S	2.5	0.7	0.0	0.0
08-03-2023	24	18.8	72.1	60.0	ENE	13.0	3.6	0.0	0.0
09-03-2023	1	17.6	69.0	360.0	N	2.2	0.6	0.0	0.0
09-03-2023	2	16.4	68.0	360.0	N	9.7	2.7	0.0	0.0
09-03-2023	3	15.4	67.0	165.0	SES	2.2	0.6	0.0	0.0
09-03-2023	4	15.2	70.0	168.0	SES	6.5	1.8	0.0	0.0
09-03-2023	5	14.6	71.0	167.0	SES	2.1	0.6	0.0	0.0
09-03-2023	6	16.2	71.0	163.0	SES	10.8	3.0	0.0	0.0
09-03-2023	7	17.5	69.0	168.0	SES	13.3	3.7	0.0	0.0
09-03-2023	8	19.5	67.0	45.0	NE	15.1	4.2	0.0	0.0
09-03-2023	9	22.1	65.0	270.0	W	18.0	5.0	0.0	0.0
09-03-2023	10	23.7	63.0	45.0	NE	19.4	5.4	0.0	0.0
09-03-2023	11	25.6	57.0	315.0	NW	21.6	6.0	0.0	0.0
09-03-2023	12	27.4	54.2	315.0	NW	19.8	5.5	0.0	0.0
09-03-2023	13	29.3	52.3	315.0	NW	22.3	6.2	0.0	0.0
09-03-2023	14	30.6	50.6	315.0	NW	20.5	5.7	0.0	0.0
09-03-2023	15	30.8	49.9	315.0	NW	16.9	4.7	0.0	0.0
09-03-2023	16	29.9	49.2	315.0	NW	17.6	4.9	0.0	0.0
09-03-2023	17	29.3	48.6	315.0	NW	18.7	5.2	0.0	0.0
09-03-2023	18	27.6	48.0	135.0	SE	18.0	5.0	0.0	0.0
09-03-2023	19	26.1	50.0	135.0	SE	9.7	2.7	0.0	0.0
09-03-2023	20	24.3	54.0	360.0	N	4.2	1.2	0.0	0.0
09-03-2023	21	22.4	58.0	45.0	NE	21.6	6.0	0.0	0.0
09-03-2023	22	21.2	63.0	360.0	N	4.2	1.2	0.0	0.0
09-03-2023	23	19.7	65.0	360.0	N	1.4	0.4	0.0	0.0
09-03-2023	24	18.6	69.0	108.0	ESE	2.1	0.6	0.0	0.0
10-03-2023	1	17.9	71.0	110.0	ESE	2.2	0.6	0.0	0.0
10-03-2023	2	17.4	71.0	135.0	SE	7.2	2.0	0.0	0.0
10-03-2023	3	16.8	68.0	135.0	SE	10.8	3.0	0.0	0.0
10-03-2023	4	16.2	65.0	335.0	NWN	10.8	3.0	0.0	0.0
10-03-2023	5	15.3	62.0	135.0	SE	14.4	4.0	0.0	0.0
10-03-2023	6	16.1	62.0	135.0	SE	1.8	0.5	0.0	0.0
10-03-2023	7	18.2	59.0	45.0	NE	7.2	2.0	0.0	0.0
10-03-2023	8	20.3	57.6	270.0	W	8.4	2.3	0.0	0.0
10-03-2023	9	22.6	55.0	315.0	NW	14.4	4.0	0.0	0.0
10-03-2023	10	24.2	54.0	315.0	NW	18.0	5.0	0.0	0.0
10-03-2023	11	25.7	52.0	315.0	NW	13.0	3.6	0.0	0.0
10-03-2023	12	27.1	50.0	315.0	NW	8.4	2.3	0.0	0.0
10-03-2023	13	28.0	49.7	315.0	NW	18.0	5.0	0.0	0.0
10-03-2023	14	28.9	48.6	315.0	NW	14.4	4.0	0.0	0.0
10-03-2023	15	30.3	48.3	315.0	NW	10.8	3.0	0.0	0.0
10-03-2023	16	31.2	47.8	315.0	NW	13.0	3.6	0.0	0.0
10-03-2023	17	31.0	47.6	315.0	NW	2.2	0.6	0.0	0.0
10-03-2023	18	28.9	49.0	135.0	SE	14.4	4.0	0.0	0.0
10-03-2023	19	28.1	52.2	135.0	SE	10.8	3.0	0.0	0.0
10-03-2023	20	26.7	54.0	333.0	NWN	4.0	1.1	0.0	0.0
10-03-2023	21	25.1	56.0	332.0	NWN	2.1	0.6	0.0	0.0
10-03-2023	22	23.6	58.0	110.0	ESE	14.4	4.0	0.0	0.0
10-03-2023	23	22.0	63.0	225.0	SW	1.8	0.5	0.0	0.0
10-03-2023	24	20.6	65.0	315.0	NW	9.1	2.5	0.0	0.0
11-03-2023	1	19.7	68.0	166.0	SES	4.7	1.3	0.0	0.0
11-03-2023	2	19.1	68.0	110.0	ESE	10.5	2.9	0.0	0.0
11-03-2023	3	18.7	68.0	225.0	SW	2.1	0.6	0.0	0.0
11-03-2023	4	18.5	69.0	148.0	SES	14.4	4.0	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
11-03-2023	5	19.6	70.0	151.0	SES	18.0	5.0	0.0	0.0
11-03-2023	6	20.9	70.0	180.0	S	10.8	3.0	0.0	0.0
11-03-2023	7	22.2	67.0	270.0	W	3.6	1.0	0.0	0.0
11-03-2023	8	23.7	64.0	270.0	W	2.5	0.7	0.0	0.0
11-03-2023	9	25.5	61.0	270.0	W	12.6	3.5	0.0	0.0
11-03-2023	10	27.1	59.0	270.0	W	9.1	2.5	0.0	0.0
11-03-2023	11	28.8	58.0	45.0	NE	7.2	2.0	0.0	0.0
11-03-2023	12	29.7	55.0	315.0	NW	10.8	3.0	0.0	0.0
11-03-2023	13	30.5	53.0	315.0	NW	14.4	4.0	0.0	0.0
11-03-2023	14	31.3	51.3	270.0	W	16.2	4.5	0.0	0.0
11-03-2023	15	32.2	49.0	315.0	NW	7.9	2.2	0.0	0.0
11-03-2023	16	32.8	47.0	135.0	SE	14.4	4.0	0.0	0.0
11-03-2023	17	33.3	47.0	315.0	NW	1.8	0.5	0.0	0.0
11-03-2023	18	31.4	48.0	255.0	WSW	12.6	3.5	0.0	0.0
11-03-2023	19	29.2	52.0	315.0	NW	14.4	4.0	0.0	0.0
11-03-2023	20	27.2	53.0	315.0	NW	13.3	3.7	0.0	0.0
11-03-2023	21	25.6	54.0	315.0	NW	8.6	2.4	0.0	0.0
11-03-2023	22	23.3	59.0	315.0	NW	2.2	0.6	0.0	0.0
11-03-2023	23	21.4	65.0	315.0	NW	1.4	0.4	0.0	0.0
11-03-2023	24	20.6	68.0	327.0	NWN	2.8	0.8	0.0	0.0
12-03-2023	1	20.0	69.0	345.0	NWN	10.8	3.0	0.0	0.0
12-03-2023	2	19.8	70.0	90.0	E	2.1	0.6	0.0	0.0
12-03-2023	3	19.6	71.0	225.0	SW	1.4	0.4	0.0	0.0
12-03-2023	4	18.9	72.0	225.0	SW	18.0	5.0	0.0	0.0
12-03-2023	5	19.4	72.0	160.0	SES	6.5	1.8	0.0	0.0
12-03-2023	6	20.1	68.0	165.0	SES	10.8	3.0	0.0	0.0
12-03-2023	7	21.4	65.0	45.0	NE	14.4	4.0	0.0	0.0
12-03-2023	8	23.3	67.0	45.0	NE	18.0	5.0	0.0	0.0
12-03-2023	9	24.8	65.0	45.0	NE	18.0	5.0	0.0	0.0
12-03-2023	10	26.7	62.0	255.0	WSW	17.3	4.8	0.0	0.0
12-03-2023	11	28.4	60.0	254.0	WSW	25.6	7.1	0.0	0.0
12-03-2023	12	29.5	58.0	315.0	NW	17.3	4.8	0.0	0.0
12-03-2023	13	30.7	56.0	315.0	NW	18.7	5.2	0.0	0.0
12-03-2023	14	31.8	55.0	315.0	NW	18.4	5.1	0.0	0.0
12-03-2023	15	33.2	51.0	315.0	NW	14.6	4.1	0.0	0.0
12-03-2023	16	34.2	51.0	315.0	NW	13.7	3.8	0.0	0.0
12-03-2023	17	34.4	51.0	315.0	NW	15.3	4.3	0.0	0.0
12-03-2023	18	33.1	53.0	315.0	NW	15.3	4.3	0.0	0.0
12-03-2023	19	31.2	57.0	290.0	WNW	2.8	0.8	0.0	0.0
12-03-2023	20	29.1	61.0	290.0	WNW	2.2	0.6	0.0	0.0
12-03-2023	21	27.3	63.0	242.0	WSW	1.8	0.5	0.0	0.0
12-03-2023	22	25.2	65.0	270.0	W	2.5	0.7	0.0	0.0
12-03-2023	23	23.1	67.0	135.0	SE	2.1	0.6	0.0	0.0
12-03-2023	24	21.7	69.0	135.0	SE	2.5	0.7	0.0	0.0
13-03-2023	1	21.5	70.0	225.0	SW	1.8	0.5	0.0	0.0
13-03-2023	2	21.3	71.4	360.0	N	1.8	0.5	0.0	0.0
13-03-2023	3	21.4	72.5	180.0	S	1.4	0.4	0.0	0.0
13-03-2023	4	21.9	73.0	17.0	NNE	7.2	2.0	0.0	0.0
13-03-2023	5	22.6	74.0	45.0	NE	2.5	0.7	0.0	0.0
13-03-2023	6	23.3	74.5	270.0	W	3.6	1.0	0.0	0.0
13-03-2023	7	24.2	75.0	180.0	S	2.2	0.6	0.0	0.0
13-03-2023	8	25.4	73.0	21.0	NNE	3.6	1.0	0.0	0.0
13-03-2023	9	26.5	72.0	45.0	NE	7.2	2.0	0.0	0.0
13-03-2023	10	28.1	70.8	360.0	N	1.8	0.5	0.0	0.0
13-03-2023	11	29.6	69.6	360.0	N	9.7	2.7	0.0	0.0
13-03-2023	12	30.9	68.3	315.0	NW	13.3	3.7	0.0	0.0
13-03-2023	13	32.3	66.2	315.0	NW	7.9	2.2	0.0	0.0
13-03-2023	14	33.4	62.6	315.0	NW	13.7	3.8	0.0	0.0
13-03-2023	15	34.3	58.4	315.0	NW	14.4	4.0	0.0	0.0
13-03-2023	16	34.8	55.7	315.0	NW	3.2	0.9	0.0	0.0
13-03-2023	17	35.1	53.4	315.0	NW	14.4	4.0	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
13-03-2023	18	33.4	51.7	45.0	NE	2.2	0.6	0.0	0.0
13-03-2023	19	31.5	51.0	45.0	NE	18.0	5.0	0.0	0.0
13-03-2023	20	30.1	56.0	225.0	SW	5.6	1.5	0.0	0.0
13-03-2023	21	28.2	60.0	18.0	NNE	4.9	1.4	0.0	0.0
13-03-2023	22	25.7	63.0	225.0	SW	18.0	5.0	0.0	0.0
13-03-2023	23	23.6	65.0	225.0	SW	3.6	1.0	0.0	0.0
13-03-2023	24	22.2	66.3	225.0	SW	14.4	4.0	0.0	0.0
14-03-2023	1	21.9	67.6	180.0	S	3.6	1.0	0.0	0.0
14-03-2023	2	21.6	69.2	135.0	SE	4.9	1.4	0.0	0.0
14-03-2023	3	21.5	71.2	135.0	SE	2.2	0.6	0.0	0.0
14-03-2023	4	22.1	72.6	135.0	SE	3.2	0.9	0.0	0.0
14-03-2023	5	22.6	73.3	270.0	W	8.3	2.3	0.0	0.0
14-03-2023	6	23.1	74.2	270.0	W	9.0	2.5	0.0	0.0
14-03-2023	7	23.8	75.1	135.0	SE	2.2	0.6	0.0	0.0
14-03-2023	8	25.0	73.2	225.0	SW	6.8	1.9	0.0	0.0
14-03-2023	9	26.3	71.7	180.0	S	11.5	3.2	0.0	0.0
14-03-2023	10	27.6	68.6	315.0	NW	9.0	2.5	0.0	0.0
14-03-2023	11	29.2	66.3	315.0	NW	5.8	1.6	0.0	0.0
14-03-2023	12	30.4	64.2	315.0	NW	5.4	1.5	0.0	0.0
14-03-2023	13	32.1	62.7	315.0	NW	9.1	2.5	0.0	0.0
14-03-2023	14	33.1	61.8	315.0	NW	12.5	3.5	0.0	0.0
14-03-2023	15	34.0	58.4	315.0	NW	15.8	4.4	0.0	0.0
14-03-2023	16	34.4	55.6	315.0	NW	15.3	4.3	0.0	0.0
14-03-2023	17	34.7	54.4	315.0	NW	8.3	2.3	0.0	0.0
14-03-2023	18	32.4	57.3	315.0	NW	16.2	4.5	0.0	0.0
14-03-2023	19	30.7	58.8	135.0	SE	8.4	2.3	0.0	0.0
14-03-2023	20	28.3	60.3	135.0	SE	9.8	2.7	0.0	0.0
14-03-2023	21	25.7	61.4	135.0	SE	8.4	2.3	0.0	0.0
14-03-2023	22	23.9	63.0	135.0	SE	2.8	0.8	0.0	0.0
14-03-2023	23	22.7	64.2	345.0	NWN	2.2	0.6	0.0	0.0
14-03-2023	24	21.6	66.5	135.0	SE	2.1	0.6	0.0	0.0
15-03-2023	1	21.2	69.0	135.0	SE	2.5	0.7	0.0	0.0
15-03-2023	2	20.8	69.0	225.0	SW	1.8	0.5	0.0	0.0
15-03-2023	3	20.4	68.0	242.0	WSW	2.8	0.8	0.0	0.0
15-03-2023	4	20.1	73.0	270.0	W	4.2	1.2	0.0	0.0
15-03-2023	5	20.2	68.0	135.0	SE	5.4	1.5	0.0	0.0
15-03-2023	6	21.4	69.0	135.0	SE	4.9	1.4	0.0	0.0
15-03-2023	7	23.5	67.0	32.0	NNE	2.5	0.7	0.0	0.0
15-03-2023	8	25.6	68.0	32.0	NNE	9.8	2.7	0.0	0.0
15-03-2023	9	28.2	64.0	180.0	S	2.2	0.6	0.0	0.0
15-03-2023	10	30.1	65.0	315.0	NW	9.9	2.7	0.0	0.0
15-03-2023	11	31.0	63.0	45.0	NE	9.3	2.6	0.0	0.0
15-03-2023	12	32.3	58.0	315.0	NW	2.5	0.7	0.0	0.0
15-03-2023	13	33.0	56.0	315.0	NW	13.4	3.7	0.0	0.0
15-03-2023	14	34.2	51.0	270.0	W	12.8	3.5	0.0	0.0
15-03-2023	15	34.9	49.5	270.0	W	10.8	3.0	0.0	0.0
15-03-2023	16	35.3	48.4	245.0	WSW	2.2	0.6	0.0	0.0
15-03-2023	17	35.2	48.0	255.0	WSW	3.6	1.0	0.0	0.0
15-03-2023	18	33.7	50.0	315.0	NW	8.6	2.4	0.0	0.0
15-03-2023	19	30.9	51.0	135.0	SE	9.3	2.6	0.0	0.0
15-03-2023	20	28.8	52.0	135.0	SE	2.5	0.7	0.0	0.0
15-03-2023	21	26.5	52.0	330.0	NWN	9.3	2.6	0.0	0.0
15-03-2023	22	24.6	57.0	340.0	NWN	1.7	0.5	0.0	0.0
15-03-2023	23	23.2	63.0	135.0	SE	1.7	0.5	0.0	0.0
15-03-2023	24	22.2	66.0	135.0	SE	2.2	0.6	0.0	0.0
16-03-2023	1	21.9	66.0	225.0	SW	2.2	0.6	0.0	0.0
16-03-2023	2	21.7	69.0	225.0	SW	5.2	1.5	0.0	0.0
16-03-2023	3	21.5	69.0	180.0	S	1.8	0.5	0.0	0.0
16-03-2023	4	21.3	73.0	270.0	W	2.9	0.8	0.0	0.0
16-03-2023	5	21.8	70.0	255.0	WSW	4.6	1.3	0.0	0.0
16-03-2023	6	22.5	66.0	45.0	NE	2.2	0.6	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
16-03-2023	7	23.7	63.0	45.0	NE	4.1	1.1	0.0	0.0
16-03-2023	8	25.2	61.0	270.0	W	2.9	0.8	0.0	0.0
16-03-2023	9	27.1	59.0	270.0	W	9.9	2.7	0.0	0.0
16-03-2023	10	28.8	55.0	315.0	NW	12.2	3.4	0.0	0.0
16-03-2023	11	31.3	51.0	315.0	NW	7.9	2.2	0.0	0.0
16-03-2023	12	33.0	50.0	225.0	SW	5.2	1.5	0.0	0.0
16-03-2023	13	34.1	48.0	315.0	NW	2.2	0.6	0.0	0.0
16-03-2023	14	34.8	47.7	315.0	NW	13.3	3.7	0.0	0.0
16-03-2023	15	35.3	47.3	315.0	NW	15.8	4.4	0.0	0.0
16-03-2023	16	35.6	48.0	315.0	NW	7.9	2.2	0.0	0.0
16-03-2023	17	35.4	49.0	315.0	NW	16.6	4.6	0.0	0.0
16-03-2023	18	33.4	50.0	315.0	NW	11.5	3.2	0.0	0.0
16-03-2023	19	31.4	54.0	315.0	NW	15.1	4.2	0.0	0.0
16-03-2023	20	29.7	58.0	65.0	ENE	2.3	0.6	0.0	0.0
16-03-2023	21	27.5	59.0	135.0	SE	1.7	0.5	0.0	0.0
16-03-2023	22	24.8	63.0	270.0	W	0.6	0.2	0.0	0.0
16-03-2023	23	23.4	66.0	270.0	W	1.2	0.3	0.0	0.0
16-03-2023	24	21.7	67.0	255.0	WSW	3.6	1.0	0.0	0.0
17-03-2023	1	21.5	69.0	360.0	N	2.9	0.8	0.0	0.0
17-03-2023	2	21.2	73.2	360.0	N	4.3	1.2	2.0	0.0
17-03-2023	3	21.4	74.4	165.0	SES	0.6	0.2	2.0	0.0
17-03-2023	4	21.8	76.2	166.0	SES	6.1	1.7	2.0	0.0
17-03-2023	5	22.3	77.6	45.0	NE	10.8	3.0	2.0	0.0
17-03-2023	6	23.6	78.0	225.0	SW	3.6	1.0	3.0	0.0
17-03-2023	7	24.8	79.4	225.0	SW	14.4	4.0	4.0	0.0
17-03-2023	8	26.1	80.2	225.0	SW	8.1	2.3	6.0	0.2
17-03-2023	9	27.4	80.3	180.0	S	1.8	0.5	7.0	1.1
17-03-2023	10	28.7	78.7	180.0	S	14.4	4.0	7.0	0.6
17-03-2023	11	29.6	76.3	65.0	ENE	7.9	2.2	5.0	0.1
17-03-2023	12	31.2	74.2	45.0	NE	2.2	0.6	4.0	0.0
17-03-2023	13	31.9	72.3	180.0	S	4.3	1.2	3.0	0.0
17-03-2023	14	32.8	68.8	315.0	NW	14.4	4.0	2.0	0.0
17-03-2023	15	33.5	66.7	315.0	NW	3.6	1.0	2.0	0.0
17-03-2023	16	34.2	64.5	315.0	NW	3.6	1.0	0.0	0.0
17-03-2023	17	34.6	63.3	180.0	S	10.8	3.0	0.0	0.0
17-03-2023	18	32.3	61.4	65.0	ENE	2.2	0.6	0.0	0.0
17-03-2023	19	30.8	58.9	66.0	ENE	3.6	1.0	0.0	0.0
17-03-2023	20	28.7	58.6	327.0	NWN	5.2	1.5	0.0	0.0
17-03-2023	21	26.4	59.0	315.0	NW	2.9	0.8	0.0	0.0
17-03-2023	22	24.3	60.0	225.0	SW	9.4	2.6	0.0	0.0
17-03-2023	23	22.7	62.0	45.0	NE	13.3	3.7	0.0	0.0
17-03-2023	24	21.9	66.0	180.0	S	1.7	0.5	2.0	0.0
18-03-2023	1	21.7	69.0	180.0	S	2.5	0.7	3.0	0.0
18-03-2023	2	21.5	71.5	180.0	S	5.8	1.6	4.0	0.0
18-03-2023	3	21.6	74.0	225.0	SW	1.2	0.3	5.0	0.0
18-03-2023	4	21.9	75.6	180.0	S	2.2	0.6	5.0	0.0
18-03-2023	5	22.4	77.0	315.0	NW	11.9	3.3	6.0	0.3
18-03-2023	6	23.3	78.0	315.0	NW	4.3	1.2	6.0	0.8
18-03-2023	7	24.2	79.4	45.0	NE	15.5	4.3	7.0	1.1
18-03-2023	8	25.6	80.4	121.0	ESE	3.6	1.0	8.0	2.3
18-03-2023	9	27.6	81.5	45.0	NE	8.7	2.4	8.0	1.6
18-03-2023	10	29.1	78.4	270.0	W	8.1	2.3	7.0	0.6
18-03-2023	11	30.7	76.5	245.0	WSW	14.4	4.0	6.0	0.2
18-03-2023	12	31.5	73.5	315.0	NW	2.5	0.7	4.0	0.0
18-03-2023	13	32.8	71.1	315.0	NW	5.8	1.6	3.0	0.0
18-03-2023	14	33.6	67.5	315.0	NW	14.4	4.0	2.0	0.0
18-03-2023	15	34.4	62.6	28.0	NNE	1.8	0.5	0.0	0.0
18-03-2023	16	35.6	58.6	45.0	NE	7.9	2.2	0.0	0.0
18-03-2023	17	36.2	54.4	90.0	E	1.8	0.5	0.0	0.0
18-03-2023	18	34.1	52.3	246.0	WSW	5.2	1.5	0.0	0.0
18-03-2023	19	32.2	55.0	270.0	W	2.3	0.6	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
18-03-2023	20	29.7	58.0	135.0	SE	5.4	1.5	0.0	0.0
18-03-2023	21	27.8	60.0	135.0	SE	2.2	0.6	0.0	0.0
18-03-2023	22	25.4	65.0	360.0	N	0.6	0.2	0.0	0.0
18-03-2023	23	23.3	67.0	115.0	ESE	2.5	0.7	0.0	0.0
18-03-2023	24	21.4	69.0	110.0	ESE	1.5	0.4	0.0	0.0
19-03-2023	1	21.3	69.0	116.0	ESE	2.2	0.6	0.0	0.0
19-03-2023	2	21.1	73.0	120.0	ESE	9.4	2.6	0.0	0.0
19-03-2023	3	21.4	73.0	225.0	SW	1.5	0.4	0.0	0.0
19-03-2023	4	21.8	70.0	270.0	W	5.0	1.4	0.0	0.0
19-03-2023	5	22.6	66.0	115.0	ESE	2.5	0.7	0.0	0.0
19-03-2023	6	23.5	63.0	45.0	NE	5.8	1.6	0.0	0.0
19-03-2023	7	24.6	60.0	135.0	SE	2.5	0.7	0.0	0.0
19-03-2023	8	26.0	59.0	315.0	NW	1.8	0.5	0.0	0.0
19-03-2023	9	27.3	56.0	180.0	S	7.9	2.2	0.0	0.0
19-03-2023	10	28.7	54.0	270.0	W	15.8	4.4	0.0	0.0
19-03-2023	11	29.8	53.0	270.0	W	4.5	1.2	0.0	0.0
19-03-2023	12	31.1	51.0	240.0	WSW	2.0	0.6	0.0	0.0
19-03-2023	13	32.4	49.0	315.0	NW	6.1	1.7	0.0	0.0
19-03-2023	14	33.3	48.4	315.0	NW	13.3	3.7	0.0	0.0
19-03-2023	15	34.4	48.1	315.0	NW	4.5	1.2	0.0	0.0
19-03-2023	16	34.9	47.3	315.0	NW	13.0	3.6	0.0	0.0
19-03-2023	17	35.3	47.6	315.0	NW	6.0	1.7	0.0	0.0
19-03-2023	18	33.5	50.0	135.0	SE	9.5	2.6	0.0	0.0
19-03-2023	19	31.6	51.0	180.0	S	4.3	1.2	0.0	0.0
19-03-2023	20	29.2	55.0	360.0	N	2.5	0.7	0.0	0.0
19-03-2023	21	27.7	59.0	105.0	ESE	2.2	0.6	0.0	0.0
19-03-2023	22	25.1	65.0	155.0	SES	1.5	0.4	0.0	0.0
19-03-2023	23	23.6	67.0	167.0	SES	6.1	1.7	0.0	0.0
19-03-2023	24	22.2	70.0	168.0	SES	3.0	0.8	0.0	0.0
20-03-2023	1	21.9	72.0	195.0	SSW	9.4	2.6	0.0	0.0
20-03-2023	2	21.7	74.5	270.0	W	1.4	0.4	0.0	0.0
20-03-2023	3	22.0	75.7	248.0	WSW	2.2	0.6	2.0	0.0
20-03-2023	4	22.7	77.5	180.0	S	9.0	2.5	4.0	0.0
20-03-2023	5	23.3	78.4	315.0	NW	7.9	2.2	5.0	0.2
20-03-2023	6	24.5	79.1	315.0	NW	5.4	1.5	7.0	0.6
20-03-2023	7	25.7	79.4	135.0	SE	2.5	0.7	7.0	0.9
20-03-2023	8	27.1	76.7	135.0	SE	3.6	1.0	6.0	0.1
20-03-2023	9	28.4	74.5	315.0	NW	1.8	0.5	4.0	0.0
20-03-2023	10	29.7	73.2	270.0	W	2.5	0.7	2.0	0.0
20-03-2023	11	31.1	71.6	315.0	NW	6.0	1.7	2.0	0.0
20-03-2023	12	32.6	69.3	315.0	NW	2.2	0.6	0.0	0.0
20-03-2023	13	34.1	66.5	315.0	NW	5.4	1.5	0.0	0.0
20-03-2023	14	35.2	62.6	315.0	NW	5.5	1.5	0.0	0.0
20-03-2023	15	35.9	59.6	315.0	NW	2.2	0.6	0.0	0.0
20-03-2023	16	36.7	56.4	315.0	NW	5.5	1.5	0.0	0.0
20-03-2023	17	36.2	53.7	238.0	WSW	9.4	2.6	0.0	0.0
20-03-2023	18	35.1	52.0	135.0	SE	4.3	1.2	0.0	0.0
20-03-2023	19	33.5	53.0	135.0	SE	2.0	0.6	0.0	0.0
20-03-2023	20	31.4	57.0	31.0	NNE	3.0	0.8	0.0	0.0
20-03-2023	21	29.3	61.0	135.0	SE	9.4	2.6	0.0	0.0
20-03-2023	22	27.2	63.0	135.0	SE	1.5	0.4	0.0	0.0
20-03-2023	23	24.6	64.0	135.0	SE	5.0	1.4	0.0	0.0
20-03-2023	24	23.1	67.0	135.0	SE	2.5	0.7	0.0	0.0
21-03-2023	1	22.7	70.0	270.0	W	1.4	0.4	0.0	0.0
21-03-2023	2	22.6	72.3	270.0	W	2.0	0.6	0.0	0.0
21-03-2023	3	22.8	74.4	301.0	WNW	6.1	1.7	2.0	0.0
21-03-2023	4	23.4	75.5	135.0	SE	1.8	0.5	3.0	0.0
21-03-2023	5	24.3	76.8	135.0	SE	4.7	1.3	4.0	0.0
21-03-2023	6	24.9	78.4	242.0	WSW	3.6	1.0	6.0	0.3
21-03-2023	7	26.2	79.1	180.0	S	8.6	2.4	7.0	0.6
21-03-2023	8	27.5	78.8	180.0	S	2.5	0.7	6.0	0.2

