

# DISTRICT SURVEY REPORT UDAIPUR

(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

---

## DISTRICT SURVEY REPORT DISTRICT UDAIPUR

(For Major & Minor Minerals)



**2024-25**

*Prepared under Notification No. S.O. 141(E) dated 15-01-2016 & S.O. 2827 dated 25-07-2018 issued by MoEF&CC*



**DEPARTMENT OF MINES AND GEOLOGY  
RAJASTHAN**

## CERTIFICATE

The draft of the district survey report has been prepared as per the latest data and information available. It is in Public domain to getting suggestion and recommendation required for next 21 days. please convey your suggestion at [me.udaipur@rajasthan.gov.in](mailto:me.udaipur@rajasthan.gov.in) or call/whatsapp a +919587861786 or by post at Khaniz bhawan, Sector 11 Hiranmagri Udaipur, Rajasthan

Sanjeev Rathore  
Superintendin Geologist .  
(Phosphate Udaipur)

Asif Ansari  
Mining Enginneer  
Udaipur

Collector and District Magistrate  
Udaipur  
Dated 29.04.2024

# DISTRICT SURVEY REPORT UDAIPUR

(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

---

## PREFACE

Ministry of Environment, Forest and Climate Change (MoEF&CC) had time to time made provisions for obtaining environmental clearance, such as, wide Environmental Impact Notification, S.O. 1533 (E), dated 14th September 2006, made mandatory to obtain environmental clearance for different kinds of development projects as listed in Schedule-1. Further, Hon'ble Supreme Court wide order dated the 27th February, 2012 in I.A. No.12- 13 of 2011 in Special Leave Petition (C) No.19628-19629 of 2009, in the matter of Deepak Kumar etc. Vs. State of Haryana and Others etc., ordered that *"leases of minor minerals including their renewal for an area of less than five hectares be granted by the States/Union Territories only after getting environmental clearance from MoEF"*; And Hon'ble National Green Tribunal, order dated the 13th January, 2015 in the matter regarding sand mining has directed for making a policy on environmental clearance for mining leases in cluster for minor Minerals, The MoEF&CC in compliance of above Hon'ble Supreme Court's and NGT'S order has prepared "Sustainable sand Mining Management Guidelines, 2016" and Enforcement & Monitoring Guidelines for Sand Mining 2020, in consultation with State governments, detailing the provisions on Environmental Clearance (EC) for cluster, creation of District Environment Impact Assessment Authority, preparation of District survey report and proper monitoring of minor mineral. There by issued Notification dated 15.01.2016 for making certain amendments in the EIA Notification, 2006, and made mandatory to obtain EC for all minor minerals. Provisions have been made for the preparation of **District Survey Report (DSR)** of River bed mining and other minor minerals. Every effort has been made to cover all matter/issues mentioned in the notification for district survey report for Udaipur district. The main objective of the preparation of DSR (as per the Sustainable Sand Mining Management Guidelines) is to ensure the following-

1. Identification of mineral wealth in the district.
2. Identification of Mineral Baring areas where mining can be allowed;
3. Identification of areas where mining should be prohibited.
4. Systematic and Scientific development of mineral resources with poroper planning.

The SEIAA and SEAC will scrutinize and recommend for EC of mining of minor minerals on the basis of DSR. This will 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 replenishment of minerals and is based on data of various departments, published reports, journals and websites. The minerals found in the district are Lead, Zinc, Silver, Rockphosphate, Byrate, Fluorite, Granite, Marble, Masonry Stone, Soapstone, Rhyolite, Pyrophillite, Bajri etc.

\*\*\*\*\*

---

# **DISTRICT SURVEY REPORT UDAIPUR**

(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

---

## **DISTRICT SURVEY REPORT (DSR) OF UDAIPUR DISTRICT**

**Need of DSR:-**To ensure identification of areas of aggradations or deposition where mining can be allowed; and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining in that area.

As per notification it is essential to prepare a survey document mapping the status of sand sources and other minerals in a district. This survey should be conducted and report be prepared for each district. Though it is an acceptable fact that rivers cut across districts and States and every river is an ecosystem in itself. But, keeping in view the fact that the district is the most established unit of administration at which this kind of survey, planning and monitoring can be ensured effectively. So, every district will prepare this document taking the river stretch in that district as an ecological unit and inventorying other sources of sand in the district.

The natural resources must be utilized in environment friendly manner in scientific and systematic way and with the objective of sustainable development the policy on the subject should have provisions for protection of environment & ecology. These factors can be accounted for in a most efficient manner at district level. The sustainable mining plan needs to be dynamic.

\*\*\*\*\*

# DISTRICT SURVEY REPORT UDAIPUR

(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

## FOR MAJOR AND MINOR MINERALS

Chapter	Contents	Page No.
<b>For Major and Minor Mineral</b>		
<b>1</b>	<b>1.1 Introduction</b>	<b>1</b>
	1.2 Location and History	1
	1.3 Brief History of The District	2
	1.4 Administrative Setup	3
	1.5 Transport and Communication	4
	1.6 Climate and rainfall	5
	1.7 Flora and Fauna of the District	7
	1.8 Socio Economic Profile of the District	7
	1.9 Ground and Surface Water Scenario of the District	7
	1.10 Seismicity	11
<b>2</b>	<b>Over View Of Mining Activity in The District</b>	<b>13</b>
<b>3</b>	<b>Demographic Profile</b>	<b>15</b>
<b>4</b>	<b>Land Utilization Pattern in The District: Forest, Agriculture, Horticulture, Mining Etc</b>	<b>17</b>
<b>5</b>	<b>Physiography of The District</b>	<b>20</b>
<b>6</b>	<b>Rainfall: Month-Wise</b>	<b>25</b>
<b>7</b>	<b>Geology And Mineral Wealth</b>	<b>30</b>
<b>8</b>	<b>The List of Mining Leases In The District With Location, Area And Period of Validity</b>	<b>44</b>
<b>9</b>	<b>Details of Production of Minor Minerals And Royalty / Revenue Received in Last Three Years</b>	<b>63</b>
<b>10</b>	<b>Details of Employment in Udaipur District (Year 2021-2024)</b>	<b>64</b>
<b>11</b>	<b>General Profile of The District</b>	<b>65</b>
<b>12</b>	<b>List Of Letter Of Intent (Loi) Holders in The District Along With its Validity</b>	<b>67</b>
<b>13</b>	<b>Total Mineral Reserve Available in The District</b>	<b>69</b>
<b>14</b>	<b>Use Of Mineral</b>	<b>70</b>
<b>15</b>	<b>Demand And Supply of The Mineral in The Last Three Years</b>	<b>72</b>
<b>16</b>	<b>Mining Lease Marked on The Map of The District</b>	<b>73</b>
<b>17</b>	<b>Details Of The Area Of Where There is a Cluster of Mining Leases</b>	<b>74</b>
<b>18</b>	<b>Details Of Eco-Sensitive Area in The District</b>	<b>75</b>

<b>19</b>	<b>Impact on The Environment (Air, Water, Soil, Flora &amp; Fauna, Land Use, Agriculture, Forest Etc.) Due To Mining Activity</b>	<b>78</b>
<b>20</b>	<b>Remedial Measures to Mitigate The Impact of Mining on The Environment</b>	<b>81</b>
<b>21</b>	<b>Reclamation of Mined Out Area (Best Practice Already Implemented In The District, Requirement as per Rules and Regulation, Proposed Reclamation Plan)</b>	<b>83</b>
<b>22</b>	<b>Risk Assessment &amp; Disaster Management Plan</b>	<b>84</b>
<b>23</b>	<b>Details Of The Occupational Health Issues in The District (Last Five Years Data Of Number Of Patients Of Silicosis &amp; Tuberculosis Is Also Need To Be Submitted)</b>	<b>87</b>
<b>24</b>	<b>Plantation And Green Belt Development in Respect Of Leases Already Granted in The District</b>	<b>88</b>

# DISTRICT SURVEY REPORT UDAIPUR

(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

---

## CHAPTER -1

### INTRODUCTION

#### **1 INTRODUCTION:**

Udaipur is a tourist destination and is known for its history, culture, scenic locations and the Rajput-era palaces. It is popularly known as the "City of Lakes" because of its sophisticated lake system. It has seven lakes surrounding the city. Five of the major lakes, namely Fateh Sagar Lake, Lake Pichola, Swaroop Sagar Lake, Rangasagar, and Doodh Talai Lake, have been included under the restoration project of the National Lake Conservation Plan (NLCP) of the Government of India. Besides lakes, Udaipur is also known for its historic forts and palaces, museums, galleries, natural locations and gardens, architectural temples, as well as traditional fairs, festivals and structures. Due to the several lakes present here, it is sometimes dubbed "Venice of the East". Udaipur economy is primarily driven by tourism, though minerals, marble processing, chemical manufacturing and development, electronic manufacturing and the handicraft industry are also contributors. Udaipur hosts several state and regional public offices, including offices of Director of Mines and Geology, Commissioner of Excise, Commissioner of Tribal Area Development, Hindustan Zinc Limited, and Rajasthan State Mines and Mineral Corporation Limited. Besides, Udaipur is rising as educational hub as well, with 5 Universities, 14 colleges and more than 160 high schools. Udaipur is home to IIM Udaipur, the fifth best management institution in the country according to NIRF ranking released by the MHRD. Udaipur District is surrounded by the Aravali Range, which separates it from the Thar Desert. It is around 660 km from Delhi, approximately 800 km from Mumbai and 1720 km from Bangalore. Placed almost in the middle of two major Indian metro cities. Besides, connectivity with Gujarat ports provide Udaipur a strategic geographical advantage. Udaipur is well connected with nearby cities and states by means of road, rail and air transportation facilities. The city is served by the Maharana Pratap Airport. Common languages spoken include Hindi, English and Rajasthani (Mewari).

#### **1.2 LOCATION AND EXTENT:**

Udaipur district is situated in the southern part of Rajasthan state and located between 23°50' and 25°05' N latitude and 73°05' and 74°40'E longitude. The total geographical area of the district is 11724 sq. Km (4.27 % of the state). It is bounded on the north by Rajsamand and

Pali district, on the south by Dungarpur, Salumberand Banswara, on the east by Bhilwara and Chittorgarh and on the west by Pali and Sirohi districts and Sabarkantha district (Gujarat).



**Figure 1.0: Location Map of Udaipur district**

### **1.3 BRIEF HISTORY OF THE DISTRICT:**

The Ahar River bank was inhabited in about 2000 BCE. There are footprints of two different civilizations, which provides claims about earliest inhabitants of the Ahar culture: the first ones are the Bhil/Bheels, the indigenous tribes originated at this place, and are still residing in the area in large numbers. The second footprints were of Rajputs, who once entered the enclosed valley, and then continued to live in this place for centuries. Before Udaipur district was established in independent India, it was a part of former Mewar or Udaipur State, comprising little less than half the portion of the former state. With the formation of the United State of Rajasthan in 1948, parts of the erstwhile district of Girwa, Khamnor, Rajnagar, Bhim, Magra, Kherwara and Kumbhalgarh, together with the thikanas of Nathdwara, Kankroli, Salumbar (excluding Sayra tehsil), Bhinder, Kanor, Bansri, Bari Sadri, Amet, Sardargarh, Deogarh and Gogunda were combined to constitute the district of Udaipur.

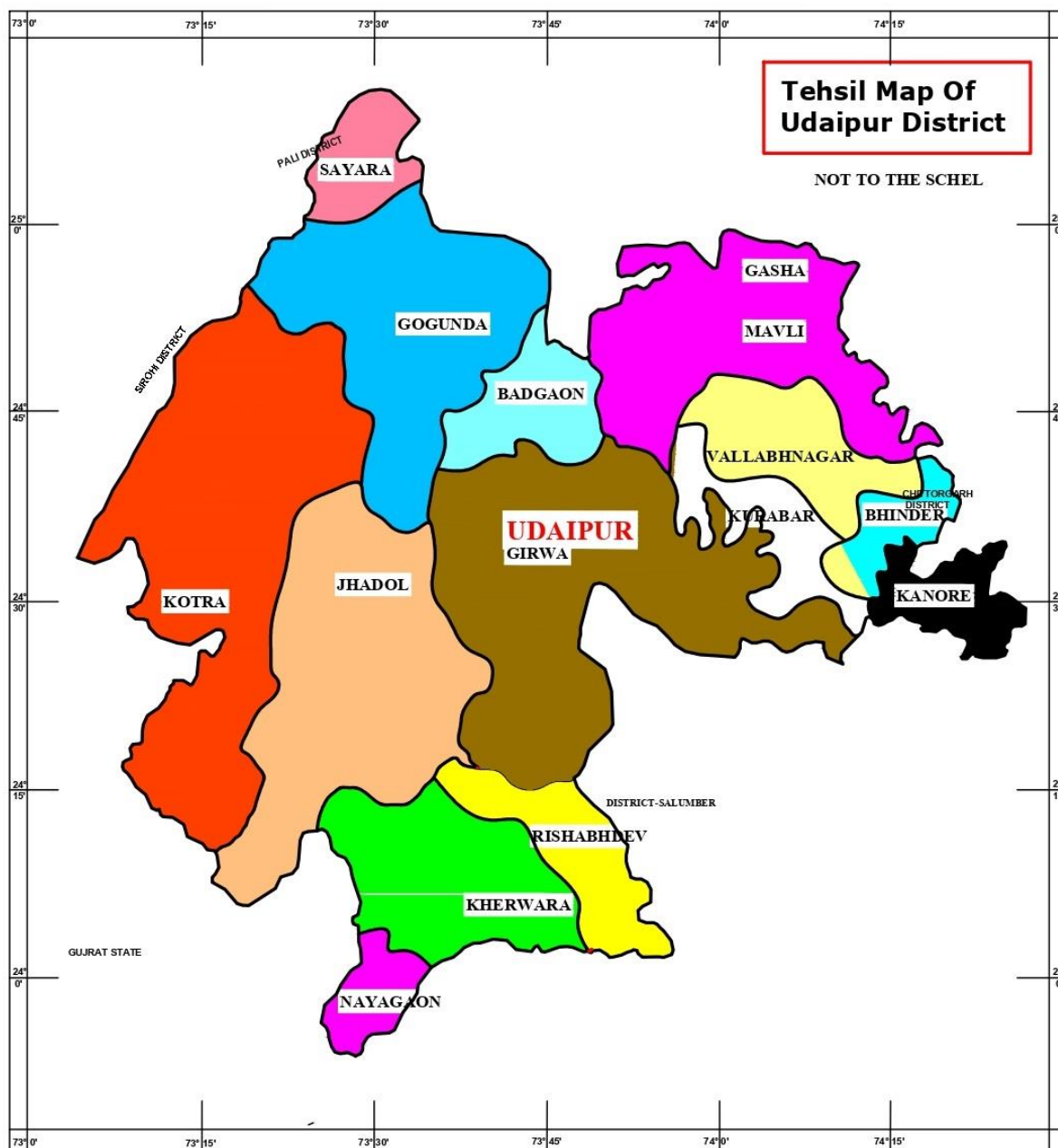
During the decadal period 1951–61, two new tehsils – Nathdwara and Gogunda – were created in the district. In 1991, seven tehsils of Udaipur district (Bhim, Deogarh, Amet, Kumbhalgarh, Rajsamand, Nathdwara and Railmagra) were transferred out of Udaipur district to create the new district of Rajsamand. Since then, several new tehsils have been created by restructuring or dividing existing tehsils; such new tehsils include Rishabhdeo and Lasadiya created in 2008, Badgaon in 2012, Bhindar in 2017, and Kanor in 2018. In the year 2023 a new district notified named salumber by joining of five tehsils named Salumber, Jhallara, Sarada, Semari and Lasadiya.