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
21-03-2023	9	28.9	76.6	315.0	NW	1.8	0.5	6.0	0.0
21-03-2023	10	30.2	73.4	180.0	S	9.7	2.7	4.0	0.0
21-03-2023	11	31.5	71.2	45.0	NE	4.0	1.1	3.0	0.0
21-03-2023	12	32.8	68.8	315.0	NW	3.0	0.8	2.0	0.0
21-03-2023	13	33.9	66.7	315.0	NW	5.5	1.5	0.0	0.0
21-03-2023	14	34.7	64.1	315.0	NW	10.4	2.9	0.0	0.0
21-03-2023	15	35.6	63.6	315.0	NW	9.0	2.5	0.0	0.0
21-03-2023	16	36.2	62.4	315.0	NW	3.6	1.0	0.0	0.0
21-03-2023	17	36.6	61.7	315.0	NW	5.5	1.5	0.0	0.0
21-03-2023	18	34.2	60.8	360.0	N	12.6	3.5	0.0	0.0
21-03-2023	19	32.3	58.8	90.0	E	4.0	1.1	0.0	0.0
21-03-2023	20	30.1	57.4	135.0	SE	3.0	0.8	0.0	0.0
21-03-2023	21	28.3	57.0	135.0	SE	13.0	3.6	0.0	0.0
21-03-2023	22	25.1	61.0	135.0	SE	2.5	0.7	0.0	0.0
21-03-2023	23	23.4	67.0	135.0	SE	8.3	2.3	0.0	0.0
21-03-2023	24	22.2	70.0	135.0	SE	1.0	0.3	0.0	0.0
22-03-2023	1	22.0	71.2	289.0	WNW	2.5	0.7	0.0	0.0
22-03-2023	2	21.7	70.4	45.0	NE	10.8	3.0	0.0	0.0
22-03-2023	3	21.1	69.0	225.0	SW	2.0	0.6	0.0	0.0
22-03-2023	4	20.7	68.0	45.0	NE	4.0	1.1	0.0	0.0
22-03-2023	5	20.6	68.0	45.0	NE	1.8	0.5	0.0	0.0
22-03-2023	6	22.2	66.0	315.0	NW	2.5	0.7	0.0	0.0
22-03-2023	7	23.9	64.0	180.0	S	12.6	3.5	0.0	0.0
22-03-2023	8	26.4	62.0	45.0	NE	9.4	2.6	0.0	0.0
22-03-2023	9	28.1	57.0	225.0	SW	2.0	0.6	0.0	0.0
22-03-2023	10	29.7	55.0	45.0	NE	3.6	1.0	0.0	0.0
22-03-2023	11	30.8	54.3	315.0	NW	9.5	2.6	0.0	0.0
22-03-2023	12	32.3	53.1	315.0	NW	12.6	3.5	0.0	0.0
22-03-2023	13	33.9	51.7	315.0	NW	16.2	4.5	0.0	0.0
22-03-2023	14	35.0	51.2	315.0	NW	6.0	1.7	0.0	0.0
22-03-2023	15	36.1	49.7	315.0	NW	23.8	6.6	0.0	0.0
22-03-2023	16	36.7	48.6	315.0	NW	5.5	1.5	0.0	0.0
22-03-2023	17	36.3	49.6	315.0	NW	18.7	5.2	0.0	0.0
22-03-2023	18	35.1	52.1	135.0	SE	4.0	1.1	0.0	0.0
22-03-2023	19	33.2	53.0	315.0	NW	13.3	3.7	0.0	0.0
22-03-2023	20	31.3	54.0	135.0	SE	2.0	0.6	0.0	0.0
22-03-2023	21	28.8	58.0	135.0	SE	1.0	0.3	0.0	0.0
22-03-2023	22	26.4	59.0	166.0	SES	1.0	0.3	0.0	0.0
22-03-2023	23	24.3	60.0	286.0	WNW	9.7	2.7	0.0	0.0
22-03-2023	24	23.1	63.0	245.0	WSW	1.0	0.3	0.0	0.0
23-03-2023	1	22.7	66.0	246.0	WSW	2.9	0.8	0.0	0.0
23-03-2023	2	22.6	66.0	248.0	WSW	2.5	0.7	0.0	0.0
23-03-2023	3	22.5	70.0	249.0	WSW	9.7	2.7	0.0	0.0
23-03-2023	4	22.9	67.0	251.0	WSW	6.1	1.7	0.0	0.0
23-03-2023	5	23.7	67.0	45.0	NE	3.6	1.0	0.0	0.0
23-03-2023	6	24.3	64.0	180.0	S	2.5	0.7	0.0	0.0
23-03-2023	7	25.2	61.0	135.0	SE	4.0	1.1	0.0	0.0
23-03-2023	8	26.6	59.0	135.0	SE	2.5	0.7	0.0	0.0
23-03-2023	9	28.3	57.0	315.0	NW	4.5	1.2	0.0	0.0
23-03-2023	10	30.1	56.0	315.0	NW	12.2	3.4	0.0	0.0
23-03-2023	11	30.9	54.0	315.0	NW	5.0	1.4	0.0	0.0
23-03-2023	12	32.1	53.2	315.0	NW	2.2	0.6	0.0	0.0
23-03-2023	13	34.9	52.0	315.0	NW	7.9	2.2	0.0	0.0
23-03-2023	14	35.7	50.6	315.0	NW	16.2	4.5	0.0	0.0
23-03-2023	15	36.5	49.4	270.0	W	20.5	5.7	0.0	0.0
23-03-2023	16	36.7	47.9	270.0	W	9.0	2.5	0.0	0.0
23-03-2023	17	36.0	49.0	270.0	W	18.7	5.2	0.0	0.0
23-03-2023	18	35.3	47.6	180.0	S	13.3	3.7	0.0	0.0
23-03-2023	19	32.1	48.3	289.0	WNW	11.9	3.3	0.0	0.0
23-03-2023	20	29.8	50.0	135.0	SE	1.0	0.3	0.0	0.0
23-03-2023	21	27.6	53.0	360.0	N	5.5	1.5	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
23-03-2023	22	25.6	58.0	120.0	ESE	13.3	3.7	0.0	0.0
23-03-2023	23	24.0	62.4	225.0	SW	1.5	0.4	0.0	0.0
23-03-2023	24	22.7	64.7	315.0	NW	1.8	0.5	0.0	0.0
24-03-2023	1	22.5	68.2	315.0	NW	4.0	1.1	0.0	0.0
24-03-2023	2	22.2	71.2	315.0	NW	6.1	1.7	0.0	0.0
24-03-2023	3	21.6	73.0	315.0	NW	1.0	0.3	0.0	0.0
24-03-2023	4	21.0	74.5	122.0	ESE	2.0	0.6	2.0	0.0
24-03-2023	5	21.2	76.4	225.0	SW	13.0	3.6	3.0	0.0
24-03-2023	6	22.9	77.2	180.0	S	3.5	1.0	4.0	0.0
24-03-2023	7	24.6	78.4	315.0	NW	9.0	2.5	6.0	0.3
24-03-2023	8	26.5	79.2	225.0	SW	2.0	0.6	7.0	0.9
24-03-2023	9	28.3	80.1	225.0	SW	5.4	1.5	8.0	1.4
24-03-2023	10	29.7	80.4	315.0	NW	13.0	3.6	8.0	1.7
24-03-2023	11	31.1	78.7	315.0	NW	14.0	3.9	7.0	0.6
24-03-2023	12	32.8	75.5	315.0	NW	13.0	3.6	6.0	0.2
24-03-2023	13	34.3	72.2	315.0	NW	10.8	3.0	4.0	0.0
24-03-2023	14	35.5	68.6	315.0	NW	4.5	1.3	3.0	0.0
24-03-2023	15	36.5	65.6	315.0	NW	15.1	4.2	2.0	0.0
24-03-2023	16	36.7	62.3	315.0	NW	7.9	2.2	0.0	0.0
24-03-2023	17	36.2	59.6	315.0	NW	7.9	2.2	0.0	0.0
24-03-2023	18	35.0	57.4	315.0	NW	13.3	3.7	0.0	0.0
24-03-2023	19	34.1	54.4	315.0	NW	7.9	2.2	0.0	0.0
24-03-2023	20	32.4	53.6	315.0	NW	13.3	3.7	0.0	0.0
24-03-2023	21	31.0	57.0	315.0	NW	7.9	2.2	0.0	0.0
24-03-2023	22	28.6	60.0	285.0	WNW	1.1	0.3	0.0	0.0
24-03-2023	23	25.7	65.0	315.0	NW	3.0	0.8	0.0	0.0
24-03-2023	24	23.4	67.0	285.0	WNW	5.8	1.6	0.0	0.0
25-03-2023	1	23.2	67.0	135.0	SE	9.0	2.5	0.0	0.0
25-03-2023	2	22.7	70.0	225.0	SW	12.6	3.5	0.0	0.0
25-03-2023	3	22.5	70.0	333.0	NWN	3.6	1.0	0.0	0.0
25-03-2023	4	22.6	66.0	345.0	NWN	8.3	2.3	0.0	0.0
25-03-2023	5	23.3	63.0	135.0	SE	9.4	2.6	0.0	0.0
25-03-2023	6	24.5	60.0	270.0	W	2.5	0.7	0.0	0.0
25-03-2023	7	25.7	58.0	112.0	ESE	2.0	0.6	0.0	0.0
25-03-2023	8	27.1	56.0	116.0	ESE	3.6	1.0	0.0	0.0
25-03-2023	9	28.4	54.0	180.0	S	3.6	1.0	0.0	0.0
25-03-2023	10	29.6	52.0	315.0	NW	10.8	3.0	0.0	0.0
25-03-2023	11	31.1	53.0	315.0	NW	14.4	4.0	0.0	0.0
25-03-2023	12	32.4	49.0	45.0	NE	18.0	5.0	0.0	0.0
25-03-2023	13	34.0	48.0	315.0	NW	10.8	3.0	0.0	0.0
25-03-2023	14	34.4	47.7	180.0	S	18.0	5.0	0.0	0.0
25-03-2023	15	36.2	48.0	315.0	NW	18.0	5.0	0.0	0.0
25-03-2023	16	36.7	47.6	315.0	NW	15.1	4.2	0.0	0.0
25-03-2023	17	36.1	47.8	285.0	WNW	18.0	5.0	0.0	0.0
25-03-2023	18	35.6	48.9	315.0	NW	14.4	4.0	0.0	0.0
25-03-2023	19	34.3	52.3	90.0	E	3.6	1.0	0.0	0.0
25-03-2023	20	32.2	55.0	300.0	WNW	10.8	3.0	0.0	0.0
25-03-2023	21	30.3	59.0	180.0	S	1.0	0.3	0.0	0.0
25-03-2023	22	28.0	64.0	180.0	S	1.0	0.3	0.0	0.0
25-03-2023	23	26.0	66.0	180.0	S	1.8	0.5	0.0	0.0
25-03-2023	24	23.7	67.0	65.0	ENE	3.6	1.0	0.0	0.0
26-03-2023	1	22.8	67.0	75.0	ENE	3.6	1.0	0.0	0.0
26-03-2023	2	22.5	66.0	115.0	ESE	3.6	1.0	0.0	0.0
26-03-2023	3	22.3	66.0	360.0	N	3.0	0.8	0.0	0.0
26-03-2023	4	22.1	70.0	360.0	N	1.0	0.3	0.0	0.0
26-03-2023	5	22.0	70.0	315.0	NW	3.0	0.8	0.0	0.0
26-03-2023	6	23.4	71.0	315.0	NW	3.2	0.9	0.0	0.0
26-03-2023	7	25.2	68.0	25.0	NNE	1.8	0.5	0.0	0.0
26-03-2023	8	27.3	66.0	360.0	N	3.6	1.0	0.0	0.0
26-03-2023	9	29.4	64.0	116.0	ESE	18.0	5.0	0.0	0.0
26-03-2023	10	30.5	65.0	166.0	SES	10.8	3.0	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
26-03-2023	11	31.8	64.0	59.0	ENE	9.5	2.6	0.0	0.0
26-03-2023	12	32.6	61.0	315.0	NW	1.8	0.5	0.0	0.0
26-03-2023	13	33.7	56.0	315.0	NW	14.4	4.0	0.0	0.0
26-03-2023	14	35.1	55.0	315.0	NW	7.9	2.2	0.0	0.0
26-03-2023	15	36.2	53.0	315.0	NW	15.5	4.3	0.0	0.0
26-03-2023	16	36.7	51.0	270.0	W	10.5	2.9	0.0	0.0
26-03-2023	17	36.3	50.5	180.0	S	13.9	3.9	0.0	0.0
26-03-2023	18	35.2	51.0	225.0	SW	3.6	1.0	0.0	0.0
26-03-2023	19	34.7	54.0	90.0	E	3.6	1.0	0.0	0.0
26-03-2023	20	32.1	58.0	148.0	SES	2.0	0.6	0.0	0.0
26-03-2023	21	30.7	62.0	159.0	SES	1.0	0.3	0.0	0.0
26-03-2023	22	28.9	68.0	135.0	SE	5.5	1.5	0.0	0.0
26-03-2023	23	27.1	70.0	115.0	ESE	8.5	2.4	0.0	0.0
26-03-2023	24	25.1	72.0	270.0	W	2.0	0.6	0.0	0.0
27-03-2023	1	24.7	73.4	270.0	W	13.0	3.6	0.0	0.0
27-03-2023	2	23.2	74.4	245.0	WSW	1.8	0.5	2.0	0.0
27-03-2023	3	23.0	76.0	315.0	NW	1.0	0.3	2.0	0.0
27-03-2023	4	22.4	77.2	315.0	NW	12.2	3.4	3.0	0.0
27-03-2023	5	22.5	77.4	315.0	NW	2.5	0.7	4.0	0.0
27-03-2023	6	23.9	78.4	180.0	S	8.6	2.4	6.0	0.2
27-03-2023	7	25.5	79.2	298.0	WNW	4.5	1.2	7.0	0.4
27-03-2023	8	27.6	78.6	315.0	NW	5.5	1.5	7.0	0.6
27-03-2023	9	28.9	76.2	315.0	NW	7.9	2.2	6.0	0.3
27-03-2023	10	29.9	73.7	270.0	W	7.9	2.2	5.0	0.1
27-03-2023	11	31.3	71.2	90.0	E	10.8	3.0	3.0	0.0
27-03-2023	12	33.1	69.3	45.0	NE	3.2	0.9	4.0	0.0
27-03-2023	13	34.1	66.6	315.0	NW	12.6	3.5	2.0	0.0
27-03-2023	14	35.0	63.4	315.0	NW	18.0	5.0	2.0	0.0
27-03-2023	15	35.4	61.2	180.0	S	2.2	0.6	0.0	0.0
27-03-2023	16	36.4	58.7	45.0	NE	18.0	5.0	0.0	0.0
27-03-2023	17	36.7	56.5	315.0	NW	10.9	3.0	0.0	0.0
27-03-2023	18	35.4	53.7	180.0	S	5.0	1.4	0.0	0.0
27-03-2023	19	33.6	53.0	315.0	NW	2.5	0.7	0.0	0.0
27-03-2023	20	31.4	57.0	315.0	NW	14.4	4.0	0.0	0.0
27-03-2023	21	29.3	60.0	45.0	NE	2.2	0.6	0.0	0.0
27-03-2023	22	27.3	66.0	328.0	NWN	3.6	1.0	0.0	0.0
27-03-2023	23	24.8	68.0	315.0	NW	10.8	3.0	0.0	0.0
27-03-2023	24	23.9	71.0	315.0	NW	4.3	1.2	0.0	0.0
28-03-2023	1	23.5	72.0	315.0	NW	3.2	0.9	0.0	0.0
28-03-2023	2	23.1	74.3	315.0	NW	10.8	3.0	0.0	0.0
28-03-2023	3	22.9	75.4	315.0	NW	8.6	2.4	2.0	0.0
28-03-2023	4	22.4	76.6	225.0	SW	2.2	0.6	3.0	0.0
28-03-2023	5	22.5	77.8	45.0	NE	5.5	1.5	4.0	0.0
28-03-2023	6	24.1	78.7	45.0	NE	5.0	1.4	5.0	0.0
28-03-2023	7	25.9	79.9	210.0	SSW	2.5	0.7	6.0	0.4
28-03-2023	8	28.1	80.1	135.0	SE	9.7	2.7	8.0	0.8
28-03-2023	9	29.4	79.2	90.0	E	1.8	0.5	7.0	1.5
28-03-2023	10	30.2	77.6	45.0	NE	10.8	3.0	6.0	0.3
28-03-2023	11	31.6	74.4	315.0	NW	3.0	0.8	5.0	0.0
28-03-2023	12	32.5	71.3	135.0	SE	8.6	2.4	3.0	0.0
28-03-2023	13	34.1	68.2	315.0	NW	1.8	0.5	2.0	0.0
28-03-2023	14	35.4	63.4	180.0	S	10.8	3.0	0.0	0.0
28-03-2023	15	36.3	59.6	315.0	NW	5.5	1.5	0.0	0.0
28-03-2023	16	36.5	56.3	315.0	NW	9.5	2.6	0.0	0.0
28-03-2023	17	35.2	53.2	315.0	NW	14.4	4.0	0.0	0.0
28-03-2023	18	33.7	50.6	256.0	WSW	2.9	0.8	0.0	0.0
28-03-2023	19	32.1	49.4	346.0	NWN	14.4	4.0	0.0	0.0
28-03-2023	20	30.4	51.0	135.0	SE	10.8	3.0	0.0	0.0
28-03-2023	21	28.6	53.3	135.0	SE	13.7	3.8	0.0	0.0
28-03-2023	22	27.2	59.0	135.0	SE	14.4	4.0	0.0	0.0
28-03-2023	23	25.1	61.0	270.0	W	10.8	3.0	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
28-03-2023	24	23.3	64.0	135.0	SE	3.6	1.0	0.0	0.0
29-03-2023	1	21.4	67.0	135.0	SE	4.0	1.1	0.0	0.0
29-03-2023	2	20.2	67.0	329.0	NWN	2.0	0.6	0.0	0.0
29-03-2023	3	19.4	71.0	135.0	SE	1.0	0.3	0.0	0.0
29-03-2023	4	18.8	71.0	346.0	NWN	1.0	0.3	0.0	0.0
29-03-2023	5	18.3	68.0	315.0	NW	9.0	2.5	0.0	0.0
29-03-2023	6	19.4	65.0	45.0	NE	2.9	0.8	0.0	0.0
29-03-2023	7	21.6	62.0	165.0	SES	5.5	1.5	0.0	0.0
29-03-2023	8	23.4	60.0	45.0	NE	3.6	1.0	0.0	0.0
29-03-2023	9	25.5	58.0	315.0	NW	2.2	0.6	0.0	0.0
29-03-2023	10	27.1	57.0	315.0	NW	3.6	1.0	0.0	0.0
29-03-2023	11	28.2	55.0	315.0	NW	3.6	1.0	0.0	0.0
29-03-2023	12	29.6	54.0	315.0	NW	10.8	3.0	0.0	0.0
29-03-2023	13	31.3	53.0	315.0	NW	5.0	1.4	0.0	0.0
29-03-2023	14	32.4	51.7	315.0	NW	7.9	2.2	0.0	0.0
29-03-2023	15	34.2	51.4	315.0	NW	5.0	1.4	0.0	0.0
29-03-2023	16	35.6	50.7	285.0	WNW	10.8	3.0	0.0	0.0
29-03-2023	17	36.2	49.9	295.0	WNW	14.4	4.0	0.0	0.0
29-03-2023	18	35.3	52.0	135.0	SE	13.7	3.8	0.0	0.0
29-03-2023	19	33.4	55.0	135.0	SE	10.8	3.0	0.0	0.0
29-03-2023	20	31.2	59.0	135.0	SE	1.5	0.4	0.0	0.0
29-03-2023	21	29.7	63.0	135.0	SE	2.0	0.6	0.0	0.0
29-03-2023	22	27.2	64.0	135.0	SE	1.0	0.3	0.0	0.0
29-03-2023	23	25.1	66.0	135.0	SE	12.6	3.5	0.0	0.0
29-03-2023	24	23.2	68.0	135.0	SE	10.8	3.0	0.0	0.0
30-03-2023	1	21.3	69.0	45.0	NE	7.9	2.2	0.0	0.0
30-03-2023	2	19.9	70.0	165.0	SES	5.8	1.6	0.0	0.0
30-03-2023	3	19.1	71.0	148.0	SES	2.5	0.7	0.0	0.0
30-03-2023	4	18.4	72.0	270.0	W	1.0	0.3	0.0	0.0
30-03-2023	5	17.6	74.0	315.0	NW	8.0	2.2	0.0	0.0
30-03-2023	6	19.1	75.0	315.0	NW	7.9	2.2	0.0	0.0
30-03-2023	7	20.2	73.0	315.0	NW	11.9	3.3	0.0	0.0
30-03-2023	8	23.2	70.0	135.0	SE	12.6	3.5	0.0	0.0
30-03-2023	9	24.4	64.0	315.0	NW	5.5	1.5	0.0	0.0
30-03-2023	10	26.1	63.0	270.0	W	3.6	1.0	0.0	0.0
30-03-2023	11	28.2	64.0	270.0	W	3.6	1.0	0.0	0.0
30-03-2023	12	29.4	59.0	270.0	W	9.0	2.5	0.0	0.0
30-03-2023	13	31.4	55.0	315.0	NW	3.6	1.0	0.0	0.0
30-03-2023	14	33.4	50.0	315.0	NW	3.6	1.0	0.0	0.0
30-03-2023	15	34.5	50.0	315.0	NW	3.6	1.0	0.0	0.0
30-03-2023	16	36.2	49.0	270.0	W	9.0	2.5	0.0	0.0
30-03-2023	17	35.2	49.0	242.0	WSW	6.0	1.7	0.0	0.0
30-03-2023	18	33.2	49.0	270.0	W	15.8	4.4	0.0	0.0
30-03-2023	19	31.2	52.0	315.0	NW	9.0	2.5	0.0	0.0
30-03-2023	20	28.8	53.0	289.0	WNW	9.4	2.6	0.0	0.0
30-03-2023	21	27.4	54.0	135.0	SE	9.0	2.5	0.0	0.0
30-03-2023	22	26.2	54.0	135.0	SE	4.0	1.1	0.0	0.0
30-03-2023	23	24.6	59.0	135.0	SE	2.5	0.7	0.0	0.0
30-03-2023	24	23.3	62.4	135.0	SE	1.0	0.3	0.0	0.0
31-03-2023	1	21.4	64.2	135.0	SE	2.5	0.7	0.0	0.0
31-03-2023	2	20.1	66.2	135.0	SE	1.5	0.4	0.0	0.0
31-03-2023	3	19.2	68.2	135.0	SE	2.2	0.6	0.0	0.0
31-03-2023	4	18.2	69.6	135.0	SE	9.4	2.6	0.0	0.0
31-03-2023	5	17.4	71.1	19.0	NNE	12.6	3.5	0.0	0.0
31-03-2023	6	17.1	72.6	25.0	NNE	13.3	3.7	0.0	0.0
31-03-2023	7	18.5	74.2	135.0	SE	15.5	4.3	2.0	0.0
31-03-2023	8	20.4	76.3	156.0	SES	16.9	4.7	3.0	0.0
31-03-2023	9	22.3	77.4	45.0	NE	2.2	0.6	5.0	0.0
31-03-2023	10	24.1	78.2	270.0	W	8.0	2.2	6.0	0.6
31-03-2023	11	26.6	79.2	270.0	W	13.3	3.7	7.0	0.9
31-03-2023	12	28.4	78.4	245.0	WSW	9.0	2.5	7.0	0.4

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
31-03-2023	13	31.2	75.2	315.0	NW	7.0	1.9	6.0	0.2
31-03-2023	14	33.2	72.7	315.0	NW	2.2	0.6	5.0	0.0
31-03-2023	15	34.6	70.7	315.0	NW	10.8	3.0	4.0	0.0
31-03-2023	16	35.4	67.7	315.0	NW	7.9	2.2	2.0	0.0
31-03-2023	17	36.7	64.4	315.0	NW	14.4	4.0	0.0	0.0
31-03-2023	18	34.6	62.3	315.0	NW	16.6	4.6	0.0	0.0
31-03-2023	19	33.2	61.0	315.0	NW	15.5	4.3	0.0	0.0
31-03-2023	20	32.0	60.6	315.0	NW	14.4	4.0	0.0	0.0
31-03-2023	21	30.6	62.4	315.0	NW	13.3	3.7	0.0	0.0
31-03-2023	22	29.9	66.5	315.0	NW	12.6	3.5	0.0	0.0
31-03-2023	23	28.4	68.8	225.0	SW	1.5	0.4	0.0	0.0
31-03-2023	24	26.6	72.0	315.0	NW	9.0	2.5	0.0	0.0
01-04-2023	1	25.1	74.0	315.0	NW	9.4	2.6	2.0	0.0
01-04-2023	2	23.6	75.4	315.0	NW	9.0	2.5	3.0	0.0
01-04-2023	3	22.4	76.0	315.0	NW	10.8	3.0	4.0	0.0
01-04-2023	4	22.2	78.3	315.0	NW	12.6	3.5	6.0	0.0
01-04-2023	5	23.1	79.2	135.0	SE	9.4	2.6	7.0	0.3
01-04-2023	6	24.4	80.2	135.0	SE	5.4	1.5	7.0	0.4
01-04-2023	7	26.1	80.6	135.0	SE	7.9	2.2	8.0	1.4
01-04-2023	8	27.7	80.9	135.0	SE	8.6	2.4	8.0	2.2
01-04-2023	9	29.4	78.9	315.0	NW	3.6	1.0	7.0	0.7
01-04-2023	10	31.1	76.2	315.0	NW	9.9	2.7	5.0	0.3
01-04-2023	11	32.2	73.4	315.0	NW	11.9	3.3	4.0	0.0
01-04-2023	12	33.7	71.1	315.0	NW	14.4	4.0	2.0	0.0
01-04-2023	13	35.2	68.6	315.0	NW	14.4	4.0	2.0	0.0
01-04-2023	14	37.5	64.9	315.0	NW	18.0	5.0	0.0	0.0
01-04-2023	15	38.7	62.1	315.0	NW	15.5	4.3	0.0	0.0
01-04-2023	16	39.3	58.6	315.0	NW	13.3	3.7	0.0	0.0
01-04-2023	17	39.2	55.4	315.0	NW	12.2	3.4	0.0	0.0
01-04-2023	18	37.7	53.2	240.0	WSW	15.1	4.2	0.0	0.0
01-04-2023	19	34.6	51.0	245.0	WSW	9.7	2.7	0.0	0.0
01-04-2023	20	31.3	55.0	315.0	NW	8.3	2.3	0.0	0.0
01-04-2023	21	28.6	58.0	255.0	WSW	7.2	2.0	0.0	0.0
01-04-2023	22	26.4	63.0	135.0	SE	10.8	3.0	0.0	0.0
01-04-2023	23	24.4	69.0	135.0	SE	1.2	0.3	0.0	0.0
01-04-2023	24	22.7	72.0	135.0	SE	10.8	3.0	0.0	0.0
02-04-2023	1	22.1	71.0	135.0	SE	14.4	4.0	0.0	0.0
02-04-2023	2	21.7	71.0	25.0	NNE	18.0	5.0	0.0	0.0
02-04-2023	3	21.2	71.0	31.0	NNE	14.4	4.0	0.0	0.0
02-04-2023	4	20.7	71.0	16.0	NNE	4.3	1.2	0.0	0.0
02-04-2023	5	20.9	67.0	15.0	NNE	10.8	3.0	0.0	0.0
02-04-2023	6	22.2	65.0	180.0	S	3.7	1.0	0.0	0.0
02-04-2023	7	23.4	62.0	165.0	SES	10.8	3.0	0.0	0.0
02-04-2023	8	25.2	60.0	45.0	NE	15.5	4.3	0.0	0.0
02-04-2023	9	26.9	56.0	45.0	NE	12.2	3.4	0.0	0.0
02-04-2023	10	28.4	54.0	45.0	NE	10.8	3.0	0.0	0.0
02-04-2023	11	30.3	52.0	210.0	SSW	12.2	3.4	0.0	0.0
02-04-2023	12	31.6	50.0	270.0	W	13.3	3.7	0.0	0.0
02-04-2023	13	33.0	48.0	255.0	WSW	15.1	4.2	0.0	0.0
02-04-2023	14	34.6	48.0	315.0	NW	16.2	4.5	0.0	0.0
02-04-2023	15	36.2	48.0	315.0	NW	18.0	5.0	0.0	0.0
02-04-2023	16	37.2	49.0	315.0	NW	21.6	6.0	0.0	0.0
02-04-2023	17	37.0	49.0	315.0	NW	18.0	5.0	0.0	0.0
02-04-2023	18	35.6	53.0	330.0	NWN	14.4	4.0	0.0	0.0
02-04-2023	19	33.3	55.0	340.0	NWN	13.0	3.6	0.0	0.0
02-04-2023	20	32.1	58.0	345.0	NWN	16.9	4.7	0.0	0.0
02-04-2023	21	31.1	63.0	135.0	SE	9.7	2.7	0.0	0.0
02-04-2023	22	28.8	64.0	135.0	SE	4.9	1.4	0.0	0.0
02-04-2023	23	27.5	66.0	135.0	SE	1.2	0.3	0.0	0.0
02-04-2023	24	26.7	69.0	135.0	SE	1.9	0.5	0.0	0.0
03-04-2023	1	26.4	69.0	135.0	SE	4.9	1.4	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
03-04-2023	2	26.2	73.0	135.0	SE	4.9	1.4	0.0	0.0
03-04-2023	3	26.3	73.0	15.0	NNE	10.8	3.0	0.0	0.0
03-04-2023	4	26.8	75.0	180.0	S	14.4	4.0	2.0	0.0
03-04-2023	5	27.5	76.0	180.0	S	1.9	0.5	3.0	0.0
03-04-2023	6	28.2	77.4	225.0	SW	10.8	3.0	4.0	0.0
03-04-2023	7	28.9	77.7	155.0	SES	14.4	4.0	6.0	0.2
03-04-2023	8	30.1	78.9	165.0	SES	1.9	0.5	6.0	0.4
03-04-2023	9	30.7	79.2	45.0	NE	4.3	1.2	6.0	0.5
03-04-2023	10	31.4	77.6	270.0	W	4.3	1.2	6.0	0.3
03-04-2023	11	33.0	74.4	315.0	NW	9.0	2.5	5.0	0.0
03-04-2023	12	34.3	71.3	315.0	NW	8.3	2.3	4.0	0.0
03-04-2023	13	35.6	68.6	315.0	NW	12.6	3.5	2.0	0.0
03-04-2023	14	36.4	65.2	315.0	NW	14.4	4.0	2.0	0.0
03-04-2023	15	36.9	62.3	315.0	NW	18.0	5.0	0.0	0.0
03-04-2023	16	37.0	58.6	315.0	NW	15.8	4.4	0.0	0.0
03-04-2023	17	37.3	55.4	180.0	S	19.4	5.4	0.0	0.0
03-04-2023	18	37.0	52.2	135.0	SE	13.7	3.8	0.0	0.0
03-04-2023	19	35.2	53.4	45.0	NE	15.5	4.3	0.0	0.0
03-04-2023	20	33.0	55.8	333.0	NWN	13.7	3.8	0.0	0.0
03-04-2023	21	30.9	58.5	135.0	SE	15.1	4.2	0.0	0.0
03-04-2023	22	28.7	60.0	135.0	SE	7.9	2.2	0.0	0.0
03-04-2023	23	27.3	63.0	135.0	SE	18.0	5.0	0.0	0.0
03-04-2023	24	25.4	65.0	25.0	NNE	14.4	4.0	0.0	0.0
04-04-2023	1	25.0	68.0	180.0	S	10.8	3.0	0.0	0.0
04-04-2023	2	24.3	71.0	180.0	S	3.6	1.0	0.0	0.0
04-04-2023	3	24.0	71.0	180.0	S	3.6	1.0	0.0	0.0
04-04-2023	4	23.6	71.0	112.0	ESE	3.7	1.0	0.0	0.0
04-04-2023	5	24.5	68.0	360.0	N	13.3	3.7	0.0	0.0
04-04-2023	6	26.4	66.0	225.0	SW	15.8	4.4	0.0	0.0
04-04-2023	7	27.6	59.0	155.0	SES	17.6	4.9	0.0	0.0
04-04-2023	8	28.7	55.0	158.0	SES	14.4	4.0	0.0	0.0
04-04-2023	9	29.9	53.0	45.0	NE	19.4	5.4	0.0	0.0
04-04-2023	10	30.7	52.0	270.0	W	15.1	4.2	0.0	0.0
04-04-2023	11	32.8	50.0	270.0	W	20.2	5.6	0.0	0.0
04-04-2023	12	34.6	48.0	270.0	W	22.7	6.3	0.0	0.0
04-04-2023	13	36.1	48.0	245.0	WSW	24.1	6.7	0.0	0.0
04-04-2023	14	36.7	48.0	315.0	NW	16.9	4.7	0.0	0.0
04-04-2023	15	37.9	47.0	315.0	NW	19.8	5.5	0.0	0.0
04-04-2023	16	38.2	47.0	315.0	NW	15.8	4.4	0.0	0.0
04-04-2023	17	38.1	47.0	315.0	NW	15.1	4.2	0.0	0.0
04-04-2023	18	37.3	49.0	315.0	NW	13.7	3.8	0.0	0.0
04-04-2023	19	35.6	52.0	135.0	SE	13.0	3.6	0.0	0.0
04-04-2023	20	33.2	56.0	135.0	SE	10.8	3.0	0.0	0.0
04-04-2023	21	31.2	60.0	135.0	SE	1.9	0.5	0.0	0.0
04-04-2023	22	29.1	64.0	335.0	NWN	5.6	1.5	0.0	0.0
04-04-2023	23	27.8	67.0	340.0	NWN	12.6	3.5	0.0	0.0
04-04-2023	24	26.6	69.0	135.0	SE	15.1	4.2	0.0	0.0
05-04-2023	1	26.2	69.0	135.0	SE	14.4	4.0	0.0	0.0
05-04-2023	2	25.9	73.0	15.0	NNE	9.3	2.6	0.0	0.0
05-04-2023	3	26.0	73.0	26.0	NNE	1.9	0.5	0.0	0.0
05-04-2023	4	26.7	73.0	180.0	S	10.8	3.0	0.0	0.0
05-04-2023	5	27.4	70.0	135.0	SE	1.9	0.5	0.0	0.0
05-04-2023	6	28.2	67.0	303.0	WNW	4.3	1.2	0.0	0.0
05-04-2023	7	29.0	64.0	135.0	SE	7.2	2.0	0.0	0.0
05-04-2023	8	29.7	64.0	270.0	W	10.4	2.9	0.0	0.0
05-04-2023	9	31.1	60.0	315.0	NW	14.4	4.0	0.0	0.0
05-04-2023	10	32.0	58.0	315.0	NW	13.0	3.6	0.0	0.0
05-04-2023	11	33.0	56.0	315.0	NW	12.6	3.5	0.0	0.0
05-04-2023	12	34.2	54.0	270.0	W	8.6	2.4	0.0	0.0
05-04-2023	13	35.8	50.0	315.0	NW	14.4	4.0	0.0	0.0
05-04-2023	14	36.5	50.0	315.0	NW	13.7	3.8	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
05-04-2023	15	37.4	49.0	315.0	NW	11.9	3.3	0.0	0.0
05-04-2023	16	38.0	50.0	315.0	NW	14.4	4.0	0.0	0.0
05-04-2023	17	38.1	50.0	315.0	NW	21.6	6.0	0.0	0.0
05-04-2023	18	36.6	53.0	135.0	SE	18.0	5.0	0.0	0.0
05-04-2023	19	34.3	54.0	135.0	SE	22.7	6.3	0.0	0.0
05-04-2023	20	32.1	58.0	116.0	ESE	18.7	5.2	0.0	0.0
05-04-2023	21	30.3	62.0	123.0	ESE	16.9	4.7	0.0	0.0
05-04-2023	22	28.9	68.0	168.0	SES	18.0	5.0	0.0	0.0
05-04-2023	23	27.5	70.0	135.0	SE	19.8	5.5	0.0	0.0
05-04-2023	24	26.0	73.0	135.0	SE	16.9	4.7	0.0	0.0
06-04-2023	1	25.7	72.0	135.0	SE	11.5	3.2	0.0	0.0
06-04-2023	2	25.3	72.0	135.0	SE	8.3	2.3	0.0	0.0
06-04-2023	3	24.8	72.0	33.0	NNE	1.2	0.3	0.0	0.0
06-04-2023	4	24.5	71.0	135.0	SE	2.5	0.7	0.0	0.0
06-04-2023	5	24.4	68.0	19.0	NNE	7.9	2.2	0.0	0.0
06-04-2023	6	26.2	66.0	123.0	ESE	3.1	0.9	0.0	0.0
06-04-2023	7	27.9	60.0	135.0	SE	3.6	1.0	0.0	0.0
06-04-2023	8	29.5	58.0	135.0	SE	3.6	1.0	0.0	0.0
06-04-2023	9	30.7	58.0	315.0	NW	9.9	2.7	0.0	0.0
06-04-2023	10	31.6	52.0	225.0	SW	11.7	3.3	0.0	0.0
06-04-2023	11	32.9	50.0	160.0	SES	16.6	4.6	0.0	0.0
06-04-2023	12	34.3	48.0	166.0	SES	18.7	5.2	0.0	0.0
06-04-2023	13	35.9	50.0	158.0	SES	15.8	4.4	0.0	0.0
06-04-2023	14	37.5	49.0	195.0	SSW	18.7	5.2	0.0	0.0
06-04-2023	15	38.6	46.3	225.0	SW	13.3	3.7	0.0	0.0
06-04-2023	16	39.6	47.0	315.0	NW	15.1	4.2	0.0	0.0
06-04-2023	17	40.3	49.0	315.0	NW	18.0	5.0	0.0	0.0
06-04-2023	18	38.1	49.0	135.0	SE	20.2	5.6	0.0	0.0
06-04-2023	19	35.4	53.0	225.0	SW	22.7	6.3	0.0	0.0
06-04-2023	20	33.1	58.0	225.0	SW	25.9	7.2	0.0	0.0
06-04-2023	21	30.2	63.0	225.0	SW	17.3	4.8	0.0	0.0
06-04-2023	22	27.8	68.0	225.0	SW	11.5	3.2	0.0	0.0
06-04-2023	23	26.5	70.0	225.0	SW	18.4	5.1	0.0	0.0
06-04-2023	24	24.4	71.0	135.0	SE	4.9	1.4	0.0	0.0
07-04-2023	1	23.7	73.0	135.0	SE	14.0	3.9	0.0	0.0
07-04-2023	2	23.1	74.0	135.0	SE	1.8	0.5	0.0	0.0
07-04-2023	3	22.4	73.2	135.0	SE	1.2	0.3	0.0	0.0
07-04-2023	4	22.2	72.2	135.0	SE	5.4	1.5	0.0	0.0
07-04-2023	5	22.9	71.0	58.0	ENE	3.7	1.0	0.0	0.0
07-04-2023	6	24.2	70.7	135.0	SE	10.8	3.0	0.0	0.0
07-04-2023	7	26.5	73.0	135.0	SE	10.8	3.0	0.0	0.0
07-04-2023	8	28.7	72.0	135.0	SE	8.0	2.2	0.0	0.0
07-04-2023	9	30.3	72.0	315.0	NW	13.0	3.6	0.0	0.0
07-04-2023	10	31.8	67.5	270.0	W	19.4	5.4	0.0	0.0
07-04-2023	11	33.5	63.0	315.0	NW	23.8	6.6	0.0	0.0
07-04-2023	12	35.3	58.5	315.0	NW	26.3	7.3	0.0	0.0
07-04-2023	13	36.6	55.6	315.0	NW	22.3	6.2	0.0	0.0
07-04-2023	14	38.2	54.0	315.0	NW	20.2	5.6	0.0	0.0
07-04-2023	15	39.3	51.5	315.0	NW	25.6	7.1	0.0	0.0
07-04-2023	16	39.7	50.5	115.0	ESE	26.3	7.3	0.0	0.0
07-04-2023	17	39.9	50.0	270.0	W	20.2	5.6	0.0	0.0
07-04-2023	18	38.6	53.0	270.0	W	17.3	4.8	0.0	0.0
07-04-2023	19	36.2	56.0	165.0	SES	19.4	5.4	0.0	0.0
07-04-2023	20	33.6	61.0	335.0	NWN	19.4	5.4	0.0	0.0
07-04-2023	21	30.9	63.0	270.0	W	15.1	4.2	0.0	0.0
07-04-2023	22	28.6	67.0	270.0	W	13.3	3.7	0.0	0.0
07-04-2023	23	27.6	70.0	270.0	W	10.1	2.8	0.0	0.0
07-04-2023	24	26.7	72.1	270.0	W	1.2	0.3	0.0	0.0
08-04-2023	1	26.5	71.7	270.0	W	4.3	1.2	0.0	0.0
08-04-2023	2	26.2	73.0	135.0	SE	11.9	3.3	0.0	0.0
08-04-2023	3	26.3	74.2	360.0	N	9.7	2.7	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
08-04-2023	4	26.8	72.0	360.0	N	3.2	0.9	0.0	0.0
08-04-2023	5	27.5	70.0	135.0	SE	4.3	1.2	0.0	0.0
08-04-2023	6	28.1	71.0	135.0	SE	15.5	4.3	0.0	0.0
08-04-2023	7	28.8	74.0	180.0	S	9.7	2.7	0.0	0.0
08-04-2023	8	29.6	72.0	115.0	ESE	13.0	3.6	0.0	0.0
08-04-2023	9	30.5	72.4	45.0	NE	8.6	2.4	0.0	0.0
08-04-2023	10	31.3	67.5	225.0	SW	19.4	5.4	0.0	0.0
08-04-2023	11	32.7	65.0	156.0	SES	23.4	6.5	0.0	0.0
08-04-2023	12	34.4	62.5	148.0	SES	18.7	5.2	0.0	0.0
08-04-2023	13	36.0	58.6	315.0	NW	20.5	5.7	0.0	0.0
08-04-2023	14	37.5	55.5	165.0	SES	16.9	4.7	0.0	0.0
08-04-2023	15	38.6	53.0	148.0	SES	18.4	5.1	0.0	0.0
08-04-2023	16	39.7	51.0	315.0	NW	23.8	6.6	0.0	0.0
08-04-2023	17	40.2	50.0	315.0	NW	20.5	5.7	0.0	0.0
08-04-2023	18	39.9	47.0	135.0	SE	16.9	4.7	0.0	0.0
08-04-2023	19	37.8	51.0	135.0	SE	19.8	5.5	0.0	0.0
08-04-2023	20	35.4	54.0	270.0	W	15.8	4.4	0.0	0.0
08-04-2023	21	33.1	58.0	315.0	NW	13.3	3.7	0.0	0.0
08-04-2023	22	30.6	62.0	315.0	NW	9.7	2.7	0.0	0.0
08-04-2023	23	28.3	66.0	258.0	WSW	9.0	2.5	0.0	0.0
08-04-2023	24	26.3	69.0	315.0	NW	3.6	1.0	0.0	0.0
09-04-2023	1	25.6	72.0	110.0	ESE	3.6	1.0	0.0	0.0
09-04-2023	2	25.3	72.0	225.0	SW	4.9	1.4	0.0	0.0
09-04-2023	3	25.1	72.0	115.0	ESE	7.9	2.2	0.0	0.0
09-04-2023	4	24.8	72.0	330.0	NWN	9.7	2.7	0.0	0.0
09-04-2023	5	24.7	68.0	270.0	W	5.8	1.6	0.0	0.0
09-04-2023	6	26.4	66.0	168.0	SES	11.5	3.2	0.0	0.0
09-04-2023	7	28.1	60.0	225.0	SW	3.6	1.0	0.0	0.0
09-04-2023	8	29.6	55.0	225.0	SW	10.8	3.0	0.0	0.0
09-04-2023	9	30.6	53.0	225.0	SW	14.4	4.0	0.0	0.0
09-04-2023	10	31.4	51.0	270.0	W	18.0	5.0	0.0	0.0
09-04-2023	11	32.6	49.0	255.0	WSW	15.8	4.4	0.0	0.0
09-04-2023	12	34.1	48.0	315.0	NW	18.7	5.2	0.0	0.0
09-04-2023	13	35.5	51.0	315.0	NW	16.9	4.7	0.0	0.0
09-04-2023	14	36.4	50.4	315.0	NW	15.8	4.4	0.0	0.0
09-04-2023	15	37.3	49.9	315.0	NW	8.0	2.2	0.0	0.0
09-04-2023	16	38.7	49.4	315.0	NW	8.6	2.4	0.0	0.0
09-04-2023	17	38.2	48.6	315.0	NW	13.3	3.7	0.0	0.0
09-04-2023	18	36.5	50.0	135.0	SE	15.8	4.4	0.0	0.0
09-04-2023	19	33.8	54.0	135.0	SE	14.0	3.9	0.0	0.0
09-04-2023	20	32.2	58.0	135.0	SE	12.2	3.4	0.0	0.0
09-04-2023	21	30.8	63.0	328.0	NWN	13.3	3.7	0.0	0.0
09-04-2023	22	29.4	64.0	135.0	SE	18.0	5.0	0.0	0.0
09-04-2023	23	28.7	67.0	135.0	SE	3.6	1.0	0.0	0.0
09-04-2023	24	27.8	67.0	135.0	SE	1.8	0.5	0.0	0.0
10-04-2023	1	27.5	70.0	135.0	SE	5.4	1.5	0.0	0.0
10-04-2023	2	27.3	73.0	341.0	NWN	12.6	3.5	0.0	0.0
10-04-2023	3	27.2	73.0	15.0	NNE	9.0	2.5	0.0	0.0
10-04-2023	4	27.5	73.0	180.0	S	10.4	2.9	0.0	0.0
10-04-2023	5	27.9	70.0	180.0	S	4.9	1.4	0.0	0.0
10-04-2023	6	28.5	70.0	180.0	S	1.8	0.5	0.0	0.0
10-04-2023	7	29.2	68.0	152.0	SES	11.5	3.2	0.0	0.0
10-04-2023	8	30.1	65.0	270.0	W	3.6	1.0	0.0	0.0
10-04-2023	9	31.1	60.0	315.0	NW	14.4	4.0	0.0	0.0
10-04-2023	10	31.8	58.0	315.0	NW	18.0	5.0	0.0	0.0
10-04-2023	11	33.1	56.0	315.0	NW	18.7	5.2	0.0	0.0
10-04-2023	12	34.9	55.0	315.0	NW	22.7	6.3	0.0	0.0
10-04-2023	13	36.6	53.0	315.0	NW	20.2	5.6	0.0	0.0
10-04-2023	14	38.1	50.0	315.0	NW	15.5	4.3	0.0	0.0
10-04-2023	15	39.6	48.0	315.0	NW	14.0	3.9	0.0	0.0
10-04-2023	16	40.8	49.0	315.0	NW	13.0	3.6	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
10-04-2023	17	41.4	50.0	315.0	NW	18.0	5.0	0.0	0.0
10-04-2023	18	38.8	52.0	270.0	W	21.6	6.0	0.0	0.0
10-04-2023	19	36.2	55.0	315.0	NW	18.0	5.0	0.0	0.0
10-04-2023	20	33.7	59.0	255.0	WSW	16.9	4.7	0.0	0.0
10-04-2023	21	31.6	63.0	270.0	W	13.0	3.6	0.0	0.0
10-04-2023	22	30.1	65.0	270.0	W	4.0	1.1	0.0	0.0
10-04-2023	23	28.4	67.0	270.0	W	1.2	0.3	0.0	0.0
10-04-2023	24	27.7	70.0	270.0	W	10.8	3.0	0.0	0.0
11-04-2023	1	27.2	71.3	245.0	WSW	3.1	0.9	0.0	0.0
11-04-2023	2	26.6	73.0	225.0	SW	12.6	3.5	0.0	0.0
11-04-2023	3	26.2	74.6	45.0	NE	14.4	4.0	2.0	0.0
11-04-2023	4	25.6	75.2	270.0	W	10.8	3.0	2.0	0.0
11-04-2023	5	25.4	76.5	15.0	NNE	9.4	2.6	4.0	0.0
11-04-2023	6	27.1	77.7	25.0	NNE	4.3	1.2	5.0	0.0
11-04-2023	7	28.4	78.3	135.0	SE	7.9	2.2	6.0	0.2
11-04-2023	8	30.5	78.9	180.0	S	10.8	3.0	6.0	0.3
11-04-2023	9	32.3	79.2	180.0	S	14.4	4.0	7.0	0.5
11-04-2023	10	33.5	77.3	180.0	S	14.4	4.0	6.0	0.4
11-04-2023	11	35.2	74.1	180.0	S	18.0	5.0	6.0	0.2
11-04-2023	12	36.7	71.2	116.0	ESE	21.6	6.0	4.0	0.0
11-04-2023	13	37.7	68.8	256.0	WSW	25.2	7.0	3.0	0.0
11-04-2023	14	38.6	65.4	247.0	WSW	21.6	6.0	2.0	0.0
11-04-2023	15	39.5	62.2	315.0	NW	18.0	5.0	0.0	0.0
11-04-2023	16	40.5	57.8	315.0	NW	18.0	5.0	0.0	0.0
11-04-2023	17	41.2	54.3	315.0	NW	21.6	6.0	0.0	0.0
11-04-2023	18	39.6	51.3	135.0	SE	21.6	6.0	0.0	0.0
11-04-2023	19	36.7	51.8	135.0	SE	25.2	7.0	0.0	0.0
11-04-2023	20	33.7	53.0	135.0	SE	21.6	6.0	0.0	0.0
11-04-2023	21	31.1	53.0	135.0	SE	14.4	4.0	0.0	0.0
11-04-2023	22	28.2	57.0	333.0	NWN	13.3	3.7	0.0	0.0
11-04-2023	23	27.1	63.0	135.0	SE	9.0	2.5	0.0	0.0
11-04-2023	24	25.6	65.0	135.0	SE	7.2	2.0	0.0	0.0
12-04-2023	1	24.4	65.0	135.0	SE	5.4	1.5	0.0	0.0
12-04-2023	2	23.6	65.0	25.0	NNE	2.5	0.7	0.0	0.0
12-04-2023	3	22.3	68.0	156.0	SES	1.2	0.3	0.0	0.0
12-04-2023	4	21.6	68.0	168.0	SES	7.2	2.0	0.0	0.0
12-04-2023	5	20.7	68.0	333.0	NWN	3.2	0.9	0.0	0.0
12-04-2023	6	22.2	66.0	135.0	SE	10.8	3.0	0.0	0.0
12-04-2023	7	23.7	63.0	115.0	ESE	14.4	4.0	0.0	0.0
12-04-2023	8	25.2	58.0	225.0	SW	18.0	5.0	0.0	0.0
12-04-2023	9	26.7	56.0	45.0	NE	10.8	3.0	0.0	0.0
12-04-2023	10	28.4	54.0	210.0	SSW	9.4	2.6	0.0	0.0
12-04-2023	11	31.1	52.0	315.0	NW	14.4	4.0	0.0	0.0
12-04-2023	12	33.2	51.0	315.0	NW	18.0	5.0	0.0	0.0
12-04-2023	13	35.2	50.0	315.0	NW	16.6	4.6	0.0	0.0
12-04-2023	14	36.6	49.0	315.0	NW	21.6	6.0	0.0	0.0
12-04-2023	15	38.4	50.0	315.0	NW	25.2	7.0	0.0	0.0
12-04-2023	16	39.7	48.0	180.0	S	16.6	4.6	0.0	0.0
12-04-2023	17	40.2	51.0	45.0	NE	19.4	5.4	0.0	0.0
12-04-2023	18	38.4	52.0	303.0	WNW	17.3	4.8	0.0	0.0
12-04-2023	19	36.7	55.0	303.0	WNW	22.7	6.3	0.0	0.0
12-04-2023	20	34.3	59.0	329.0	NWN	14.4	4.0	0.0	0.0
12-04-2023	21	32.2	61.0	289.0	WNW	9.0	2.5	0.0	0.0
12-04-2023	22	29.7	64.0	293.0	WNW	6.1	1.7	0.0	0.0
12-04-2023	23	28.4	64.0	225.0	SW	9.0	2.5	0.0	0.0
12-04-2023	24	27.5	66.0	270.0	W	4.7	1.3	0.0	0.0
13-04-2023	1	26.8	70.0	166.0	SES	4.9	1.4	0.0	0.0
13-04-2023	2	26.5	73.0	45.0	NE	2.5	0.7	0.0	0.0
13-04-2023	3	26.7	73.0	225.0	SW	1.9	0.5	0.0	0.0
13-04-2023	4	27.2	73.0	315.0	NW	9.0	2.5	0.0	0.0
13-04-2023	5	28.2	70.0	270.0	W	10.4	2.9	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
13-04-2023	6	28.8	68.0	270.0	W	11.5	3.2	0.0	0.0
13-04-2023	7	29.3	64.0	256.0	WSW	16.2	4.5	0.0	0.0
13-04-2023	8	30.1	62.0	135.0	SE	7.4	2.1	0.0	0.0
13-04-2023	9	31.0	60.0	315.0	NW	8.6	2.4	0.0	0.0
13-04-2023	10	32.2	58.0	116.0	ESE	13.3	3.7	0.0	0.0
13-04-2023	11	33.5	53.0	315.0	NW	14.4	4.0	0.0	0.0
13-04-2023	12	35.9	53.0	315.0	NW	18.0	5.0	0.0	0.0
13-04-2023	13	38.1	52.0	315.0	NW	14.4	4.0	0.0	0.0
13-04-2023	14	39.2	51.0	315.0	NW	21.6	6.0	0.0	0.0
13-04-2023	15	39.9	49.0	315.0	NW	25.2	7.0	0.0	0.0
13-04-2023	16	40.8	49.0	180.0	S	14.4	4.0	0.0	0.0
13-04-2023	17	41.6	49.0	315.0	NW	10.8	3.0	0.0	0.0
13-04-2023	18	39.7	53.0	315.0	NW	18.0	5.0	0.0	0.0
13-04-2023	19	37.0	56.0	90.0	E	21.6	6.0	0.0	0.0
13-04-2023	20	34.1	59.0	135.0	SE	21.6	6.0	0.0	0.0
13-04-2023	21	30.5	62.0	315.0	NW	25.2	7.0	0.0	0.0
13-04-2023	22	28.0	64.0	315.0	NW	18.0	5.0	0.0	0.0
13-04-2023	23	26.7	66.0	180.0	S	10.8	3.0	0.0	0.0
13-04-2023	24	25.5	68.0	135.0	SE	7.2	2.0	0.0	0.0
14-04-2023	1	25.0	72.0	135.0	SE	1.8	0.5	0.0	0.0
14-04-2023	2	24.5	71.0	135.0	SE	5.8	1.6	0.0	0.0
14-04-2023	3	24.0	68.0	15.0	NNE	4.3	1.2	0.0	0.0
14-04-2023	4	23.9	68.0	18.0	NNE	7.9	2.2	0.0	0.0
14-04-2023	5	24.0	68.0	180.0	S	4.3	1.2	0.0	0.0
14-04-2023	6	25.5	65.0	68.0	ENE	1.8	0.5	0.0	0.0
14-04-2023	7	27.0	59.0	116.0	ESE	4.9	1.4	0.0	0.0
14-04-2023	8	28.5	57.0	45.0	NE	7.4	2.1	0.0	0.0
14-04-2023	9	30.0	56.0	270.0	W	8.6	2.4	0.0	0.0
14-04-2023	10	31.7	54.0	315.0	NW	10.8	3.0	0.0	0.0
14-04-2023	11	33.4	53.0	315.0	NW	14.4	4.0	0.0	0.0
14-04-2023	12	35.2	52.0	315.0	NW	18.0	5.0	0.0	0.0
14-04-2023	13	36.5	50.0	315.0	NW	18.0	5.0	0.0	0.0
14-04-2023	14	37.7	50.0	315.0	NW	14.4	4.0	0.0	0.0
14-04-2023	15	38.6	50.0	315.0	NW	18.0	5.0	0.0	0.0
14-04-2023	16	39.5	48.0	315.0	NW	21.6	6.0	0.0	0.0
14-04-2023	17	40.4	49.0	315.0	NW	20.2	5.6	0.0	0.0
14-04-2023	18	39.5	51.0	135.0	SE	16.6	4.6	0.0	0.0
14-04-2023	19	37.3	54.0	135.0	SE	18.0	5.0	0.0	0.0
14-04-2023	20	34.9	57.0	225.0	SW	15.8	4.4	0.0	0.0
14-04-2023	21	32.2	61.0	135.0	SE	1.2	0.3	0.0	0.0
14-04-2023	22	29.6	61.0	135.0	SE	1.9	0.5	0.0	0.0
14-04-2023	23	28.3	64.0	135.0	SE	9.0	2.5	0.0	0.0
14-04-2023	24	26.8	66.0	290.0	WNW	1.8	0.5	0.0	0.0
15-04-2023	1	26.5	69.0	112.0	ESE	5.4	1.5	0.0	0.0
15-04-2023	2	26.4	73.0	270.0	W	2.5	0.7	0.0	0.0
15-04-2023	3	26.8	73.0	270.0	W	5.8	1.6	0.0	0.0
15-04-2023	4	27.3	70.0	315.0	NW	7.9	2.2	0.0	0.0
15-04-2023	5	27.7	70.0	315.0	NW	5.4	1.5	0.0	0.0
15-04-2023	6	28.2	67.0	315.0	NW	10.8	3.0	0.0	0.0
15-04-2023	7	28.9	64.0	315.0	NW	8.6	2.4	0.0	0.0
15-04-2023	8	30.1	62.0	315.0	NW	15.5	4.3	0.0	0.0
15-04-2023	9	30.9	60.0	315.0	NW	14.4	4.0	0.0	0.0
15-04-2023	10	31.8	58.0	315.0	NW	16.6	4.6	0.0	0.0
15-04-2023	11	33.5	56.0	315.0	NW	19.8	5.5	0.0	0.0
15-04-2023	12	35.6	55.0	315.0	NW	22.7	6.3	0.0	0.0
15-04-2023	13	37.0	54.0	315.0	NW	14.0	3.9	0.0	0.0
15-04-2023	14	38.1	52.0	315.0	NW	24.1	6.7	0.0	0.0
15-04-2023	15	38.9	53.0	315.0	NW	18.7	5.2	0.0	0.0
15-04-2023	16	40.4	54.0	315.0	NW	16.9	4.7	0.0	0.0
15-04-2023	17	40.6	55.0	315.0	NW	10.8	3.0	0.0	0.0
15-04-2023	18	40.5	56.0	303.0	WNW	19.1	5.3	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
15-04-2023	19	37.6	58.0	90.0	E	20.2	5.6	0.0	0.0
15-04-2023	20	34.4	62.0	327.0	NWN	15.5	4.3	0.0	0.0
15-04-2023	21	32.2	64.0	270.0	W	8.6	2.4	0.0	0.0
15-04-2023	22	29.8	69.0	270.0	W	5.4	1.5	0.0	0.0
15-04-2023	23	27.5	69.6	270.0	W	10.8	3.0	0.0	0.0
15-04-2023	24	26.4	70.4	255.0	WSW	12.6	3.5	0.0	0.0
16-04-2023	1	26.3	71.1	257.0	WSW	16.2	4.5	0.0	0.0
16-04-2023	2	26.0	71.6	315.0	NW	9.0	2.5	0.0	0.0
16-04-2023	3	25.8	72.2	135.0	SE	5.4	1.5	0.0	0.0
16-04-2023	4	26.7	70.6	135.0	SE	13.0	3.6	0.0	0.0
16-04-2023	5	28.2	69.5	315.0	NW	11.9	3.3	0.0	0.0
16-04-2023	6	29.3	68.6	270.0	W	17.6	4.9	0.0	0.0
16-04-2023	7	29.8	67.3	135.0	SE	18.7	5.2	0.0	0.0
16-04-2023	8	30.4	65.5	270.0	W	15.5	4.3	0.0	0.0
16-04-2023	9	31.7	64.4	270.0	W	18.0	5.0	0.0	0.0
16-04-2023	10	33.3	63.6	315.0	NW	13.3	3.7	0.0	0.0
16-04-2023	11	35.2	61.4	315.0	NW	11.7	3.3	0.0	0.0
16-04-2023	12	37.2	58.0	315.0	NW	15.8	4.4	0.0	0.0
16-04-2023	13	38.2	56.0	315.0	NW	20.2	5.6	0.0	0.0
16-04-2023	14	38.9	55.0	315.0	NW	23.4	6.5	0.0	0.0
16-04-2023	15	39.6	53.0	315.0	NW	25.6	7.1	0.0	0.0
16-04-2023	16	40.2	52.0	315.0	NW	22.7	6.3	0.0	0.0
16-04-2023	17	40.6	51.0	315.0	NW	16.9	4.7	0.0	0.0
16-04-2023	18	39.2	52.0	135.0	SE	13.3	3.7	0.0	0.0
16-04-2023	19	37.8	55.0	135.0	SE	7.9	2.2	0.0	0.0
16-04-2023	20	35.6	58.0	135.0	SE	2.5	0.7	0.0	0.0
16-04-2023	21	32.4	62.0	333.0	NWN	1.2	0.3	0.0	0.0
16-04-2023	22	29.3	67.0	345.0	NWN	4.7	1.3	0.0	0.0
16-04-2023	23	27.6	70.0	90.0	E	7.9	2.2	0.0	0.0
16-04-2023	24	26.7	71.1	45.0	NE	1.2	0.3	0.0	0.0
17-04-2023	1	26.5	72.1	303.0	WNW	5.8	1.6	0.0	0.0
17-04-2023	2	25.6	72.6	333.0	NWN	11.9	3.3	0.0	0.0
17-04-2023	3	25.2	71.7	135.0	SE	15.1	4.2	0.0	0.0
17-04-2023	4	24.4	73.1	315.0	NW	6.8	1.9	0.0	0.0
17-04-2023	5	24.2	71.3	255.0	WSW	2.2	0.6	0.0	0.0
17-04-2023	6	25.8	70.7	250.0	WSW	12.6	3.5	0.0	0.0
17-04-2023	7	27.4	74.0	248.0	WSW	15.8	4.4	0.0	0.0
17-04-2023	8	29.8	72.0	238.0	WSW	13.3	3.7	0.0	0.0
17-04-2023	9	32.2	71.0	315.0	NW	16.2	4.5	0.0	0.0
17-04-2023	10	33.7	67.5	315.0	NW	21.6	6.0	0.0	0.0
17-04-2023	11	35.4	65.0	270.0	W	25.2	7.0	0.0	0.0
17-04-2023	12	37.1	62.0	315.0	NW	27.0	7.5	0.0	0.0
17-04-2023	13	38.3	58.0	225.0	SW	20.2	5.6	0.0	0.0
17-04-2023	14	38.8	55.0	315.0	NW	13.7	3.8	0.0	0.0
17-04-2023	15	39.4	51.0	135.0	SE	16.2	4.5	0.0	0.0
17-04-2023	16	39.8	50.5	315.0	NW	22.3	6.2	0.0	0.0
17-04-2023	17	40.2	50.0	315.0	NW	15.8	4.4	0.0	0.0
17-04-2023	18	40.1	51.0	270.0	W	13.7	3.8	0.0	0.0
17-04-2023	19	38.8	54.0	270.0	W	11.9	3.3	0.0	0.0
17-04-2023	20	36.3	56.0	135.0	SE	10.8	3.0	0.0	0.0
17-04-2023	21	33.2	60.0	315.0	NW	7.9	2.2	0.0	0.0
17-04-2023	22	31.0	64.0	270.0	W	11.9	3.3	0.0	0.0
17-04-2023	23	28.3	66.0	293.0	WNW	13.0	3.6	0.0	0.0
17-04-2023	24	25.9	69.0	135.0	SE	1.9	0.5	0.0	0.0
18-04-2023	1	25.2	68.0	202.0	SSW	10.8	3.0	0.0	0.0
18-04-2023	2	25.4	68.0	270.0	W	9.0	2.5	0.0	0.0
18-04-2023	3	25.5	72.0	270.0	W	1.2	0.3	0.0	0.0
18-04-2023	4	25.9	69.0	304.0	WNW	5.4	1.5	0.0	0.0
18-04-2023	5	26.6	66.0	225.0	SW	9.4	2.6	0.0	0.0
18-04-2023	6	27.1	63.0	315.0	NW	9.0	2.5	0.0	0.0
18-04-2023	7	27.7	63.0	135.0	SE	11.9	3.3	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
18-04-2023	8	28.2	60.0	328.0	NWN	4.7	1.3	0.0	0.0
18-04-2023	9	29.3	58.0	315.0	NW	15.5	4.3	0.0	0.0
18-04-2023	10	31.0	56.0	315.0	NW	13.3	3.7	0.0	0.0
18-04-2023	11	33.0	56.0	315.0	NW	16.6	4.6	0.0	0.0
18-04-2023	12	34.9	55.0	315.0	NW	19.4	5.4	0.0	0.0
18-04-2023	13	36.7	53.0	90.0	E	22.0	6.1	0.0	0.0
18-04-2023	14	37.6	50.0	180.0	S	23.0	6.4	0.0	0.0
18-04-2023	15	39.1	49.6	256.0	WSW	20.5	5.7	0.0	0.0
18-04-2023	16	39.7	50.0	315.0	NW	16.9	4.7	0.0	0.0
18-04-2023	17	40.4	50.0	315.0	NW	14.8	4.1	0.0	0.0
18-04-2023	18	39.3	51.0	135.0	SE	19.8	5.5	0.0	0.0
18-04-2023	19	37.2	52.0	45.0	NE	4.0	1.1	0.0	0.0
18-04-2023	20	35.0	55.0	135.0	SE	1.8	0.5	0.0	0.0
18-04-2023	21	33.0	59.0	360.0	N	0.6	0.2	0.0	0.0
18-04-2023	22	31.1	63.0	120.0	ESE	1.2	0.3	0.0	0.0
18-04-2023	23	29.2	64.0	225.0	SW	4.3	1.2	0.0	0.0
18-04-2023	24	27.4	65.4	225.0	SW	1.9	0.5	0.0	0.0
19-04-2023	1	27.1	66.7	225.0	SW	4.9	1.4	0.0	0.0
19-04-2023	2	26.7	68.2	315.0	NW	3.1	0.9	0.0	0.0
19-04-2023	3	26.5	69.2	315.0	NW	18.0	5.0	0.0	0.0
19-04-2023	4	26.8	70.2	315.0	NW	19.8	5.5	0.0	0.0
19-04-2023	5	27.2	70.6	225.0	SW	3.7	1.0	0.0	0.0
19-04-2023	6	27.6	71.2	315.0	NW	12.6	3.5	0.0	0.0
19-04-2023	7	28.5	70.0	225.0	SW	10.8	3.0	0.0	0.0
19-04-2023	8	29.6	68.0	225.0	SW	7.9	2.2	0.0	0.0
19-04-2023	9	31.3	66.0	360.0	N	14.4	4.0	0.0	0.0
19-04-2023	10	33.0	62.0	180.0	S	13.0	3.6	0.0	0.0
19-04-2023	11	34.5	56.0	180.0	S	8.0	2.2	0.0	0.0
19-04-2023	12	36.5	53.0	315.0	NW	12.6	3.5	0.0	0.0
19-04-2023	13	38.1	52.0	315.0	NW	15.8	4.4	0.0	0.0
19-04-2023	14	39.9	51.0	45.0	NE	18.0	5.0	0.0	0.0
19-04-2023	15	40.6	49.0	315.0	NW	12.6	3.5	0.0	0.0
19-04-2023	16	40.9	50.0	315.0	NW	21.6	6.0	0.0	0.0
19-04-2023	17	40.1	49.0	180.0	S	13.3	3.7	0.0	0.0
19-04-2023	18	38.6	52.0	135.0	SE	13.7	3.8	0.0	0.0
19-04-2023	19	36.5	55.0	289.0	WNW	15.1	4.2	0.0	0.0
19-04-2023	20	33.0	59.0	315.0	NW	12.6	3.5	0.0	0.0
19-04-2023	21	30.0	62.0	121.0	ESE	1.2	0.3	0.0	0.0
19-04-2023	22	28.5	64.0	315.0	NW	1.8	0.5	0.0	0.0
19-04-2023	23	27.5	66.0	327.0	NWN	10.5	2.9	0.0	0.0
19-04-2023	24	26.5	69.0	328.0	NWN	9.7	2.7	0.0	0.0
20-04-2023	1	26.0	69.0	135.0	SE	2.5	0.7	0.0	0.0
20-04-2023	2	25.6	68.0	135.0	SE	4.3	1.2	0.0	0.0
20-04-2023	3	25.5	67.0	135.0	SE	1.2	0.3	0.0	0.0
20-04-2023	4	25.8	67.6	327.0	NWN	6.1	1.7	0.0	0.0
20-04-2023	5	26.2	69.0	345.0	NWN	9.4	2.6	0.0	0.0
20-04-2023	6	26.6	69.0	135.0	SE	13.7	3.8	0.0	0.0
20-04-2023	7	27.5	66.0	135.0	SE	5.4	1.5	0.0	0.0
20-04-2023	8	28.5	64.0	135.0	SE	11.5	3.2	0.0	0.0
20-04-2023	9	29.5	61.0	315.0	NW	9.3	2.6	0.0	0.0
20-04-2023	10	31.5	57.0	315.0	NW	8.6	2.4	0.0	0.0
20-04-2023	11	33.5	53.0	315.0	NW	14.4	4.0	0.0	0.0
20-04-2023	12	35.0	52.0	315.0	NW	12.9	3.6	0.0	0.0
20-04-2023	13	37.1	51.0	315.0	NW	16.5	4.6	0.0	0.0
20-04-2023	14	38.8	51.0	315.0	NW	18.7	5.2	0.0	0.0
20-04-2023	15	40.5	49.0	315.0	NW	19.8	5.5	0.0	0.0
20-04-2023	16	40.8	50.0	315.0	NW	17.3	4.8	0.0	0.0
20-04-2023	17	39.4	50.0	315.0	NW	13.6	3.8	0.0	0.0
20-04-2023	18	38.9	53.0	315.0	NW	18.0	5.0	0.0	0.0
20-04-2023	19	35.5	55.0	315.0	NW	7.9	2.2	0.0	0.0
20-04-2023	20	32.0	58.0	360.0	N	3.7	1.0	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
20-04-2023	21	30.0	62.0	135.0	SE	1.2	0.3	0.0	0.0
20-04-2023	22	28.0	67.0	135.0	SE	9.3	2.6	0.0	0.0
20-04-2023	23	27.0	70.0	270.0	W	3.1	0.9	0.0	0.0
20-04-2023	24	25.9	73.0	270.0	W	12.6	3.5	0.0	0.0
21-04-2023	1	25.5	72.0	135.0	SE	8.3	2.3	0.0	0.0
21-04-2023	2	25.0	68.0	329.0	NWN	1.2	0.3	0.0	0.0
21-04-2023	3	24.9	68.0	135.0	SE	15.1	4.2	0.0	0.0
21-04-2023	4	24.5	64.0	135.0	SE	5.4	1.5	0.0	0.0
21-04-2023	5	24.6	64.0	135.0	SE	10.8	3.0	0.0	0.0
21-04-2023	6	25.5	61.0	135.0	SE	4.9	1.4	0.0	0.0
21-04-2023	7	26.6	59.0	327.0	NWN	8.6	2.4	0.0	0.0
21-04-2023	8	28.1	57.0	135.0	SE	3.1	0.9	0.0	0.0
21-04-2023	9	29.5	55.0	315.0	NW	13.3	3.7	0.0	0.0
21-04-2023	10	31.1	51.0	45.0	NE	18.0	5.0	0.0	0.0
21-04-2023	11	33.0	50.0	315.0	NW	21.6	6.0	0.0	0.0
21-04-2023	12	35.5	49.0	315.0	NW	18.7	5.2	0.0	0.0
21-04-2023	13	37.2	49.0	315.0	NW	20.9	5.8	0.0	0.0
21-04-2023	14	38.7	47.0	315.0	NW	23.8	6.6	0.0	0.0
21-04-2023	15	39.2	47.0	315.0	NW	20.9	5.8	0.0	0.0
21-04-2023	16	39.6	47.0	270.0	W	21.6	6.0	0.0	0.0
21-04-2023	17	39.8	47.0	270.0	W	18.7	5.2	0.0	0.0
21-04-2023	18	38.2	48.0	303.0	WNW	18.0	5.0	0.0	0.0
21-04-2023	19	36.6	56.0	303.0	WNW	17.3	4.8	0.0	0.0
21-04-2023	20	34.2	54.0	135.0	SE	13.0	3.6	0.0	0.0
21-04-2023	21	32.1	58.0	330.0	NWN	9.7	2.7	0.0	0.0
21-04-2023	22	29.3	61.0	135.0	SE	5.8	1.6	0.0	0.0
21-04-2023	23	27.1	63.0	270.0	W	4.3	1.2	0.0	0.0
21-04-2023	24	26.4	66.0	315.0	NW	1.9	0.5	0.0	0.0
22-04-2023	1	26.0	66.0	270.0	W	4.9	1.4	0.0	0.0
22-04-2023	2	25.6	65.0	135.0	SE	2.5	0.7	0.0	0.0
22-04-2023	3	25.0	68.0	270.0	W	8.3	2.3	0.0	0.0
22-04-2023	4	24.6	68.0	45.0	NE	11.9	3.3	0.0	0.0
22-04-2023	5	25.5	65.0	195.0	SSW	2.2	0.6	0.0	0.0
22-04-2023	6	27.0	63.0	135.0	SE	8.0	2.2	0.0	0.0
22-04-2023	7	28.5	60.0	116.0	ESE	1.8	0.5	0.0	0.0
22-04-2023	8	29.9	59.0	135.0	SE	9.3	2.6	0.0	0.0
22-04-2023	9	31.4	57.0	315.0	NW	4.0	1.1	0.0	0.0
22-04-2023	10	33.0	53.0	315.0	NW	16.2	4.5	0.0	0.0
22-04-2023	11	35.0	52.0	315.0	NW	12.6	3.5	0.0	0.0
22-04-2023	12	36.2	50.0	315.0	NW	12.6	3.5	0.0	0.0
22-04-2023	13	37.3	50.0	315.0	NW	9.4	2.6	0.0	0.0
22-04-2023	14	38.3	51.0	315.0	NW	12.6	3.5	0.0	0.0
22-04-2023	15	38.8	50.0	135.0	SE	2.5	0.7	0.0	0.0
22-04-2023	16	39.4	50.0	270.0	W	13.0	3.6	0.0	0.0
22-04-2023	17	39.7	50.0	303.0	WNW	9.4	2.6	0.0	0.0
22-04-2023	18	39.2	53.0	135.0	SE	8.6	2.4	0.0	0.0
22-04-2023	19	38.0	57.0	135.0	SE	3.7	1.0	0.0	0.0
22-04-2023	20	35.0	60.0	135.0	SE	1.9	0.5	0.0	0.0
22-04-2023	21	32.3	64.0	135.0	SE	3.6	1.0	0.0	0.0
22-04-2023	22	29.3	68.0	270.0	W	7.9	2.2	0.0	0.0
22-04-2023	23	28.0	70.0	225.0	SW	2.2	0.6	0.0	0.0
22-04-2023	24	27.0	73.0	225.0	SW	8.6	2.4	0.0	0.0
23-04-2023	1	26.5	73.0	304.0	WNW	4.0	1.1	0.0	0.0
23-04-2023	2	26.0	73.0	242.0	WSW	3.1	0.9	0.0	0.0
23-04-2023	3	25.5	72.0	315.0	NW	4.3	1.2	0.0	0.0
23-04-2023	4	25.4	71.0	315.0	NW	18.0	5.0	0.0	0.0
23-04-2023	5	25.8	71.0	315.0	NW	13.0	3.6	0.0	0.0
23-04-2023	6	26.6	73.0	315.0	NW	13.7	3.8	0.0	0.0
23-04-2023	7	27.8	70.0	315.0	NW	16.2	4.5	0.0	0.0
23-04-2023	8	28.7	67.0	135.0	SE	3.6	1.0	0.0	0.0
23-04-2023	9	30.2	62.0	315.0	NW	2.5	0.7	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
23-04-2023	10	31.8	58.0	315.0	NW	7.9	2.2	0.0	0.0
23-04-2023	11	34.1	56.0	90.0	E	10.8	3.0	0.0	0.0
23-04-2023	12	36.2	55.0	180.0	S	14.4	4.0	0.0	0.0
23-04-2023	13	37.3	54.0	90.0	E	18.0	5.0	0.0	0.0
23-04-2023	14	38.4	53.0	225.0	SW	18.0	5.0	0.0	0.0
23-04-2023	15	39.4	52.0	90.0	E	14.4	4.0	0.0	0.0
23-04-2023	16	39.9	52.0	90.0	E	12.2	3.4	0.0	0.0
23-04-2023	17	40.4	50.0	315.0	NW	15.5	4.3	0.0	0.0
23-04-2023	18	40.6	51.0	135.0	SE	11.9	3.3	0.0	0.0
23-04-2023	19	38.1	54.0	90.0	E	9.0	2.5	0.0	0.0
23-04-2023	20	35.7	56.0	135.0	SE	10.8	3.0	0.0	0.0
23-04-2023	21	33.1	61.0	327.0	NWN	7.9	2.2	0.0	0.0
23-04-2023	22	29.8	64.0	290.0	WNW	4.9	1.4	0.0	0.0
23-04-2023	23	27.6	67.0	315.0	NW	18.0	5.0	0.0	0.0
23-04-2023	24	26.5	73.0	90.0	E	5.8	1.6	0.0	0.0
24-04-2023	1	26.4	73.0	225.0	SW	3.1	0.9	0.0	0.0
24-04-2023	2	26.3	74.2	225.0	SW	9.0	2.5	0.0	0.0
24-04-2023	3	26.5	75.2	225.0	SW	0.6	0.2	0.0	0.0
24-04-2023	4	27.1	76.7	225.0	SW	10.8	3.0	0.0	0.0
24-04-2023	5	27.6	78.5	135.0	SE	10.8	3.0	0.0	0.0
24-04-2023	6	28.2	79.2	135.0	SE	14.4	4.0	0.0	0.0
24-04-2023	7	28.6	79.3	135.0	SE	10.8	3.0	0.0	0.0
24-04-2023	8	28.9	78.8	135.0	SE	13.0	3.6	0.0	0.0
24-04-2023	9	30.1	76.4	315.0	NW	15.8	4.4	0.0	0.0
24-04-2023	10	32.0	73.2	315.0	NW	14.4	4.0	0.0	0.0
24-04-2023	11	34.5	69.6	315.0	NW	18.0	5.0	0.0	0.0
24-04-2023	12	36.9	67.6	315.0	NW	21.6	6.0	0.0	0.0
24-04-2023	13	38.5	65.4	315.0	NW	18.0	5.0	0.0	0.0
24-04-2023	14	39.5	63.2	315.0	NW	19.8	5.5	0.0	0.0
24-04-2023	15	40.6	60.6	315.0	NW	16.9	4.7	0.0	0.0
24-04-2023	16	40.2	58.6	315.0	NW	21.6	6.0	0.0	0.0
24-04-2023	17	40.0	56.3	315.0	NW	15.8	4.4	0.0	0.0
24-04-2023	18	39.9	54.3	290.0	WNW	10.8	3.0	0.0	0.0
24-04-2023	19	37.3	51.7	180.0	S	10.8	3.0	0.0	0.0
24-04-2023	20	34.4	54.0	315.0	NW	9.0	2.5	0.0	0.0
24-04-2023	21	32.1	55.0	315.0	NW	12.6	3.5	0.0	0.0
24-04-2023	22	29.2	58.0	245.0	WSW	11.5	3.2	0.0	0.0
24-04-2023	23	27.5	62.3	74.0	ENE	7.9	2.2	0.0	0.0
24-04-2023	24	27.0	64.6	315.0	NW	9.0	2.5	0.0	0.0
25-04-2023	1	26.8	68.6	135.0	SE	1.9	0.5	0.0	0.0
25-04-2023	2	26.5	71.3	135.0	SE	3.1	0.9	0.0	0.0
25-04-2023	3	26.0	74.3	180.0	S	1.2	0.3	0.0	0.0
25-04-2023	4	25.5	75.2	23.0	NNE	4.7	1.3	0.0	0.0
25-04-2023	5	25.0	76.5	135.0	SE	3.6	1.0	0.0	0.0
25-04-2023	6	25.6	77.3	270.0	W	10.8	3.0	0.0	0.0
25-04-2023	7	27.0	74.4	135.0	SE	10.8	3.0	0.0	0.0
25-04-2023	8	28.5	72.3	135.0	SE	14.4	4.0	0.0	0.0
25-04-2023	9	29.9	70.6	315.0	NW	4.0	1.1	0.0	0.0
25-04-2023	10	31.5	68.3	315.0	NW	9.9	2.7	0.0	0.0
25-04-2023	11	33.5	64.4	315.0	NW	8.0	2.2	0.0	0.0
25-04-2023	12	35.2	58.6	315.0	NW	9.3	2.6	0.0	0.0
25-04-2023	13	36.3	52.0	15.0	NNE	19.1	5.3	0.0	0.0
25-04-2023	14	37.8	51.0	225.0	SW	21.0	5.8	0.0	0.0
25-04-2023	15	39.2	50.0	163.0	SES	3.6	1.0	0.0	0.0
25-04-2023	16	39.6	50.0	24.0	NNE	8.6	2.4	0.0	0.0
25-04-2023	17	39.8	50.0	225.0	SW	3.6	1.0	0.0	0.0
25-04-2023	18	39.9	53.0	165.0	SES	9.3	2.6	0.0	0.0
25-04-2023	19	37.4	56.0	90.0	E	3.2	0.9	0.0	0.0
25-04-2023	20	34.2	59.0	315.0	NW	3.7	1.0	0.0	0.0
25-04-2023	21	31.4	63.0	270.0	W	1.9	0.5	0.0	0.0
25-04-2023	22	28.5	70.0	135.0	SE	1.2	0.3	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
25-04-2023	23	27.0	70.0	347.0	NWN	4.7	1.3	0.0	0.0
25-04-2023	24	26.5	73.0	346.0	NWN	2.5	0.7	0.0	0.0
26-04-2023	1	26.0	73.0	90.0	E	1.9	0.5	0.0	0.0
26-04-2023	2	25.5	74.3	90.0	E	3.6	1.0	0.0	0.0
26-04-2023	3	25.0	75.0	135.0	SE	10.8	3.0	0.0	0.0
26-04-2023	4	24.5	76.2	135.0	SE	3.6	1.0	0.0	0.0
26-04-2023	5	24.6	76.6	135.0	SE	4.9	1.4	0.0	0.0
26-04-2023	6	26.0	77.2	330.0	NWN	3.1	0.9	0.0	0.0
26-04-2023	7	27.6	77.7	270.0	W	3.6	1.0	0.0	0.0
26-04-2023	8	29.1	78.7	165.0	SES	9.9	2.7	0.0	0.0
26-04-2023	9	30.6	76.3	270.0	W	3.6	1.0	0.0	0.0
26-04-2023	10	32.0	73.6	45.0	NE	10.8	3.0	0.0	0.0
26-04-2023	11	34.0	72.2	315.0	NW	11.7	3.3	0.0	0.0
26-04-2023	12	36.4	70.6	315.0	NW	14.4	4.0	0.0	0.0
26-04-2023	13	38.0	68.6	315.0	NW	16.2	4.5	0.0	0.0
26-04-2023	14	39.5	66.4	69.0	ENE	3.6	1.0	0.0	0.0
26-04-2023	15	40.1	63.6	315.0	NW	18.0	5.0	0.0	0.0
26-04-2023	16	40.2	62.2	315.0	NW	21.6	6.0	0.0	0.0
26-04-2023	17	40.0	59.6	135.0	SE	4.9	1.4	0.0	0.0
26-04-2023	18	39.9	56.7	180.0	S	9.0	2.5	0.0	0.0
26-04-2023	19	37.0	56.0	315.0	NW	7.9	2.2	0.0	0.0
26-04-2023	20	33.5	59.0	270.0	W	2.5	0.7	0.0	0.0
26-04-2023	21	30.5	62.0	327.0	NWN	3.6	1.0	0.0	0.0
26-04-2023	22	29.0	64.0	135.0	SE	1.2	0.3	0.0	0.0
26-04-2023	23	28.0	67.0	327.0	NWN	3.1	0.9	0.0	0.0
26-04-2023	24	26.9	70.0	135.0	SE	1.2	0.3	0.0	0.0
27-04-2023	1	26.6	73.0	135.0	SE	2.2	0.6	0.0	0.0
27-04-2023	2	26.5	73.0	25.0	NNE	3.1	0.9	0.0	0.0
27-04-2023	3	26.3	72.0	180.0	S	3.1	0.9	0.0	0.0
27-04-2023	4	26.4	72.0	180.0	S	1.9	0.5	0.0	0.0
27-04-2023	5	26.8	73.0	330.0	NWN	5.8	1.6	0.0	0.0
27-04-2023	6	27.3	73.0	135.0	SE	4.9	1.4	0.0	0.0
27-04-2023	7	27.8	70.0	336.0	NWN	4.9	1.4	0.0	0.0
27-04-2023	8	28.5	67.0	315.0	NW	3.6	1.0	0.0	0.0
27-04-2023	9	30.0	62.0	315.0	NW	5.6	1.5	0.0	0.0
27-04-2023	10	32.4	58.0	315.0	NW	2.2	0.6	0.0	0.0
27-04-2023	11	34.5	54.0	315.0	NW	2.5	0.7	0.0	0.0
27-04-2023	12	36.0	53.0	315.0	NW	2.9	0.8	0.0	0.0
27-04-2023	13	37.5	51.0	315.0	NW	8.0	2.2	0.0	0.0
27-04-2023	14	38.5	50.0	315.0	NW	2.2	0.6	0.0	0.0
27-04-2023	15	39.4	48.0	315.0	NW	8.6	2.4	0.0	0.0
27-04-2023	16	39.5	48.0	315.0	NW	2.5	0.7	0.0	0.0
27-04-2023	17	39.5	48.0	270.0	W	9.9	2.7	0.0	0.0
27-04-2023	18	37.9	52.0	294.0	WNW	3.6	1.0	0.0	0.0
27-04-2023	19	35.5	55.0	180.0	S	1.8	0.5	0.0	0.0
27-04-2023	20	32.0	58.0	301.0	WNW	4.0	1.1	0.0	0.0
27-04-2023	21	29.5	61.0	270.0	W	3.6	1.0	0.0	0.0
27-04-2023	22	28.7	67.0	270.0	W	4.3	1.2	0.0	0.0
27-04-2023	23	28.3	67.0	135.0	SE	1.9	0.5	0.0	0.0
27-04-2023	24	27.4	70.0	135.0	SE	1.9	0.5	0.0	0.0
28-04-2023	1	27.3	70.0	180.0	S	3.6	1.0	0.0	0.0
28-04-2023	2	26.8	73.0	360.0	N	0.6	0.2	0.0	0.0
28-04-2023	3	26.6	74.5	315.0	NW	4.3	1.2	0.0	0.0
28-04-2023	4	26.7	76.4	225.0	SW	4.7	1.3	2.0	0.0
28-04-2023	5	27.2	77.2	135.0	SE	3.6	1.0	3.0	0.0
28-04-2023	6	27.6	77.8	135.0	SE	10.8	3.0	4.0	0.0
28-04-2023	7	28.2	78.4	135.0	SE	1.9	0.5	6.0	0.2
28-04-2023	8	29.3	79.0	135.0	SE	10.8	3.0	6.0	0.4
28-04-2023	9	29.9	77.3	315.0	NW	14.4	4.0	5.0	0.1
28-04-2023	10	31.6	74.2	315.0	NW	18.0	5.0	0.0	0.0
28-04-2023	11	34.0	72.2	315.0	NW	21.6	6.0	4.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
28-04-2023	12	36.4	69.5	315.0	NW	18.0	5.0	2.0	0.0
28-04-2023	13	38.0	67.3	315.0	NW	23.4	6.5	0.0	0.0
28-04-2023	14	39.0	64.3	270.0	W	18.0	5.0	0.0	0.0
28-04-2023	15	39.9	62.2	240.0	WSW	14.4	4.0	0.0	0.0
28-04-2023	16	40.8	59.2	315.0	NW	14.4	4.0	0.0	0.0
28-04-2023	17	41.6	57.2	315.0	NW	9.3	2.6	0.0	0.0
28-04-2023	18	39.6	56.6	345.0	NWN	10.8	3.0	0.0	0.0
28-04-2023	19	37.3	56.0	346.0	NWN	2.2	0.6	0.0	0.0
28-04-2023	20	34.6	59.0	135.0	SE	5.6	1.5	0.0	0.0
28-04-2023	21	32.3	64.0	135.0	SE	10.8	3.0	0.0	0.0
28-04-2023	22	29.7	68.0	270.0	W	1.2	0.3	0.0	0.0
28-04-2023	23	28.1	70.0	45.0	NE	3.7	1.0	0.0	0.0
28-04-2023	24	26.8	73.0	315.0	NW	15.1	4.2	0.0	0.0
29-04-2023	1	26.6	73.0	315.0	NW	13.0	3.6	0.0	0.0
29-04-2023	2	26.4	73.0	45.0	NE	3.1	0.9	0.0	0.0
29-04-2023	3	26.7	73.0	45.0	NE	5.0	1.4	0.0	0.0
29-04-2023	4	27.1	70.0	45.0	NE	4.3	1.2	0.0	0.0
29-04-2023	5	27.7	70.0	135.0	SE	3.7	1.0	0.0	0.0
29-04-2023	6	28.1	70.0	135.0	SE	10.8	3.0	0.0	0.0
29-04-2023	7	28.7	67.0	135.0	SE	4.0	1.1	0.0	0.0
29-04-2023	8	29.3	64.0	135.0	SE	4.3	1.2	0.0	0.0
29-04-2023	9	30.2	62.0	315.0	NW	3.1	0.9	0.0	0.0
29-04-2023	10	31.8	61.0	315.0	NW	9.0	2.5	0.0	0.0
29-04-2023	11	34.3	56.0	315.0	NW	13.0	3.6	0.0	0.0
29-04-2023	12	36.1	53.0	315.0	NW	14.0	3.9	0.0	0.0
29-04-2023	13	37.7	52.0	315.0	NW	14.4	4.0	0.0	0.0
29-04-2023	14	38.4	51.0	315.0	NW	18.0	5.0	0.0	0.0
29-04-2023	15	39.2	50.0	315.0	NW	23.4	6.5	0.0	0.0
29-04-2023	16	39.7	50.0	315.0	NW	4.3	1.2	0.0	0.0
29-04-2023	17	40.3	50.0	315.0	NW	7.9	2.2	0.0	0.0
29-04-2023	18	39.2	53.0	135.0	SE	10.8	3.0	0.0	0.0
29-04-2023	19	38.3	58.0	135.0	SE	3.6	1.0	0.0	0.0
29-04-2023	20	37.0	62.0	315.0	NW	2.5	0.7	0.0	0.0
29-04-2023	21	33.5	65.0	45.0	NE	1.8	0.5	0.0	0.0
29-04-2023	22	31.1	69.0	327.0	NWN	1.8	0.5	0.0	0.0
29-04-2023	23	28.4	70.0	135.0	SE	1.2	0.3	0.0	0.0
30-04-2023	24	27.0	72.0	328.0	NWN	5.4	1.5	0.0	0.0
30-04-2023	1	26.5	73.0	328.0	NWN	3.1	0.9	0.0	0.0
30-04-2023	2	26.0	74.5	242.0	WSW	1.8	0.5	2.0	0.0
30-04-2023	3	25.5	76.0	242.0	WSW	2.2	0.6	4.0	0.0
30-04-2023	4	25.8	77.2	135.0	SE	10.8	3.0	5.0	0.0
30-04-2023	5	26.4	78.3	328.0	NWN	7.9	2.2	6.0	0.2
30-04-2023	6	26.8	78.8	135.0	SE	7.2	2.0	6.0	0.4
30-04-2023	7	28.0	79.3	120.0	ESE	4.0	1.1	7.0	0.8
30-04-2023	8	29.8	80.1	17.0	NNE	8.6	2.4	7.0	0.3
30-04-2023	9	31.1	78.7	315.0	NW	2.9	0.8	8.0	0.9
30-04-2023	10	33.5	76.3	315.0	NW	10.8	3.0	6.0	0.2
30-04-2023	11	35.9	73.2	315.0	NW	11.7	3.3	4.0	0.0
30-04-2023	12	37.5	69.7	315.0	NW	8.6	2.4	3.0	0.0
30-04-2023	13	38.5	66.4	255.0	WSW	14.4	4.0	0.0	0.0
30-04-2023	14	39.2	63.3	135.0	SE	10.8	3.0	0.0	0.0
30-04-2023	15	39.7	59.2	315.0	NW	14.4	4.0	0.0	0.0
30-04-2023	16	40.2	56.6	315.0	NW	3.6	1.0	0.0	0.0
30-04-2023	17	40.6	53.4	315.0	NW	10.8	3.0	0.0	0.0
30-04-2023	18	39.4	52.3	329.0	NWN	3.6	1.0	0.0	0.0
30-04-2023	19	38.6	54.0	213.0	SSW	10.8	3.0	0.0	0.0
30-04-2023	20	35.7	57.0	270.0	W	3.6	1.0	0.0	0.0
30-04-2023	21	33.2	62.0	270.0	W	3.1	0.9	0.0	0.0
30-04-2023	22	30.7	65.0	270.0	W	2.5	0.7	0.0	0.0
30-04-2023	23	28.2	68.0	315.0	NW	3.7	1.0	0.0	0.0
30-04-2023	24	26.6	71.0	287.0	WNW	3.6	1.0	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
01-05-2023	1	26.4	72.4	315.0	NW	3.3	0.9	0.0	0.0
01-05-2023	2	26.0	74.3	315.0	NW	8.3	2.3	2.0	0.0
01-05-2023	3	25.8	75.6	135.0	SE	1.6	0.4	4.0	0.1
01-05-2023	4	26.2	77.4	135.0	SE	7.2	2.0	5.0	0.3
01-05-2023	5	26.9	78.5	135.0	SE	14.4	4.0	6.0	0.5
01-05-2023	6	27.8	79.2	135.0	SE	11.5	3.2	7.0	0.8
01-05-2023	7	28.6	77.3	135.0	SE	7.9	2.2	7.0	0.4
01-05-2023	8	29.7	73.2	225.0	SW	16.2	4.5	6.0	0.2
01-05-2023	9	31.2	71.1	45.0	NE	11.8	3.3	4.0	0.0
01-05-2023	10	33.2	68.6	45.0	NE	14.4	4.0	2.0	0.0
01-05-2023	11	34.8	65.4	45.0	NE	18.0	5.0	0.0	0.0
01-05-2023	12	36.6	62.3	195.0	SSW	15.1	4.2	0.0	0.0
01-05-2023	13	38.1	59.4	270.0	W	20.2	5.6	0.0	0.0
01-05-2023	14	38.8	56.4	270.0	W	23.0	6.4	0.0	0.0
01-05-2023	15	39.4	52.3	270.0	W	16.9	4.7	0.0	0.0
01-05-2023	16	39.9	49.7	45.0	NE	13.0	3.6	0.0	0.0
01-05-2023	17	40.2	49.0	45.0	NE	15.8	4.4	0.0	0.0
01-05-2023	18	38.3	52.0	135.0	SE	7.9	2.2	0.0	0.0
01-05-2023	19	36.1	55.5	135.0	SE	3.1	0.9	0.0	0.0
01-05-2023	20	33.3	58.7	328.0	NWN	13.0	3.6	0.0	0.0
01-05-2023	21	30.7	63.2	135.0	SE	4.7	1.3	0.0	0.0
01-05-2023	22	28.2	66.5	135.0	SE	0.8	0.2	0.0	0.0
01-05-2023	23	27.0	69.2	328.0	NWN	9.7	2.7	0.0	0.0
01-05-2023	24	26.5	70.2	135.0	SE	16.9	4.7	0.0	0.0
02-05-2023	1	26.0	71.2	328.0	NWN	7.9	2.2	0.0	0.0
02-05-2023	2	25.9	73.2	135.0	SE	3.1	0.9	0.0	0.0
02-05-2023	3	25.5	74.3	65.0	ENE	13.3	3.7	2.0	0.0
02-05-2023	4	24.6	76.2	327.0	NWN	10.8	3.0	3.0	0.0
02-05-2023	5	24.9	75.7	135.0	SE	14.4	4.0	5.0	0.0
02-05-2023	6	26.4	77.0	135.0	SE	10.8	3.0	6.0	0.4
02-05-2023	7	27.9	78.0	270.0	W	7.6	2.1	7.0	0.5
02-05-2023	8	29.6	79.0	270.0	W	9.4	2.6	8.0	1.3
02-05-2023	9	30.5	80.2	315.0	NW	14.4	4.0	8.0	1.6
02-05-2023	10	32.0	81.1	315.0	NW	18.0	5.0	7.0	2.2
02-05-2023	11	34.1	78.7	315.0	NW	21.6	6.0	6.0	0.9
02-05-2023	12	36.2	76.3	315.0	NW	15.8	4.4	4.0	0.1
02-05-2023	13	37.7	74.2	315.0	NW	18.0	5.0	3.0	0.0
02-05-2023	14	39.4	71.4	315.0	NW	16.6	4.6	2.0	0.0
02-05-2023	15	40.1	68.8	315.0	NW	15.8	4.4	0.0	0.0
02-05-2023	16	40.7	66.6	180.0	S	13.3	3.7	0.0	0.0
02-05-2023	17	41.4	65.4	315.0	NW	20.2	5.6	0.0	0.0
02-05-2023	18	39.2	63.7	315.0	NW	14.9	4.1	0.0	0.0
02-05-2023	19	37.7	62.2	90.0	E	14.4	4.0	0.0	0.0
02-05-2023	20	34.6	60.7	135.0	SE	10.8	3.0	0.0	0.0
02-05-2023	21	31.3	58.6	135.0	SE	9.0	2.5	0.0	0.0
02-05-2023	22	28.7	60.0	328.0	NWN	2.4	0.7	0.0	0.0
02-05-2023	23	27.4	66.0	135.0	SE	8.3	2.3	0.0	0.0
02-05-2023	24	27.0	67.0	135.0	SE	4.7	1.3	0.0	0.0
03-05-2023	1	26.7	69.3	315.0	NW	15.1	4.2	0.0	0.0
03-05-2023	2	26.3	71.2	225.0	SW	7.9	2.2	0.0	0.0
03-05-2023	3	25.9	73.3	315.0	NW	5.5	1.5	0.0	0.0
03-05-2023	4	25.6	74.5	315.0	NW	3.1	0.9	0.0	0.0
03-05-2023	5	27.1	76.2	270.0	W	9.4	2.6	0.0	0.0
03-05-2023	6	28.6	77.3	225.0	SW	3.9	1.1	0.0	0.0
03-05-2023	7	29.5	78.7	180.0	S	13.0	3.6	0.0	0.0
03-05-2023	8	30.6	79.3	360.0	N	9.4	2.6	0.0	0.0
03-05-2023	9	31.9	77.6	120.0	ESE	11.0	3.0	0.0	0.0
03-05-2023	10	34.5	74.6	225.0	SW	15.8	4.4	0.0	0.0
03-05-2023	11	37.1	72.2	315.0	NW	13.0	3.6	0.0	0.0
03-05-2023	12	39.5	70.6	315.0	NW	16.2	4.5	0.0	0.0
03-05-2023	13	40.5	67.6	315.0	NW	13.0	3.6	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
03-05-2023	14	41.0	64.3	135.0	SE	18.7	5.2	0.0	0.0
03-05-2023	15	42.0	62.2	315.0	NW	16.9	4.7	0.0	0.0
03-05-2023	16	42.2	60.6	315.0	NW	8.6	2.4	0.0	0.0
03-05-2023	17	42.5	58.6	315.0	NW	13.3	3.7	0.0	0.0
03-05-2023	18	40.1	56.5	135.0	SE	18.0	5.0	0.0	0.0
03-05-2023	19	37.4	54.7	135.0	SE	21.6	6.0	0.0	0.0
03-05-2023	20	34.7	58.2	135.0	SE	18.0	5.0	0.0	0.0
03-05-2023	21	31.8	61.2	270.0	W	14.4	4.0	0.0	0.0
03-05-2023	22	29.6	63.6	135.0	SE	14.4	4.0	0.0	0.0
03-05-2023	23	28.2	66.3	135.0	SE	15.8	4.4	0.0	0.0
04-05-2023	24	27.3	69.6	315.0	NW	18.0	5.0	0.0	0.0
04-05-2023	1	26.6	71.4	315.0	NW	15.8	4.4	0.0	0.0
04-05-2023	2	26.2	73.2	315.0	NW	18.0	5.0	0.0	0.0
04-05-2023	3	25.7	74.7	135.0	SE	13.3	3.7	0.0	0.0
04-05-2023	4	25.4	76.2	135.0	SE	7.9	2.2	0.0	0.0
04-05-2023	5	25.5	77.6	225.0	SW	13.7	3.8	0.0	0.0
04-05-2023	6	27.6	78.6	225.0	SW	16.2	4.5	0.0	0.0
04-05-2023	7	28.9	78.3	135.0	SE	10.8	3.0	0.0	0.0
04-05-2023	8	30.4	75.6	135.0	SE	14.4	4.0	0.0	0.0
04-05-2023	9	32.5	73.2	315.0	NW	18.0	5.0	0.0	0.0
04-05-2023	10	34.1	71.2	315.0	NW	15.8	4.4	0.0	0.0
04-05-2023	11	36.9	68.7	315.0	NW	16.9	4.7	0.0	0.0
04-05-2023	12	38.9	66.5	315.0	NW	15.8	4.4	0.0	0.0
04-05-2023	13	39.6	64.3	315.0	NW	20.2	5.6	0.0	0.0
04-05-2023	14	39.9	62.3	315.0	NW	19.1	5.3	0.0	0.0
04-05-2023	15	40.6	60.2	315.0	NW	23.0	6.4	0.0	0.0
04-05-2023	16	41.3	58.6	315.0	NW	19.1	5.3	0.0	0.0
04-05-2023	17	42.1	56.4	315.0	NW	16.9	4.7	0.0	0.0
04-05-2023	18	40.3	54.6	225.0	SW	13.3	3.7	0.0	0.0
04-05-2023	19	39.4	56.7	90.0	E	15.8	4.4	0.0	0.0
04-05-2023	20	35.7	59.0	315.0	NW	7.9	2.2	0.0	0.0
04-05-2023	21	32.3	63.2	315.0	NW	7.2	2.0	0.0	0.0
04-05-2023	22	29.6	68.0	328.0	NWN	7.9	2.2	0.0	0.0
04-05-2023	23	27.8	69.0	270.0	W	1.6	0.4	0.0	0.0
04-05-2023	24	27.0	71.0	270.0	W	9.4	2.6	0.0	0.0
05-05-2023	1	26.6	72.2	270.0	W	7.9	2.2	0.0	0.0
05-05-2023	2	26.1	73.0	135.0	SE	10.8	3.0	0.0	0.0
05-05-2023	3	25.8	74.4	270.0	W	14.4	4.0	0.0	0.0
05-05-2023	4	25.5	75.2	135.0	SE	1.6	0.4	2.0	0.0
05-05-2023	5	25.0	76.6	135.0	SE	10.1	2.8	3.0	0.0
05-05-2023	6	25.9	77.8	340.0	NWN	14.4	4.0	4.0	0.0
05-05-2023	7	28.4	79.2	333.0	NWN	8.6	2.4	7.0	0.5
05-05-2023	8	30.0	80.2	135.0	SE	13.0	3.6	7.0	0.8
05-05-2023	9	32.9	78.6	270.0	W	16.2	4.5	6.0	0.4
05-05-2023	10	34.6	74.3	315.0	NW	20.2	5.6	6.0	0.2
05-05-2023	11	35.6	71.1	289.0	WNW	18.4	5.1	2.0	0.0
05-05-2023	12	37.2	68.6	315.0	NW	22.7	6.3	0.0	0.0
05-05-2023	13	38.4	65.4	315.0	NW	20.5	5.7	0.0	0.0
05-05-2023	14	39.3	62.2	315.0	NW	16.6	4.6	0.0	0.0
05-05-2023	15	40.4	59.3	225.0	SW	19.8	5.5	0.0	0.0
05-05-2023	16	41.2	55.6	90.0	E	16.9	4.7	0.0	0.0
05-05-2023	17	42.1	52.2	315.0	NW	18.0	5.0	0.0	0.0
05-05-2023	18	40.7	53.0	270.0	W	18.0	5.0	0.0	0.0
05-05-2023	19	37.7	57.0	90.0	E	14.4	4.0	0.0	0.0
05-05-2023	20	35.6	59.0	45.0	NE	13.0	3.6	0.0	0.0
05-05-2023	21	32.6	65.0	45.0	NE	14.4	4.0	0.0	0.0
05-05-2023	22	30.4	68.0	270.0	W	2.4	0.7	0.0	0.0
05-05-2023	23	28.5	69.0	240.0	WSW	4.7	1.3	0.0	0.0
05-05-2023	24	27.6	71.0	255.0	WSW	13.0	3.6	0.0	0.0
06-05-2023	1	27.0	70.0	270.0	W	18.0	5.0	0.0	0.0
06-05-2023	2	27.2	70.0	65.0	ENE	7.9	2.2	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
06-05-2023	3	27.5	69.0	115.0	ESE	15.8	4.4	0.0	0.0
06-05-2023	4	28.3	68.0	225.0	SW	13.7	3.8	0.0	0.0
06-05-2023	5	28.8	68.0	315.0	NW	10.8	3.0	0.0	0.0
06-05-2023	6	29.4	64.0	315.0	NW	14.4	4.0	0.0	0.0
06-05-2023	7	30.2	62.0	315.0	NW	9.4	2.6	0.0	0.0
06-05-2023	8	31.3	60.0	327.0	NWN	11.9	3.3	0.0	0.0
06-05-2023	9	32.5	58.0	315.0	NW	11.0	3.0	0.0	0.0
06-05-2023	10	34.9	55.0	315.0	NW	15.5	4.3	0.0	0.0
06-05-2023	11	37.0	54.0	315.0	NW	15.1	4.2	0.0	0.0
06-05-2023	12	38.6	52.0	315.0	NW	14.4	4.0	0.0	0.0
06-05-2023	13	39.5	53.0	315.0	NW	13.3	3.7	0.0	0.0
06-05-2023	14	40.6	51.0	315.0	NW	15.1	4.2	0.0	0.0
06-05-2023	15	41.0	50.0	315.0	NW	18.0	5.0	0.0	0.0
06-05-2023	16	41.1	50.0	315.0	NW	17.3	4.8	0.0	0.0
06-05-2023	17	40.5	49.0	315.0	NW	20.2	5.6	0.0	0.0
06-05-2023	18	38.0	52.0	270.0	W	16.9	4.7	0.0	0.0
06-05-2023	19	36.0	55.0	270.0	W	13.3	3.7	0.0	0.0
06-05-2023	20	33.5	59.0	116.0	ESE	15.1	4.2	0.0	0.0
06-05-2023	21	30.1	62.0	225.0	SW	1.6	0.4	0.0	0.0
06-05-2023	22	28.6	67.0	225.0	SW	3.6	1.0	0.0	0.0
06-05-2023	23	27.1	69.0	225.0	SW	10.8	3.0	0.0	0.0
06-05-2023	24	26.5	70.0	225.0	SW	0.8	0.2	0.0	0.0
07-05-2023	1	26.0	71.0	225.0	SW	14.4	4.0	0.0	0.0
07-05-2023	2	25.5	71.0	155.0	SES	3.1	0.9	0.0	0.0
07-05-2023	3	25.2	70.0	165.0	SES	7.9	2.2	0.0	0.0
07-05-2023	4	25.0	69.0	45.0	NE	13.3	3.7	0.0	0.0
07-05-2023	5	25.1	68.0	315.0	NW	13.0	3.6	0.0	0.0
07-05-2023	6	26.4	66.0	270.0	W	15.5	4.3	0.0	0.0
07-05-2023	7	27.9	60.0	270.0	W	18.0	5.0	0.0	0.0
07-05-2023	8	29.6	58.0	328.0	NWN	8.6	2.4	0.0	0.0
07-05-2023	9	31.2	57.0	315.0	NW	14.4	4.0	0.0	0.0
07-05-2023	10	33.5	53.0	315.0	NW	13.0	3.6	0.0	0.0
07-05-2023	11	35.6	52.0	290.0	WNW	16.2	4.5	0.0	0.0
07-05-2023	12	37.9	52.0	135.0	SE	19.8	5.5	0.0	0.0
07-05-2023	13	39.5	53.0	15.0	NNE	15.8	4.4	0.0	0.0
07-05-2023	14	40.1	51.0	20.0	NNE	23.8	6.6	0.0	0.0
07-05-2023	15	41.2	50.0	315.0	NW	20.3	5.6	0.0	0.0
07-05-2023	16	42.7	50.0	315.0	NW	20.5	5.7	0.0	0.0
07-05-2023	17	42.2	50.0	270.0	W	15.1	4.2	0.0	0.0
07-05-2023	18	40.0	53.0	328.0	NWN	18.7	5.2	0.0	0.0
07-05-2023	19	37.5	56.0	135.0	SE	14.4	4.0	0.0	0.0
07-05-2023	20	34.5	59.0	329.0	NWN	11.8	3.3	0.0	0.0
07-05-2023	21	31.0	63.0	225.0	SW	7.8	2.2	0.0	0.0
07-05-2023	22	29.0	68.0	328.0	NWN	16.2	4.5	0.0	0.0
07-05-2023	23	27.5	69.0	135.0	SE	5.0	1.4	0.0	0.0
07-05-2023	24	26.9	70.0	327.0	NWN	1.6	0.4	0.0	0.0
08-05-2023	1	26.6	71.0	270.0	W	3.9	1.1	0.0	0.0
08-05-2023	2	26.2	72.0	328.0	NWN	9.4	2.6	0.0	0.0
08-05-2023	3	25.9	73.4	135.0	SE	11.9	3.3	0.0	0.0
08-05-2023	4	25.6	74.0	135.0	SE	9.7	2.7	2.0	0.0
08-05-2023	5	25.6	76.3	135.0	SE	16.9	4.7	4.0	0.2
08-05-2023	6	27.1	75.0	135.0	SE	11.9	3.3	5.0	0.1
08-05-2023	7	28.4	73.2	135.0	SE	5.5	1.5	6.0	0.3
08-05-2023	8	29.9	71.1	90.0	E	12.5	3.5	4.0	0.0
08-05-2023	9	31.2	68.6	25.0	NNE	3.1	0.9	2.0	0.0
08-05-2023	10	32.9	65.6	180.0	S	18.0	5.0	0.0	0.0
08-05-2023	11	35.0	63.7	180.0	S	14.9	4.1	0.0	0.0
08-05-2023	12	36.9	62.4	180.0	S	10.2	2.8	0.0	0.0
08-05-2023	13	38.6	61.2	360.0	N	11.0	3.0	0.0	0.0
08-05-2023	14	39.2	58.9	210.0	SSW	9.4	2.6	0.0	0.0
08-05-2023	15	39.4	58.2	315.0	NW	16.9	4.7	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
08-05-2023	16	39.5	56.3	315.0	NW	8.6	2.4	0.0	0.0
08-05-2023	17	39.5	54.2	315.0	NW	14.4	4.0	0.0	0.0
08-05-2023	18	39.0	53.0	328.0	NWN	18.0	5.0	0.0	0.0
08-05-2023	19	37.0	56.0	135.0	SE	21.6	6.0	0.0	0.0
08-05-2023	20	34.0	59.0	290.0	WNW	17.3	4.8	0.0	0.0
08-05-2023	21	31.6	64.0	135.0	SE	14.8	4.1	0.0	0.0
08-05-2023	22	29.2	68.0	315.0	NW	12.2	3.4	0.0	0.0
08-05-2023	23	27.6	69.0	328.0	NWN	11.2	3.1	0.0	0.0
08-05-2023	24	26.6	71.0	135.0	SE	1.6	0.4	0.0	0.0
09-05-2023	1	26.2	73.0	135.0	SE	9.4	2.6	0.0	0.0
09-05-2023	2	25.6	74.5	270.0	W	3.9	1.1	0.0	0.0
09-05-2023	3	25.1	75.2	242.0	WSW	11.9	3.3	0.0	0.0
09-05-2023	4	24.9	73.1	270.0	W	9.7	2.7	0.0	0.0
09-05-2023	5	25.2	71.3	135.0	SE	7.9	2.2	0.0	0.0
09-05-2023	6	26.5	69.3	135.0	SE	13.3	3.7	0.0	0.0
09-05-2023	7	27.9	66.0	301.0	WNW	9.0	2.5	0.0	0.0
09-05-2023	8	29.5	63.1	135.0	SE	20.2	5.6	0.0	0.0
09-05-2023	9	30.6	61.2	315.0	NW	17.4	4.8	0.0	0.0
09-05-2023	10	33.2	58.6	20.0	NNE	15.6	4.3	0.0	0.0
09-05-2023	11	35.9	54.4	115.0	ESE	12.2	3.4	0.0	0.0
09-05-2023	12	37.7	52.0	225.0	SW	17.3	4.8	0.0	0.0
09-05-2023	13	39.2	53.0	315.0	NW	18.0	5.0	0.0	0.0
09-05-2023	14	39.8	53.0	315.0	NW	16.9	4.7	0.0	0.0
09-05-2023	15	40.4	50.0	315.0	NW	21.6	6.0	0.0	0.0
09-05-2023	16	41.3	49.0	315.0	NW	18.0	5.0	0.0	0.0
09-05-2023	17	41.8	50.0	315.0	NW	23.8	6.6	0.0	0.0
09-05-2023	18	40.1	53.0	238.0	WSW	19.1	5.3	0.0	0.0
09-05-2023	19	38.4	57.0	180.0	S	15.1	4.2	0.0	0.0
09-05-2023	20	36.1	61.0	330.0	NWN	1.6	0.4	0.0	0.0
09-05-2023	21	33.7	62.0	270.0	W	8.6	2.4	0.0	0.0
09-05-2023	22	31.2	66.0	135.0	SE	20.2	5.6	0.0	0.0
09-05-2023	23	28.5	67.0	135.0	SE	13.7	3.8	0.0	0.0
09-05-2023	24	27.4	70.0	330.0	NWN	9.7	2.7	0.0	0.0
10-05-2023	1	27.1	72.1	315.0	NW	2.2	0.6	0.0	0.0
10-05-2023	2	26.9	74.5	285.0	WNW	5.4	1.5	0.0	0.0
10-05-2023	3	26.5	76.7	315.0	NW	1.6	0.4	0.0	0.0
10-05-2023	4	26.2	73.2	315.0	NW	8.3	2.3	0.0	0.0
10-05-2023	5	26.1	71.0	135.0	SE	11.9	3.3	0.0	0.0
10-05-2023	6	27.2	68.7	135.0	SE	7.9	2.2	0.0	0.0
10-05-2023	7	28.5	64.5	270.0	W	17.3	4.8	0.0	0.0
10-05-2023	8	29.6	61.4	270.0	W	13.3	3.7	0.0	0.0
10-05-2023	9	31.4	58.6	315.0	NW	13.0	3.6	0.0	0.0
10-05-2023	10	34.1	56.5	315.0	NW	8.6	2.4	0.0	0.0
10-05-2023	11	36.3	54.5	315.0	NW	9.4	2.6	0.0	0.0
10-05-2023	12	37.8	52.1	315.0	NW	14.1	3.9	0.0	0.0
10-05-2023	13	39.6	50.9	315.0	NW	18.0	5.0	0.0	0.0
10-05-2023	14	41.1	49.5	315.0	NW	16.9	4.7	0.0	0.0
10-05-2023	15	41.8	48.6	315.0	NW	19.1	5.3	0.0	0.0
10-05-2023	16	42.2	48.2	270.0	W	19.8	5.5	0.0	0.0
10-05-2023	17	41.6	47.7	315.0	NW	18.0	5.0	0.0	0.0
10-05-2023	18	39.1	48.8	315.0	NW	14.4	4.0	0.0	0.0
10-05-2023	19	37.5	50.0	135.0	SE	14.4	4.0	0.0	0.0
10-05-2023	20	34.1	55.0	135.0	SE	8.6	2.4	0.0	0.0
10-05-2023	21	31.6	58.0	315.0	NW	10.8	3.0	0.0	0.0
10-05-2023	22	29.1	63.0	315.0	NW	1.6	0.4	0.0	0.0
10-05-2023	23	28.0	66.0	289.0	WNW	3.6	1.0	0.0	0.0
10-05-2023	24	26.8	68.0	225.0	SW	3.6	1.0	0.0	0.0
11-05-2023	1	26.6	69.0	270.0	W	8.6	2.4	0.0	0.0
11-05-2023	2	26.1	70.0	135.0	SE	14.4	4.0	0.0	0.0
11-05-2023	3	25.9	70.0	135.0	SE	3.6	1.0	0.0	0.0
11-05-2023	4	25.5	69.0	270.0	W	3.6	1.0	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
11-05-2023	5	25.6	68.0	135.0	SE	7.9	2.2	0.0	0.0
11-05-2023	6	26.9	66.0	270.0	W	12.6	3.5	0.0	0.0
11-05-2023	7	28.4	60.0	303.0	WNW	14.4	4.0	0.0	0.0
11-05-2023	8	29.9	59.0	135.0	SE	18.1	5.0	0.0	0.0
11-05-2023	9	31.4	57.0	135.0	SE	12.9	3.6	0.0	0.0
11-05-2023	10	33.9	54.0	135.0	SE	14.9	4.1	0.0	0.0
11-05-2023	11	36.5	53.0	327.0	NWN	24.1	6.7	0.0	0.0
11-05-2023	12	38.1	52.0	290.0	WNW	18.0	5.0	0.0	0.0
11-05-2023	13	39.4	53.0	315.0	NW	23.4	6.5	0.0	0.0
11-05-2023	14	40.0	51.0	315.0	NW	21.6	6.0	0.0	0.0
11-05-2023	15	40.9	50.0	315.0	NW	17.6	4.9	0.0	0.0
11-05-2023	16	41.0	50.0	270.0	W	19.8	5.5	0.0	0.0
11-05-2023	17	41.0	50.0	315.0	NW	18.0	5.0	0.0	0.0
11-05-2023	18	39.1	53.0	135.0	SE	17.2	4.8	0.0	0.0
11-05-2023	19	36.9	56.0	135.0	SE	14.8	4.1	0.0	0.0
11-05-2023	20	34.5	59.0	327.0	NWN	11.5	3.2	0.0	0.0
11-05-2023	21	31.0	63.0	328.0	NWN	1.6	0.4	0.0	0.0
11-05-2023	22	29.5	68.0	344.0	NWN	8.6	2.4	0.0	0.0
11-05-2023	23	28.4	69.0	345.0	NWN	13.3	3.7	0.0	0.0
11-05-2023	24	27.6	70.0	135.0	SE	3.6	1.0	0.0	0.0
12-05-2023	1	27.2	70.0	135.0	SE	7.9	2.2	0.0	0.0
12-05-2023	2	26.9	71.0	270.0	W	11.5	3.2	0.0	0.0
12-05-2023	3	26.5	72.0	270.0	W	1.6	0.4	0.0	0.0
12-05-2023	4	26.1	74.4	135.0	SE	8.6	2.4	2.0	0.0
12-05-2023	5	26.2	76.2	135.0	SE	10.8	3.0	2.0	0.0
12-05-2023	6	27.4	77.3	330.0	NWN	11.9	3.3	4.0	0.0
12-05-2023	7	29.0	78.7	345.0	NWN	11.5	3.2	5.0	0.2
12-05-2023	8	30.1	78.2	135.0	SE	8.6	2.4	6.0	0.3
12-05-2023	9	32.0	75.6	315.0	NW	11.8	3.3	5.0	0.4
12-05-2023	10	33.7	71.2	315.0	NW	15.8	4.4	4.0	0.0
12-05-2023	11	35.1	68.6	315.0	NW	19.8	5.5	2.0	0.0
12-05-2023	12	36.5	64.3	315.0	NW	17.0	4.7	0.0	0.0
12-05-2023	13	37.3	61.2	315.0	NW	18.0	5.0	0.0	0.0
12-05-2023	14	38.4	59.0	315.0	NW	21.6	6.0	0.0	0.0
12-05-2023	15	39.7	59.0	315.0	NW	18.7	5.2	0.0	0.0
12-05-2023	16	40.4	62.5	315.0	NW	13.3	3.7	0.0	0.0
12-05-2023	17	41.0	64.0	315.0	NW	17.2	4.8	0.0	0.0
12-05-2023	18	39.0	65.5	135.0	SE	7.8	2.2	0.0	0.0
12-05-2023	19	36.5	66.7	328.0	NWN	14.4	4.0	0.0	0.0
12-05-2023	20	34.0	67.4	330.0	NWN	8.3	2.3	0.0	0.0
12-05-2023	21	31.2	68.2	315.0	NW	1.6	0.4	0.0	0.0
12-05-2023	22	29.0	69.4	135.0	SE	11.8	3.3	0.0	0.0
12-05-2023	23	27.5	70.2	328.0	NWN	3.9	1.1	0.0	0.0
12-05-2023	24	27.0	70.7	315.0	NW	14.4	4.0	0.0	0.0
13-05-2023	1	26.6	71.0	31.0	NNE	1.6	0.4	0.0	0.0
13-05-2023	2	26.4	72.2	31.0	NNE	18.0	5.0	0.0	0.0
13-05-2023	3	26.5	73.0	315.0	NW	9.0	2.5	0.0	0.0
13-05-2023	4	26.7	71.1	135.0	SE	0.8	0.2	0.0	0.0
13-05-2023	5	27.2	69.3	135.0	SE	8.6	2.4	0.0	0.0
13-05-2023	6	27.7	67.7	135.0	SE	14.4	4.0	0.0	0.0
13-05-2023	7	28.4	66.6	135.0	SE	10.8	3.0	0.0	0.0
13-05-2023	8	29.6	64.0	135.0	SE	14.4	4.0	0.0	0.0
13-05-2023	9	31.1	63.0	315.0	NW	18.0	5.0	0.0	0.0
13-05-2023	10	33.0	62.0	45.0	NE	18.0	5.0	0.0	0.0
13-05-2023	11	34.4	56.0	315.0	NW	23.8	6.6	0.0	0.0
13-05-2023	12	36.5	55.0	90.0	E	18.0	5.0	0.0	0.0
13-05-2023	13	38.0	54.0	180.0	S	18.0	5.0	0.0	0.0
13-05-2023	14	39.6	53.0	90.0	E	21.6	6.0	0.0	0.0
13-05-2023	15	41.1	51.0	90.0	E	16.2	4.5	0.0	0.0
13-05-2023	16	42.1	50.0	180.0	S	18.7	5.2	0.0	0.0
13-05-2023	17	42.8	50.0	180.0	S	16.6	4.6	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
13-05-2023	18	39.6	53.0	45.0	NE	13.0	3.6	0.0	0.0
13-05-2023	19	37.4	56.0	45.0	NE	11.9	3.3	0.0	0.0
13-05-2023	20	34.5	59.0	23.0	NNE	0.9	0.3	0.0	0.0
13-05-2023	21	31.0	63.0	360.0	N	12.6	3.5	0.0	0.0
13-05-2023	22	29.0	68.0	120.0	ESE	11.5	3.2	0.0	0.0
13-05-2023	23	27.5	66.0	315.0	NW	12.6	3.5	0.0	0.0
13-05-2023	24	26.8	69.0	225.0	SW	1.8	0.5	0.0	0.0
14-05-2023	1	26.5	70.0	225.0	SW	3.6	1.0	0.0	0.0
14-05-2023	2	26.1	71.0	315.0	NW	14.4	4.0	0.0	0.0
14-05-2023	3	25.6	71.0	315.0	NW	9.0	2.5	0.0	0.0
14-05-2023	4	25.4	69.0	315.0	NW	12.6	3.5	0.0	0.0
14-05-2023	5	25.5	68.0	315.0	NW	20.5	5.7	0.0	0.0
14-05-2023	6	26.6	66.0	156.0	SES	22.7	6.3	0.0	0.0
14-05-2023	7	27.9	60.0	45.0	NE	8.3	2.3	0.0	0.0
14-05-2023	8	29.5	58.0	315.0	NW	16.2	4.5	0.0	0.0
14-05-2023	9	30.9	57.0	90.0	E	18.0	5.0	0.0	0.0
14-05-2023	10	33.5	53.0	45.0	NE	9.0	2.5	0.0	0.0
14-05-2023	11	36.0	53.0	270.0	W	14.4	4.0	0.0	0.0
14-05-2023	12	37.9	55.0	315.0	NW	20.2	5.6	0.0	0.0
14-05-2023	13	39.5	57.0	315.0	NW	18.0	5.0	0.0	0.0
14-05-2023	14	41.1	59.0	225.0	SW	17.6	4.9	0.0	0.0
14-05-2023	15	42.4	61.0	225.0	SW	18.0	5.0	0.0	0.0
14-05-2023	16	43.1	64.0	315.0	NW	14.4	4.0	0.0	0.0
14-05-2023	17	42.2	66.0	225.0	SW	7.8	2.2	0.0	0.0
14-05-2023	18	39.6	67.0	135.0	SE	8.3	2.3	0.0	0.0
14-05-2023	19	38.1	69.0	135.0	SE	11.9	3.3	0.0	0.0
14-05-2023	20	35.5	70.1	270.0	W	14.4	4.0	0.0	0.0
14-05-2023	21	32.0	70.7	225.0	SW	14.4	4.0	0.0	0.0
14-05-2023	22	29.0	71.4	121.0	ESE	1.6	0.4	0.0	0.0
14-05-2023	23	27.6	72.2	45.0	NE	8.6	2.4	0.0	0.0
14-05-2023	24	27.2	73.2	315.0	NW	12.6	3.5	0.0	0.0
15-05-2023	1	27.0	71.4	327.0	NWN	9.4	2.6	0.0	0.0
15-05-2023	2	26.8	70.6	135.0	SE	3.9	1.1	0.0	0.0
15-05-2023	3	26.7	69.5	135.0	SE	10.6	2.9	0.0	0.0
15-05-2023	4	27.1	72.0	135.0	SE	4.2	1.2	0.0	0.0
15-05-2023	5	27.6	73.0	315.0	NW	15.3	4.3	0.0	0.0
15-05-2023	6	28.3	74.0	210.0	SSW	19.0	5.3	2.0	0.0
15-05-2023	7	29.2	75.0	315.0	NW	14.8	4.1	2.0	0.0
15-05-2023	8	29.8	76.0	135.0	SE	10.0	2.8	4.0	0.0
15-05-2023	9	31.5	77.0	315.0	NW	15.6	4.3	5.0	0.2
15-05-2023	10	32.5	77.6	315.0	NW	13.3	3.7	5.0	0.3
15-05-2023	11	35.0	75.4	315.0	NW	17.0	4.7	6.0	0.4
15-05-2023	12	36.9	73.2	315.0	NW	15.1	4.2	4.0	0.0
15-05-2023	13	38.5	71.0	315.0	NW	18.0	5.0	2.0	0.0
15-05-2023	14	39.6	68.6	270.0	W	21.6	6.0	0.0	0.0
15-05-2023	15	40.5	64.4	315.0	NW	18.0	5.0	0.0	0.0
15-05-2023	16	42.1	61.2	270.0	W	18.0	5.0	0.0	0.0
15-05-2023	17	42.4	58.4	270.0	W	18.0	5.0	0.0	0.0
15-05-2023	18	40.2	56.0	270.0	W	21.6	6.0	0.0	0.0
15-05-2023	19	37.6	56.0	270.0	W	25.2	7.0	0.0	0.0
15-05-2023	20	34.5	59.0	327.0	NWN	27.7	7.7	0.0	0.0
15-05-2023	21	31.0	63.0	135.0	SE	24.1	6.7	0.0	0.0
15-05-2023	22	29.0	68.0	135.0	SE	20.2	5.6	0.0	0.0
15-05-2023	23	28.1	70.0	135.0	SE	15.8	4.4	0.0	0.0
15-05-2023	24	26.9	70.0	135.0	SE	11.9	3.3	0.0	0.0
16-05-2023	1	26.6	70.0	15.0	NNE	10.8	3.0	0.0	0.0
16-05-2023	2	26.0	70.0	16.0	NNE	2.4	0.7	0.0	0.0
16-05-2023	3	25.6	71.0	19.0	NNE	14.4	4.0	0.0	0.0
16-05-2023	4	25.4	70.0	25.0	NNE	13.3	3.7	0.0	0.0
16-05-2023	5	25.5	68.0	270.0	W	14.4	4.0	0.0	0.0
16-05-2023	6	26.9	66.0	45.0	NE	21.6	6.0	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
16-05-2023	7	28.6	60.0	135.0	SE	15.5	4.3	0.0	0.0
16-05-2023	8	30.1	59.0	135.0	SE	16.2	4.5	0.0	0.0
16-05-2023	9	32.2	58.0	315.0	NW	21.6	6.0	0.0	0.0
16-05-2023	10	34.5	54.0	315.0	NW	18.0	5.0	0.0	0.0
16-05-2023	11	36.0	53.0	315.0	NW	21.6	6.0	0.0	0.0
16-05-2023	12	37.5	51.0	90.0	E	18.0	5.0	0.0	0.0
16-05-2023	13	38.9	53.0	290.0	WNW	17.0	4.7	0.0	0.0
16-05-2023	14	39.9	51.0	290.0	WNW	21.6	6.0	0.0	0.0
16-05-2023	15	40.4	49.0	315.0	NW	22.0	6.1	0.0	0.0
16-05-2023	16	41.0	48.0	315.0	NW	24.1	6.7	0.0	0.0
16-05-2023	17	40.6	47.8	315.0	NW	20.9	5.8	0.0	0.0
16-05-2023	18	39.8	49.0	135.0	SE	19.1	5.3	0.0	0.0
16-05-2023	19	37.6	51.0	90.0	E	16.6	4.6	0.0	0.0
16-05-2023	20	35.1	54.0	135.0	SE	14.8	4.1	0.0	0.0
16-05-2023	21	32.0	58.0	329.0	NWN	14.0	3.9	0.0	0.0
16-05-2023	22	30.0	62.0	135.0	SE	11.9	3.3	0.0	0.0
16-05-2023	23	28.5	64.0	270.0	W	14.4	4.0	0.0	0.0
16-05-2023	24	27.6	66.0	303.0	WNW	9.7	2.7	0.0	0.0
17-05-2023	1	27.0	67.5	242.0	WSW	2.4	0.7	0.0	0.0
17-05-2023	2	26.6	69.2	301.0	WNW	11.2	3.1	0.0	0.0
17-05-2023	3	26.4	70.6	135.0	SE	1.6	0.4	0.0	0.0
17-05-2023	4	26.5	72.1	135.0	SE	18.0	5.0	0.0	0.0
17-05-2023	5	27.4	73.4	270.0	W	19.1	5.3	0.0	0.0
17-05-2023	6	28.7	75.2	270.0	W	9.4	2.6	2.0	0.0
17-05-2023	7	28.9	76.6	328.0	NWN	10.8	3.0	4.0	0.0
17-05-2023	8	29.4	78.7	135.0	SE	14.4	4.0	5.0	0.2
17-05-2023	9	31.4	79.4	315.0	NW	18.0	5.0	6.0	0.4
17-05-2023	10	32.6	80.5	315.0	NW	21.6	6.0	7.0	1.1
17-05-2023	11	34.0	82.3	315.0	NW	18.0	5.0	8.0	2.7
17-05-2023	12	35.4	81.2	210.0	SSW	19.1	5.3	8.0	1.4
17-05-2023	13	37.1	80.3	270.0	W	16.9	4.7	7.0	0.9
17-05-2023	14	38.3	79.2	270.0	W	20.2	5.6	6.0	0.4
17-05-2023	15	39.4	77.8	240.0	WSW	23.4	6.5	6.0	0.2
17-05-2023	16	40.6	75.6	315.0	NW	16.9	4.7	4.0	0.0
17-05-2023	17	41.7	73.2	315.0	NW	15.1	4.2	3.0	0.0
17-05-2023	18	40.1	70.6	135.0	SE	13.3	3.7	2.0	0.0
17-05-2023	19	39.0	68.6	90.0	E	11.5	3.2	0.0	0.0
17-05-2023	20	37.1	65.6	225.0	SW	15.8	4.4	0.0	0.0
17-05-2023	21	34.1	64.5	225.0	SW	6.1	1.7	0.0	0.0
17-05-2023	22	31.5	69.0	135.0	SE	1.6	0.4	0.0	0.0
17-05-2023	23	29.4	71.0	135.0	SE	14.4	4.0	0.0	0.0
17-05-2023	24	27.9	71.0	290.0	WNW	10.4	2.9	0.0	0.0
18-05-2023	1	27.7	71.0	288.0	WNW	13.0	3.6	0.0	0.0
18-05-2023	2	27.5	71.0	287.0	WNW	9.0	2.5	0.0	0.0
18-05-2023	3	27.6	71.0	287.0	WNW	11.2	3.1	0.0	0.0
18-05-2023	4	27.9	70.0	289.0	WNW	1.6	0.4	0.0	0.0
18-05-2023	5	28.4	70.0	135.0	SE	9.4	2.6	0.0	0.0
18-05-2023	6	29.6	68.0	135.0	SE	11.2	3.1	0.0	0.0
18-05-2023	7	30.3	65.0	360.0	N	9.0	2.5	0.0	0.0
18-05-2023	8	31.1	63.0	135.0	SE	12.5	3.5	0.0	0.0
18-05-2023	9	32.2	61.0	327.0	NWN	17.6	4.9	0.0	0.0
18-05-2023	10	33.1	59.0	315.0	NW	18.0	5.0	0.0	0.0
18-05-2023	11	34.5	54.0	315.0	NW	18.0	5.0	0.0	0.0
18-05-2023	12	36.0	53.0	315.0	NW	14.4	4.0	0.0	0.0
18-05-2023	13	37.9	52.0	315.0	NW	16.2	4.5	0.0	0.0
18-05-2023	14	39.8	51.0	315.0	NW	13.0	3.6	0.0	0.0
18-05-2023	15	40.5	50.7	315.0	NW	14.4	4.0	0.0	0.0
18-05-2023	16	41.1	52.0	315.0	NW	18.0	5.0	0.0	0.0
18-05-2023	17	41.4	52.0	315.0	NW	18.0	5.0	0.0	0.0
18-05-2023	18	40.2	56.0	345.0	NWN	14.4	4.0	0.0	0.0
18-05-2023	19	38.0	54.0	330.0	NWN	9.7	2.7	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
18-05-2023	20	35.6	55.0	225.0	SW	14.4	4.0	0.0	0.0
18-05-2023	21	32.5	58.0	45.0	NE	18.0	5.0	0.0	0.0
18-05-2023	22	30.0	62.0	315.0	NW	1.6	0.4	0.0	0.0
18-05-2023	23	28.0	70.0	315.0	NW	18.0	5.0	0.0	0.0
18-05-2023	24	26.9	70.0	315.0	NW	14.4	4.0	0.0	0.0
19-05-2023	1	26.6	70.0	290.0	WNW	19.8	5.5	0.0	0.0
19-05-2023	2	26.4	71.0	135.0	SE	3.9	1.1	0.0	0.0
19-05-2023	3	26.1	72.5	135.0	SE	15.8	4.4	0.0	0.0
19-05-2023	4	26.0	74.0	110.0	ESE	24.1	6.7	2.0	0.0
19-05-2023	5	26.4	75.6	115.0	ESE	20.2	5.6	2.0	0.0
19-05-2023	6	27.8	77.0	160.0	SES	13.8	3.8	4.0	0.1
19-05-2023	7	29.4	74.3	155.0	SES	15.1	4.2	5.0	0.3
19-05-2023	8	31.2	72.2	168.0	SES	8.6	2.4	4.0	0.0
19-05-2023	9	33.5	69.4	45.0	NE	15.5	4.3	3.0	0.0
19-05-2023	10	35.0	66.6	270.0	W	17.2	4.8	2.0	0.0
19-05-2023	11	36.9	63.3	240.0	WSW	22.7	6.3	0.0	0.0
19-05-2023	12	38.5	59.2	250.0	WSW	18.0	5.0	0.0	0.0
19-05-2023	13	40.2	56.3	315.0	NW	21.6	6.0	0.0	0.0
19-05-2023	14	41.0	53.2	315.0	NW	19.4	5.4	0.0	0.0
19-05-2023	15	42.5	55.0	315.0	NW	14.0	3.9	0.0	0.0
19-05-2023	16	42.4	55.0	315.0	NW	16.2	4.5	0.0	0.0
19-05-2023	17	42.2	57.0	180.0	S	12.5	3.5	0.0	0.0
19-05-2023	18	40.6	61.0	135.0	SE	17.6	4.9	0.0	0.0
19-05-2023	19	38.0	64.0	90.0	E	18.0	5.0	0.0	0.0
19-05-2023	20	35.0	69.0	238.0	WSW	1.6	0.4	0.0	0.0
19-05-2023	21	31.5	68.0	270.0	W	8.6	2.4	0.0	0.0
19-05-2023	22	29.6	69.0	270.0	W	19.4	5.4	0.0	0.0
19-05-2023	23	28.5	71.0	301.0	WNW	10.8	3.0	0.0	0.0
19-05-2023	24	27.2	70.0	338.0	NWN	9.7	2.7	0.0	0.0
20-05-2023	1	26.6	69.0	270.0	W	10.8	3.0	0.0	0.0
20-05-2023	2	26.0	68.0	135.0	SE	7.9	2.2	0.0	0.0
20-05-2023	3	25.6	70.0	135.0	SE	1.6	0.4	0.0	0.0
20-05-2023	4	25.1	71.0	360.0	N	15.8	4.4	0.0	0.0
20-05-2023	5	25.2	71.0	225.0	SW	16.2	4.5	0.0	0.0
20-05-2023	6	26.6	70.0	168.0	SES	21.6	6.0	0.0	0.0
20-05-2023	7	27.9	69.0	45.0	NE	19.8	5.5	0.0	0.0
20-05-2023	8	29.5	68.0	45.0	NE	11.0	3.0	0.0	0.0
20-05-2023	9	32.4	64.0	315.0	NW	12.6	3.5	0.0	0.0
20-05-2023	10	34.5	59.0	315.0	NW	21.6	6.0	0.0	0.0
20-05-2023	11	36.9	56.0	315.0	NW	20.2	5.6	0.0	0.0
20-05-2023	12	39.1	56.0	90.0	E	16.9	4.7	0.0	0.0
20-05-2023	13	40.4	53.0	315.0	NW	16.2	4.5	0.0	0.0
20-05-2023	14	41.7	52.0	315.0	NW	21.6	6.0	0.0	0.0
20-05-2023	15	42.3	51.0	315.0	NW	18.7	5.2	0.0	0.0
20-05-2023	16	42.7	51.0	315.0	NW	17.6	4.9	0.0	0.0
20-05-2023	17	41.8	51.0	315.0	NW	15.8	4.4	0.0	0.0
20-05-2023	18	39.2	52.0	135.0	SE	11.8	3.3	0.0	0.0
20-05-2023	19	37.8	52.0	45.0	NE	13.3	3.7	0.0	0.0
20-05-2023	20	35.6	55.0	135.0	SE	4.7	1.3	0.0	0.0
20-05-2023	21	32.4	58.0	135.0	SE	18.0	5.0	0.0	0.0
20-05-2023	22	30.8	62.0	135.0	SE	1.6	0.4	0.0	0.0
20-05-2023	23	28.4	64.0	270.0	W	5.8	1.6	0.0	0.0
20-05-2023	24	26.8	66.0	45.0	NE	7.9	2.2	0.0	0.0
21-05-2023	1	25.7	69.0	45.0	NE	10.8	3.0	0.0	0.0
21-05-2023	2	24.4	69.0	256.0	WSW	14.4	4.0	0.0	0.0
21-05-2023	3	23.6	70.0	270.0	W	3.9	1.1	0.0	0.0
21-05-2023	4	23.1	70.0	315.0	NW	1.6	0.4	0.0	0.0
21-05-2023	5	22.2	71.0	315.0	NW	9.0	2.5	0.0	0.0
21-05-2023	6	23.8	71.0	15.0	NNE	13.3	3.7	0.0	0.0
21-05-2023	7	25.4	71.0	180.0	S	9.4	2.6	0.0	0.0
21-05-2023	8	27.8	71.0	315.0	NW	12.5	3.5	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
21-05-2023	9	30.2	66.0	315.0	NW	2.5	0.7	0.0	0.0
21-05-2023	10	32.1	62.0	315.0	NW	11.5	3.2	0.0	0.0
21-05-2023	11	33.8	61.0	315.0	NW	11.2	3.1	0.0	0.0
21-05-2023	12	36.2	58.0	270.0	W	16.6	4.6	0.0	0.0
21-05-2023	13	38.3	53.0	315.0	NW	23.0	6.4	0.0	0.0
21-05-2023	14	39.6	52.2	315.0	NW	20.9	5.8	0.0	0.0
21-05-2023	15	41.1	50.7	315.0	NW	16.6	4.6	0.0	0.0
21-05-2023	16	42.4	53.0	315.0	NW	13.7	3.8	0.0	0.0
21-05-2023	17	43.1	56.0	315.0	NW	16.2	4.5	0.0	0.0
21-05-2023	18	40.8	58.0	135.0	SE	18.0	5.0	0.0	0.0
21-05-2023	19	38.3	61.0	289.0	WNW	15.8	4.4	0.0	0.0
21-05-2023	20	35.6	62.0	135.0	SE	15.1	4.2	0.0	0.0
21-05-2023	21	32.2	64.0	315.0	NW	1.6	0.4	0.0	0.0
21-05-2023	22	29.5	68.0	256.0	WSW	14.4	4.0	0.0	0.0
21-05-2023	23	28.0	70.0	255.0	WSW	18.0	5.0	0.0	0.0
21-05-2023	24	26.6	71.0	255.0	WSW	1.6	0.4	0.0	0.0
22-05-2023	1	26.4	72.3	270.0	W	18.0	5.0	0.0	0.0
22-05-2023	2	26.1	74.0	270.0	W	3.9	1.1	2.0	0.0
22-05-2023	3	25.6	75.0	315.0	NW	9.4	2.6	2.0	0.0
22-05-2023	4	25.4	76.6	135.0	SE	12.6	3.5	3.0	0.0
22-05-2023	5	25.5	77.8	303.0	WNW	14.4	4.0	5.0	0.1
22-05-2023	6	26.6	79.2	303.0	WNW	18.0	5.0	6.0	0.4
22-05-2023	7	28.0	79.7	135.0	SE	23.4	6.5	7.0	0.7
22-05-2023	8	29.4	81.2	135.0	SE	16.9	4.7	8.0	1.7
22-05-2023	9	30.8	83.2	315.0	NW	22.3	6.2	8.0	2.4
22-05-2023	10	33.5	81.1	315.0	NW	27.0	7.5	8.0	1.2
22-05-2023	11	35.9	79.2	270.0	W	20.5	5.7	7.0	0.7
22-05-2023	12	38.6	77.6	315.0	NW	19.8	5.5	6.0	0.2
22-05-2023	13	40.5	72.2	290.0	WNW	16.9	4.7	4.0	0.2
22-05-2023	14	41.6	69.3	290.0	WNW	15.1	4.2	4.0	0.0
22-05-2023	15	42.0	67.6	90.0	E	18.0	5.0	3.0	0.0
22-05-2023	16	42.0	63.3	315.0	NW	18.0	5.0	2.0	0.0
22-05-2023	17	41.1	58.6	315.0	NW	19.3	5.4	0.0	0.0
22-05-2023	18	39.0	56.2	135.0	SE	9.4	2.6	0.0	0.0
22-05-2023	19	37.0	54.4	45.0	NE	13.0	3.6	0.0	0.0
22-05-2023	20	34.2	56.0	328.0	NWN	1.6	0.4	0.0	0.0
22-05-2023	21	31.2	60.0	135.0	SE	8.6	2.4	0.0	0.0
22-05-2023	22	29.2	64.0	135.0	SE	10.8	3.0	0.0	0.0
22-05-2023	23	27.7	66.0	270.0	W	10.8	3.0	0.0	0.0
22-05-2023	24	26.4	69.0	135.0	SE	14.4	4.0	0.0	0.0
23-05-2023	1	26.0	71.0	270.0	W	0.8	0.2	0.0	0.0
23-05-2023	2	25.5	72.7	270.0	W	7.9	2.2	0.0	0.0
23-05-2023	3	25.4	74.0	270.0	W	1.6	0.4	2.0	0.0
23-05-2023	4	25.1	75.0	303.0	WNW	13.3	3.7	3.0	0.0
23-05-2023	5	25.2	76.3	303.0	WNW	3.9	1.1	5.0	0.1
23-05-2023	6	26.4	77.2	270.0	W	10.8	3.0	6.0	0.3
23-05-2023	7	27.9	73.8	225.0	SW	14.4	4.0	5.0	0.0
23-05-2023	8	29.5	72.1	292.0	WNW	18.0	5.0	3.0	0.0
23-05-2023	9	31.1	69.6	292.0	WNW	7.9	2.2	2.0	0.0
23-05-2023	10	33.0	66.7	292.0	WNW	18.0	5.0	0.0	0.0
23-05-2023	11	36.2	64.2	225.0	SW	19.8	5.5	0.0	0.0
23-05-2023	12	38.9	61.7	270.0	W	24.1	6.7	0.0	0.0
23-05-2023	13	40.1	59.7	270.0	W	19.8	5.5	0.0	0.0
23-05-2023	14	41.4	57.2	315.0	NW	13.5	3.7	0.0	0.0
23-05-2023	15	42.1	54.5	315.0	NW	7.9	2.2	0.0	0.0
23-05-2023	16	42.7	52.3	315.0	NW	11.5	3.2	0.0	0.0
23-05-2023	17	42.2	51.0	315.0	NW	15.1	4.2	0.0	0.0
23-05-2023	18	39.8	52.0	135.0	SE	9.4	2.6	0.0	0.0
23-05-2023	19	38.0	54.0	135.0	SE	8.6	2.4	0.0	0.0
23-05-2023	20	35.5	55.0	135.0	SE	12.6	3.5	0.0	0.0
23-05-2023	21	32.0	58.0	270.0	W	3.9	1.1	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
23-05-2023	22	29.6	61.0	315.0	NW	1.6	0.4	0.0	0.0
23-05-2023	23	28.1	67.0	315.0	NW	13.3	3.7	0.0	0.0
23-05-2023	24	26.9	70.0	211.0	SSW	9.7	2.7	0.0	0.0
24-05-2023	1	26.6	70.0	45.0	NE	16.9	4.7	0.0	0.0
24-05-2023	2	26.1	70.0	135.0	SE	3.9	1.1	0.0	0.0
24-05-2023	3	25.6	68.0	135.0	SE	1.6	0.4	0.0	0.0
24-05-2023	4	25.4	68.0	135.0	SE	12.6	3.5	0.0	0.0
24-05-2023	5	25.5	68.0	301.0	WNW	11.9	3.3	0.0	0.0
24-05-2023	6	26.9	66.0	135.0	SE	5.5	1.5	0.0	0.0
24-05-2023	7	28.4	64.0	288.0	WNW	14.4	4.0	0.0	0.0
24-05-2023	8	29.9	62.0	180.0	S	21.6	6.0	0.0	0.0
24-05-2023	9	31.4	60.0	284.0	WNW	18.0	5.0	0.0	0.0
24-05-2023	10	33.3	56.0	315.0	NW	18.0	5.0	0.0	0.0
24-05-2023	11	35.2	51.0	315.0	NW	18.0	5.0	0.0	0.0
24-05-2023	12	36.8	48.0	315.0	NW	18.0	5.0	0.0	0.0
24-05-2023	13	38.4	49.0	315.0	NW	18.0	5.0	0.0	0.0
24-05-2023	14	39.6	50.0	315.0	NW	18.0	5.0	0.0	0.0
24-05-2023	15	40.2	49.0	73.0	ENE	24.1	6.7	0.0	0.0
24-05-2023	16	41.4	49.0	315.0	NW	22.7	6.3	0.0	0.0
24-05-2023	17	42.2	49.0	315.0	NW	20.9	5.8	0.0	0.0
24-05-2023	18	41.0	52.0	90.0	E	14.4	4.0	0.0	0.0
24-05-2023	19	39.0	55.0	90.0	E	18.0	5.0	0.0	0.0
24-05-2023	20	36.0	58.0	135.0	SE	10.8	3.0	0.0	0.0
24-05-2023	21	32.5	58.0	135.0	SE	0.8	0.2	0.0	0.0
24-05-2023	22	30.1	62.0	225.0	SW	10.8	3.0	0.0	0.0
24-05-2023	23	28.5	67.0	225.0	SW	8.6	2.4	0.0	0.0
24-05-2023	24	27.1	70.0	315.0	NW	7.9	2.2	0.0	0.0
25-05-2023	1	26.9	70.0	315.0	NW	12.6	3.5	0.0	0.0
25-05-2023	2	26.6	71.4	45.0	NE	2.2	0.6	0.0	0.0
25-05-2023	3	26.1	73.4	156.0	SES	16.9	4.7	0.0	0.0
25-05-2023	4	26.0	75.2	135.0	SE	0.8	0.2	2.0	0.0
25-05-2023	5	25.9	76.0	303.0	WNW	7.2	2.0	4.0	0.0
25-05-2023	6	26.9	77.4	135.0	SE	14.4	4.0	5.0	0.0
25-05-2023	7	27.6	78.2	45.0	NE	12.2	3.4	6.0	0.2
25-05-2023	8	29.5	79.3	315.0	NW	13.3	3.7	7.0	0.4
25-05-2023	9	31.0	80.2	315.0	NW	8.6	2.4	8.0	0.7
25-05-2023	10	33.1	81.4	315.0	NW	15.5	4.3	8.0	1.4
25-05-2023	11	35.2	83.1	315.0	NW	18.0	5.0	8.0	2.2
25-05-2023	12	36.7	80.7	315.0	NW	15.5	4.3	8.0	1.9
25-05-2023	13	38.3	78.7	315.0	NW	13.3	3.7	7.0	0.6
25-05-2023	14	39.2	76.3	315.0	NW	15.8	4.4	6.0	0.3
25-05-2023	15	39.8	74.4	315.0	NW	18.0	5.0	4.0	0.0
25-05-2023	16	41.1	71.7	315.0	NW	21.6	6.0	3.0	0.0
25-05-2023	17	41.7	68.6	270.0	W	16.2	4.5	2.0	0.0
25-05-2023	18	40.8	65.6	270.0	W	19.8	5.5	2.0	0.0
25-05-2023	19	38.2	62.2	270.0	W	12.6	3.5	0.0	0.0
25-05-2023	20	35.5	60.8	270.0	W	9.4	2.6	0.0	0.0
25-05-2023	21	32.1	61.0	180.0	S	7.9	2.2	0.0	0.0
25-05-2023	22	29.8	65.0	270.0	W	2.2	0.6	0.0	0.0
25-05-2023	23	28.1	70.0	270.0	W	16.2	4.5	0.0	0.0
25-05-2023	24	26.8	71.4	135.0	SE	9.7	2.7	0.0	0.0
26-05-2023	1	26.5	73.2	135.0	SE	4.7	1.3	0.0	0.0
26-05-2023	2	26.3	74.4	270.0	W	3.1	0.9	2.0	0.0
26-05-2023	3	26.7	76.4	135.0	SE	1.6	0.4	4.0	0.0
26-05-2023	4	27.1	77.7	327.0	NWN	0.8	0.2	5.0	0.2
26-05-2023	5	27.7	78.7	225.0	SW	9.4	2.6	6.0	0.5
26-05-2023	6	28.1	79.2	327.0	NWN	10.1	2.8	7.0	0.8
26-05-2023	7	28.6	81.2	315.0	NW	14.4	4.0	8.0	1.4
26-05-2023	8	29.7	80.3	315.0	NW	16.2	4.5	8.0	1.1
26-05-2023	9	31.4	78.9	315.0	NW	11.8	3.3	7.0	0.7
26-05-2023	10	33.4	82.1	270.0	W	15.8	4.4	8.0	2.6