#### 1.4 ADMINISTRATIVE SET UP:

District Collector is head of the district for revenue, Law and order matters. District Collector & District Magistrate is the head of District Administration. For administration and development, the district is divided in Sub Divisions and Tehsil (sub-districts). The District Udaipur has 10 sub-divisions. Each of the sub-divisions is headed by a Sub-divisional Officer (SDOs) / Magistrates, the officers are responsible for implementation of law and order matters in their respective sub-divisions. There are 11 Tehsil headquarters in Udaipur district and each one has a Tehsildar as an administrative officer who works in accordance with the Land Record System to serve for the rural farmers and land holders and is responsible for maintaining the revenue matters in their respective Tehsil. For the purpose of the implementation of rural development projects/ Schemes under Panchayati Raj System, the district is divided in the 14 Panchayat Samities (Blocks). Block Development Officer or Vikas Adhikari is the Controlling Officer of each of the Panchayat Samiti to serve as extension and developmental executive at block level.

S.No.	Name of Sub-division	Name of Tehsil	Name of Panchayat Samiti
1.	Kherwara	Kherwara	Kherwara
2.	Rishabhdev	Rishabhdeo	Rishabhdeo
3.	Girwa	Girwa	Girwa
4.	Gogunda	Gogunda	Gogunda
5.	Badgoan	Badgaon	Badgaon
6.	Kotra	Kotda	Kotda
7.	Mavli	Mavli	Mavli
8.	Jhadol	Jhadol	Jhadol
9.	Vallabhnagar	Vallabhnagar	Vallabhnagar
10.	Bhinder	Bhinder	Bhinder

11.		Kanore	Kurabad
12.		Sayara	Sayara
13.		Nayagaon	Phalasiya
14.		Ghasa	Nayagaon
15.		Kurabad	



**Figure 2.0: Administrative set up of Udaipur District**

### 1.5 CLIMATE AND RAINFALL:

Udaipur district has a sub-humid climate. There are three distinct seasons in a year. The winter season encompassing four months from November to February are mild and pleasant,

with temperature ranging between 0<sup>0</sup>C (Mount Abu) to 18<sup>0</sup>C with little or no humidity. In Dec-Jan months occasional cold waves bring down the temperature significantly. March is a pleasant transition month to summer. The summer months from April to June, record average daily temperatures of around 37<sup>0</sup>C. May and June are the hottest months when temperature reaches up to 48<sup>0</sup>C. Annually, most of the rainfall is received during the monsoon season which extends from June (end of June) to September. The droughts are in general of mild or normal type. However, severe type of droughts has been recorded at Udaipur, Gogunda, Kherwara, Jharol, Kotra and Vallabhnagar. Very severe type of drought has been recorded in the year 1987 at Kotra.

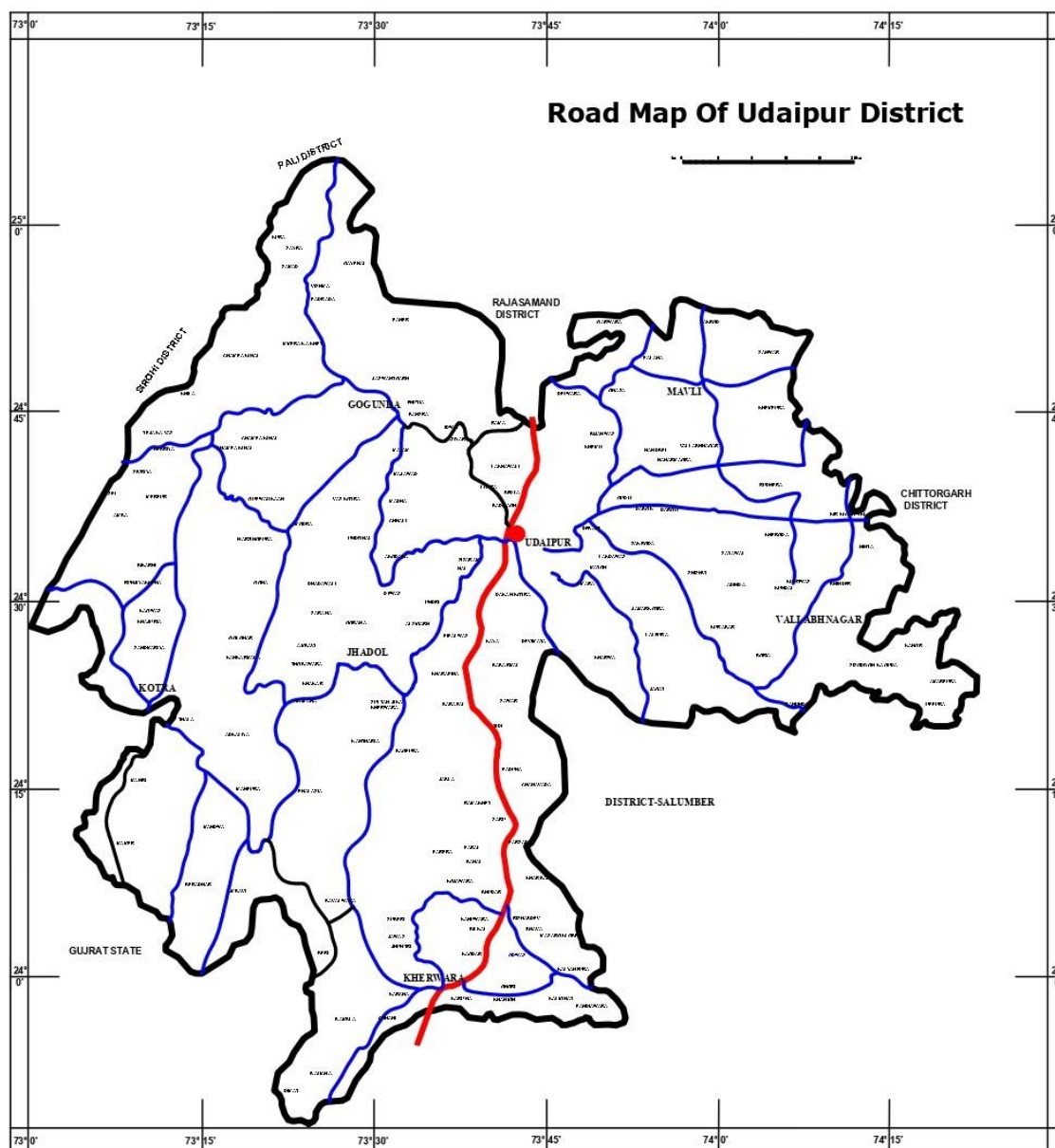
## 1.6 TRANSPORT AND COMMUNICATION:

### Road Transport:

The city lies on the intersection point of East West Corridor, Golden Quadrilateral, National Highway (NH) 76 and National Highway (NH) 8, midway between Delhi and Mumbai, located around 700 kilometres from either city. The East West Corridor which starts from Porbandar and ends at Silchar is intersecting the Golden Quadrilateral and shares the common space from Udaipur to Chittorgarh. The roads in this part of the country are paved and fit for private vehicles. One can either drive from Jaipur (around 6 hours), Ahmedabad (4. hours) or Surat (9 hours) on NH 8 or Golden Quadrilateral, from Kota (3 hours - EW Corridor or NH 76). Udaipur City Bus Depot has lines running for the majority of other destinations in Rajasthan and farther north and west towards Madhya Pradesh and Gujarat. Apart from Rajasthan State Road Transport Corporation (RSRTC), there are numerous private operators and companies providing bus services to and from the other cities. The length of road network available in the district as below:

Highway (NH, SH, MDH & Others )	Length (in Kms)
(a) National Highway	568.70
(b) State Highway	482.70
(c) Main District Highway	270.0
(d) Other district Roads	809.00
(e) Rural road	2425.00
<b>Total Length of road in kms Passing in Udaipur District</b>	<b>4555.4</b>

*\* Source: Superintendent Engineer P.W.D. Circle I Udaipur*



**Figure 3.0: Road Map of Udaipur district**

### **Rail Transport:**

Udaipur City railway station and Rana Pratap Nagar railway station are two railway stations in Udaipur. Through them, Udaipur has direct train connectivity on the broad gauge network to most of the major cities in Rajasthan and the rest of India such as Mysuru, Khajuraho, Alwar, Jaipur, Kota, Chittorgarh, Ajmer, Delhi, Mumbai, Kolkata, Ratlam, Indore, Ujjain, Mumbai, Surat, Vadodara, Gwalior and Agra and a broad gauge conversion have been done Ahmedabad. Luxurious trains, The Palace on Wheels, Royal Rajasthan on Wheels, Maharaja Express and The Indian Maharaja have Udaipur as the scheduled stop on their itinerary. Trains connecting Udaipur with the Capital of India, Delhi include the Mewar Express and Chetak Express.

### **Air Transport:**

Maharana Pratap Airport, is a small domestic airport situated in a satellite town about 20 kilometres from Udaipur. Daily flights connect Udaipur with Jaipur, Mumbai, Delhi, Chennai, Aurangabad, Bangalore, Hyderabad, Surat and Varanasi. Air India, IndiGo and Spice Jet are operational at present. The airport has been renovated by the Airport Authority of India for a though remote but possible International airport status.

## **1.7 FLORA & FAUNA OF THE DISTRICT:**

Udaipur district's major portion is covered with rocks & hills which are well stocked with forests. It covers about 297620 hectares under forests. The forest are valuable source of income and partly sustain the economy of the district. The tendu, katha, honey, wax, barks and grasses are economically important.

The forest in the district fall under the tropical dry deciduous. The district has large variety of flora. The common species found are Babul, Bargad, Dhok, Gugal, Khejri, Pipal, Neem, Salon, other tree found are Bahera, Hingota, Semal, Timru, Bans, Aak, Anwala, Thor, Karonda etc.

The wild life found in the various areas of the district includes a large variety of animals, birds, and reptiles. Among the principal ones are Panther, Tiger, Wild boar, Sambhar, Wolf, Jack and striped Hyaena etc. There are main sanctuaries at Jaisamand and Sajjangarh.

## **1.8 SOCIO ECONOMIC PROFILE OF THE DISTRICT:**

Agriculture is the main occupation of the people of Udaipur district and provided livelihood to maximum number of people. To assess the industrial potential, it would be of worth to explore the land use pattern, irrigation facilities; cropping system etc. which will provide a broad spectrum of resources inventory on which the foundations of industrial growth are generally laid down. Both rabi and khariff crops are grown in the district. Main crop of khariff are maize, rice, tur, moong, urad, cotton and sugarcane. In rabi crops barley, wheat, gram and mustard are the main crops, The third crop viz. zayad is also grown when several types of vegetables of principal crops in the district.

## **1.9 GROUND & SURFACE WATER SCENARIO OF DISTRICT:**

The occurrence of ground water in the district is mainly controlled by the topographic and structural features present in the geological formations. The principal source of ground water in the district is precipitation. Out of the total rainfall received, a major part of it is lost as

runoff and by evapo-transpiration through soil and vegetation. Only a small part of rainfall infiltrates down to reach ground water body. Ground water occurs mainly under water table condition in all formations. The main water bearing formation occurring in the district are the gneisses, granite gneiss, phyllite and schist, calc schist, quartzite and limestone. The occurrence and movement of ground water is controlled through the foliation / bedding plane, fissures, joints, solution cavities and other structural weak planes. The weathered mantles of the hard rock's yield good discharge of water. Depth to water level and yield of wells are generally controlled by physiographic location of well and percentage of secondary opening encountered in well sections. The ground water conditions in different formations are described below.

### **Groundwater in Bhilwara Super Group**

The eastern part of the district is underlain by rock belonging to Bhilwara Super Group. Innermost part of the area the formation encountered are schist, gneisses and migmatites with intrusive granites. Ground water in these rocks occurs under water table conditions in the zone of weathering and fracturing, joints and foliation planes. When schist is intermixed with gneisses then the sequence becomes softer and crumpling with the result that it forms a better aquifer. At places granites and gneisses form fairly good aquifers, where the thickness of weathering zone persists along secondary quartz veins. Intrusive contacts area found to be good channels for ground water circulation. The yields of wells vary from 10 to 150 m<sup>3</sup>/day. The rate of recuperation in wells is slow in gneisses and schist, whereas it is comparatively faster in granites.