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
26-05-2023	11	36.1	79.1	315.0	NW	13.3	3.7	7.0	0.8
26-05-2023	12	37.6	77.6	315.0	NW	14.4	4.0	6.0	0.5
26-05-2023	13	38.2	74.5	315.0	NW	7.8	2.2	4.0	0.0
26-05-2023	14	39.6	71.2	315.0	NW	12.6	3.5	0.0	0.0
26-05-2023	15	40.4	68.6	315.0	NW	15.1	4.2	0.0	0.0
26-05-2023	16	41.2	64.2	90.0	E	14.4	4.0	0.0	0.0
26-05-2023	17	42.2	61.3	90.0	E	16.6	4.6	0.0	0.0
26-05-2023	18	40.6	58.6	328.0	NWN	14.4	4.0	0.0	0.0
26-05-2023	19	38.8	56.7	135.0	SE	18.0	5.0	0.0	0.0
26-05-2023	20	37.2	59.0	289.0	WNW	21.6	6.0	0.0	0.0
26-05-2023	21	35.3	63.0	135.0	SE	15.5	4.3	0.0	0.0
26-05-2023	22	32.6	67.0	135.0	SE	9.0	2.5	0.0	0.0
26-05-2023	23	29.7	68.0	135.0	SE	9.7	2.7	0.0	0.0
26-05-2023	24	27.8	70.0	328.0	NWN	6.1	1.7	0.0	0.0
27-05-2023	1	27.6	70.0	135.0	SE	9.0	2.5	0.0	0.0
27-05-2023	2	27.4	70.0	135.0	SE	3.1	0.9	0.0	0.0
27-05-2023	3	27.1	70.0	135.0	SE	7.2	2.0	0.0	0.0
27-05-2023	4	27.3	70.0	135.0	SE	9.7	2.7	0.0	0.0
27-05-2023	5	27.7	66.0	135.0	SE	14.4	4.0	0.0	0.0
27-05-2023	6	28.4	64.0	135.0	SE	9.4	2.6	0.0	0.0
27-05-2023	7	29.5	61.0	135.0	SE	10.8	3.0	0.0	0.0
27-05-2023	8	31.6	61.0	135.0	SE	14.4	4.0	0.0	0.0
27-05-2023	9	33.2	59.0	253.0	WSW	18.0	5.0	0.0	0.0
27-05-2023	10	35.5	57.0	315.0	NW	21.6	6.0	0.0	0.0
27-05-2023	11	37.1	53.0	180.0	S	18.0	5.0	0.0	0.0
27-05-2023	12	38.7	52.0	180.0	S	23.8	6.6	0.0	0.0
27-05-2023	13	39.6	51.0	90.0	E	21.6	6.0	0.0	0.0
27-05-2023	14	40.4	50.0	360.0	N	20.2	5.6	0.0	0.0
27-05-2023	15	41.4	48.0	180.0	S	18.0	5.0	0.0	0.0
27-05-2023	16	42.2	48.0	45.0	NE	21.6	6.0	0.0	0.0
27-05-2023	17	42.0	48.0	135.0	SE	23.8	6.6	0.0	0.0
27-05-2023	18	40.9	52.0	225.0	SW	16.9	4.7	0.0	0.0
27-05-2023	19	38.0	54.0	90.0	E	16.9	4.7	0.0	0.0
27-05-2023	20	34.5	59.0	328.0	NWN	19.4	5.4	0.0	0.0
27-05-2023	21	31.5	61.0	135.0	SE	13.3	3.7	0.0	0.0
27-05-2023	22	28.5	64.0	135.0	SE	15.1	4.2	0.0	0.0
27-05-2023	23	27.5	70.0	329.0	NWN	4.7	1.3	0.0	0.0
27-05-2023	24	27.1	70.0	270.0	W	7.9	2.2	0.0	0.0
28-05-2023	1	26.6	71.0	270.0	W	0.8	0.2	0.0	0.0
28-05-2023	2	26.5	71.0	242.0	WSW	5.8	1.6	0.0	0.0
28-05-2023	3	26.1	71.0	270.0	W	11.9	3.3	0.0	0.0
28-05-2023	4	25.9	69.0	135.0	SE	15.1	4.2	0.0	0.0
28-05-2023	5	25.9	69.0	315.0	NW	13.3	3.7	0.0	0.0
28-05-2023	6	26.6	66.0	315.0	NW	15.5	4.3	0.0	0.0
28-05-2023	7	28.1	64.0	135.0	SE	13.3	3.7	0.0	0.0
28-05-2023	8	29.5	58.0	135.0	SE	16.6	4.6	0.0	0.0
28-05-2023	9	31.4	57.0	315.0	NW	19.8	5.5	0.0	0.0
28-05-2023	10	34.0	54.0	270.0	W	18.0	5.0	0.0	0.0
28-05-2023	11	37.0	54.0	315.0	NW	21.6	6.0	0.0	0.0
28-05-2023	12	39.4	55.0	315.0	NW	18.0	5.0	0.0	0.0
28-05-2023	13	40.5	53.0	315.0	NW	20.2	5.6	0.0	0.0
28-05-2023	14	41.6	52.0	315.0	NW	24.1	6.7	0.0	0.0
28-05-2023	15	42.0	50.0	315.0	NW	21.2	5.9	0.0	0.0
28-05-2023	16	42.0	50.0	225.0	SW	19.1	5.3	0.0	0.0
28-05-2023	17	41.9	48.0	225.0	SW	16.9	4.7	0.0	0.0
28-05-2023	18	40.1	51.0	330.0	NWN	15.1	4.2	0.0	0.0
28-05-2023	19	37.8	54.0	135.0	SE	13.3	3.7	0.0	0.0
28-05-2023	20	35.4	59.0	135.0	SE	11.9	3.3	0.0	0.0
28-05-2023	21	32.0	61.0	135.0	SE	1.6	0.4	0.0	0.0
28-05-2023	22	29.6	64.0	135.0	SE	9.4	2.6	0.0	0.0
28-05-2023	23	28.1	70.0	135.0	SE	15.1	4.2	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
28-05-2023	24	27.5	71.0	135.0	SE	0.8	0.2	0.0	0.0
29-05-2023	1	27.1	73.2	135.0	SE	13.7	3.8	0.0	0.0
29-05-2023	2	26.8	74.4	135.0	SE	15.8	4.4	0.0	0.0
29-05-2023	3	26.4	75.0	135.0	SE	14.4	4.0	2.0	0.0
29-05-2023	4	26.1	76.0	327.0	NWN	16.9	4.7	4.0	0.0
29-05-2023	5	26.0	77.7	328.0	NWN	18.0	5.0	5.0	0.0
29-05-2023	6	27.1	75.4	135.0	SE	18.7	5.2	6.0	0.4
29-05-2023	7	28.4	73.2	135.0	SE	16.6	4.6	5.0	0.0
29-05-2023	8	29.9	71.6	135.0	SE	12.6	3.5	4.0	0.0
29-05-2023	9	31.5	70.4	315.0	NW	15.8	4.4	4.0	0.0
29-05-2023	10	33.6	67.6	315.0	NW	13.3	3.7	2.0	0.0
29-05-2023	11	36.0	65.5	315.0	NW	14.4	4.0	0.0	0.0
29-05-2023	12	38.5	63.4	315.0	NW	18.0	5.0	0.0	0.0
29-05-2023	13	39.4	62.2	315.0	NW	21.6	6.0	0.0	0.0
29-05-2023	14	41.2	59.8	315.0	NW	16.9	4.7	0.0	0.0
29-05-2023	15	42.4	57.7	315.0	NW	19.8	5.5	0.0	0.0
29-05-2023	16	42.5	56.6	315.0	NW	16.2	4.5	0.0	0.0
29-05-2023	17	41.2	55.5	315.0	NW	13.3	3.7	0.0	0.0
29-05-2023	18	40.7	53.6	135.0	SE	15.8	4.4	0.0	0.0
29-05-2023	19	38.4	54.0	90.0	E	16.2	4.5	0.0	0.0
29-05-2023	20	35.7	55.0	135.0	SE	16.6	4.6	0.0	0.0
29-05-2023	21	33.0	59.0	135.0	SE	13.3	3.7	0.0	0.0
29-05-2023	22	31.2	60.0	135.0	SE	7.9	2.2	0.0	0.0
29-05-2023	23	28.4	64.0	135.0	SE	1.6	0.4	0.0	0.0
29-05-2023	24	26.9	70.0	344.0	NWN	13.0	3.6	0.0	0.0
30-05-2023	1	26.6	71.0	270.0	W	8.6	2.4	0.0	0.0
30-05-2023	2	26.1	71.0	245.0	WSW	13.0	3.6	0.0	0.0
30-05-2023	3	25.9	70.0	315.0	NW	15.1	4.2	0.0	0.0
30-05-2023	4	25.6	71.0	288.0	WNW	1.6	0.4	0.0	0.0
30-05-2023	5	25.5	68.0	295.0	WNW	13.0	3.6	0.0	0.0
30-05-2023	6	26.5	66.0	270.0	W	15.8	4.4	0.0	0.0
30-05-2023	7	27.9	64.0	270.0	W	19.8	5.5	0.0	0.0
30-05-2023	8	29.4	61.0	327.0	NWN	13.3	3.7	0.0	0.0
30-05-2023	9	31.1	60.0	315.0	NW	15.1	4.2	0.0	0.0
30-05-2023	10	33.0	59.0	290.0	WNW	16.6	4.6	0.0	0.0
30-05-2023	11	35.6	55.0	225.0	SW	20.5	5.7	0.0	0.0
30-05-2023	12	38.1	54.0	315.0	NW	19.4	5.4	0.0	0.0
30-05-2023	13	39.4	53.0	315.0	NW	17.6	4.9	0.0	0.0
30-05-2023	14	39.9	51.0	315.0	NW	19.8	5.5	0.0	0.0
30-05-2023	15	40.0	51.0	315.0	NW	21.6	6.0	0.0	0.0
30-05-2023	16	40.4	49.0	90.0	E	19.8	5.5	0.0	0.0
30-05-2023	17	40.4	49.0	315.0	NW	21.6	6.0	0.0	0.0
30-05-2023	18	40.0	51.0	135.0	SE	19.8	5.5	0.0	0.0
30-05-2023	19	38.1	54.0	90.0	E	14.4	4.0	0.0	0.0
30-05-2023	20	35.4	55.0	135.0	SE	15.8	4.4	0.0	0.0
30-05-2023	21	32.0	58.0	135.0	SE	11.9	3.3	0.0	0.0
30-05-2023	22	29.6	61.0	135.0	SE	9.7	2.7	0.0	0.0
30-05-2023	23	28.1	63.0	135.0	SE	8.3	2.3	0.0	0.0
30-05-2023	24	27.2	66.0	135.0	SE	4.7	1.3	0.0	0.0
31-05-2023	1	26.9	67.0	289.0	WNW	9.7	2.7	0.0	0.0
31-05-2023	2	26.5	69.0	315.0	NW	14.4	4.0	0.0	0.0
31-05-2023	3	26.1	70.0	315.0	NW	22.7	6.3	0.0	0.0
31-05-2023	4	25.6	68.0	270.0	W	14.4	4.0	0.0	0.0
31-05-2023	5	25.5	65.0	270.0	W	15.8	4.4	0.0	0.0
31-05-2023	6	27.0	59.0	270.0	W	18.7	5.2	0.0	0.0
31-05-2023	7	28.4	57.0	135.0	SE	14.0	3.9	0.0	0.0
31-05-2023	8	29.9	56.0	135.0	SE	19.1	5.3	0.0	0.0
31-05-2023	9	31.5	52.0	270.0	W	14.4	4.0	0.0	0.0
31-05-2023	10	33.4	50.0	270.0	W	13.7	3.8	0.0	0.0
31-05-2023	11	36.0	50.0	270.0	W	16.2	4.5	0.0	0.0
31-05-2023	12	38.1	52.0	315.0	NW	13.3	3.7	0.0	0.0

Date	Time	Temperature (^{0}C)	RH (%)	Direction		Wind Speed		Cloud Cover	Rainfall (mm)
				in angle	in letter	Km/hrs	m/s		
31-05-2023	13	39.4	51.0	315.0	NW	13.3	3.7	0.0	0.0
31-05-2023	14	41.1	50.0	315.0	NW	16.2	4.5	0.0	0.0
31-05-2023	15	42.1	48.0	315.0	NW	24.1	6.7	0.0	0.0
31-05-2023	16	42.7	48.0	315.0	NW	20.2	5.6	0.0	0.0
31-05-2023	17	42.2	49.0	315.0	NW	15.8	4.4	0.0	0.0
31-05-2023	18	40.6	50.0	303.0	WNW	19.4	5.4	0.0	0.0
31-05-2023	19	38.2	50.0	315.0	NW	12.6	3.5	0.0	0.0
31-05-2023	20	35.7	52.0	315.0	NW	13.7	3.8	0.0	0.0
31-05-2023	21	33.1	56.0	135.0	SE	14.4	4.0	0.0	0.0
31-05-2023	22	31.2	60.0	135.0	SE	18.0	5.0	0.0	0.0
31-05-2023	23	28.8	64.0	135.0	SE	21.6	6.0	0.0	0.0
31-05-2023	24	28.2	70.0	135.0	SE	18.0	5.0	0.0	0.0