### **Groundwater in Aravalli Formation**

Rocks belonging to Aravalli Super Group are located in the district in the south central part and comprise mainly phyllites, schist quartzites, conglomerate, dolomite, marble and meta volcanics. Debar and Udaipur groups which comprise mainly phyllite, dolomite and quartzites are exposed in the extreme south central part, south of Udaipur. Phyllite, quartzites and dolomites belonging to the Aravalli Supergroup form important aquifer especially around Jharol, Bhogpura, Udaipur, Khirpura, and Barapal. Ground water in these rocks occurs and circulates mainly through the weathered zones and weak planes like joint, fissures, schistosity bedding etc. Quartzites generally occur intercalated with phyllites and slates and are well jointed. Ground water occurs along the formational contact, and in the joints. Ground water in phyllites and schist occur mainly in slaty and fractured cleavages. The yield of wells varies from 15 to 150 m<sup>3</sup>/day. However, the average yield is around 40 m<sup>3</sup>/day. In dolomite and

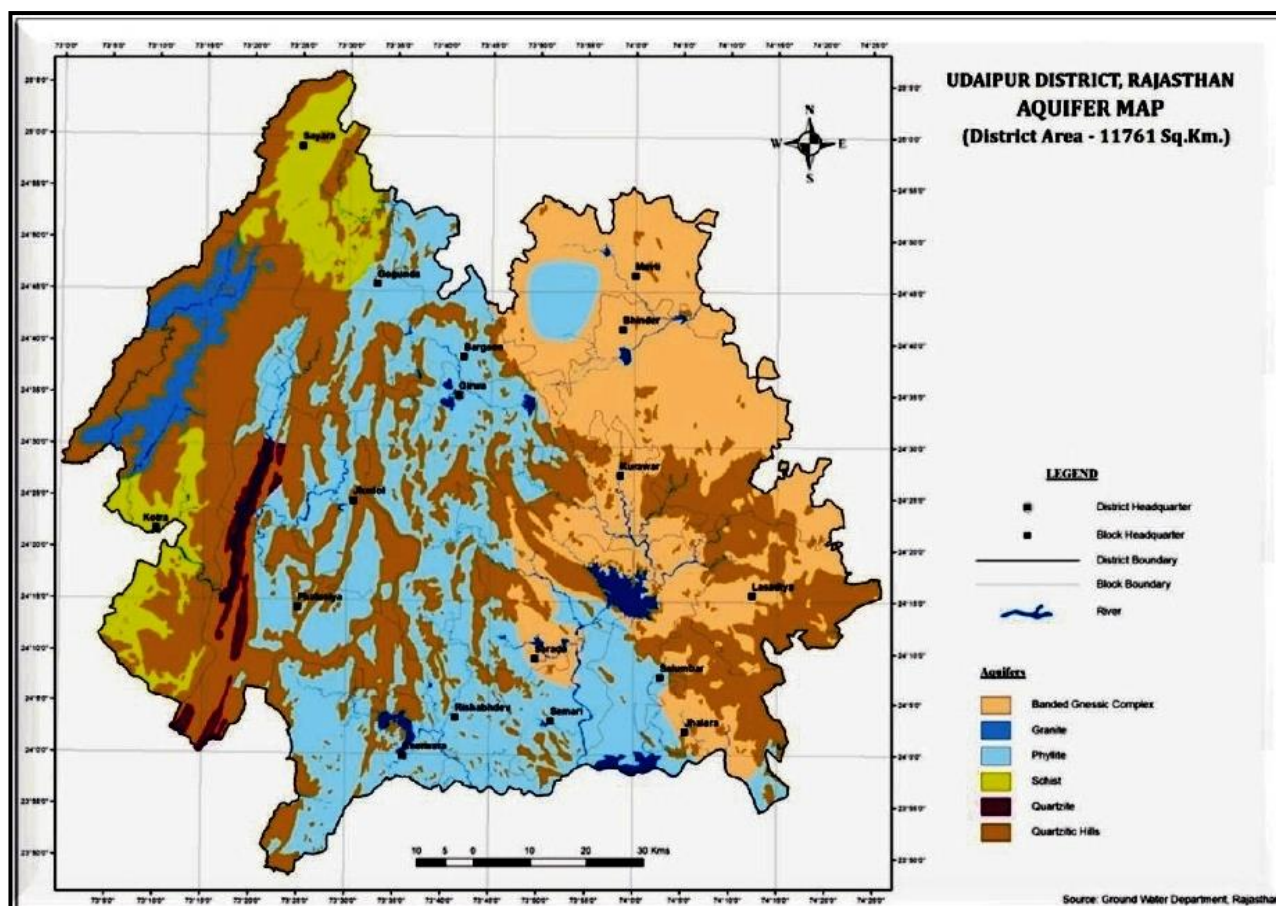
limestone the yield of well varied from 20 to 200 m<sup>3</sup>/day, averaging about 92 m<sup>3</sup>/day. Ground water in the intrusives (granitic gneiss) occurs in the joints and fractures and the yield of dug wells is very poor around 12m<sup>3</sup>/day. Serpentine talc rocks belonging to ultramafic suite, ground water occur in weathered and cleavage mass. The yield of dug well varies from 20 to 40 m<sup>3</sup>/day, average to about 25 m<sup>3</sup>/day.

### **Groundwater in Delhi super group**

The formations belonging to Gogunda and Kumbhalgarh groups of Delhi Duper Group are exposed in the western part of the district along a north east, south west trending belt. These formations are intruded by Sendra Ambaji Syn-orogenic granite in the south western part. Lower Gogunda group constitutes mainly quartzites and schist and the upper Kumbhalgarh Group comprises mainly schist, gneisses, marble and quartzites. Ground water in quartzites, occurs in the joints and fracture and in the contact plane near granitic intrusive. Depth to water level generally is shallow. The yield of well ranges between 16 and 95 m<sup>3</sup>/day, roughly averaging to 50 m<sup>3</sup>/day. Ground water in biotite schist and hornblende schist occurs in joints and fractures. The depth to water level ranges from 5 to 20 mbgl and the yield of wells varies from 12 m<sup>3</sup>/day to 250 m<sup>3</sup>/day. In calc schist and calc gneisses the yield of dug wells varies from 10 to 100 m<sup>3</sup>/day averaging to 60 m<sup>3</sup>/day. The yield is high when the lenticular cavities are saturated and are interconnected. In Sendra Ambaji granites which are intrusives into the formations of Delhi Super Group, the ground water occurs in weathered zones, joints and partings. The yield of dug wells varies from 15 to 40 m<sup>3</sup>/day.

### **Groundwater in Alluvium**

Ground water occurs under unconfined conditions in the unconsolidated formations consisting of sand, gravel, pebbles, cobbles and boulders. The movement of ground water takes place through the pore spaces occupied by above formations. The water table slopes broadly in the natural drainage direction of the Ahar River i.e. towards east and the river is seasonal.



**Figure 4.0: Aquifer Map of Udaipur District**

Aquifer in Potential Zone	Area (sq km)	% age of District	Description of the unit/Occurrence
Schist	738.2	6.3	Medium to fine grained compact rock. The litho-units are soft, friable and have closely spaced cleavage. This forms major water bearing formation under weathered/fractured conditions and found in the western and northwestern parts of the district within the Kotra and Gogunda blocks.
Phyllite	3461.7	29.4	These include meta sediments and represented by carbonaceous phyllite. This forms one of the most widespread aquifer type in Udaipur district covering nearly half of the district.
Quartzite	141.0	1.2	Medium to coarse grained and varies from feldspathic grit to sericitic quartzite. It forms aquifers along the border of Jhadol and Kotra blocks in the western part of the district.

Grainitic Gneiss	298.1	2.5	Grey to dark coloured, medium to coarse grained rocks. Its weathered and fractured part constitutes aquifers in the southwestern part of the district occupying major parts of Udaipur and Bhinder blocks in the eastern parts of the district.
BGC	2664.5	22.6	Grey to dark coloured, medium to coarse grained rocks. When weathered and fractured, it forms good aquifers in the district. It occupies large tracts in Mavli, Udaipur, blocks.
Non Potential zone	4469.4	38.0	Hills and intervening valleys
<b>Total</b>	<b>11772.9</b>	<b>100.0</b>	

#### 1.10 SEISMICITY:

As per seismic zoning map of India IS 1893 (Part-I): 2002, Figure 4, the major part of Rajasthan lies in Zone – II and Western parts of the districts of Barmer and Sirohi and Jalore as well as northern sections of Alwar district lie in Zone IV, where the maximum intensity could reach VIII (MSK). The remaining areas of Barmer and Sirohi districts, as well as the districts of Bikaner, Jaisalmer and Sirohi lie in Zone III. The north-eastern districts of Jhunjhunu, Sikar, Bharatpur and the rest of Alwar also lie in Zone III. The rest of the state, including the capital, Jaipur, lie in Zone II, where the maximum intensity expected would be around MSK VI, as is evident from the Seismic Zone Map of Rajasthan shows that some portion of district Barmer, Jalore, Alwar and Bharatpur lie under Zone – IV.