ANNEXURES – 3.2

AIR MONITORING DATA & MONITORING PHOTPGRAPHS

Project Name: Mining of Stone (Minor Mineral) from Donkhera Stone Mine with production capacity 15,00,000 MTPA over an area of 7.46 ha located at Donkhera (Gram Panchayat) Village, Nangal Chaudhary Tehsil, & Mahendragarh District of Haryana

Monitoring Season: March to May 2023

Ambient Air Quality

Sampling Locations

S. No.	Location Name	Code	Distance (km)	Direction	Latitude	Longitude
1	Near Project Site	AAQ-1	0.2	NNE	27°50'27.05"N	76° 2'40.97"E
2	Mina Ka Nangal	AAQ-2	1.4	SW	27°49'46.32"N	76° 2'4.26"E
3	Golwa	AAQ-3	1.6	WNW	27°50'38.52"N	76° 1'43.77"E
4	Donkhera Ki Dhani	AAQ-4	1.4	NNE	27°51'23.13"N	76° 3'10.25"E
5	Bhedanti	AAQ-5	2.3	ENE	27°50'58.99"N	76° 4'18.83"E
6	Dilpura	AAQ-6	1.3	SE	27°50'2.72"N	76° 3'27.36"E
7	Rampura	AAQ-7	2.6	SSE	27°48'57.00"N	76° 2'46.06"E

Ambient Air Quality Results

Near Project Site						AAQ-1
S. No.	Date	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	CO (mg/m³)
1	03-03-2023	52	18	8.3	11.6	0.63
2	04-03-2023	49	17	6.4	10.1	0.84
3	10-03-2023	63	22	7.8	10.9	0.69
4	11-03-2023	51	18	8.1	11.3	0.82
5	17-03-2023	58	20	6.9	11.3	0.99
6	18-03-2023	67	23	8.8	12.3	0.64
7	24-03-2023	47	18	7.4	10.4	0.85
8	25-03-2023	69	24	<5	11.5	0.69
9	03-04-2023	82	31	6.8	10.7	0.79
10	04-04-2023	59	21	7.2	11.7	0.82
11	10-04-2023	49	17	8.9	12.5	0.98
12	11-04-2023	63	22	7.9	11.1	0.87
13	17-04-2023	57	20	6.8	10.9	0.69
14	18-04-2023	52	18	8.5	11.9	0.82
15	24-04-2023	58	20	<5	12.4	0.59
16	25-04-2023	65	28	6.9	10.1	0.74
17	03-05-2023	48	17	9.5	13.3	0.69
18	04-05-2023	52	18	9.8	13.7	0.95
19	10-05-2023	74	31	8.1	11.3	1.06
20	11-05-2023	67	24	7.6	10.6	1.11
21	17-05-2023	57	20	8.7	12.2	0.98
22	18-05-2023	49	17	6.9	10.1	0.92
23	24-05-2023	51	18	7.6	10.6	0.60
24	25-05-2023	63	22	9.1	12.7	0.84

Mina Ka Nangal						AAQ-2
S. No.	Date	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	CO (mg/m³)
1	03-03-2023	50	18	8.9	12.5	0.84
2	04-03-2023	61	21	9.0	12.6	0.69
3	10-03-2023	48	17	7.6	10.6	0.59
4	11-03-2023	63	22	6.8	10.1	0.62

Mina Ka Nangal						AAQ-2
S. No.	**Date**	**PM_{10} (µg/m³)**	**$PM_{2.5}$ (µg/m³)**	**SO_2 (µg/m³)**	**NO_x (µg/m³)**	**CO (mg/m³)**
5	17-03-2023	52	18	7.1	11.8	0.59
6	18-03-2023	48	17	8.3	12.1	0.94
7	24-03-2023	60	21	6.9	10.1	0.91
8	25-03-2023	54	19	7.4	10.4	0.99
9	03-04-2023	59	21	7.9	11.1	0.85
10	04-04-2023	63	22	8.6	12.0	0.91
11	10-04-2023	44	15	<5	13.1	1.06
12	11-04-2023	54	19	7.6	10.6	1.09
13	17-04-2023	69	24	8.1	11.3	1.02
14	18-04-2023	49	17	6.9	10.6	0.88
15	24-04-2023	65	23	8.5	11.9	0.74
16	25-04-2023	58	20	6.9	10.1	0.69
17	03-05-2023	50	17	<5	12.2	0.62
18	04-05-2023	67	24	8.5	11.9	0.59
19	10-05-2023	63	22	7.5	10.5	0.81
20	11-05-2023	55	19	8.6	12.0	0.69
21	17-05-2023	49	17	10.1	14.1	0.64
22	18-05-2023	62	22	6.9	10.1	0.58
23	24-05-2023	53	19	7.6	10.6	0.95
24	25-05-2023	48	17	9.1	12.7	0.84

Golwa						AAQ-3
S. No.	**Date**	**PM_{10} (µg/m³)**	**$PM_{2.5}$ (µg/m³)**	**SO_2 (µg/m³)**	**NO_x (µg/m³)**	**CO (mg/m³)**
1	07-03-2023	50	17	7.6	10.6	0.82
2	08-03-2023	62	22	8.1	11.3	0.63
3	14-03-2023	54	19	9.6	13.4	0.59
4	15-03-2023	70	24	10.1	14.1	0.46
5	21-03-2023	51	18	8.5	11.9	0.61
6	22-03-2023	59	21	<5	12.3	0.59
7	28-03-2023	65	23	9.6	13.4	0.92
8	29-03-2023	71	25	7.6	10.6	0.84
9	07-04-2023	69	24	8.6	12.0	0.69
10	08-04-2023	61	21	7.6	10.6	0.85
11	14-04-2023	54	19	7.6	10.6	0.94
12	15-04-2023	62	22	8.6	12.0	0.99
13	21-04-2023	64	22	9.8	13.7	1.06
14	22-04-2023	60	21	<5	11.8	1.01
15	28-04-2023	70	24	9.5	13.3	1.11
16	29-04-2023	52	18	10.6	16.0	0.98
17	07-05-2023	58	20	9.4	13.2	0.92
18	08-05-2023	47	16	8.9	12.5	0.59
19	14-05-2023	67	24	10.1	15.0	0.68
20	15-05-2023	42	17	9.5	13.3	0.74
21	21-05-2023	63	22	8.3	11.6	0.86
22	24-05-2023	58	20	7.2	10.1	0.81
23	28-05-2023	49	17	7.9	11.1	0.79
24	29-05-2023	60	21	8.1	11.3	0.62

Donkhera Ki Dhani						AAQ-4
S. No.	**Date**	**PM_{10} (µg/m³)**	**$PM_{2.5}$ (µg/m³)**	**SO_2 (µg/m³)**	**NO_x (µg/m³)**	**CO (mg/m³)**
1	03-03-2023	49	17	8.3	12.2	0.68
2	04-03-2023	62	22	6.5	11.1	0.89
3	10-03-2023	57	20	7.8	10.9	0.95
4	11-03-2023	49	17	8.4	11.8	0.99
5	17-03-2023	63	22	7.8	10.9	0.76
6	18-03-2023	58	20	9.5	13.3	0.69
7	24-03-2023	51	18	6.4	10.1	0.52
8	25-03-2023	62	22	7.8	10.9	0.87
9	03-04-2023	59	21	8.4	11.8	0.69
10	04-04-2023	49	17	7.9	11.1	0.85
11	10-04-2023	67	23	6.8	10.1	1.08
12	11-04-2023	74	32	8.6	12.0	1.11
13	17-04-2023	58	20	9.9	13.9	0.64
14	18-04-2023	69	24	<5	10.8	0.85
15	24-04-2023	52	18	8.4	11.8	0.69
16	25-04-2023	64	22	7.6	10.6	0.94
17	03-05-2023	75	34	6.9	10.1	0.58
18	04-05-2023	64	22	8.7	12.2	0.85
19	10-05-2023	52	18	6.9	10.1	0.69
20	11-05-2023	49	17	8.1	11.3	0.99
21	17-05-2023	61	21	7.8	10.9	1.06
22	18-05-2023	72	31	9.9	13.9	0.65
23	24-05-2023	59	21	11.6	15.2	0.72
24	25-05-2023	48	17	7.9	11.1	0.99

Bhedanti						AAQ-5
S. No.	**Date**	**PM_{10} (µg/m³)**	**$PM_{2.5}$ (µg/m³)**	**SO_2 (µg/m³)**	**NO_x (µg/m³)**	**CO (mg/m³)**
1	05-03-2023	58	20	9.5	13.3	0.69
2	06-03-2023	47	16	7.6	10.6	0.74
3	12-03-2023	65	23	8.1	11.3	0.92
4	13-03-2023	81	28	6.9	10.1	0.82
5	19-03-2023	56	20	9.2	12.6	0.69
6	20-03-2023	47	16	7.9	11.1	0.74
7	26-03-2023	56	20	8.5	11.9	1.09
8	27-03-2023	71	25	10.1	14.1	1.02
9	05-04-2023	69	24	<5	10.8	0.98
10	06-04-2023	64	22	9.3	13.0	0.82
11	12-04-2023	71	25	8.4	11.8	0.98
12	13-04-2023	63	22	7.6	10.6	0.84
13	19-04-2023	48	17	8.1	11.3	1.06
14	20-04-2023	59	21	9.3	13.0	1.12
15	26-04-2023	62	22	7.5	10.5	1.08
16	27-04-2023	71	25	9.4	13.2	1.01
17	05-05-2023	63	22	10.1	14.1	0.92
18	06-05-2023	53	18	<5	11.5	0.98
19	12-05-2023	65	23	7.8	10.9	1.09
20	13-05-2023	50	17	8.4	11.8	1.05
21	19-05-2023	57	20	7.2	10.1	0.98
22	20-05-2023	46	16	9.1	12.7	0.84

Bhedanti						AAQ-5
S. No.	**Date**	**PM_{10} (µg/m³)**	**$PM_{2.5}$ (µg/m³)**	**SO_2 (µg/m³)**	**NO_x (µg/m³)**	**CO (mg/m³)**
23	26-05-2023	57	20	7.3	10.2	0.69
24	27-05-2023	63	22	10.1	14.1	0.74

Dilpura						AAQ-6
S. No.	**Date**	**PM_{10} (µg/m³)**	**$PM_{2.5}$ (µg/m³)**	**SO_2 (µg/m³)**	**NO_x (µg/m³)**	**CO (mg/m³)**
1	05-03-2023	49	17	7.9	11.1	0.64
2	06-03-2023	61	21	9.2	12.9	0.79
3	12-03-2023	54	19	7.9	10.2	0.66
4	13-03-2023	59	21	6.7	11.6	0.79
5	19-03-2023	49	17	7.8	10.9	0.56
6	20-03-2023	62	22	9.1	12.7	0.51
7	26-03-2023	71	25	10.5	14.1	0.69
8	27-03-2023	62	22	7.6	10.6	0.98
9	05-04-2023	58	20	8.5	11.9	0.89
10	06-04-2023	49	17	6.9	10.1	0.41
11	12-04-2023	78	27	9.1	12.7	0.84
12	13-04-2023	69	24	11.3	15.8	0.49
13	19-04-2023	49	17	<5	12.9	0.57
14	20-04-2023	62	22	9.8	13.7	0.64
15	26-04-2023	71	25	6.9	10.1	0.79
16	27-04-2023	69	24	5.8	11.6	0.58
17	05-05-2023	72	25	10.6	14.6	0.69
18	06-05-2023	69	24	9.5	13.3	0.89
19	12-05-2023	53	19	<5	11.9	0.71
20	13-05-2023	54	19	9.6	13.4	0.86
21	19-05-2023	49	17	7.8	10.9	0.91
22	20-05-2023	68	24	6.9	10.1	0.80
23	26-05-2023	76	27	9.1	12.7	0.69
24	27-05-2023	63	22	10.2	14.3	0.72

Rampura						AAQ-7
S. No.	**Date**	**PM_{10} (µg/m³)**	**$PM_{2.5}$ (µg/m³)**	**SO_2 (µg/m³)**	**NO_x (µg/m³)**	**CO (mg/m³)**
1	07-03-2023	57	20	7.9	11.1	0.64
2	08-03-2023	68	24	9.2	12.9	0.79
3	14-03-2023	47	16	7.9	10.2	0.66
4	15-03-2023	53	18	6.7	11.6	0.79
5	21-03-2023	46	16	7.8	10.9	0.56
6	22-03-2023	64	22	9.1	12.7	0.51
7	28-03-2023	76	27	10.1	13.1	0.69
8	29-03-2023	63	22	7.6	10.6	0.98
9	07-04-2023	53	18	8.5	11.9	0.89
10	08-04-2023	47	16	6.9	10.1	0.41
11	14-04-2023	65	23	9.1	12.7	0.84
12	15-04-2023	55	21	11.3	15.8	0.49
13	21-04-2023	47	16	<5	12.9	0.57
14	22-04-2023	56	20	9.8	13.7	0.64
15	28-04-2023	60	21	6.9	10.1	0.79
16	29-04-2023	65	23	5.8	11.6	0.58
17	07-05-2023	52	18	8.6	12.0	0.69

Rampura						AAQ-7
S. No.	**Date**	**PM_{10} (µg/m³)**	**$PM_{2.5}$ (µg/m³)**	**SO_2 (µg/m³)**	**NO_x (µg/m³)**	**CO (mg/m³)**
18	08-05-2023	69	24	9.5	13.3	0.89
19	14-05-2023	53	19	<5	11.9	0.71
20	15-05-2023	51	18	9.6	13.4	0.86
21	21-05-2023	50	17	7.8	10.9	0.91
22	24-05-2023	67	24	6.9	10.1	0.80
23	28-05-2023	52	18	9.1	12.7	0.69
24	29-05-2023	63	22	10.2	13.2	0.72
Maximum		**75.8**	**26.5**	**11.3**	**15.8**	**0.98**
Minimum		**45.8**	**16.0**	**5.8**	**10.1**	**0.41**
Mean		**57.4**	**20.2**	**8.5**	**12.1**	**0.71**
Percentile 98		**72.7**	**25.5**	**10.8**	**14.9**	**0.95**
Standard Deviation		**8.4**	**2.9**	**1.4**	**1.4**	**0.15**

Mineralogical Composition of PM10

Location Name	Date	PM 10 (µg/m³)	Free Silica (%)	Ca (µg/m³)	Mg (µg/m³)	Ni (µg/m³)	Pb (µg/m³)
Near Project Site	25-03-2023	82	4.1	1.23	0.82	<0.5	<0.05
Mina Ka Nangal	11-03-2023	63	3.2	0.98	0.61	<0.5	<0.05
Golwa	08-05-2023	47	2.4	0.69	0.49	<0.5	<0.05
Donkhera Ki Dhani	10-03-2023	57	2.9	0.87	0.62	<0.5	<0.05
Bhedanti	20-04-2023	59	3.2	0.91	0.55	<0.5	<0.05
Dilpura	05-04-2023	58	2.8	0.88	0.69	<0.5	<0.05
Rampura	29-04-2023	65	3.4	1.13	0.73	<0.5	<0.05

Ambient Noise Quality

Sampling Locations

S. No.	Location Name	Location Code	Distance (km)	Direction	Latitude	Longitude
1	Near Project Site	N-1	0.3	NNE	27°50'27.05"N	76° 2'40.97"E
2	Mina Ka Nangal	N-2	1.4	SW	27°49'46.32"N	76° 2'4.26"E
3	Golwa	N-3	1.7	WNW	27°50'38.52"N	76° 1'43.77"E
4	Donkhera Ki Dhani	N-4	1.5	NNE	27°51'23.13"N	76° 3'10.25"E
5	Bhedanti	N-5	2.3	ENE	27°50'58.99"N	76° 4'18.83"E
6	Dilpura	N-6	1.3	SE	27°50'2.72"N	76° 3'27.36"E
7	Rampura	N-7	3	SSE	27°48'57.00"N	76° 2'46.06"E

Ambient Noise Results

Noise Location	Zone	Code	Day				Night			
			Std.	L Max	L Min	L eq	Std.	L Max	L Min	L eq
Near Project Site	Residential	AN-1	55	54.9	38.6	49.9	45	40.2	29.5	35.6
Mina Ka Nangal		AN-2	55	56.4	39.5	50.4	45	38.2	29.3	34.3
Golwa		AN-3	55	55.0	39.6	49.6	45	38.9	29.9	35.0
Donkhera Ki Dhani		AN-4	55	54.2	40.6	49.0	45	37.6	30.0	34.5
Bhedanti		AN-5	55	55.9	39.5	50.3	45	38.6	29.9	34.8
Dilpura		AN-6	55	53.9	41.6	49.6	45	39.5	30.1	35.2
Rampura		AN-7	55	54.5	39.6	49.7	45	40.1	30.2	36.2

Water Quality

Ground Water Sampling Locations

Location Name	Location Code	Distance (km)	Direction	Co-Ordinates	
				Latitude	Longitude
Near Project Site	GW1	0.1	NNE	27°50'26.58"N	76° 2'40.47"E
Golwa	GW2	1.4	WNW	27°50'38.60"N	76° 1'51.71"E
Donkhera	GW3	1.1	NE	27°51'6.00"N	76° 3'21.50"E
Bhedanti	GW4	2.2	ENE	27°50'56.32"N	76° 4'16.59"E
Dilpura	GW5	1.3	SE	27°50'3.27"N	76° 3'27.36"E

Ground Water Results

		Source	Handpump / Borewell					IS 10500 :2012	
S. No.	Parameters	Unit	GW-1	GW-2	GW-3	GW-4	GW-5	AL	PL
1	pH	--	7.20	7.60	7.20	7.70	7.50	6.5-8.5	NR
2	Conductivity	µS/cm	1612	1298	1189	1342	2248	$	$
3	Total Dissolve Solids	mg/l	1017	797	723	817	1361	500	2000
4	Alkalinity as $CaCO_3$	mg/l	328.4	160.0	237.1	245.0	360.0	200	600
5	Total Hardness as $CaCO_3$	mg/l	395.3	295.7	360.7	412.7	472.8	300	600
6	Calcium as Ca	mg/l	86.3	62.4	68.4	74.3	89.3	75	200
7	Magnesium as Mg	mg/l	43.7	34.0	46.2	55.2	60.8	30	100
8	Sodium	mg/l	176	134	89	107	245	$	$
9	Potassium	mg/l	4	3	5	4	21	$	$
10	Bicarbonate	mg/l	328.4	245.0	237.1	245.0	360.0	$	$
11	Chloride as Cl	mg/l	304.9	244.0	209.3	267.0	451.0	250	1000
12	Sulphate as SO_4	mg/l	60.0	65.0	58.0	54.0	120.0	200	400
13	Nitrate as NO_3	mg/l	2.1	1.9	1.0	2.1	3.1	45	NR
14	Total Nitrogen as N	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	$	$
15	Fluoride as F	mg/l	1.03	1.19	1.14	1.01	1.37	1.00	1.50
16	Total Phosphorus as P	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	$	$
17	Phenolic compound as C_6H_5OH	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.002
18	Cyanide	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	NR
19	Aluminium	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.2
20	Arsenic	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.05
21	Cadmium	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003	0.003	NR
22	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	NR
23	Iron	mg/l	0.31	0.11	0.21	0.1	0.14	0.3	NR
24	Copper	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	1.5
25	Lead	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	NR
26	Manganese	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	0.1	0.3
27	Mercury	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	NR
28	Zinc	mg/l	1.8	2.1	1.7	1.8	2.2	5	15

AL- Acceptable Limit, **PL- Permissible Limits in absence of alternate sources, NR- No Relaxation

Surface Water Sampling Locations

S. No.	Location Name	Location Code	Latitude	Longitude
1	Pond Near Project Site	SW1	27°50'31.29"N	76° 2'55.13"E
2	Donkhera Ki Dhani Near Pond	SW2	27°51'26.90"N	76° 3'10.15"E
3	Bhedanti Near Pond	SW3	27°50'57.54"N	76° 4'32.83"E
4	Rampur Near Pond	SW4	27°48'51.84"N	76° 2'19.05"E

Surface Water Results

S. No.	Parameters	Unit	SW-1	SW-2	SW-3	SW-4	CPCB Standards*	
							IS 2296	Class
1	Turbidity	NTU	17.9	19.5	18.5	17.5	$	$
2	pH	--	7.54	8.14	7.36	8.11	6.5 – 8.5	Class A
3	Temperature	^{0}C	25.1	25.6	25.9	25.8	$	$
4	Total Suspended Solids	mg/l	39	33	25	31	$	$
5	Conductivity	µS/cm	632	599	548	521	$	$
6	Total Dissolve Solids	mg/l	457	484	399	418	$	$
7	Alkalinity as $CaCO_3$	mg/l	168.9	176.9	181.1	183.6	$	$
8	Total Hardness as $CaCO_3$	mg/l	179.2	168.7	180.7	180.0	$	$
9	Calcium as Ca	mg/l	42.3	39.9	41.9	45.9	$	$
10	Magnesium as Mg	mg/l	17.9	16.8	18.5	15.9	$	$
11	Sodium	mg/l	30	38	35	33	$	$
12	Potassium	mg/l	4	5	4	5	$	$
13	Bicarbonate	mg/l	168.9	176.9	181.1	183.6	$	$
14	Chloride as Cl	mg/l	48.5	46.9	42.6	44.5	$	$
15	Sulphate as SO_4	mg/l	30.3	32.4	36.8	33.9	$	$
16	Nitrate as NO_3	mg/l	9.9	10.2	11.9	10.1	$	$
17	Total Carbon	mg/l	<1	<1	<1	<1	$	$
18	Fluoride as F	mg/l	0.98	0.87	0.71	0.84	1.5	$
19	Phenolic compound as C_6H_5OH	mg/l	<0.001	<0.001	<0.001	<0.001	0.005	$
20	Nickel	mg/l	<0.03	<0.03	<0.03	<0.03	$	$
21	Arsenic	mg/l	<0.020	<0.020	<0.020	<0.020	0.2	$
22	Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01	$	$
23	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05	$	$
24	Iron	mg/l	0.54	0.49	0.69	0.68	$	$
25	Lead	mg/l	<0.1	<0.1	<0.1	<0.1	$	$
26	Zinc	mg/l	2.8	3.3	4.1	0.51	$	$
27	Dissolve Oxygen	mg/l	6.9	6.2	7.1	6.8	5	Class A
28	COD	mg/l	9.6	10.1	9.2	8.9	$	$
29	BOD, 27°C 3 days	mg/l	<5	<5	<5	<5	3	Below E**
30	Total Coliforms	MPN / 100ml	0.3×10^3	0.2×10^3	0.1×10^3	0.2×10^3	500	Class B

IS 2296-class B designated for inland surface water & class as per CPCB Water Quality Criteria, ** Not meeting to any class defined by CPCB.