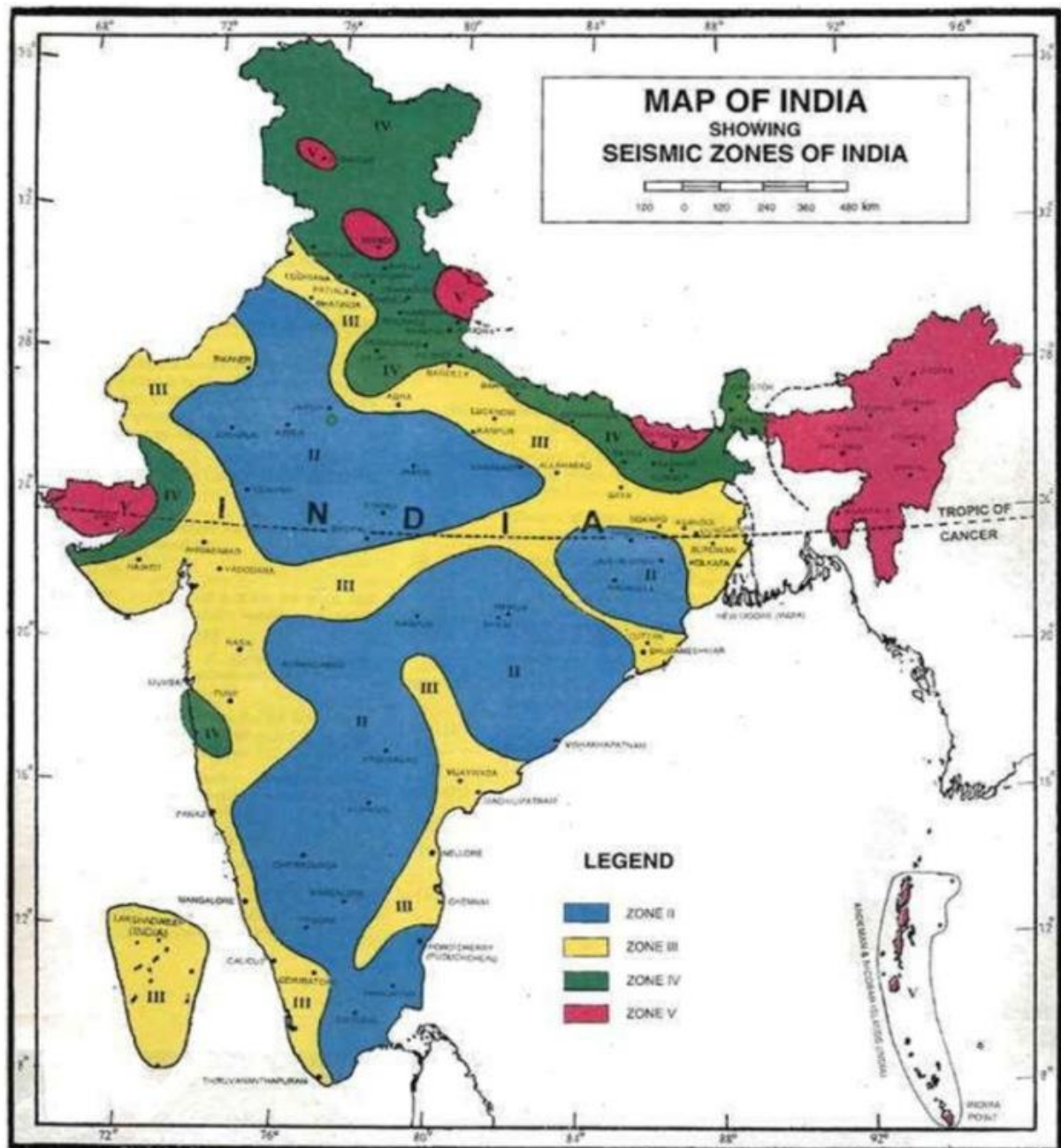


Figure 5.0: Map showing Seismic Zones of India and Rajasthan

\*\*\*\*\*

## **CHAPTER -2**

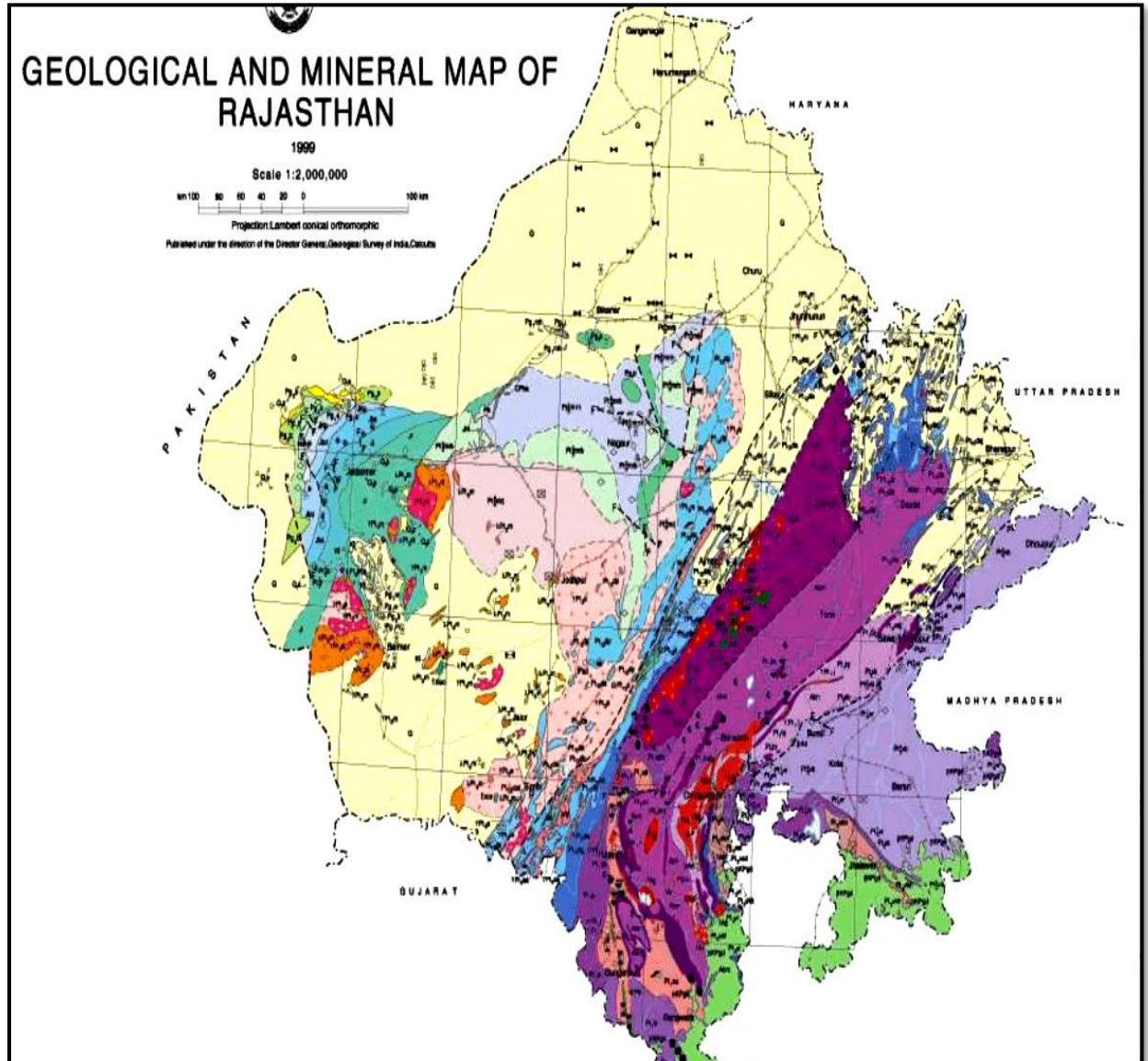
### **OVERVIEW OF MINING ACTIVITY IN THE DISTRICT**

**OVER VIEW OF MINING ACTIVITY IN THE DISTRICT:** Mineral administration work in the district is being looked after by the Mining Engineers, Udaipur and Assistant Mining Engineers Rishabdeo which comes under the jurisdiction of Superintending Mining Engineer, Udaipur preceded by Additional Director, Mines (ADM) Udaipur. Geological work including mineral prospecting & investigations are being looked after by the Senior Geologist (Phos), Udaipur, Senior Geologist, Udaipur which is under the Superintending Geologist Udaipur and Additional Director (Geology), Udaipur Zone.

#### **MINERAL RESOURCES:**

Udaipur district is particularly rich in mineral resource as a large variety of important minerals are found in the district. The important metals and non- metals found in the district are ores of copper, lead, zinc and silver. Among industrial minerals rock phosphate, asbestos, calcite, limestone, barites, emerald and marble etc. are important. Soapstone, Bajri another important minerals also found in the district. Nature has endowed Udaipur with natural minerals. Udaipur is a commercial hub of the world with marble mining and processing as important occupation of people. Udaipur tops in mining of natural minerals as like White Marble, Zinc, Rock Phosphate, Talc, Calcite, Quartz, Wollastonite, Pyrophyllite and Sillimanite. Following Minerals are found and quarried in the Udaipur District:

<b>S.No.</b>	<b>Mineral</b>
1	Copper
2	Lead, Zinc And Silver
3	Iron – Ore
4	Rock Phosphate
5	Lime Stone
6	MarbleSerpentine and Granite
7	Soapstone & Pyrophyllite
8	Calcite
9	Batytes
10	China Clay, Ochere
11	Dolomite
12	Quartz and Feldspar
13	Masonry Stone
14	Phyllite, Schist
15	Silica Sand



**Figure : Geological and Mineral map of Rajasthan District**

\*\*\*\*\*

### **CHAPTER -3**

#### **DEMOGRAPHIC PROFILE:**

An official Census 2011 detail of Udaipur a district of Rajasthan has been released by Directorate of Census Operations in Rajasthan. Enumeration of key persons was also done by census officials in Udaipur District of Rajasthan. As per the Census 2011 Rural & Urban population of the district is 24,59,994&6,08,426 respectively. Total population is 30,68,420. The total male and female population of the district is 15,66,801 and 15,01,619 respectively. Sex ratio of the district is 958. The population density of the district is 242 per sq km whereas; in the state it is only 206. The Scheduled Casteand Scheduled Tribe population in Udaipur district is 6.1 percent and 49.7 percent respectively whereas the State percent of Scheduled Caste and Scheduled Tribe population is 17.8 and 13.5 respectively. The economy of the district is mainly dependent on agriculture as 61.7 percent workers in the district are either cultivators or agricultural labourers. However the district percent of such workers is lower than the state average of 62.1 percent.Population Density is 242 personper sq.Km.

The literacy rate in the district is 61.8 percent which is lower than the State Average 66.1 percent and it ranks 21<sup>st</sup>among the other districts of the state. Gender Gap of the literacy rate is 26.3percent in the district.:

S. No.	Tehsil	Population		Total Population
		Male	Female	
1.	Mavli	1,28,830	1,24,515	2,53,344
2.	Gogunda	1,09,673	1,05,275	2,14,948
3.	Kotra	1,16,764	1,13,768	2,30,532
4.	Jhadol	1,26,124	1,23,713	2,49,297
5.	Girwa	4,62,688	4,35,445	8,98,133
6.	Vallabhnagar	1,38,834	1,32,845	2,71,679
7.	Lasadiya	46,364	44,865	91,229
8.	Rishabhdeo	88,216	84,719	1,72,935
9.	Kherwara	1,05,309	1,01,468	2,06,777

*Demographic Details of the District*

Total Population	Absolute			Percentage		
	Total	Rural	Urban	Total	Rural	Urban
<b>Total Persons (males+Females)</b>	3068420	2459994	608426	100.00	80.19	19.83
<b>Males</b>	1566801	1251316	315485	100.00	79.86	20.14
<b>Females</b>	1501619	1208678	292941	100.00	80.49	19.51

\*\*\*\*\*

## **CHAPTER -4**

### **LAND UTILIZATION PATTERN IN THE DISTRICT: DRAINAGE OF IRRIGATION PATTERN, FOREST, AGRICULTURE, HORTICULTURE, MINING ETC.**

#### **DRAINAGE OF IRRIGATION PATTERN:**

The western portion of the district is drained by the Sabarmati River which flows south into Gujarat. The northern portion of the district is drained by tributaries of the Banas River, including the Ahar River, which flows through the city of Udaipur. The southern and central portion of the district is drained by the tributaries of the Mahi River including the Som and Gomti rivers. These rivers are seasonal; with dendritic to sub-dendritic drainage..

There is wide variation in the district in terms of soil composition. Gogunda, Sayara, Kotra, Jhadol, Girwa, Kurabar, Badgaon, Mavli and Bhinder development blocks mainly have lime dominated clayey loam soil, whereas Kherwara. The western part of the district is mostly rocky where as south eastern part has yellowish brown soil. agriculture in Udaipur is primarily rain fed. Nearly 60% of the cultivated area is under single cropping, done during the monsoon season (Kharif). Of the total area under different crops, almost 70% is utilized for cereals and millet. The important crops in the district are Maize, Wheat, Barley and Gram. Nearly 50% of all the farm families in the district cultivate land of under 1 hectare size. The largest numbers of these small and marginal farmers are tribal, whose farming resources are extremely limited. Recurrently faced with drought, farmers have to routinely cope with situations of food and income shortages.

#### **Major soil types of the area and their percent distribution**

S.No.	Major Soils (common names)	Area (hectare)	Percent (%) of Total
1.	Black Clayey Deep Soil	102.64	7.02
2.	Brown Loamy Medium to Deep Soil	503.84	34.46
3.	Red Gravelly Loam Hilly Soil	692.60	47.37
4.	Red Loamy Shallow to Medium Soil	84.23	5.76
5.	Red Gravelly Loam Shallow Soil	51.61	3.53

#### **AGRICULTURAL RESOURCES:**

Agriculture is the main occupation of the people of Udaipur and provides livelihood to maximum number of people in the district. To assess the potential industries for Udaipur district it would be of worth to explore the land use pattern, irrigation facilities, occupation pattern, livestock population, dairy and cattle development etc. which will provide a broad

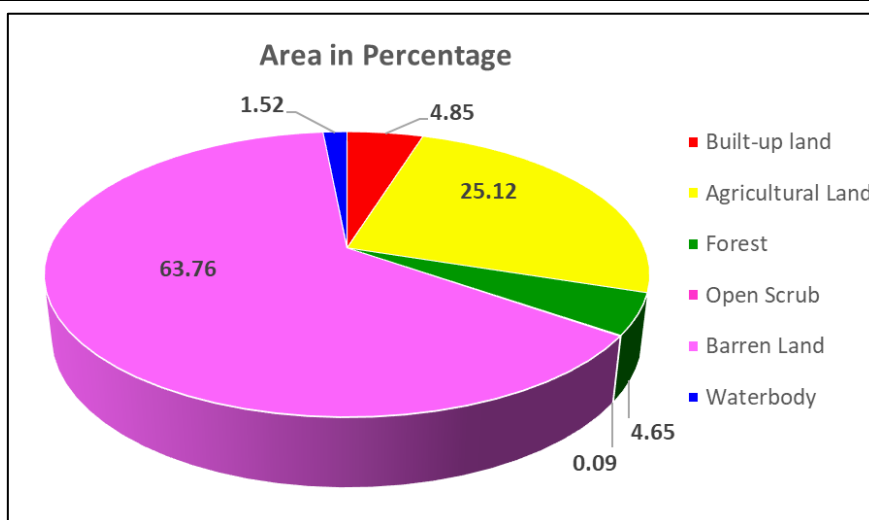
spectrum of resources inventories and resource base on which the foundation of the individuals growth is generally laid down.

### **LANDUSE PATTERN:**

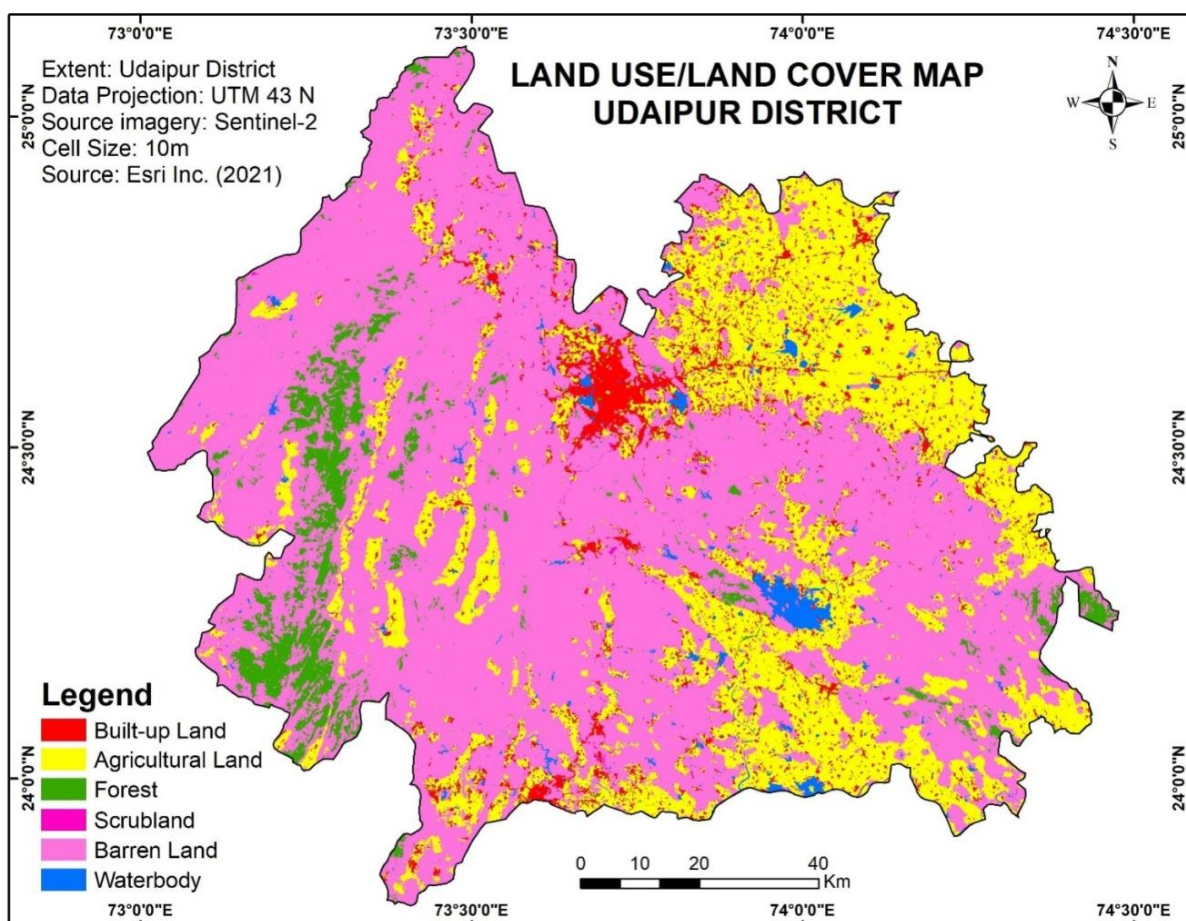
The total geographical area of Udaipur district was recorded at 11,724 Sq. Kms.