Soil Quality

Soil Sampling Locations

S. No.	Location Name	Location Code	Latitude	Longitude
1	Near Project Site	S-1	27°50'25.51"N	76° 2'45.78"E
2	Golwa	S-2	27°50'39.70"N	76° 1'49.56"E
3	Donkhera	S-3	27°51'5.81"N	76° 3'19.11"E
4	Bhedanti	S-4	27°50'56.16"N	76° 4'14.75"E
5	Dalpatpura	S-5	27°49'50.03"N	76° 3'14.34"E

Soil Quality Results

Parameters	Unit	SQ-1	SQ-2	SQ-3	SQ-4	SQ-5
pH	----	7.8	6.8	7.1	7.5	7.3
Electrical Conductivity	µmhos /cm	279	2.57	284	314	324
Moisture	%	13.7	22	16.8	14.3	18.2
Soil texture	USDA System	Loam	Sandy Clay Loom	Loam	Loam	Sandy Clay Loam
Sand	%	45	52	35	43	52
Silt	%	37	22	38	36	20
Clay	%	18	26	27	21	28
Infiltration Rate	cm/hr	1.21	1.25	1.31	1.27	1.21
Bulk density	gm/cm^3	1.55	1.55	1.50	1.54	1.51
Porosity	%	43.2	44.0	43.6	44.0	44.2
Iron (DTPA Extractable)	mg/kg	1.57	1.87	2.34	2.18	1.85
Zinc (DTPA Extractable)	mg/kg	2.31	2.31	2.64	2.15	2.01
Copper (DTPA Extractable)	mg/kg	3.51	3.14	3.51	3.63	2.94
Sodium as Na	mg/kg	138	129	149	138	154
Calcium as Ca	mg/kg	1103	1059	1231	1029	1204
Magnesium as Mg	mg/kg	532	604	669	569	681
SAR Value	USDA System	6.83	6.33	6.84	6.90	7.09
Nitrogen as N	kg/ha as N	313	259	281	287	298
Phosphorus	kg/ha as P	15	16	16	18	22
Potassium as K	kg/ha as K	72	81	71	75	89
Organic Carbon	%	0.59	0.77	0.65	0.73	0.76
Organic matter	%	1.02	1.05	1.08	0.99	1.12















ANNEXURES – 10.1

CA CERTIFICATE FOR PROJECT COST

MAA & Company
Chartered Accountants

Shankar Market, Narnaul, Haryana - 123001
E-mail:- magarwal0712@gmail.com

TO WHOM SO EVER IT MAY CONCERN

This is to complied that on the basis of records and information & explanation gives by the management of M/s Stone Field Through Ashwani Khurana, GH-18, Celebrity Home, Palam Vihar,Gurgaon, Haryana the approximate project cost developed by the company on the land measuring 7.46 hectares at Village- Dhonkera vibe lease deed are mentioned below:-

Sr. No.	Particulars	Amount (INR Crore)
1	Land Cost (Lease Development Cost)	5.36
2	Construction Cost	4.35
3	Plant and Machinery	4.00
4	Other Fixed Assets	1.50
	Total	**15.21**

This certificate has been made on the basis of information given to us.

For MAA & Company
Chartered Accountants

Manish Kumar Nuniwla
Partner

M. No. 528718
Dated: 25-07-2023

Place: Narnaul

ANNEXURES – 12.1

QCI NABET CERTIFICATE (ENVIRONMENT CONSULTANT)

QUALITY COUNCIL® OF INDIA
Creating an Ecosystem for Quality

National Accreditation Board for Education and Training

Certificate of Accreditation

Parivesh Environmental Engineering Services

5/916, Viram Khand, Gomti Nagar, Lucknow, Uttar Pradesh-226010

*The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations, 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- opencast mining only	1	1 (a) (i)	B
2	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	A
3	Cement plants	9	3 (b)	A
4	Synthetic organic chemicals industry	21	5 (f)	A
5	Ports, harbours, break waters and dredging	33	7 (e)	B
6	Highways,	34	7 (f)	B
7	Building and construction projects	38	8 (a)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in IAAC minutes dated January 4, 2022 and Supplementary assessment minutes dated April 22, 2022 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/22/2295 dated April 1, 2022. The accreditation needs to be renewed before the expiry date by Parivesh Environmental Engineering Services, Lucknow following due process of assessment.

Sr. Director, NABET
Dated: May 12, 2022

Certificate No.
NABET/EIA/2124/IA 0092(Rev.01)

Valid up to
November 11, 2024

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website

ANNEXURES – 12.2

NABL & MOEF&CC CERTIFICATE (LABORATORY)

National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

ASIA ENVIRO LAB

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

H1-837, PHASE-2, RIICO INDUSTRIAL AREA, BHIWADI, ALWAR, RAJASTHAN, INDIA

in the field of

TESTING

Certificate Number: TC-6004

Issue Date: 16/03/2023 **Valid Until:** 15/03/2025

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 Identity : ASIA ENVIRO LAB

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

सी.जी.-डी.एल.-अ.-02062021-227331
CG-DL-E-02062021-227331

असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 1977] नई दिल्ली, बुधवार, जून 2, 2021/ज्येष्ठ 12, 1943
No. 1977] NEW DELHI, WEDNESDAY, JUNE 2, 2021/JYAISHTHA 12, 1943

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 1 जून, 2021

का.आ. 2131(अ).—केंद्रीय सरकार, पर्यावरण (संरक्षण) नियम, 1986, के नियम 10 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 12 की उप-धारा (1) के खंड (ख) और धारा 13, द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए तत्कालीनs पर्यावरण और वन मंत्रालय का.आ 1174 (अ), तारीख 18, जुलाई, 2007, द्वारा भारत सरकार की अधिसूचना में निम्नलिखित और संशोधन करती है अर्थात् : -

उक्त अधिसूचना की सारणी में -

(i) क्रम संख्या 23, 36, 40, 44, 46, 48, 50, 51, 57, 67, 68, 70, 74, 99, 101, 106, 112, 119,127 और 138 और उससे संबंधित प्रविष्टियों के स्थान पर, क्रमशः निम्नलिखित क्रम संख्या और प्रविष्टियां रखी जाएंगी, अर्थात्:-

सारणी

क्र.सं.	प्रयोगशाला का नाम	सरकारी विश्लेषक के नाम	निम्नलिखित तारीख तक वैध मान्यता
(1)	(2)	(3)	(4)
“23	मैसर्स विट्रो लैब्स, # 2-2-647/ ए/3, 3	(i) श्री चौ. नरसिम्हा राव	01 जून, 2021

127	मैसर्स वर्धन एनरोलैब प्लॉट नंबर 82 / ए, सेक्टर -5, एचएसआईआईडीसी, आईएमटी, मानेसर, गुड़गांव -122051, हरियाणा	(i) श्री एस. शर्मा (ii) श्री गौरे प्रताप सिंह (iii) डॉ. शिव प्रकाश सिंह	01 जून , 2021 से 6 जनवरी, 2023
138	मैसर्स फूड हाइजीन एंड हेल्थ प्रयोगशाला, को सर्वे नंबर 126/10, प्लॉट नं. –1, हडपसर इंडस्ट्रियल एस्टेट, हडपसर, ताल - हवेली, जिला - पुणे -1013, महाराष्ट्र	(i) श्री रोहन देशपांडे (ii) सुश्री सीमा सतीश बाकडे (iii) सुश्री सुषमा महेश	01 जून, 2021 से 29 मार्च, 2024

(iii) **क्रम संख्या** 201 **और उससे संबंधित प्रविष्टियों के पश्चात, निम्नलिखित क्रम संख्या और प्रविष्टियां रखी जाएंगी, अर्थात:-**

क्र.सं.	प्रयोगशाला का नाम	सरकारी विश्लेषक के नाम	निम्नलिखित तारीख तक वैध मान्यता
(1)	(2)	(3)	(4)
"202	209 मेसर्स अज़ीस लैब्स प्लॉट नं –एम-43 सेक्टर -3, पीठमपुर जिला धार -454774, मध्य प्रदेश	(i) श्री रविशंकर सहाय (ii) श्री मनोज बामनीया (iii) सुश्री निकिता भंड	01 जून , 2021 से 28 फरवरी 2023
203	मेसर्स क्रिएटिव एनवायरो सर्विसेज, 42, दूर संचार नगर, सेवॉय कॉम्प्लेक्स अरेरा कॉलोनी के निकट भोपाल -462039, मध्य प्रदेश	(i) डॉ. जी.के. जैस (ii) श्री संतोष खंटल (iii) सुश्री अमृता मिश्रा	01 जून , 2021 से 11अक्टूबर, 2021
204	मेसर्स एशिया एनवायरो लैब, एच1-837, प्रदूषण बोर्ड के पास, चरण- II, रिको औद्योगिक क्षेत्र, भिवाड़ी, जिला- अलवर- 301019, राजस्थान	(i) श्री विक्रम सिंह (ii) श्री रोहताश	01 जून , 2021 से 23 दिसंबर, 2023
205	मेसर्स क्वालिटी रिसर्च और एनालिटिकल लैब्स. 341, ग्राउंड फ्लोर, कार्यात्मक औद्योगिक क्षेत्र, पटपड़गंज, नई दिल्ली -110092	(i) डॉ. गौरव माहेश्वरी (ii) मिस अनीता सिंह	01 जून , 2021 से 21अक्टूबर, 2023
206	मेसर्स दिल्ली एनालिटिकल रिसर्च प्रयोगशाला, प्लॉट नंबर 2, टिम्बर ब्लॉक, झिलमिल औद्योगिक क्षेत्र, दिल्ली-110095	(i) डा. प्रियंका मिश्रा (ii) श्री विनय गुप्ता (iii) श्री नाओ ज्योति कुमार गुप्त	01 जून , 2021 से 12 नवंबर, 2021
207	मैसर्स वर्धन एनरोलैब, प्लॉट नंबर - 24और 25, नारायण विहार, बीब्लॉक, मानसरोवर, जयपुर- 302035, राजस्थान	(i) श्री राजिंदर सिंह यादव (ii) श्री राज कुमार यादव (iii) श्री नेमी चंद चौधरी	01 जून , 2021 से 6 जनवरी, 2023
208	मैसर्स पर्यावरण परीक्षण लैब, दुकान नंबर 1, देना बैंक के पास, बास रोड, रामनगर, ददरुहेरा, रेवाड़ी -123106, हरियाणा	(i) श्री करतार सिंह (ii) श्री हेमराज	01 जून , 2021 से 23 मार्च, 2024
209	मैसर्स अल्टीमेट एनवायरोलाइटिकल समाधान, एचडीडी 272, चरण-3, जेपी	(i) श्री अनुराग के. श्रीवास्तव	01 जून, 2021 से

ADDITIONAL ANNEXURES

ADDITIONAL ANNEXURES – 1

UNDERTAKING OF CONSULTANT ENGAGEMENT

Affidavit

Indian-Non Judicial Stamp
Haryana Government

Date :28/06/2023

Certificate No. OC282023F37

GRN No. 104446503

Stamp Duty Paid : ₹ 101

Penalty :₹ 0

Deponent

Name: Stone Field
H.No/Floor : Na
Sector/Ward : Na
Landmark : Na
City/Village : N choudhary
District : Mahendergarh
State : Haryana
Phone : 85******83

Purpose : UNDERTAKING **to be submitted at Any office**

UNDERTAKING

I, Mr. Raag Khurana, Authorized Signatory of M/s Stone Field, through Ashwani Khurana R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon, Haryana, India-122017, for the project - Proposed Mining of Stone (Minor Mineral) from Donkhera Stone Mine with proposed production capacity of 15,00,000 MTPA (Metric Ton Per Annum) over an area of 7.46 ha located at Village Donkhera, Nangal Chaudhary Tehsil & District Mahendragarh and State Haryana, hereby authorize **Mr. Vikas Tripathi**, Director of **PARIVESH ENVIRONMENTAL ENGINEERING SERVICES** having it's office at B-8/916, Vikram Khand, Gomti Nagar, Lucknow, Uttar Pradesh 226010, as Environment Consultant for the project.

NOTARY DHARMESH JOSHI ADVOCATE Distt. Courts, NARNAUL Regd. No. 2026

For M/s Stone Field

Raag Khurana
Date & Place

ATTESTED
DHARMESH JOSHI ADVOCATE
NOTARY PUBLIC NARNAUL

ADDITIONAL ANNEXURES – 2

AFFIDAVIT BY CONSULTANT

Affidavit

Indian-Non Judicial Stamp
Haryana Government

Date :28/06/2023

Certificate No. OC282023F36

GRN No. 104446503

Stamp Duty Paid : ₹ 101

Penalty :₹ 0

Deponent

Name: Stone Field
H.No/Floor : Na
Sector/Ward : Na
Landmark : Na
City/Village : N choudhary
District : Mahendergarh
State : Haryana
Phone : 85******83

Purpose : AFFIDAVIT to be submitted at Any office

AFFIDAVIT CUM UNDERTAKING

I, Mr. Vikas Tripathi, Director of **PARIVESH ENVIRONMENTAL ENGINEERING SERVICES** having it`s office at 5/916, Vikram Khand, Gomti Nagar, Lucknow, Uttar Pradesh 226010, as Environment Consultant of **M/s Stone Field** for the project - Proposed Mining of Stone (Minor Mineral) from Donkhera Stone Mine with proposed production capacity of 15,00,000 MTPA (Metric Ton Per Annum) over an area of 7.46 ha located at Village Donkhera, Nangal Chaudhary Tehsil & District Mahendragarh and State Haryana do hereby solemnly affirm, declare and undertake that all the information in the proposal are being given are correct.

Deponent

Date & Place

Verification:

The consent of the above undertaking is true and correct to the best of my knowledge as per record & nothing has been concealed.

Deponent

Date & Place

ATTESTED

ADDITIONAL ANNEXURES – 3

AFFIDAVIT BY PROPONENT

Affidavit

Indian-Non Judicial Stamp
Haryana Government

Date 28/06/2023

Certificate No. OC282023F35

GRN No. 104446503

Stamp Duty Paid : ₹ 101

Penalty :₹ 0

Deponent

Name: Stone Field
H.No/Floor : Na
Sector/Ward : Na
Landmark : Na
City/Village : N choudhary
District : Mahendergarh
State : Haryana
Phone : 85******83

Purpose : AFFIDAVIT **to be submitted at Any office**

AFFIDAVIT CUM UNDERTAKING

I, Mr. Raag Khurana, Authorized Signatory of M/s Stone Field, having its registered office at GH-18, Celebrity Homes, Palam Vihar, Gurgaon, Haryana, India-122017, for the project - Proposed Mining of Stone (Minor Mineral) from Donkhera Stone Mine with proposed production capacity of 15,00,000 MTPA (Metric Ton Per Annum) over an area of 7.46 ha located at Village Donkhera, Nangal Chaudhary Tehsil & District Mahendragarh and State Haryana hereby solemnly affirm, declare, and undertake.

1. That all the information in the proposal is being given are correct.
2. Any activity at site will be started only after grant of EC/Consent/ Statuary NOCs from the concerned departments.
3. All the mining activity will be done only as per approved mining plan.

Deponent

Date & Place

Verification:

The consent of the above undertaking is true and correct to the best of my knowledge as per record & nothing has been concealed.

Deponent

Date & Place

NOTARY DHARMESH JOSHI ADVOCATE Distt. Courts, NARNAUL Regd. No. 5936 GOVT. OF INDIA

ATTESTED DHARMESH JOSHI ADVOCATE NOTARY PUBLIC NARNAUL 28/6/23

ADDITIONAL ANNEXURES – 4

UNDERTAKING FOR NO MINING ACTIVITY

Affidavit

Indian-Non Judicial Stamp
Haryana Government

Date :28/06/2023

Certificate No. OC282023F38

GRN No. 104446503

Stamp Duty Paid : ₹ 101

Penalty :₹ 0

Deponent

Name: Stone Field
H.No/Floor : Na
Sector/Ward : Na
Landmark : Na
City/Village : N choudhary
District : Mahendergarh
State : Haryana
Phone : 85******83

Purpose : UNDERTAKING to be submitted at Any office

UNDERTAKING

I, Mr. Raag Khurana, Authorized Signatory of M/s Stone Field, through Ashwani Khurana R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon, Haryana, India-122017, for the project - Proposed Mining of Stone (Minor Mineral) from Donkhera Stone Mine with proposed production capacity of 15,00,000 MTPA (Metric Ton Per Annum) over an area of 7.46 ha located at Village Donkhera, Nangal Chaudhary Tehsil & District Mahendragarh and State Haryana, hereby confirms that no mining activity have been done on lease area, all the mining activity will be done after obtaining environmental clearance/ consent from consent authorities.

For M/s Stone Field

Date & Place

ATTESTED
DHARMESH JOSHI ADVOCATE
NOTARY PUBLIC NARNAUL

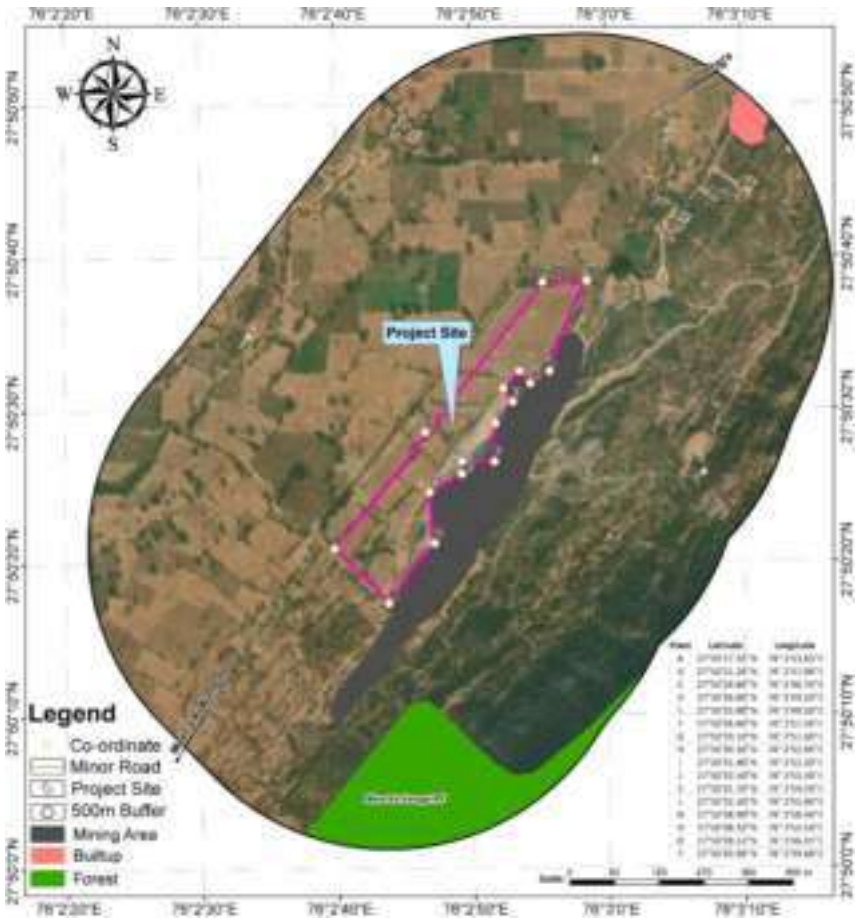
EXECUTIVE SUMMARY

MINING OF STONE (MINOR MINERAL) FROM DONKHERA STONE MINE

VILLAGE DONKHERA (GRAM PANCHAYAT) VILLAGE, NANGAL CHAUDHARY TEHSIL, & MAHENDRAGARH DISTRICT OF HARYANA.

MAXIMUM PRODUCTION – 15,00,000 MTPA

AREA – 7.46 HA



PROPONENT	:	**M/S STONE FIELD**
ENVIRONMENT CONSULTANT	:	**PARIVESH ENVIRONMENTAL ENGINEERING SERVICES** Nabet Certificate No. - NABET /EIA/2124/IA 0092 (Rev.01)
STUDY PERIOD	:	**PRE-MONSOON (MARCH TO MAY 2023)**

JULY 2023

EXECUTIVE SUMMARY

NAME: DONKHERA STONE MINE AT DONKHERA (GRAM PANCHAYAT) VILLAGE, NANGAL CHAUDHARY TEHSIL, & MAHENDRAGARH DISTRICT OF HARYANA
PRODUCTION CAPACITY: 15,00,000 MTPA & AREA: 7.46 HA

Executive Summary

General

The Letter of Intent has been issued to M/s Stone Field, through Ashwani Khurana, R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon by Director Mines & Geology, Panchkula Haryana for Mining of Stone (Minor Mineral) in "Donkhera" having tentative area of 7.46 hectares in Nangal Chaudhary Tehsil of District Mahendragarh, Haryana via e-auction held on 27.03.2022 for a period of 10 years. The NOCs and approvals have been obtained from the various respective authorities and briefed in Table 1.

Table 1: Approvals / Permissions from Concerned Authorities

Item	Permission / Approval Details
Letter of Intent	The Letter of Intent has been issued to M/s Stone Field, through Ashwani Khurana, R/o GH-18, Celebrity Homes, Palam Vihar, Gurgaon by Director Mines & Geology, State of Haryana Govt., Chandigarh vide memo no. **DMG/ HY/ ML/ DONKHERA/ 2022/ 2713, Panchkula Dated 20-04-2022** for Mining of Stone (Minor Mineral) in Donkhera village over an area of 7.46 hectares in Nangal Chaudhary Tehsil of District Mahendragarh, Haryana for a period of 10 years.
Approved Mining Plan	As per rule 70 of Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Presentation of Illegal Mining Rule, 2012, the mining plan was approved vide memo no. **DMG/ HY/ MP/ DONKHERA/ 2022/ 2732-2735 Panchkula Dated 19.05.2023.**
Cluster Letter	Department of Mines and Geology, Narnaul confirms one more mine (XANDY Stone Mines& Minerals – Area 4.80 Ha) is available within 500m radius from lease for form cluster vide letter **Memo No./1795 dated 01.06.2023**.
Forest NOC	The leased area land is owned by gram panchayat as no forest land is involved in lease area. The NOC has been asked from department vide **SARAL ID: HFLC/2023/00355 Dated: 27/07/2023**. The acknowledgement letter is enclosed.
Tehsildar NOC	Clarification has been obtained from the Tehsildar about no habitat coming within 500m from the lease area and no forest land involved within 500m and cluster status on dated 09.06.2023.
DSR	District Survey Report of Mahendragarh District is available and enclosed.
Panchayat NOC	No objection letter from the Panchayat Donkhera has been obtained on dated 29.06.2023 for the mining operation.
Water Supply	Water will be supplied via hired private water tankers for dust suppression, plantation, and domestic use.
Electricity Supply	Electrical supply is available in all nearby villages. The permission will be taken from concerned department for the electricity use.

EXECUTIVE SUMMARY

NAME: DONKHERA STONE MINE AT DONKHERA (GRAM PANCHAYAT) VILLAGE, NANGAL CHAUDHARY TEHSIL, & MAHENDRAGARH DISTRICT OF HARYANA
PRODUCTION CAPACITY: 15,00,000 MTPA & AREA: 7.46 HA

Table 2: Salient Features of Mine

S. No.	Parameters	Description		
1.	Name of the project	Mining of Stone (Minor Mineral) from Donkhera Stone Mine by M/s Stone Field		
2.	Nature & category of Mine	Non-Coal Mining Category 'B' of Activity 1(a)		
3.	Project Proponent	M/s Stone Field		
4.	Khasra No.	59//1.10/1,10/2, 60//4 min ,7/1min,7/2 min ,6/1, 6/2, 5 min 13/1 min, 13/2 min, 14/1 min,14/2. 15/1, 15/2, 17, 18/1, 18/2 min 19 min, 22 min, 23, 24, 62//6 min, min,16,17 min, 25, 63//1 min, 2,3,9,10 min,11,20,21, 64//1, 65//5.		
5.	Total Lease area	7.46 Ha (Gram Panchayat Land)		
6.	Location of the project	Village- Donkhera, Tehsil- Nangal Chaudhary, District- Mahendragarh, Haryana		
7.	Toposheet No.	G43E1 – Project Site G43D13, G43D14, G43E1 & G43E2 - Study Area.		
8.	Maximum Production Capacity	15,00,000 MTPA		
9.	Geological Mineral Reserve	1,95,54,155 MT		
10.	Mineable Reserve	1,56,43,324 MT		
11.	Geographical co-ordinates	**Point**	**Longitude**	**Latitude**
		A	76^0 02' 43.626"	27^0 50' 17.355"
		B	76^0 02' 47.056"	27^0 50' 21.258"
		C	76^0 02' 46.7"	27^0 50' 24.6"
		D	76^0 02' 49.1"	27^0 50' 26.6"
		E	76^0 02' 49.1"	27^0 50' 25.8"
		F	76^0 02' 51.5"	27^0 50' 26.6"
		G	76^0 02' 51.6"	27^0 50' 29.1"
		H	76^0 02' 52.9"	27^0 50' 30.5"
		I	76^0 02' 52.2"	27^0 50' 31.4"
		J	76^0 02' 53.4"	27^0 50' 32.5"
		K	76^0 02' 54.2"	27^0 50' 31.7"
		L	76^0 02' 55.6"	27^0 50' 32.5"
		M	76^0 02' 58.4"	27^0 50' 38.4"
		N	76^0 02' 55.143"	27^0 50' 38.322"
		O	76^0 02' 46.407"	27^0 50' 28.549"
		P	76^0 02' 39.682"	27^0 50' 20.958"
		A	76^0 02' 43.626"	27^0 50' 17.355"
		B	76^0 02' 47.056"	27^0 50' 21.258"
		C	76^0 02' 46.7"	27^0 50' 24.6"
		D	76^0 02' 49.1"	27^0 50' 26.6"
		E	76^0 02' 49.1"	27^0 50' 25.8"
		F	76^0 02' 51.5"	27^0 50' 26.6"

S. No.	Parameters	Description		
		G	76^0 02' 51.6"	27^0 50' 29.1"
12.	Topography of ML area	The general slope of the land of southern most part of the district Mahendragarh is from south to north. The lease area is consisting of slightly undulatory agriculture land. The highest point in the lease area is recorded to be 355 mRL and the lowest point recorded is 350 mRL. The lease area does not have any water body. The area sloping towards west in which water flows during rains for a short duration, otherwise they remain dry for the rest of the months. The rainwater from fields drains either into local johars or in agriculture fields.		
13.	Mining Method & Technology	**Proposed Method of Mining:** The present mining operations are designed to be carried out by mechanized open cast mining method. The entire operations proposed are mechanized. Apart of mining, the loading and transportation up to stack yard shall be done mechanically. It is proposed to load in the trucks/ dumpers directly to the destinations and mineral is not usually put up in this stack yard to avoid the double handling. In the present operation the bench height and width shall be 10m x 10m. Each bench will advance one by one. While carrying out the mining operations in accordance with the above provision the overall pit slope shall be maintenance the 49^0 the mineral bearing rocks being hard and compact. The mining operations shall be carried out by fully mechanized opencast method utilizing Heavy Earth Moving Equipment (HEMM) in conjunction with deep hole drilling dry crawler mounted DTH drills and blasting. To start with benches shall be kept along dip and advanced along the strike to give a well-blended material in each bench. The direction may be varied in due course based on experience gained, to give wider benches, longer faces and proper alignment along haul roads/ ramps. It is proposed to be adopted mechanized opencast mining method for exploitation of the mineral. Drilling and blasting shall be required to dislodge the mineral. The mining method involves breaking the		

S. No.	Parameters	Description
		rocks with explosives, loading the material with excavators and haulage with dumpers.
14.	Ultimate depth of Mining	90.0 m BGL
15.	Ground water level	The ultimate depth of the mining area will be 90 m at end of life. The general water table around the lease area is at 80 - 100 m BGL.
16.	GWT intersection	Mining will be done above ground water level. So, ground water table will not be intersected.
17.	Drainage pattern/ water courses	The areal is mainly sloping both west and north direction. Mining shall be mainly below the general ground level with only one slicing of each bench one by one. Such situation may warrant any water accumulation at the lower parts of the pit. However, as the mine progresses and mining continue below the general ground level as envisaged during lease period, the mining area will become a depression, which may warrant accumulation of water during rainy season. A scheme is proposed to prevent the accumulation of such water.
18.	Water requirement & source	The source of water is private water tankers. The break-up of water requirement is as follows:

S. No.	Description	Demand
1	Dust Suppression	5.7
2	Greenbelt Development	6.3
3	Domestic Requirement	2.7
	Total	**14.7 KLD**

19.	Cost of project	The capital cost for the project will be Rs. 11 Crores including proposed lease area and machinery will be hired on contract bases.

Source: Approved Mining Plan & Project Feasibility Report

Table 3: Mining Cluster Details (Mines within 500m radius)

S. No.	Lease Name	Area
1	Stone Mine by M/s XANDY Mines & Minerals	4.80 Ha
2	Stone Mine by M/s Stone Field	7.46 Ha
Total		**12.26 Ha**

Source: Cluster NOC from Mining Department

Analysis of Alternative

It is case of fresh quarry lease. The mineral is site specific, so no alternative site was identified. Lease approval from concerned authority has been obtained and enclosed in report.

EXECUTIVE SUMMARY

NAME: DONKHERA STONE MINE AT DONKHERA (GRAM PANCHAYAT) VILLAGE, NANGAL CHAUDHARY TEHSIL, & MAHENDRAGARH DISTRICT OF HARYANA
PRODUCTION CAPACITY: 15,00,000 MTPA & AREA: 7.46 HA

Description of Baseline Environment

Environmental data has been collected during pre-monsoon season i.e., March to May 2023 in accordance with the guidelines for preparation of EIA studies.

Table 4: Baseline Status

Parameters	Baseline Status
Ambient Air Quality	PM_{10} was varying from 42 µg/m^3 to 82 µg/m^3. $PM_{2.5}$ was observed between 15 µg/m^3 to 34 µg/m^3. SO_2 was varying from 5.8 µg/m^3 to 11.6 µg/m^3. NOx was observed from 10.1 µg/m^3 to 16.0 µg/m^3 in the study area. CO was observed from 0.41 mg/m^3 to 1.12 mg/m^3 in study area.
Noise Level	The Sound Pressure Level recorded during the daytime on all locations varies from 38.6 dB(A) to 56.4 dB(A) & in time it varies between 29.3 dB(A) to 40.2 dB(A).
Ground Water	pH (7.2 to 7.7), TDS (723 mg/l to 1361 mg/l), alkalinity (160.0 mg/l to 360.0 mg/l), Total Hardness (295.7 mg/l to 472.8 mg/l), Calcium as Ca (62.4 mg/l to 89.3 mg/l), Magnesium as Mg (34.0 mg/l to 60.8 mg/l), Chloride (209.3 mg/l to 451.0 mg/l) & Sulphate (54.0 mg/l to 120.0 mg/l) parameters were analysed. Water was also analysed for heavy metal. Fluoride level is very high and not good for health.
Surface Water	The pH was varying between 7.2 to 7.8, denotes water meeting to the Class A. Dissolved Oxygen was varying between 6.2 to 7.1, denotes water quality meeting to Class A. Total Coliform is meeting to Class B (<500 MPN/100 ml).
Soil Quality	The soil was predominantly Sandy Loam. The pH (6.8 to 7.8), Conductivity (257 µmhos/cm to 314 µmhos/cm), Organic carbon (0.99% to 1.08%), Nitrogen (259 kg/ha to 313 kg/ha), Phosphorous (15 kg/ha to 22 kg/ha), Potassium (71 kg/ha to 89 kg/ha) and another parameter were analysed. Overall, the soil quality was found good in terms of fertility.
Meteorology	The maximum temperature was 43.1°C in May and the minimum temperature was 14.6°C in March. The highest RH was 83.2% in May, while RH was 46.3% in April. The average wind speed was 3.0 m/sec. Predominant wind direction was North-West to South-East and west to east.

Anticipated Environmental Impact and Mitigation Measures

The proposed mining operations are not anticipated to raise the concentration of the pollutants beyond prescribed limits. The identified impacts and mitigation measures are detailed below.

- ✓ Total 1200 PCU/ day will increase in the existing traffic due to this mining activity hence vehicle collation may occur unwanted sound and can also cause impact on human health of villagers near to transportation route like effect on breathing and respiratory issues. Accidents may occur due to fast movement of vehicles. The truck movement will be from suggested transportation route only. It is proposed about 6,294 nos. of plants in plan period and water sprinkling will be done twice in a day to reduce the impact.

- ✓ The machinery will be maintained in good running condition so that noise will be reduced to minimum possible level. Vehicles with PUC certificate will be hired. Regular maintenance of vehicles will be done to ensure smooth running of vehicle. Awareness will be imparted to the workers about the permissible noise level and effect of maximum exposure to those levels. In addition, truck drivers will be instructed to make minimum use of horns in the village area and sensitive zones.
- ✓ There will be no impact on water environment as the mining will be limited before the water level. So, no impact on water was identified. Only 0.54 KLD domestic wastewater will be generated from the proposed mining activity which will be treated in septic tanks and will be used for plantation purpose.
- ✓ The mine worker will generate municipal solid waste of about 22 Kg per day, which will have an adverse impact on human health. There will be 4 Nos. of dustbin for domestic solid waste collection.
- ✓ The mining activities will be done in a systematic manner by maintaining the road infrastructure and vehicle transport, which will be a protective measure for preserving the topography and drainage in the area.
- ✓ No settlement is proposed. Local manpower will be preferred.
- ✓ The mining will likely increase the per capita income of local people by which the socioeconomic status of the people will be improved. The local people have been provided with either direct employments or indirect employment such as business, contract works and development work like roads, etc. and other welfare amenities such as medical facilities, conveyance, free education, drinking water supply etc.
- ✓ Except dust generation, there is no source which can show a probability for health-related diseases. Regular water sprinkling will be done with sprinkles mounted tankers and dust masks will be provided to the workers.
- ✓ Personal protective equipment will provide to prevent the noise exposure. Personal Protective Equipment will be provided during mining activity. Regular Health check-up camps will be organized. All the workers will be insured by employer.

Environmental Monitoring Program

To maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will have complied as per conditions. For this the lessee has taken decision to formulate an Environment Policy of the mine and constitute an Environmental Management Cell and committed to operate the proposed mine with the objectives mentioned in approved Environment Policy. A budget for monitoring of Air, water, Noise and Soil will be Rs. 60.0 thousand annual which is to be incurred by the project proponent for undertaking pollution prevention measures during the mining activity.

Additional Studies

As per proposal made under the mining plan the area will be developed by means of opencast mining method. Water table will not be touched during the mining process. No high-risk accidents like landslides, subsidence flood etc. have been apprehended.

The Safety Health and Environmental (SHE) policy is existing and accessible to all at site and to other stakeholders. The policy has been framed considering legislative compliance, stakeholder involvement, continual improvement, and management by objectives.

To minimize the health impacts PPE like dust masks, ear plugs/ muffs and other equipment will be provided for use by the work personnel. All workers will be subjected to Initial Medical Examination as per Mines Rule 1955 at the time of appointment. Periodical Medical Examination will be conducted at least once in five years. Medical camps will be organized Six Monthly by proponent.

There is no displacement of the population within the project area and adjacent nearby area. This working of mine will offer more employment, chances to some of the nearby population, it is always obvious that the safe mining activity will help to improve socio-economic conditions of the inhabitants.

Table 5: Budget for Occupational Health & Safety

S. No.	Description	Annual Budget
1	Health check-up camps	₹ 1,00,000
2	Insurance cover of workers	₹ 1,00,000
3	Assistance to local schools, scholarship to students at Govt. school in Donkhera Village	₹ 1,00,000
4	Computer Lab for Govt. school in Donkhera Village	₹ 1,00,000
5	Solar Street Lights on Panchayat & Govt. school in Donkhera Village	₹ 30,000
6	Sanitations (Toilets) and drinking water facility of Govt. school in Donkhera Village	₹ 1,00,000
7	Vocational training to persons for income generation	₹ 50,000
8	Assistance to self-help groups	₹ 50,000
	Total	**₹ 6,30,000**

Project Benefit

The project proponent is conscious of its social responsibility and as any good corporate citizen; it is proposed to undertake the need specific (skilled & non-skilled) employment. This Project will provide employment to local people directly and indirectly. Indirect employers are shopkeepers, mechanic, drivers, transporters etc. About 89 persons will get direct employment and 20 persons will get indirect employment form nearby villages. The workers will be mostly skilled.

The developer will also adopt the ESR program as per norms and will provide vary facilities the nearby villages. The salient features of the programme are as follows:

- ✓ Social welfare program like provision of medical facilities educational facilities, water supply for the employees as well as for nearby villagers will be taken.
- ✓ A well laid plan for employment of the local people has been prepared by giving priority to local people.
- ✓ Supplementing Govt. efforts in health monitoring camps, social welfare, and various awareness programs among the rural population.
- ✓ Assisting social plantation program.
- ✓ Development of facilities within villages like roads, etc.

Environment Management Plan & Budget

The detailed activity-wise has been calculated which are ₹14,00,000 as a Capital Cost and ₹4,80,000 per annum as a Recurring cost, respectively. Total budget of ₹38,00,000 for environmental measurements has been ensured by the developer.

Table 6: Environment Management Budget (5 Years)

S. No.	Particulars	Capital	Recurring	Total
1	Pollution Monitoring	-	₹ 60,000	₹ 3,00,000
2	Pollution Control – Water sprinkling	₹ 5,00,000	₹ 2,00,000	₹ 15,00,000
3	Wire fencing at plantation sites	₹ 2,00,000	₹ 50,000	₹ 4,50,000
4	Plantation including maintenance	₹ 3,00,000	₹ 1,00,000	₹ 8,00,000
5	Rainwater harvesting	₹ 2,00,000	₹ 20,000	₹ 3,00,000
6	Haul road and other roads repair and maintenance	₹ 2,00,000	₹ 50,000	₹ 4,50,000
	Total	**₹ 14,00,000**	**₹ 4,80,000**	**₹ 38,00,000**

Conclusion

As per above discussion there is no major impact on the environment due to mining except fugitive emission during loading, unloading of mineral & transportation. The adequate preventive measures will be adopted to contain the various pollutants within permissible limits. It is proposed to plant about 6,294 saplings and gap plantation of about 1,260 saplings considering cost of INR 8,00,000 including maintenance. It will prove an effective pollution mitigate technique and help avoid soil erosion during monsoon season. Employment opportunities will be provided to the locals only as providing extraction of minerals from the mine site is the only prevailing occupation for them for their livelihood. Plantation development will be carried out in the mine premises, along the approach roads, around Govt. buildings, schools approx.

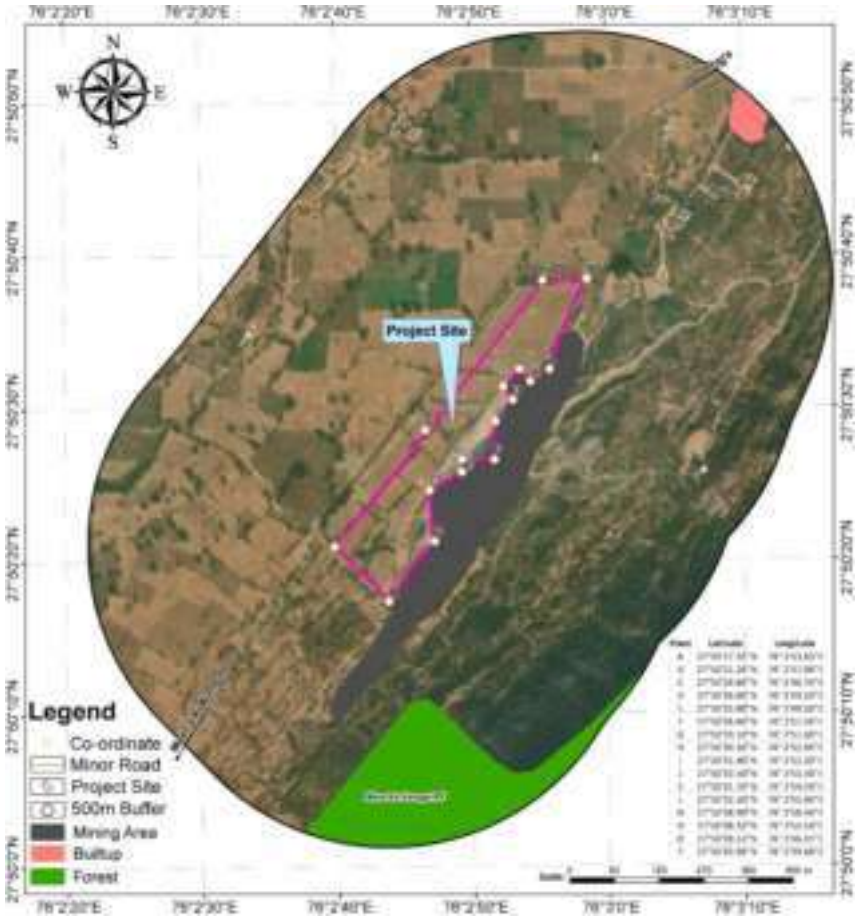
कार्यकारी सारांश

डोनखेरा पत्थर खदान से पत्थर (लघु खनिज) का खनन

ग्राम डोनखेरा (ग्राम पंचायत), नांगल चौधरी तहसील, और हरियाणा का महेंद्रगढ़ जिला।

अधिकतम उत्पादन - 15,00,000 एमटीपीए

क्षेत्रफल - 7.46 हेक्टेयर



PROPONENT	:	**M/S STONE FIELD**
ENVIRONMENT CONSULTANT	:	**PARIVESH ENVIRONMENTAL ENGINEERING SERVICES** Nabet Certificate No. - NABET /EIA/2124/IA 0092 (Rev.01)
STUDY PERIOD	:	**PRE-MONSOON (MARCH TO MAY 2023)**

JULY 2023

डोनखेरा पत्थर खदान से पत्थर (लघु खनिज) का खनन की कार्यकारी सारांश

ग्राम डोनखेरा (ग्राम पंचायत), नांगल चौधरी तहसील, और हरियाणा का महेंद्रगढ़ जिला।

अधिकतम उत्पादन - 15,00,000 एमटीपीए एवं क्षेत्रफल - 7.46 हेक्टेयर

कार्यकारी सारांश।

सामान्य

हरियाणा के महेंद्रगढ़ जिले की नांगल चौधरी तहसील में 7.46 हेक्टेयर के अनुमानित क्षेत्र वाले डोंखेड़ा में स्टोन (माइनर मिनरल) के खनन के लिए निदेशक खान एवं भूविज्ञान, पंचकूला, हरियाणा द्वारा 10 वर्षों की अवधि के लिए ई-नीलामी के माध्यम से मैसर्स स्टोन फील्ड को आशय पत्र जारी किया गया है। विभिन्न संबंधित प्राधिकरणों से अनापत्ति प्रमाण पत्र और अनुमोदन प्राप्त कर लिए गए हैं और तालिका 1 में संक्षिप्त जानकारी दी गई है।

मेज़ 1: संबंधित प्राधिकारियों से अनुमोदन/अनुमतियां

मद	अनुमति/अनुमोदन विवरण
आशय पत्र	हरियाणा के **महेंद्रगढ़ जिले की नांगल चौधरी तहसील में 7.46 हेक्टेयर क्षेत्र में डोंखेड़ा गांव में 10 वर्षों की अवधि के लिए पत्थर (लघु खनिज) के खनन के लिए** डीएमजी/एचवाई/एमएल/डोंखेड़ा/2022/2713, पंचकूला दिनांक 20-04-2022 आशय पत्र जारी किया गया है।
अनुमोदित खनन योजना	हरियाणा लघु खनिज रियायत, भंडारण, खनिजों का परिवहन और अवैध खनन नियम, 2012 की प्रस्तुति के नियम 70 के अनुसार, खनन योजना को ज्ञापन संख्या 2012 के तहत अनुमोदित किया गया था। **डीएमजी/एचवाई/एमपी/डोंखेड़ा/2022/2732-2735 पंचकूला दिनांक 19.05.2023.**
क्लस्टर पत्र	खान एवं भूविज्ञान विभाग, नारनौल दिनांक 01.06.2023 के पत्र ज्ञापन संख्या/1795 के **माध्यम से पुष्टि करता है कि फॉर्म क्लस्टर के लिए पट्टे से 500 मीटर के दायरे में एक और खदान (जेनडी स्टोन माइन्स एंड मिनरल्स - क्षेत्र 4.80 हेक्टेयर) उपलब्ध है**।
वन एनओसी	पट्टे पर दी गई भूमि ग्राम पंचायत के स्वामित्व में है क्योंकि कोई भी वन भूमि पट्टा क्षेत्र में शामिल नहीं है। विभाग से सरल आईडी: एचएफएलसी/2023/**00355 दिनांक: 27/07/2023 के माध्यम से एनओसी मांगी गई है**।
तहसीलदार एनओसी	तहसीलदार से दिनांक 09.06.2023 को पट्टा क्षेत्र से 500 मीटर के भीतर आने वाले किसी भी निवास स्थान और 500 मीटर के भीतर शामिल वन भूमि और क्लस्टर स्थिति के बारे में स्पष्टीकरण प्राप्त किया गया है।
DSR	महेन्द्रगढ़ जिले की जिला सर्वेक्षण रिपोर्ट उपलब्ध है और संलग्न है।
पंचायत एनओसी	खनन संचालन के लिए पंचायत डोंखेड़ा से दिनांक 29.06.2023 को अनापत्ति पत्र प्राप्त कर लिया गया है।
जल आपूर्ति	धूल दमन, वृक्षारोपण और घरेलू उपयोग के लिए किराए के निजी पानी के टैंकरों के माध्यम से पानी की आपूर्ति की जाएगी।

डोनखेरा पत्थर खदान से पत्थर (लघु खनिज) का खनन की कार्यकारी सारांश

ग्राम डोनखेरा (ग्राम पंचायत), नांगल चौधरी तहसील, और हरियाणा का महेंद्रगढ़ जिला।

अधिकतम उत्पादन - 15,00,000 एमटीपीए एवं क्षेत्रफल - 7.46 हेक्टेयर

मद	अनुमति/अनुमोदन विवरण
बिजली की आपूर्ति	आस-पास के सभी गांवों में बिजली की आपूर्ति उपलब्ध है। बिजली उपयोग के लिए संबंधित विभाग से अनुमति ली जाएगी।

मेज़ 2: मेरी मुख्य विशेषताएं

एस. नं.	पैरामीटर	विवरण		
एक.	परियोजना का नाम	मैसर्स स्टोन फील्ड द्वारा डोंखेड़ा स्टोन माइन से स्टोन (माइनर मिनरल) का खनन		
दो.	मेरी प्रकृति और श्रेणी	गतिविधि की गैर-कोयला खनन श्रेणी 'बी' 1 (ए)		
तीन.	परियोजना प्रस्तावक	मैसर्स स्टोन फील्ड		
चार.	खसरा नं.	59//1.10/1,10/2, 60//4 मिनट, 7/1 मिनट, 7/2 मिनट, 6/1, 6/2, 5 मिनट 13/1 मिनट, 13/2 मिनट, 14/1 मिनट, 14/2। 15/1, 15/2, 17, 18/1, 18/2 मिनट 19 मिनट, 22 मिनट, 23, 24, 62//6 मिनट, मिनट, 16,17 मिनट, 25, 63/1 मिनट, 2,3,9,10 मिनट, 11,20,21, 64//1, 65/5।		
पाँच.	कुल पट्टा क्षेत्र	7.46 हेक्टेयर (ग्राम पंचायत भूमि)		
छः.	परियोजना का स्थान	गांव- डोंखेड़ा, तहसील- नांगल चौधरी, जिला- महेंद्रगढ़, हरियाणा		
सात.	टॉपशीट नं.	G43E1 - परियोजना साइट G43D13, G43D14, G43E1 और G43E2 - अध्ययन क्षेत्र।		
आठ.	अधिकतम उत्पादन क्षमता	15,00,000 एमटीपीए		
नौ.	भूवैज्ञानिक खनिज भंडार	1,95,54,155 मीट्रिक टन		
दस.	खनन योग्य रिजर्व	1,56,43,324 मीट्रिक टन		
ग्यारह.	भौगोलिक समन्वय	**बिन्दु**	**देशान्तर**	**अक्षांश**
		A	760 02' 43.626"	270 50' 17.355"
		B	760 02' 47.056"	270 50' 21.258"
		C	760 02' 46.7"	270 50' 24.6"
		D	760 02' 49.1"	270 50' 26.6"
		E	760 02' 49.1"	270 50' 25.8"
		F	760 02' 51.5"	270 50' 26.6"
		G	760 02' 51.6"	270 50' 29.1"
		H	760 02' 52.9"	270 50' 30.5"
		I	760 02' 52.2"	270 50' 31.4"
		J	760 02' 53.4"	270 50' 32.5"
		K	760 02' 54.2"	270 50' 31.7"
		L	760 02' 55.6"	270 50' 32.5"

डोनखेरा पत्थर खदान से पत्थर (लघु खनिज) का खनन की कार्यकारी सारांश

ग्राम डोनखेरा (ग्राम पंचायत), नांगल चौधरी तहसील, और हरियाणा का महेंद्रगढ़ जिला।

अधिकतम उत्पादन - 15,00,000 एमटीपीए एवं क्षेत्रफल - 7.46 हेक्टेयर

एस. नं.	पैरामीटर	विवरण		
		M	760 02' 58.4"	270 50' 38.4"
		N	760 02' 55.143"	270 50' 38.322"
		O	760 02' 46.407"	270 50' 28.549"
		P	760 02' 39.682"	270 50' 20.958"
		A	760 02' 43.626"	270 50' 17.355"
		B	760 02' 47.056"	270 50' 21.258"
		C	760 02' 46.7"	270 50' 24.6"
		D	760 02' 49.1"	270 50' 26.6"
		E	760 02' 49.1"	270 50' 25.8"
		F	760 02' 51.5"	270 50' 26.6"
		G	760 02' 51.6"	270 50' 29.1"
बारह.	एमएल क्षेत्र की स्थलाकृति	महेंद्रगढ़ जिले के दक्षिणी भाग की भूमि का सामान्य ढलान दक्षिण से उत्तर की ओर है। पट्टा क्षेत्र में थोड़ी लहरदार कृषि भूमि शामिल है। लीज क्षेत्र में उच्चतम बिंदु 355 mRL दर्ज किया गया है और दर्ज किया गया निम्नतम बिंदु 350 mRL है। लीज क्षेत्र में कोई जल निकाय नहीं है। पश्चिम की ओर ढलान वाला क्षेत्र जिसमें वर्षा के दौरान थोड़े समय के लिए पानी बहता है, अन्यथा वे शेष महीनों के लिए सूखे रहते हैं। खेतों से बारिश का पानी या तो स्थानीय जोहार ोें में या कृषि क्षेत्रों में बह जाता है।		
तेरह.	खनन विधि और प्रौद्योगिकी	**खनन की प्रस्तावित विधि:** वर्तमान खनन कार्यों को मशीनीकृत ओपन कास्ट खनन विधि द्वारा किए जाने के लिए डिज़ाइन किया गया है। प्रस्तावित संपूर्ण प्रचालन यंत्रीकृत हैं। खनन के अलावा, स्टैक यार्ड तक लोडिंग और परिवहन यांत्रिक रूप से किया जाएगा। ट्रकों/डम्परों को सीधे गंतव्यों तक लादने का प्रस्ताव है और दोहरी हैंडलिंग से बचने के लिए इस स्टैक यार्ड में आमतौर पर खनिज नहीं रखा जाता है। वर्तमान संचालन में बेंच की ऊंचाई और चौड़ाई 10 मीटर x 10 मीटर होगी। प्रत्येक बेंच एक-एक करके आगे बढ़ेगी। उपर्युक्त प्रावधान के अनुसार खनन कार्य करते समय समग्र गड्ढे ढलान का रख-रखाव किया जाएगा जिसमें खनिज युक्त चट्टानें कठोर और संकुचित होंगी। खनन कार्यों को डीप होल ड्रिलिंग, ड्राई क्रॉलर माउंटेड डीटीएच ड्रिल और ब्लास्टिंग के संयोजन के साथ हैवी अर्थ मूविंग इक्विपमेंट (एचईएमएम) का उपयोग करके पूरी तरह से मशीनीकृत ओपनकास्ट		

एस. नं.	पैरामीटर	विवरण
		विधि द्वारा किया जाएगा। शुरुआत में बेंच ोंं को डुबकी के साथ रखा जाएगा और प्रत्येक बेंच में एक अच्छी तरह से मिश्रित सामग्री देने के लिए हड़ताल के साथ उन्नत किया जाएगा। प्राप्त अनुभव के आधार पर दिशाओं में भिन्नता हो सकती है, ताकि चौड़ी बेंच, लंबे चेहरे और लंबी सड़कों/रैंप ोंं के साथ उचित संरेखण प्रदान किया जा सके। खनिज के दोहन के लिए यंत्रीकृत ओपनकास्ट खनन पद्धति अपनाने का प्रस्ताव है। खनिज को हटाने के लिए ड्रिलिंग और ब्लास्टिंग की आवश्यकता होगी। खनन विधि में विस्फोटकों के साथ चट्टानों को तोड़ना, खुदाई के साथ सामग्री लोड करना और डंपर के साथ ढुलाई करना शामिल है।
चौदह.	खनन की अंतिम गहराई	90.0 मीटर बीजीएल
पंद्रह.	भूजल स्तर	खनन क्षेत्र की अंतिम गहराई जीवन के अंत में 90 मीटर होगी। लीज क्षेत्र के आसपास सामान्य जल स्तर 80 - 100 मीटर बीजीएल पर है।
सोलह.	भूजल स्तर को प्रतिच्छेद	भू-जल स्तर से ऊपर खनन किया जाएगा। इसलिए, भूजल स्तर को प्रतिच्छेद नहीं किया जाएगा।
सत्रह.	जल निकासी पैटर्न	अरियल मुख्य रूप से पश्चिम और उत्तर दोनों दिशाओं में ढलान वाला है। खनन मुख्य रूप से सामान्य जमीनी स्तर से नीचे होगा, जिसमें प्रत्येक बेंच को एक-एक करके केवल एक टुकड़ा किया जाएगा। ऐसी स्थिति गड्ढे के निचले हिस्सों में किसी भी पानी के संचय की आवश्यकता हो सकती है। तथापि, जैसे-जैसे खान आगे बढ़ती है और खनन पट्टा अवधि के दौरान परिकल्पित सामान्य भू-स्तर से नीचे जारी रहता है, खनन क्षेत्र एक दबाव बन जाएगा, जिसके कारण वर्षा ऋतु के दौरान जल संचय की आवश्यकता हो सकती है। ऐसे पानी के संचय को रोकने के लिए एक योजना प्रस्तावित है।
अठ्ठारह.	पानी की आवश्यकता और स्रोत	पानी का स्रोत निजी पानी के टैंकर हैं। पानी की आवश्यकता का विवरण इस प्रकार है:

एस. नं.	विवरण	मांग
1	धूल का दमन	5.7

एस. नं.	पैरामीटर	विवरण		
		2	ग्रीनबेल्ट विकास	6.3
		3	घरेलू आवश्यकता	2.7
			कुल	**14.7 KLD**
उन्नीस.	परियोजना की लागत	परियोजना के लिए पूंजीगत लागत 11 करोड़ रुपये होगी, जिसमें प्रस्तावित पट्टा क्षेत्र और मशीनरी को अनुबंध के आधार पर किराए पर लिया जाएगा।		

स्रोत: अनुमोदित खनन योजना और परियोजना व्यवहार्यता रिपोर्ट

मेज़ 3: खनन क्लस्टर विवरण (500 मीटर त्रिज्या के भीतर खदानें)

एस. नं.	पट्टे का नाम	क्षेत्र
1	मैसर्स जेनडी माइन्स एंड मिनरल्स द्वारा पत्थर की खान	4.80 हेक्टेयर
2	मेसर्स स्टोन फील्ड द्वारा पत्थर की खान	7.46 हेक्टेयर
कुल		**12.26 हेक्टेयर**

स्रोत: खनन विभाग से क्लस्टर एनओसी

विकल्प का विश्लेषण

यह नए खदान पट्टे का मामला है। खनिज साइट विशिष्ट है, इसलिए कोई वैकल्पिक साइट की पहचान नहीं की गई थी। संबंधित प्राधिकारी से पट्टा अनुमोदन प्राप्त कर लिया गया है और रिपोर्ट में संलग्न कर दिया गया है ।

आधारभूत वातावरण का विवरण

ईआईए अध्ययन तैयार करने के लिए दिशानिर्देशों के अनुसार मानसून-पूर्व मौसम यानी मार्च से मई 2023 के दौरान पर्यावरणीय डेटा एकत्र किया गया है।

मेज़ 4: आधारभूत स्थिति

पैरामीटर	आधारभूत स्थिति
परिवेशी वायु गुणवत्ता	PM10 42 µg/m^3 से 82 µg/m^3 तक भिन्न था। PM2.5 को 15 µg/m^3 से 34 µg/m^3 के बीच देखा गया। SO2 5.8 µg/m^3 से 11.6 µg/m^3 तक भिन्न था। अध्ययन क्षेत्र में NOx 10.1 µg/m^3 से 16.0 µg/m^3 तक देखा गया। अध्ययन क्षेत्र में सीओ 0.41 mg/m^3 से 1.12 mg/m^3 तक देखा गया था।
शोर का स्तर	सभी स्थानों पर दिन के दौरान दर्ज किया गया ध्वनि दबाव स्तर 38.6 डीबी (ए) से 56.4 डीबी (ए) तक भिन्न होता है और समय में यह 29.3 डीबी (ए) से 40.2 डीबी (ए) के बीच भिन्न होता है।
भूजल	पीएच (7.2 से 7.7), टीडीएस (723 मिलीग्राम/लीटर से 1361 मिलीग्राम/लीटर), क्षारीयता (160.0 मिलीग्राम/लीटर से 360.0 मिलीग्राम/लीटर), कुल कठोरता (295.7 मिलीग्राम/लीटर से 472.8

पैरामीटर	आधारभूत स्थिति
	मिलीग्राम/लीटर), कैल्शियम के रूप में सीए (62.4 मिलीग्राम/लीटर से 89.3 मिलीग्राम/लीटर), मैग्नीशियम के रूप में (34.0 मिलीग्राम/लीटर से 60.8 मिलीग्राम/लीटर) का विश्लेषण किया गया। भारी धातु के लिए पानी का भी विश्लेषण किया गया था। फ्लोराइड का स्तर बहुत अधिक है और स्वास्थ्य के लिए अच्छा नहीं है।
सतही जल	pH 7.2 से 7.8 के बीच भिन्न था, जो कक्षा A के लिए पानी के मिलन को दर्शाता है। घुलित ऑक्सीजन 6.2 से 7.1 के बीच भिन्न थी, जो कक्षा A के लिए पानी की गुणवत्ता को दर्शाता है। कुल कोलीफॉर्म कक्षा B (<500 एमपीएन / 100 मिलीलीटर) से मिल रहा है।
मिट्टी की गुणवत्ता	मिट्टी मुख्य रूप से रेतीली दोमट थी। पीएच (6.8 से 7.8), चालकता (257 µmhos/cm से 314 µmhos/cm), कार्बनिक कार्बन (0.99% से 1.08%), नाइट्रोजन (259 किग्रा/हेक्टेयर से 313 किग्रा/हेक्टेयर), फॉस्फोरस (15 किग्रा/हेक्टेयर से 22 किग्रा/हेक्टेयर), पोटेशियम (71 किग्रा/हेक्टेयर से 89 किग्रा/हेक्टेयर) और एक अन्य पैरामीटर का विश्लेषण किया गया। कुल मिलाकर, उर्वरता के मामले में मिट्टी की गुणवत्ता अच्छी पाई गई।
मौसम विज्ञान	मई में अधिकतम तापमान 43.1 डिग्री सेल्सियस और मार्च में न्यूनतम तापमान 14.6 डिग्री सेल्सियस था। मई में उच्चतम आरएच 83.2% था, जबकि अप्रैल में आरएच 46.3% था। हवा की औसत गति 3.0 मीटर / सेकंड थी। हवा की प्रमुख दिशा उत्तर-पश्चिम से दक्षिण-पूर्व और पश्चिम से पूर्व थी।

प्रत्याशित पर्यावरणीय प्रभाव और शमन उपाय

प्रस्तावित खनन प्रचालनों से प्रदूषकों की सघनता निर्धारित सीमा से अधिक बढ़ने का अनुमान नहीं है। पहचान किए गए प्रभाव और शमन उपाय नीचे दिए गए हैं।

- ✓ इस खनन गतिविधि के कारण मौजूदा यातायात में कुल 1200 पीसीयू / दिन की वृद्धि होगी, इसलिए वाहन मिलान अवांछित ध्वनि हो सकती है और परिवहन मार्ग के पास ग्रामीणों के मानव स्वास्थ्य पर भी प्रभाव डाल सकती है जैसे सांस लेने और श्वसन संबंधी मुद्दों पर प्रभाव। वाहनों की तेज गति के कारण दुर्घटनाएं हो सकती हैं। ट्रक की आवाजाही सुझाए गए परिवहन मार्ग से ही होगी। योजना अवधि में लगभग 6,294 संयंत्रों का प्रस्ताव है और प्रभाव को कम करने के लिए दिन में दो बार पानी का छिड़काव किया जाएगा।
- ✓ मशीनरी को अच्छी चलने की स्थिति में बनाए रखा जाएगा ताकि शोर को न्यूनतम संभव स्तर तक कम किया जा सके। पीयूसी सर्टिफिकेट वाले वाहनों को किराए पर लिया जाएगा। वाहनों के सुचारू संचालन को सुनिश्चित करने के लिए वाहनों का नियमित रखरखाव किया जाएगा। कामगारों को अनुमेय ध्वनि स्तर और उन स्तरों के अधिकतम संपर्क के प्रभाव के बारे में जागरूकता प्रदान की जाएगी। इसके साथ ही ट्रक चालकों को निर्देश दिए जाएंगे कि वे गांव क्षेत्र और संवेदनशील क्षेत्रों में हॉर्न का कम से कम इस्तेमाल करें।

- ✓ जल पर्यावरण पर कोई प्रभाव नहीं पड़ेगा क्योंकि जल स्तर से पहले खनन सीमित हो जाएगा। इसलिए, पानी पर किसी प्रभाव की पहचान नहीं की गई थी। प्रस्तावित खनन गतिविधि से केवल 0.54 केएलडी घरेलू अपशिष्ट जल उत्पन्न किया जाएगा जिसे सेप्टिक टैंकों में उपचारित किया जाएगा और वृक्षारोपण उद्देश्य के लिए उपयोग किया जाएगा।
- ✓ खदान श्रमिक प्रति दिन लगभग 22 किलोग्राम नगरपालिका ठोस अपशिष्ट उत्पन्न करेगा, जिसका मानव स्वास्थ्य पर प्रतिकूल प्रभाव पड़ेगा। घरेलू ठोस कचरा संग्रह के लिए 4 नंबर कूड़ेदान होंगे।
- ✓ खनन गतिविधियों को सड़क के बुनियादी ढांचे और वाहन परिवहन को बनाए रखते हुए व्यवस्थित तरीके से किया जाएगा, जो क्षेत्र में स्थलाकृति और जल निकासी के संरक्षण के लिए एक सुरक्षात्मक उपाय होगा।
- ✓ कोई समझौता प्रस्तावित नहीं है। स्थानीय जनशक्ति को प्राथमिकता दी जाएगी।
- ✓ खनन से स्थानीय लोगों की प्रति व्यक्ति आय में वृद्धि होगी जिसके द्वारा लोगों की सामाजिक आर्थिक स्थिति में सुधार होगा। स्थानीय लोगों को या तो प्रत्यक्ष रोजगार या अप्रत्यक्ष रोजगार जैसे व्यापार, ठेका कार्य और सड़क आदि जैसे विकास कार्य प्रदान किए गए हैं। और अन्य कल्याणकारी सुविधाएं जैसे चिकित्सा सुविधाएं, वाहन, मुफ्त शिक्षा, पेयजल आपूर्ति आदि।
- ✓ धूल उत्पादन को छोड़कर, ऐसा कोई स्रोत नहीं है जो स्वास्थ्य संबंधी बीमारियों की संभावना दिखा सके। स्प्रिंकलर माउंटेड टैंकरों के साथ नियमित रूप से पानी का छिड़काव किया जाएगा और श्रमिकों को डस्ट मास्क प्रदान किए जाएंगे।
- ✓ व्यक्तिगत सुरक्षा उपकरण शोर जोखिम को रोकने के लिए प्रदान करेंगे। खनन गतिविधि के दौरान व्यक्तिगत सुरक्षा उपकरण प्रदान किए जाएंगे। नियमित स्वास्थ्य जांच शिविरों का आयोजन किया जाएगा। नियोक्ता द्वारा सभी श्रमिकों का बीमा किया जाएगा।

पर्यावरण निगरानी कार्यक्रम

निर्धारित मानकों के भीतर पर्यावरणीय गुणवत्ता बनाए रखने के लिए, विभिन्न पर्यावरणीय घटकों की नियमित निगरानी आवश्यक है जो शर्तों के अनुसार अनुपालन किया जाएगा। इसके लिए पट्टेदार ने खान की पर्यावरण नीति बनाने और एक पर्यावरण प्रबंधन प्रकोष्ठ का गठन करने का निर्णय लिया है और अनुमोदित पर्यावरण नीति में उल्लिखित उद्देश्यों के साथ प्रस्तावित खान को संचालित करने के लिए प्रतिबद्ध है। वायु, जल, शोर और मिट्टी की निगरानी के लिए वार्षिक बजट 60.0 हजार रुपये होगा जो खनन गतिविधि के दौरान प्रदूषण की रोकथाम के उपायों को शुरू करने के लिए परियोजना प्रस्तावक द्वारा वहन किया जाना है।

अतिरिक्त अध्ययन

खनन योजना के तहत किए गए प्रस्ताव के अनुसार इस क्षेत्र को ओपनकास्ट खनन विधि के माध्यम से विकसित किया जाएगा। खनन प्रक्रिया के दौरान जल स्तर को नहीं छुआ जाएगा। भूस्खलन, धंसाव, बाढ़ आदि जैसी कोई उच्च जोखिम वाली दुर्घटनाएं नहीं होती हैं। पकड़े गए हैं।

सुरक्षा, स्वास्थ्य और पर्यावरण (एसएचई) नीति मौजूदा है और साइट पर सभी और अन्य हितधारकों के लिए सुलभ है। नीति विधायी अनुपालन, हितधारक भागीदारी, निरंतर सुधार और उद्देश्यों द्वारा प्रबंधन पर विचार करते हुए तैयार की गई है।

स्वास्थ्य पर पड़ने वाले प्रभाव ो को कम करने के लिए पीपीई जैसे डस्ट मास्क, ईयर प्लग/मफ और अन्य उपकरण कर्मियों द्वारा उपयोग के लिए प्रदान किए जाएंगे। नियुक्ति के समय खान नियम 1955 के अनुसार सभी श्रमिकों की प्रारंभिक चिकित्सा

जांच की जाएगी। आवधिक चिकित्सा परीक्षा पांच साल में कम से कम एक बार आयोजित की जाएगी। प्रस्तावक द्वारा छः मासिक चिकित्सा शिविरों का आयोजन किया जाएगा।

परियोजना क्षेत्र के भीतर और आस-पास के क्षेत्र में आबादी का कोई विस्थापन नहीं है। मेरा यह काम आस-पास की कुछ आबादी को अधिक रोजगार, संभावनाएं प्रदान करेगा, यह हमेशा स्पष्ट है कि सुरक्षित खनन गतिविधि निवासियों की सामाजिक-आर्थिक स्थितियों में सुधार करने में मदद करेगी।

मेज़ 5: व्यावसायिक स्वास्थ्य और सुरक्षा के लिए बजट

एस. नं.	विवरण	वार्षिक बजट
1	स्वास्थ्य जांच शिविर	₹ 1,00,000
2	श्रमिकों का बीमा कवर	₹ 1,00,000
3	स्थानीय स्कूलों को सहायता, डोंखेड़ा गांव में सरकारी स्कूल में छात्रों को छात्रवृत्ति	₹ 1,00,000
4	डोंखेड़ा गांव में सरकारी स्कूल के लिए कंप्यूटर लैब	₹ 1,00,000
5	डोंखेड़ा गांव में पंचायत और सरकारी स्कूल पर सौर स्ट्रीट लाइट	₹ 30,000
6	डोंखेड़ा गांव में सरकारी स्कूल की स्वच्छता (शौचालय) और पीने के पानी की सुविधा	₹ 1,00,000
7	आय सृजन के लिए व्यक्तियों को व् यावसायिक प्रशिक्षण	₹ 50,000
8	स्व-सहायता समूहों को सहायता	₹ 50,000
	कुल	**₹ 6,30,000**

परियोजना का लाभ

परियोजना प्रस्तावक अपनी सामाजिक जिम्मेदारी के प्रति जागरूक है और किसी भी अच्छे कॉर्पोरेट नागरिक के रूप में; आवश्यकता विशिष्ट (कुशल और गैर-कुशल) रोजगार शुरू करने का प्रस्ताव है। यह परियोजना स्थानीय लोगों को प्रत्यक्ष और अप्रत्यक्ष रूप से रोजगार प्रदान करेगी। अप्रत्यक्ष नियोक्ता दुकानदार, मैकेनिक, ड्राइवर, ट्रांसपोर्टर आदि हैं। लगभग 89 व्यक्तियों को प्रत्यक्ष रोजगार और 20 व्यक्तियों को आस-पास के गांवों से अप्रत्यक्ष रोजगार मिलेगा। श्रमिक ज्यादातर कुशल होंगे। डेवलपर मानदंडों के अनुसार ईएसआर कार्यक्रम को भी अपनाएगा और आस-पास के गांवों को अलग-अलग सुविधाएं प्रदान करेगा। कार्यक्रम की मुख्य विशेषताएं इस प्रकार हैं:

- ✓ सामाजिक कल्याण कार्यक्रम जैसे चिकित्सा सुविधाओं, शैक्षिक सुविधाओं, कर्मचारियों के साथ-साथ आस-पास के ग्रामीणों के लिए पानी की आपूर्ति की जाएगी।
- ✓ स्थानीय लोगों को प्राथमिकता देते हुए उनके रोजगार के लिए एक अच्छी तरह से निर्धारित योजना तैयार की गई है।
- ✓ ग्रामीण आबादी के बीच स्वास्थ्य निगरानी शिविरों, सामाजिक कल्याण और विभिन्न जागरूकता कार्यक्रमों में सरकार के प्रयासों को पूरक करना।
- ✓ सामाजिक वृक्षारोपण कार्यक्रम में सहायता करना।
- ✓ गांवों के भीतर सड़कों आदि जैसी सुविधाओं का विकास।

पर्यावरण प्रबंधन योजना और बजट

विस्तृत गतिविधि-वार गणना की गई है जो क्रमशः पूंजीगत लागत के रूप में ₹14,00,000 और आवर्ती लागत के रूप में ₹4,80,000 प्रति वर्ष है। डेवलपर द्वारा पर्यावरणीय माप के लिए ₹ 38,00,000 का कुल बजट सुनिश्चित किया गया है।

मेज़ 6: पर्यावरण प्रबंधन बजट (5 वर्ष)

एस. नं.	विवरण	राजधानी	पुनरावर्ती	कुल
1	प्रदूषण की निगरानी	-	₹ 60,000	₹ 3,00,000
2	प्रदूषण नियंत्रण - पानी का छिड़काव	₹ 5,00,000	₹ 2,00,000	₹ 15,00,000
3	वृक्षारोपण स्थलों पर तार की बाड़	₹ 2,00,000	₹ 50,000	₹ 4,50,000
4	रखरखाव सहित वृक्षारोपण	₹ 3,00,000	₹ 1,00,000	₹ 8,00,000
5	वर्षा जल संचयन	₹ 2,00,000	₹ 20,000	₹ 3,00,000
6	सड़क और अन्य सड़कों की मरम्मत और रखरखाव	₹ 2,00,000	₹ 50,000	₹ 4,50,000
	कुल	**₹ 14,00,000**	**₹ 4,80,000**	**₹ 38,00,000**

समाप्ति

उपर्युक्त चर्चा के अनुसार खनिज और परिवहन के लदान, उतराई के दौरान उत्सर्जन को छोड़कर खनन के कारण पर्यावरण पर कोई बड़ा प्रभाव नहीं पड़ता है। विभिन्न प्रदूषकों को अनुमेय सीमा के भीतर रखने के लिए पर्याप्त निवारक उपाय अपनाए जाएंगे। रखरखाव सहित 8,00,000 रुपये की लागत को ध्यान में रखते हुए लगभग 6,294 पौधे लगाने और लगभग 1,260 पौधों का गैप प्लांटेशन करने का प्रस्ताव है। यह एक प्रभावी प्रदूषण कम करने वाली तकनीक साबित होगी और मानसून के मौसम के दौरान मिट्टी के क्षरण से बचने में मदद करेगी। स्थानीय लोगों को रोजगार के अवसर केवल प्रदान किए जाएंगे क्योंकि खदान स्थल से खनिजों का निष्कर्षण प्रदान करना उनकी आजीविका के लिए एकमात्र प्रचलित व्यवसाय है। खदान परिसर, संपर्क मार्गों, सरकारी भवनों, स्कूलों के आसपास लगभग पौधारोपण विकास किया जाएगा।