Brief information about land use classification is given below:

S. No.	Land Use	Area (Sq. Km)	Area (%)
1	Built-up land	569.03	4.85
2	Agricultural Land	2945.08	25.12
3	Forest	545.40	4.65
4	Open Scrub	10.84	0.09
5	Barren Land	7475.04	63.76
6	Waterbodies	178.61	1.52
<b>Total</b>		<b>11,724</b>	<b>100</b>



**Figure 8.0: Area wise existing Land use graphical representation of Udaipur district**



**Figure 9.0: Land Use and Land Cover Map of the Udaipur District**

\*\*\*\*\*

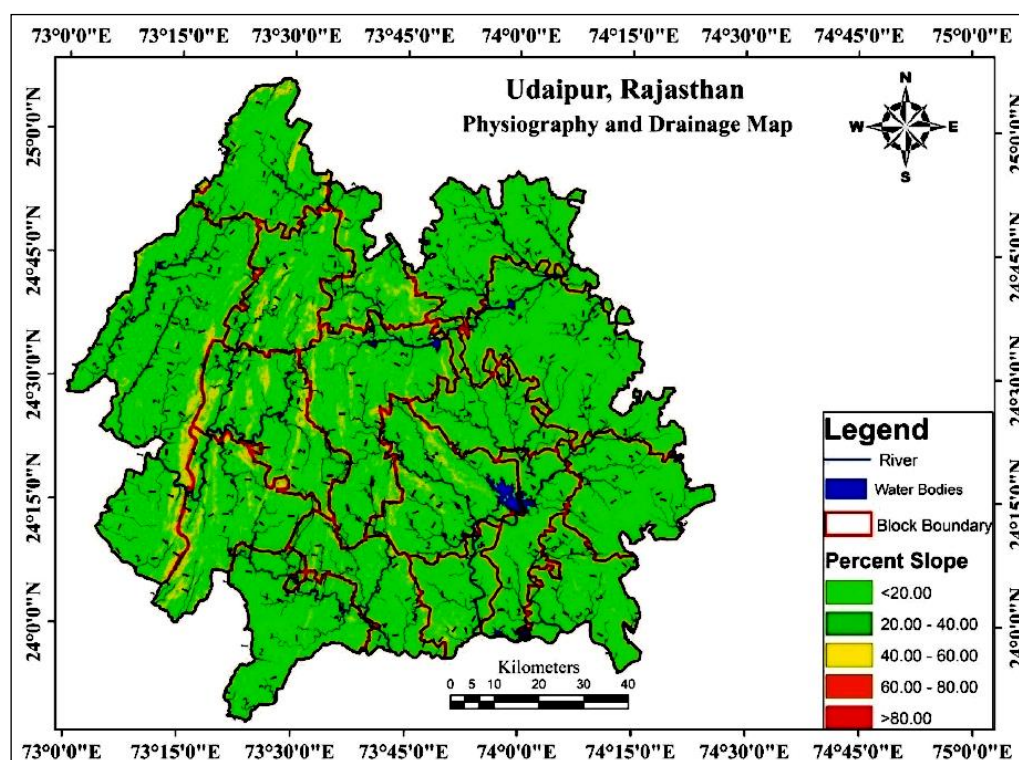
## CHAPTER -5

### PHYSIOGRAPHY OF THE DISTRICT

#### **PHYSIOGRAPHY OF THE DISTRICT:-**

The district has an undulating topography. Western part of the district has high hills which are part of Aravalli ranges with intervening valleys, while the eastern part has relatively low hills and broader plains. Elevation ranges from a minimum of 235 m above mean sea level in the southeastern part of the district and maximum of 1290 m amsl in Gogunda block in the northwestern part of the district. The hills are generally in the form of north east – south west trending ridges.

The western portion of the district is drained by the Sabarmati River which flows south into Gujarat. The northern portion of the district is drained by tributaries of the Banas River, including the Ahar River, which flows through the city of Udaipur. The southern and central portion of the district is drained by the tributaries of the Mahi River including the Som and Gomti rivers. These rivers are seasonal; with dendritic to sub-dendritic drainage..



**Figure 10.0: Physiographic and Drainage Map of Udaipur District**

The erstwhile rulers Maharanas of Mewar constructed several lakes in the Udaipur basin to overcome the problems of availability of water for the local population. The city is famous all over the world for its enchanting lakes. Udaipur is dependent on its lake system, which is directly, or indirectly the life source of the city in terms of surface water resources,

tourism, and the ecosystem at large. Most of the tourists (domestic as well as foreign) come to the city primarily because of placid beauty of the lakes. Lakes thus form the backbone of the city's economy. These lakes are the principal lifelines of the resident's city. The Udaipur Lake region is divided into six major catchments.

#### **Catchment Area of Udaipur Lake Regions**

S.No.	Lake region	Catchment area (in Ha.)
1.	Bada Madar	8780.48
2.	Chhota Madar	2987.23
3.	Fatehsagar	4325.35
4.	Bari ka Talab	1906.55
5.	Pichola	14610.63
6.	Goverdhan Sagar	814.63

### **SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT**

The occurrence of ground water in the district is mainly controlled by the topographic and structural features present in the geological formations. The principal source of ground water in the district is precipitation. Out of the total rainfall received, a major part of it is lost as runoff and by evapo-transpiration through soil and vegetation. Only as small part of rainfall infiltrates down to reach ground water body. Ground water occurs mainly under water table condition in all formations. The main water bearing formation occurring in the district are the gneisses, granite gneiss, phyllite and schist, calc schist, quartzite and limestone. The occurrence and movement of ground water is controlled through the foliation / bedding plane, fissures, joints, solution cavities and other structural weak planes. The weathered mantles of the hard rock's yield good discharge of water. Depth to water level and yield of wells are generally controlled by physiographic location of well and percentage of secondary opening encountered in well sections.

A brief description of the major lakes is given below:

**Pichhola:** It is the oldest amongst all the city lakes. It was constructed 600 years ago between 1382 and 1392 by Rana Lakha. This lake is situated in the southwestern part of the city at longitude 73°40' E and latitude 24°34' N. It derives its name from the village of 'Pichholi'. It accounts for a total water body area around 6.96 km<sup>2</sup> and has gross, live and dead capacities of 483, 318 and 165 mcft (million cubic feet), respectively. Its gauge height above and below sill level is 3.35 and 5.2 m. The lake has a maximum depth of 10.5 m.

**Rang Sagar:** It was constructed in 1668. It is 1.03 km long and 245 m wide. It has a maximum depth of 7 m. It acts as a link channel between Pichhola Lake towards south and Swaroop Sagar and Fateh Sagar in the north. Its water holding capacity is 1000 mcft.

**Swaroop Sagar:** It is a pear shaped lake which was constructed in the year 1678. Its gross capacity is 427 mcft. Its live and dead capacity is 247 mcft and 180 mcft respectively. Its total area is 4.00 km<sup>2</sup> and has a maximum depth of 13.4 m.

**Fatehsagar:** Lake Fatehsagar is another principal lake of the city. The Lake is situated at longitude 73°37' E and latitude 24°35' N at 578 m altitude (m.s.l.) in the north western side of the city. This pear shaped and medium sized lake was constructed by Rana Jai Singh in 1678 A.D. It was renovated in 1889 A.D. by Maharana Fateh Singh. The lake is 720m long, about 100m wide and rises nearly 40 m from the ground level towards east. Fatehsagar Lake stretches 2.6 km in north-south and 1.8 km in east-west directions, covering total water spread of nearly 4.00 sq. km and maximum depth of 13.4 m. It commands a total catchment area is about 41 km<sup>2</sup>. Its gross, live and dead capacity is 427.60, 247.60 and 180 mcft water, evidently lower than that of Pichhola.

**Goverdhan Sagar:** This lake is situated to the south of Pichhola at longitude 74°42' E and latitude 24°34' N. Its gross catchment area is 2.5 km<sup>2</sup> and its live capacity is 9 mcft. It is connected with Lake Pichhola through a link channel.

From observations came to know that these lakes are interconnected with each other. Interesting fact about it is that overflow from one goes to the next, making it the best example in rainwater harvesting and management. The water itself equals its level as these lakes are interconnected. Fatehsagar has a very small catchment of its own and is fed by Lake Badi, Chota and Bada Madar. The overflow from the Bada and Chota Madar merge with the Ayar River. The Ayar River feeds Udaisagar several kilometers downstream. The overflow from Lake Badi directly merges with Fatehsagar. The overflow from Pichhola (and from parts of Pichhola) flows into Fatehsagar, and the overflow from Fatehsagar flows into the Ayar through a canal before it enters Udaisagar. Below Pichhola and Fatehsagar are numerous wells and bawdi (step wells), which were the only source of drinking water, back then. With this web of lakes and wells, most of the rain falling within the Udaipur basin was kept within the basin itself, with very little losses making it a remarkable rain water harvesting system.

### **Geomorphology:-**

Geomorphologically, the area can be sub-divided into three major geomorphological units, i.e., hills (structural/linear/denudational), denudational origin (pediment/buried pediment),

and fluvial origin (valley fill). Most of the area is covered by hills, mostly runoff zones; the northeast and south of the district are covered by denudational origin, which is formed by erosion, stripping, and leaching, and serves as good recharge zones. Nearby the water bodies, the area is covered by fluvial origin, which is formed by the mass movement, transportation, and deposition and erosion of soil/sediment by streams, and serves as good recharge zones.

### **Geomorphologic units, their description and distribution, Udaipur District**

<b>Origin</b>	<b>Landform Unit</b>	<b>Description</b>
Denudational	Buried Pediment	Pediment covers essentially with relatively thicker alluvial, colluvial or weathered materials.
	Pediment	Broad gently sloping rock flooring, erosional surface of low relief between hill and plain, comprised of varied lithology, criss-crossed by fractures and faults.
	Intermontane valley	Depression between mountains, generally broad & linear, filled with colluvial deposits.
Fluvial	Valley fill	Formed by fluvial activity, usually at lower topographic locations, comprising of boulders, cobbles, pebbles, gravels, sand, silt and clay. The unit has consolidated sediment deposits.
Hills	Structural Hills	Linear to arcuate hills showing definite trend-lines with varying lithology associated with folding, faulting etc.

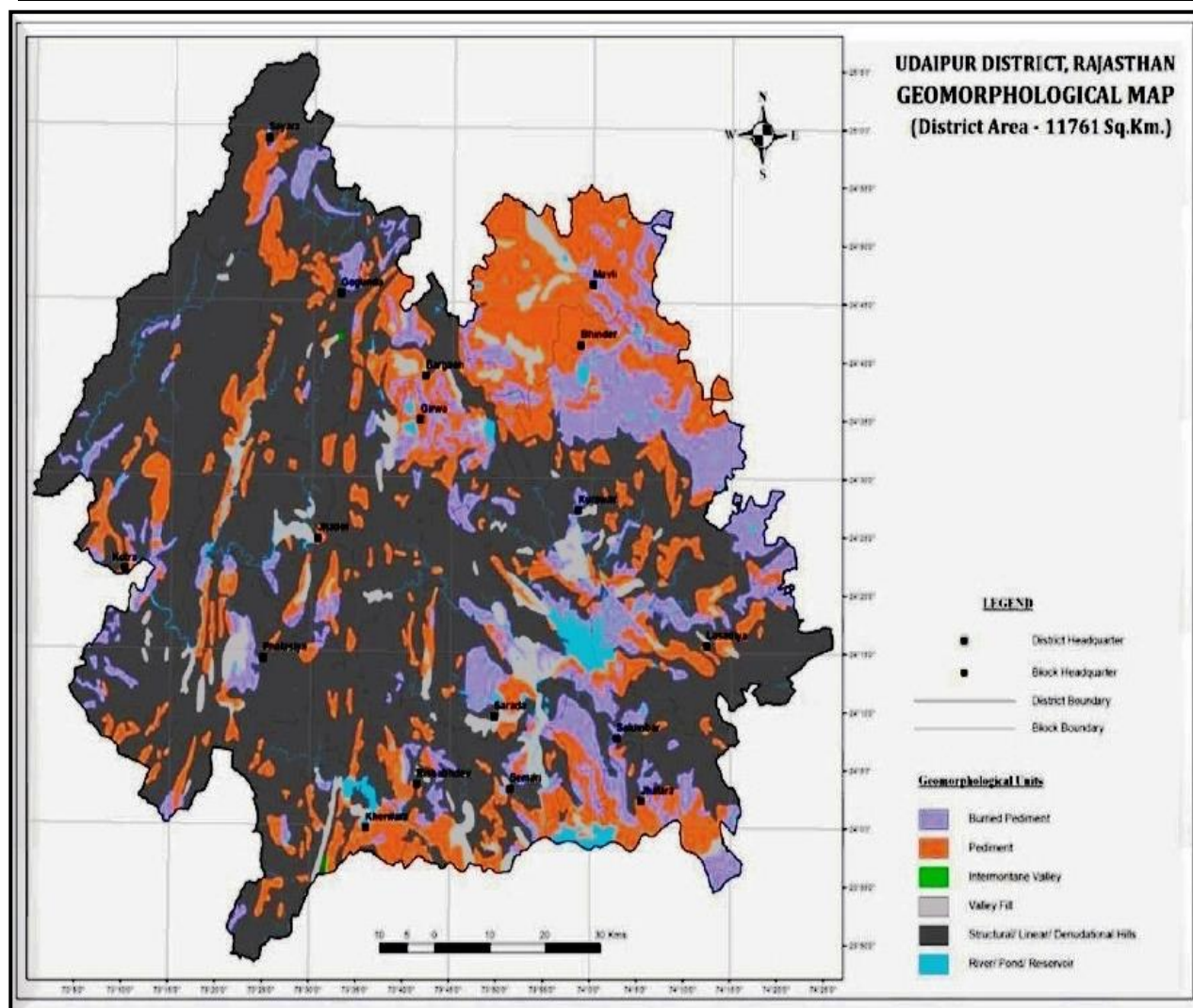


Figure 11.0: Geomorphologic Units and Their Description of Udaipur District

\*\*\*\*\*

## **CHAPTER -6**

### **RAINFALL**

#### **Climate:**

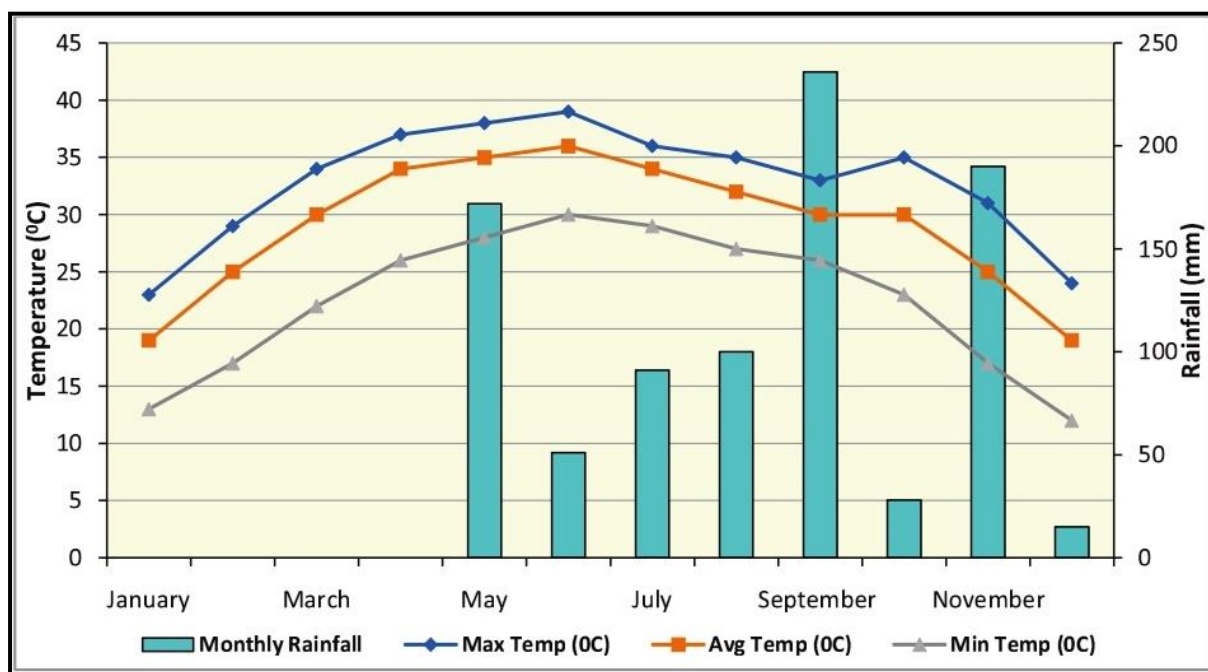
The district particularly has a tropical climate. The three main seasons, summer, monsoon and winter dominate the Udaipur district. Moreover, in a desert area, Udaipur has sultry type of climate. However, it is the only place in Rajasthan that has quite moderate climate throughout the year. In summers, the scorching sun makes the city hot whereas in winters the weather remains pleasant. The summer season runs from Mid-March to June and the average maximum temperature attains value of 39°C. Monsoon arrives in the month of July heralded by dust and thunderstorms. The district annually receives around 688 mm of rainfall. This scanty amount of rainfall makes district more humid. The humidity reaches to the extent of 90% during the months of Monsoon. Winters are comparatively cooler than summers but not extremely cold at all. The winter season prevails from the month of October till February. Humidity, which prevails during monsoon, diminishes at the arrival of winters. The district experiences pleasant sunny days and enjoyable cool nights. The average temperature falls to the level of 7°C in the nights. The climate of Udaipur district is mild throughout the year. The maximum temperature ranges between 35°C to 39°C on most of the days during summer season. Heat wave also prevails for a few days in the summer season, when day's temperature rose to 4<sup>0</sup>–6<sup>0</sup>C above normal. In winter minimum temperatures remain around 5<sup>0</sup>–10<sup>0</sup>C or so when chilly wind (northerly) blow from Himalayan region. Mist also occurs at a few occasions in the morning hours after incursion of moisture from Arabian Sea. The minimum temperature is as low as -1.2<sup>0</sup>C was recorded on 1st January, 1991. The maximum temperature's upward surge starts from April and reaches at peak in the month of May-June with the average value of 39.8<sup>0</sup> C. The downward trend in minimum temperature commences in September and continues up to January. January is the coldest month with average minimum temperature of 7<sup>0</sup>C. Rainfall increases from the month of June when thundery activities start and July and August are the rainiest months. Monsoon generally sets around 20th June and lasts up to middle of September. Rainfall decreases sharply in October and November. These are the transit months.

#### **Monthly Temperature and Rainfall variation of Udaipur**

##### **Rainfall:**

Rainfall during the monsoon period in the study area is observed by the low pressure systems formed in the Bay of Bengal and moving from east to NW direction and oscillation of the

Monsoon trough from north to south direction from normal position. Heavy rainfall over the district is generally realized with the interaction of western disturbances (moving from west to east) and low pressure areas from Bay of Bengal over and around the district. During some years low pressure areas formed over the north Arabian Sea and their movement toward SE Rajasthan also give very good amount of rainfall over this district. Udaipur is in one of that area in India where average rainfall is less than average rainfall of India and it also suffer from high temperatures. So it is important to determine the rainfall and temperature trend in different seasons for the purpose of agricultural activities, crop water balance model as well as to know about drought condition and productivity of that area.

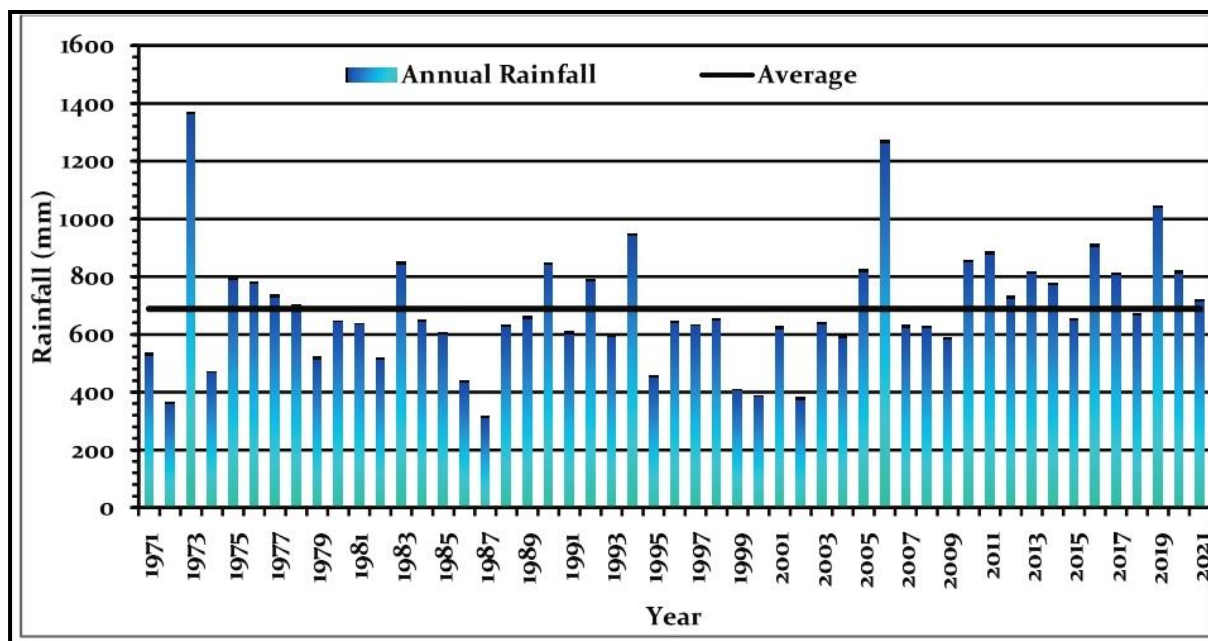


#### Statistical Analysis of Rainfall Data for the Period 1971-2021.

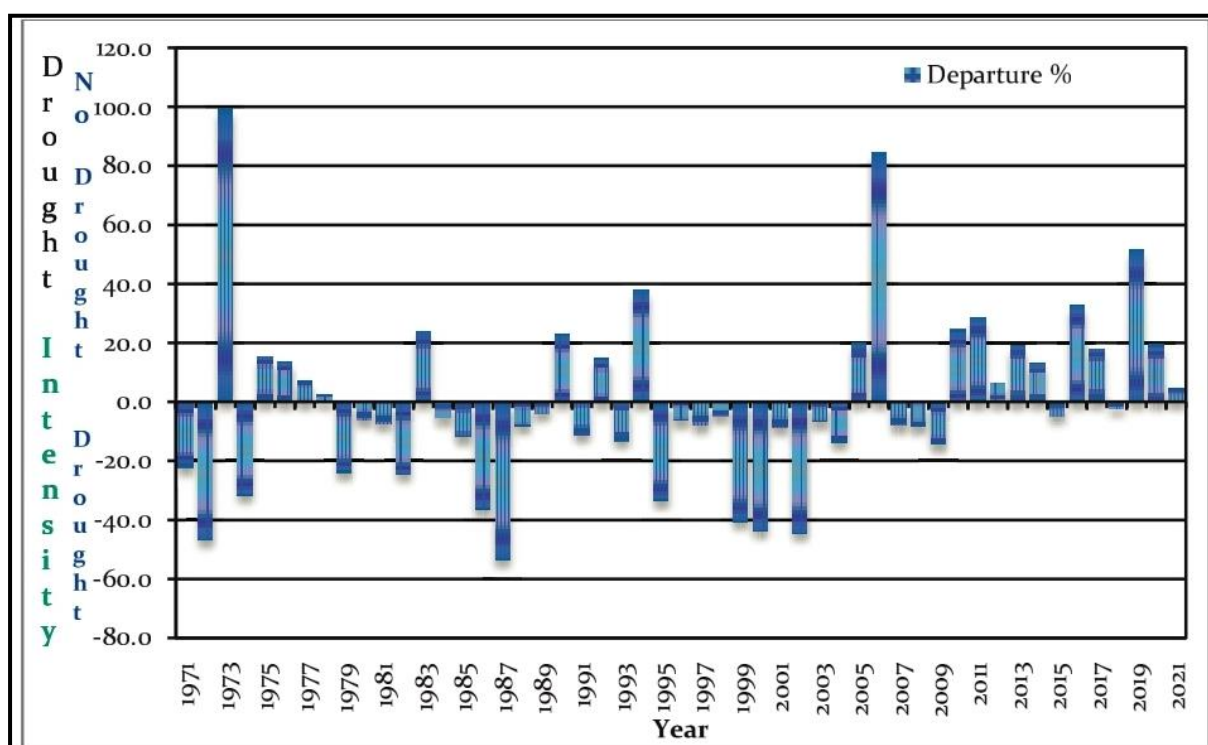
Rain Gauge Station	Maximum RF (mm)	Minimum RF (mm)	Maximum RF (Year)	Minimum RF (Year)	SD (mm)	CV (%)
Girwa	1189	206	2019	1987	206.72	314.25
Gogunda	1670	285	2006	1987	279.56	249.17
Jhadol	1475.1	305	1973	1987	239.83	283.88
Kherwara	1332	251	2019	1987	223.91	282.28
Kotra	2068	191	1973	1987	339.26	254.96
Mavli	1210	286.1	2016	1972	205.00	328.40
Rishabhdev	1181	254	2019	2007	218.29	330.52
Vallabh Nagar	1415.8	297.3	1973	1972	250.91	262.86

Statistical analysis of rainfall data shows that the nature rainfall in the district is quite erratic and uncertain. The average annual rainfall in the study from 1971 to 2021 is 688.08 mm, with the annual lowest and highest rainfall being 319.89 mm (1987) and 1370.43 mm (1973), respectively. As per rainfall analysis, 58.82% of overall time series of annual rainfall years have a below average rainfall (688.08 mm), whereas the remaining 41.18% have surplus rainfall. Therefore, it can be concluded that there is high variability in the amount of rainfall received.

The drought is a period of abnormal dry weather causing serious hydrological imbalance in the affected area. The study of drought trends is very much useful for these drought affected regions where the annual rainfall is highly variable with frequent dry spells. The yearly intensity of drought has been determined using the criteria suggested by IMD which is based on the percentage deviation of rainfall from its long term mean. Annual drought intensities show that surplus rainfall has been followed by multiple successive deficit rainfall years (1991-2001). The frequency of occurrence of drought in the district is 58.82%. Consequently occurrences of droughts coupled with rainfall are a characteristic feature of the basin.



**Temporal Variation of Annual Rainfall (1971-2021) of Udaipur District**



**Plot of the Temporal Drought Intensity in Udaipur District**

## **RAINFALL- MONTHWISE**

In India, the year has been divided into four seasons:

- Winter Season: December to February
- Summer Season: March to May
- Monsoon Season: June to September
- Post Monsoon Season: October to November

The Udaipur district mainly receives Monsoonal rainfall between the months of late June to early September. Monthly rainfall data procured from Irrigation Dept. is shown below:

### **Month-wise Rainfall (in mm) of Udaipur District for the Year 2021**

S. No.	Rainfall Station	Rainfall mm (2021)											
		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
1.	Gogunda	0.0	0.0	0.0	0.0	141.0	41.0	120.0	89.0	321.0	16.0	89.0	38.0
2.	Jhadol	0.0	0.0	0.0	0.0	77.0	81.0	94.0	120.0	245.0	16.0	233.0	1.0
3.	Kherwara	0.0	0.0	0.0	0.0	41.0	50.0	62.0	21.0	198.0	8.0	28.0	5.0
4.	Kotda	0.0	0.0	0.0	0.0	67.0	110.0	150.0	47.0	390.0	21.0	133.0	12.0
5.	Mavli	0.0	0.0	0.0	0.0	77.0	130.0	118.0	113.0	225.0	12.0	125.0	50.0
6.	Salumber	5.0	0.0	0.0	0.0	97.0	32.0	149.0	26.5	379.0	16.0	105.0	2.0
7.	Sarada	6.0	0.0	0.0	0.0	148.0	99.0	52.0	38.0	195.0	0.0	72.0	2.0
8.	Udaipur (Girwa)	0.0	0.0	0.0	0.0	172.0	51.0	91.0	100.0	236.0	28.0	190.0	15.0
9.	Vallabh Nagar	0.0	0.0	8.0	0.0	102.0	139.0	82.0	117.0	260.0	19.0	83.0	15.0
10.	Lasadia	4.0	0.0	0.0	0.0	114.0	123.0	142.0	121.0	350.0	21.0	93.0	4.0
11.	Rishabhdev	0.0	0.0	0.0	0.0	153.0	55.0	88.0	46.0	239.0	3.0	35.0	4.0
12.	Badgaon	0.0	0.0	0.0	0.0	113.0	29.0	42.0	57.0	135.0	0.0	125.0	9.0
13.	Semari	19.0	0.0	0.0	0.0	167.0	67.0	156.0	23.0	226.0	0.0	67.0	5.0
14.	Bhinder	0.0	0.0	0.0	0.0	87.0	112.0	206.0	75.0	350.0	0.0	80.0	28.0
15.	Kanod	10.0	0.0	0.0	0.0	89.0	95.0	213.0	102.0	332.0	52.0	88.0	14.0
<b>Total Rainfall</b>		<b>44</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>1645</b>	<b>1214</b>	<b>1765</b>	<b>1095.5</b>	<b>4081</b>	<b>212</b>	<b>1546</b>	<b>204</b>
<b>Av. Rainfall</b>		<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>110</b>	<b>81</b>	<b>118</b>	<b>73</b>	<b>272</b>	<b>14</b>	<b>103</b>	<b>14</b>

Source: Water Resource Department, Rajasthan

\*\*\*\*\*

## **CHAPTER -7**

### **GEOLOGY AND MINERAL WEALTH**

#### **7.0 GEOLOGY AND MINERAL WEALTH:**

Rock types ranging in age from Archean to upper Proterozoic are present in the area which holds significant position in metallogeny and tectonics of the western Indian craton. The Precambrian meta-sediments belong to three geological cycles designated as Bhilwara, Aravalli and Delhi Supergroups. The Bhilwara Supergroup is represented by the Hindoli Group and Mangalwar Complex of Archean age. The Mangalwar complex of Bhilwara Supergroup represents the oldest meta-supracrustals of Rajasthan grouped overlying Mando–Ki–Pal and Potla Formations. The Hindoli group is represented by the Sujanpura Formation consisting of volcano–clastics with tuffs and meta-greywacke. The Bhilwara Orogeny experienced large scale magnetism that resulted in the emplacement of intrusive granitic plutons of the Untala and Gingla granites. NW-SE trending meta-dolerite of tholeiitic affinity traverses the granites and gneisses. The Newania Carbonatite, NW-SE trending elliptical dyke of approximately 4 km<sup>2</sup> area, is intrusive into the Untala Granite. The Palaeoproterozoic Rajpura-Dariba Group is an assemblage of sulphide bearing sediments and is represented by the Bhinder formation. The rocks of the Aravalli Supergroup are represented by several Groups in the area: Debari, Udaipur, Bari Lake, Kankroli, Jharol, Dovda and Nathdwara Groups. The Aravalli supergroup is separated from the Bhilwara Supergroup by the quartzitic horizon of Gurali formation of the Debari Group. The metamorphosed ultramafics (serpentinite) along with clastics and chemogeneic sediments occurring over the Jharol Group have been within the Rakhabdev Ultramafic Suite, which along with the Salumber, Udaipur and Darwal Granites represent the post-Aravalli intrusive phases. The rocks of the Delhi Supergroup exposed in the area are divided into the Gogunda, Kumbhalgarh and Sirohi Groups. The post Delhi magmatism is reflected by the granite, granite gneiss and migmatites of Sendra Ambaji Granite and Erinpura Granite intrusives. The other post Delhi intrusive includes pegmatite, syenite, and metabasics. In the western part of the area a small patch of well sorted fine aeolian sand belongs to the Akhaj formation of Holocene age. In the district, the important are Jhamarkotra rock phosphate, Daroli limestone, pink marble of Babarmal, Zawar Lead-Zinc deposits etc. Post Aravalli rocks, mainly ultrabasics, are the source of green marble and host rocks for soapstone deposits.



31 | Page

The stratigraphic succession of the rocks occurring in Udaipur district is given below:

Supergroup	Group	Formation	Lithology
		Akhaj Formation	Well sorted fine Aeolian sand
Intrusives		Erinpura Granites	
		Syenite, Pegmatite, Meta-Basic Rocks	
	Sirohi Group	Sendra Ambaji	Granite Gneiss, Granite
		Khiwandi	Calc-Schist rocks
		Phulad Ophiolite Suite	Epidiorite, Amphibolite, Gabbro, Pyroxene Granulite
Delhi Supergroup	Kumbhalgarh	Kalakot	Calc-gneisses, calc-Schist, marble, Schist, migmatites, gneisses, quartzites etc
		Todgarh	
	Gogunda	Kelwara	Quartzites, interbedded schist with subordinate impure calcareous meta-sediments.
		Antalia	
Intrusives		Dolerite, Pegmatite, Quartz Vein	
		Udaipur/ Udaisagar/ Darwal/ Salumbar	Granite and Granite Gneiss
Aravalli Supergroup	Jharol/ Dovda /Nathdwara	Rakhabdev Ultramafic Suite	Talc-Chlorite Schist, Serpentinite
		Rama	Quartzite, Clacitic Marble, Dolomitic Marble, Schist, Gneiss
		Samlaji/ Devthari/ Haldighati	
		Kadmal	
	Bari Lake	Goran/Depti	Quartzite, Phyllite, Schists, Basic Meta-Volcanics
		Khamnor	
		Varla	
	Udaipur	Sajjangarh	Quartzite, Meta-Conglomerate, Arkose
		Zawar/Mochia	Quartzite, Dolomite Marble (Sulphide Bearing), Mica Schist
		Banaswara	Quartzite, Marble, Amphibolite
		Nimachmata	Phyllite, Dolomite, Quartzite, Feldspathised Schist
		Balicha/Baroi Magra	

	Debari Group	Eklinggarh	Dolomite, Greywacke, Phyllite, Meta- Conglomerate
		Mandli	
		Sabina	
		Babarmal/Jhamarkotr a/Jagpura/Kathalia	Phosphorite Bearing Dolomite , Dolomite, Phyllite, Mica Schist
		Berwas/Mukundpura/ Dakankkotra/ Sismagra	Phyllite, Cherty Dolomite, Meta- Conglomerate
		Jaisamand	Quartzite, Phyllite, Mica Schist, Dolomite, Meta-Arkose
		Delwara/ Natharia- Ki-Pal	Quartzite, Phyllite, Mica Schist, Dolomitic Marble, Basic Meta- Volcanics, Volcanic Conglomerate
	Rajpura- Dariba	Gurali	Quartzite
		Bhinder	Amphibolite, Quartzite, Calc- Gneiss, Mica Schist, Greywacke
		Newania Carbonatite	Carbonatite
Intrusives	Ultrabasics	Dolerites	
	Gingla Granites	Granites	
	Untala Granites		
Bhilwara	Hindoli	Sujanpura	Meta-Greywacke with bands of volcanics
	Mangalwar Complex	Potla	Biotite Schist
		Mando-Ki-Pal	Migmatites, Biotite Schist, Gneiss, Amphibolites
		Sarada	Quartzite, Migmatite, Quartz-Biotite Gneiss, Feldspathic Mica Schist
		Lasaria	Granite Gneiss, Migmatite, Amphibolite, Quartzite, Mica/Hornblende Schist

It is the Aravalli Supergroup of rocks which hosts some of the best mineral belts being worked

The mineral resources of Udaipur district are described as below:

### **A. METALLIC MINERALS:**

The district contains both non-ferrous (base metals) as well as ferrous mineral deposits. These are Pb-Zn deposits of Zawar, Copper deposits of Anjani, Bedawal, Umrada and iron deposit of Nathara Ki Pal.

#### **Copper ore:**

**Anjani deposit:** It is located about 70 kms. Southeast of Udaipur at Dhariawad tehsil. Copper mineralisation extends over a strike length of 1.6 kms. and has been proved up to 120 m. vertical depth. The area has been divided into two blocks i.e. north and south. In north block, 0.99 million tonne reserves with 1.09% Cu and in south block 0.473 million tonne reserves with 1.01% copper have been proved. It also contains 20-60 ppm silver.

#### **Lead-Zinc ore:**

**Zawar Lead-Zinc deposit:** Before discovery of Agucha deposit, Zawar remained the important source of lead-zinc ore in the country. It is located about 40 km. south of Udaipur city. Zawar is also a Railway Station on the Udaipur City-Ahmedabad of the Western Railway. These deposits are believed to have been worked during the 14<sup>th</sup> century. The area was held under the mining lease by Metal Corporation of India till 1965, after that the mines were nationalised by the Government of India and the Hindustan Zinc Limited, a Government of India undertaking, was set-up.

The Zawar lead-zinc belt extends from Hameta-Magra in north to Prasad in south, for a distance of 20 km. Mineralisation occurs in siliceous dolomite of Aravalli Supergroup and it extends for 16 km. from south to north and then swings towards east. This belt has been divided into 5 blocks namely, Prasad, Bara, Paduna, Zawar and Hameta Magra; of these the Zawar and Hameta Magra have been investigated in detail.

The hills of Mochia Magra, Balaria, Zawarmala, Bowa and Baroi are included in the Zawar area. The Mochia Magra including Sunaria and Ruparia hills on the west, extends east-west over a strike length of 4.6 km. The width of mineralised zone in this part varies from 3 to 60 m. The primary ore minerals are sphalerite, galena and some pyrite containing recoverable amount of cadmium and silver. The average metal content is 3.7% zinc and 1.8% lead.

The Balaria hill is the eastern extension of Mochia Magra beyond the Tidi river. The mineralised zone extends for about 2 Km. and its width is upto 15 m. The ore contains about 8% zinc and 6% lead in certain portions of the lode. In the Zawarmala hill, indications of mineralisation are seen over a length of 5 km. Drilling has indicated a thick ore body in the northern portion.

Mineralisation also occurs over 1.6 Km. length in the Baroi Magara, parallel to Zawarmala and in Bowa Magra. 1 Km. south of Mochia Magara. Production is coming from Mochia, Balaria, Baroi & Zawarmala mines. A small lead-zinc ore body, containing 4% zinc and 2% lead exists in the Hameta Magara block. Its depth persistence has been ascertained upto 280 m. The ore extracted from the Zawar area is treated in two ore dressing mills situated at Zawar and metal is recovered at Zinc Smelter, Debari on Udaipur-Chittaurgath road and Super smelter at Chanderia.

## **B. NON-METALLIC MINERALS:**

Udaipur district possesses various industrial mineral deposits viz. rock phosphate, soapstone, asbestos, barytes etc. and decorative stones like green and pink marble. In rock phosphate and soapstone, it is the leading producer in the country. In marble, asbestos and barytes, it has a handsome share in Rajasthan's production.

### **Asbestos:**

Asbestos bearing areas in Udaipur can be put in two groups i.e. Rikhababdeo and Jharol.

**Rikhabdeo Area:** The Chrysotile variety of asbestos is known to occur around villages Kagdar-Ki-Pal, Rikhabdeo, Serro-Ki-Pal and near by areas in the form of cross fibre veins forming ribbons or irregular stock-works. The length of fibre varies from 1 mm. to 12 mm. Recovery percentage is quite low and commercial production is negligible.

In south of Rikhabdeo, occurrences of tremolite asbestos have been reported near villages Dhelana, Odwas, Saru, Bhana, Khanmin, Kalighati etc. The asbestos is associated with talc and hence, commercial exploitation is not possible.

**Jhadol Area:** The deposit is located 16 km. west of Jharol. It extends for about 20 km. in strike length and 3 km. in width, starting from Banli and Kirat villages in south and around Jhanjhar-Ki-Pal, Parri through Amari Bara, Solar Amberi, Uprera and extends up to Malmukhi village in north. The mineralisation of anthophyllite variety of asbestos is found in altered ultrabasic rocks as detached lenticular masses. The asbestos fibres occur in form of stock-work or in mass fibre form which ranges from 2 m. to 25 m in length. The quality of asbestos in general is poor.

### **Barytes:**

**Relpataliya deposit:** It is the biggest barytes deposit in the state. The deopsit is located near village Relpataliya in Girwa tehsil and lies 7 km. north-west of Jagat. The barytes occurs as a long band in granitized gneisses and schist, flanked by metabasites on both hanging and footwall sides. The barytes bearing zones could be traced over a strike length of about 2.5 km. The main barytes band starts about 1.4 km. south of Relpataliya village and continues in north east for a strike length of

about 200 m., making total of 1.6 km. length. Besides this main zone, there are two more bands of barytes which also follow the general trend of barytes mineralisation. These veins have strike length varying from 150 m. to a maximum of 450 m. It contains 78-94% BaSO<sub>4</sub> and its sp.gr. varies from 3.85 to 4.55.

The barytes occurs chiefly in two modes, massive and vein/veinlets. Both types of the mineralisation occurs are found together in the host rocks forming a mixed zone of barytes and country rocks. The width of barytes zone, in general, varies from 0.5 m. to about 5 m., exceptionally reaching to 8 m. At most of the places, the barytes is massive in nature and medium to coarse grained. White, off white and pink coloured barytes has been found in the area.

**Babarmal:** Barytes mineralisation is found over a strike length of about 6.5 km. in the form of disconnected thin lenses. It is associated with quartz veins intruded in the granite gneisses. The thickness of the barytes veins varies from 10 cm. to 40 cm. Besides above deposits, small veins of baryte also occur near Tikhi, Chanda and Kharwa villages.

#### **Calcite:**

**Rabach deposit:** The area is situated near village Rabach in Gogunda tehsil. It is located about 73 km. north-west of Udaipur. The area contains a rich deposit of calcite. Calcite is found in the form of thin to moderately thick veins of variable length and width and in mixed zone where the calcite is found associated with decomposed limestone. Four calcite veins and five mixed zones of calcite are exposed in the area. It is white in colour, flaky as well as crystalline and brittle in nature. Geological investigations carried out have revealed that four lakh tonnes of calcite reserves are available from this deposit.

#### **China clay:**

**Kharbariyon-Ka-Guda:** This deposits is located 7 km. ESE of Udaipur. The thickness of the clay band is more than 17 m. The inferred reserves are of the order of four million tonnes.

#### **Feldspar:**

Feldspar is found in the mica bearing area of Udaipur district. The mineral is mostly soda feldspar which contains 13 to 18% Na<sub>2</sub>O. It is found near Saidam area, Malva-ka-choraha and Bekariya in Kotra tehsil and Suratpura in Vallabhnagar tehsil.

#### **Limestone:**

In Udaipur district there are four major bands of limestone near Daroli, Manderia, Palana- Thamlam, Sandmaria and Semad-Sanchli. The limestone in Daroli area is of Raialo Group while that in

Sandmaria area, it belongs to Kumbhalgarh Group of Delhi Supergroup. The limestone in part of Palana-Thamla area falls in Rajsamand district. Details of individual belt is given below-

**A. Limestone Deposit near Daroli-Manderia & Kheri:** The deposit is located 26 kms east of Udaipur on Chittaurgarh road in Girwa & Vallabhnagar tehsils. It extends over 9 kms strike length from Maharaja Ki-Khedi in north to Bechhiwara, Gurli in south through Daroli and Manderia. The limestone bands form an outlier in banded gneissic complex and strikes N 10- 20°W with 60° due east to vertical dips. It is white to buff white in colour, crystalline, banded and medium to coarse grained in nature. The width of the deposit varies from 100 to 1500 m., maximum is seen in Manderia area. Major part of the area was held under mining lease by Udaipur Cement Works to meet out the limestone requirement of their cement plant located at Dabok. The entire plant and area has now been transferred to J.K. Udaipur Udyog Limited. In Daroli area 52.50 million tonne reserves of cement grade limestone have been estimated by the Department. Besides, 40 million tonne reserves have been inferred in Manderia area. In the entire belt 200 million tonne reserves have been inferred. The limestone takes good polish and thus, it is also being used as marble. Several quarries near Bechhiwara, Hairo, Manderia and Jaspura are in operation for marble. Area near Maharaj-ki-Khedi is also suitable for block mining and thus, has been applied for marble leases.

**B. Limestone Deposits near Palana- Thamla:** Small discontinuous limestone outcrops in Pre- Aravalli gneisses occur near Palana, Thamla, Mogana, Rathana, Mandop, Khema-Kera, Larwa and Kali Magri falling in Mavli and Nathdwara tehsils, over a length of 15 to 20 kms. The limestones is medium to coarse grained, hard, compact, off-white, buff in colour and at places banded in nature. The general strike of the belt is N 15 to 80° E with 45° to vertical dips on either sides. The nearest railway stations are Mogana (2 kms) and Bhimal (7 kms).

Department has carried out detailed investigations by drilling (8 boreholes totalling 316 m.) and estimated limestone reserves of the tune of 10.29 million tonnes and 6.37 million tonnes under proved and probable categories, respectively. Further 10 million tonnes have been estimated under inferred category. The CaO content varies from 45 to 53%, but the average is around 48%, with low silica and magnesia. The limestone being of higher purity, finds its use as sweetner in cement plant using low or marginal grade limestone as well as in chemical industries. Almost entire area has been leased out.

**C. Limestone deposit near Sandmaria, Bikarni-Khajuria:** The limestone deposit of Kumbhalgarh Group of Delhi Supergroup occurs near villages Kagwas, Sandmariya, Koliya, Nayawas, Beran, Khajuria and Bikarni in Kotra tehsil. The deposit is located about 40 km. east of Sarupganj railway station which lies on Delhi-Ahmedabad broad gauge line of the western railway and about 125 km. WSW of Udaipur. The area is well connected by tar road from Sarupganj. The

limestone deposit extends for about 15 kms. in strike length, from south of Bikarni in north east to Nanawas-Amboliya in south-west having 50 to 500 m. width. The limestone occurs as discontinuous and parallel bands separated by schists and Erinpura granites. It is fine to medium grained, hard, massive and greyish black in colour. It strikes NE-SW and dips  $50^{\circ}$  towards NW 6 to 8 limestone bands are occurring in the area. Department has carried out detailed investigations since the area by 369.50 m. drillings spread over 10 boreholes and proved 37.47 million tonne reserves of drill indicated category and 96.51 million tonnes of inferred category.

**D. Limestone deposit near Semad-Sanchli:** The limestone deposit near Piprana, Padrada, Semad and Sanchli in Gogunda tehsil has been investigated by the department by putting 8 boreholes totalling 411 m. drilling. The area is approachable by Udaipur Ranakpur tar road. The nearest railway station Falna, is about 45 kms. from the deposit. Discontinuous bands of limestone of Kumbhalgarh Group of Delhi Supergroup trending N  $30^{\circ}$ E - S  $30^{\circ}$ W and dipping at  $70-80^{\circ}$  due SE, occur for a strike length of about 2 to 3 kms. The average width of the individual bands is about 50 m. The limestone is off-white to white in colour, medium to coarse grained, hard, compact, crystalline and mostly micaceous in nature. It contains 42 to 50% CaO, 6 to 10% SiO<sub>2</sub> and 1 to 3% MgO. About 6 million tonne reserves have been estimated in this area. It can be used in cement making provided mica can be separated from it by suitable process. At places big sized blocks can be mined out, which can be used as marble.

#### **Magnesite:**

This deposit is located 50 km. south of Udaipur near Parsad village. Two bands of magnesite having 200 and 400 m. strike length and 20 to 60 m. varying width have been established in this area. It contains, on an average, 41.91 % MgO and 1 to 5% SiO<sub>2</sub>. State department has proved reserves of 2 million tonnes upto a depth of 50 m. The beneficiation studies carried out by the department and Dalima Magnesite Corporation, Salem (T.N.), have revealed that 75% recovery of industrial grade magnesite can be made from this low grade magnesite. Another Magnesite deposit explored by MECL near village selu tehsil Badgaon established 14.85 million tonnes resources with average MgO 40% with Silica 2% & CaO 3.65%.

#### **Marble:**

Marble deposits in Udaipur district are known since hundreds of years when palaces and embankments in and around Udaipur were built with local marble. There are three main belts of marble in Udaipur district i.e. Babarmal-Devimata, Jaspura- Daroli and Rikhabdeo. All these three belts produce different types of marbles i.e., pink from Babarmal-Devimata, white, adanga from Jaspura-Karoli and green from Rikhabdeo.

**Babarmal marble deposit:** Pink marble of Aravalli Supergroup occurs near villages Devimata and Babarmal. It is located about 25 kms. south of Udaipur. The marble band extends for a strike length of 4.5 kms. with width varying from 30 to 350 m. The general strike is N-S. The marble is siliceous, light pink to dark pink in colour, fine to medium grained with biotite and other basic impurities in the form of thin bands and lenses. These impurities form grey to greenish coloured bands which make it attractive. Marble is hard, compact and joints are sparse which facilitate extraction of blocks up to 2.5 x 1.5 x 1.5 m. size. Almost whole of the area has been covered under mining. A part of the belt in northern side, falls in Army Firing Range.

**Rikhabdeo Green marble deposit:** Green marble is the trade name of serpentine marble. In the past, the only known occurrences of this rock were in Baroda (Gujrat), from where it was mined and marketed under the trade name of "Green Marble". After the discovery of green marble in Udaipur and Dungarpur districts of Rajasthan, it became very popular.

Serpentinites are the altered ultramafics which have intruded the deep water facies of Aravalli Supergroup. Geographically these rocks are exposed intermittently or continuously over long stretches, from north of Gogunda to south of Kherwara (continuing in Dungarpur distt.) upto Idar in Gujarat, through Parsad, Jhadol, Rikhabdeo etc.

The rock is light to dark bottle green in colour, fine grained with cross view of calcite and magnetite. It is extremely hard and is not suitable for manual carving, but it can mechanically be carved into lamps, pillars, jhalis, fountains etc.

Large size blocks upto 3 x 1.5 x 1.5 m size are excavated. The important locations of green marble mines are Dhelana, Khanmin, Bilkhai, Bhadawa, Pipaldara, Saru, Ugmana Kotra etc. Another green marble belt is located from Sultanji Ka Kherwada in Jhadol tehsil to Bhutala in Gogunda tehsil. Green marble leases are existing near villages Modi, Bhutala, Chhippala, Undithal, Sultanji Ka Kherwada, Kalighati, Kankan Ka Guda etc.

**Jaspura-Daroli marble deposit:** Greyish-White coloured, medium grained, crystalline limestone occurring near Jaspura, Daroli villages in 25 km. east of Udaipur on Udaipur- Chittaurgarh highway, is being mined as adanga marble having various patterns and shades.

Besides, marble in Udaipur district is also being mined in small amounts near Bamniya, Baroda (Salumber tehsil), Manpur, Lohagarh (Dhariawad tehsil) etc.

### **Rock Phosphate:**

**Jhamarkotra deposit:** It is the largest and high grade phosphorite deposit located about 24 km. SE of Udaipur. The nearest railway station Kharwa-Chanda, is about 10 km. from the deposit and lies on Udaipur city-Ahmedabad meter gauge section of the western railway. However, Umra is the

convenient railway station. The rock-phosphate is found associated with metasedimentary rocks of Aravalli Supergroup (Precambrian age). It is of algal origin occurring in between siliceous, ferruginous and cherty dolomitic limestone lying over basal gritty quartzite which unconformably rest over the Banded Gneissic Complex of pre-Aravalli age. The deposit extends over a strike length of 16 km. in horse shoe shape with average thickness of 15 m.

Detailed prospecting was carried out by the state department of Mines & Geology, which has located this deposit. A reserve of 77.0 million tonnes of rockphosphate has been proved on the basis of 60,000 m. drilling in 500 boreholes. Out of these, 17 million tonnes is of +30%  $P_2O_5$  content and rest has 12 to 30%  $P_2O_5$ .

**Matoon deposit:** It is located 15 km. south-east of Udaipur City. The rock formations belong to Aravalli Supergroup and are represented by dolomitic marble, calcareous grits, chert, brecciated quartzite and phyllite. A 3.5 km. long and 1 to 25 m. thick phosphorite band showing pinching and swelling nature, is occurring in cherty quartzite. Based on 25 boreholes with 2250 m. drilling, about 9.2 million tonnes reserves of rock phosphate have been estimated. This deposit was exploited by M/s Hindustan Zinc Limited. lease were lapse and the area falls in definition of Aravali Hills.

**Kanpur deposit:** It is located 8 km. east of Udaipur-Jhamarkotra road. The rock formations in the area belong to the Aravalli Supergroup which are intruded at places by post-Aravalli granites. The phosphorite band has a strike length of about 600 m. and its thickness varies from 4 to 6 m. Complex folding is responsible for the repetition of phosphorite horizons. The host rock for rock-phosphate mineralization is light to bluish grey, compact limestone or calcareous rocks. The indicated reserves have been put at 3.0 million tonnes having 12-30%  $P_2O_5$  content. The deposits falls in definition of Aravali Hills and falls Habitation

**Dakan Kotra:** The phosphorite deposit is located about 12 km. SSE of Udaipur. The rock formations are similar to those found at Kanpur. The rock phosphate occurs within dark grey and bluish limestone and cherty quartzite. Estimated reserves of rock phosphate in this area are 1.4 million tonnes having 12 to 20%  $P_2O_5$  content. The area was held under M/L in favor of M/S RSMML & surrendered.

**Kharbaria Ka Guda:** It is situated 1 km. west of Kanpur deposit. The rock phosphate occurs as 1-5 m. thick discontinuous bands over a length of 1.5 km. In the northern part rock-phosphate occurs at the contact of phyllite and quartzite while in the southern part, it is associated with yellow, brown, cherty coloured and brecciated quartzite. The cumulative length of phosphorite horizon is

about 300 m. 0.5 million tonnes of phosphorite containing 22-25%  $P_2O_5$  have been estimated in this deposit. The deposits fall in definition of Aravali Hills and fall Habitation

**Sisarma prospect:** It is located 10 km. south-west of Udaipur and extends over a length of about 2 km. The phosphorite is associated with cherty dolomite and siliceous limestone of Aravalli Supergroup having a width of 7 to 20 m. The prospect is investigated by the department. 20 channels were cut across the mineralised zone, Besides, 11 bore holes with an aggregate drilling of 492.86 m. have been drilled in the area. About 0.84 million tonnes of rock-phosphate reserves with 5 to 10%  $P_2O_5$  have been estimated up to 50 m. depth.

**Neemach Mata prospect:** It is located in Kataria hill about 3 km. north-west of Udaipur. The rock formations are phyllite, shale, dolomite and siliceous limestone of Aravalli Supergroup. The phosphorite occurs in the form of small bands and lenses within 0.75 sq. km. area. On the basis of 32 boreholes with an aggregate drilling of 1250.45 m., reserves of 0.11 million tonnes containing 10%  $P_2O_5$  and 0.22 million tonnes with 5-10%  $P_2O_5$ , have been estimated in this area.

**Badgaon deposit:** The rock-phosphate deposit is located about 6 km. north of Udaipur on way to Gogunda. The area comprises phyllite, dolomite, siliceous limestones and quartzite of Aravalli Supergroup. Isolated patches and lenses of rock-phosphate having 3 to 22 m. width, are occurring within limestone. On the basis of 704.85 m. drilling spread over 23 boreholes, 3,47,405 tonne reserves of rock-phosphate containing 3 to 23%  $P_2O_5$  have been estimated in this area.

In addition to the above, small occurrences / incidences of phosphorite were also located near Amberi (10 km. from Udaipur on Udaipur-Rajsamand road), Berwas (8 km. from Udaipur on Udaipur Chittaurgarh road) and Undari (16 km. from Udaipur on Udaipur-Jhadol road). The area was held under in favor of M/S RSMMLS, due to habitation area surrendered by RSMML.

**Apatite deposit:** The deposit is located near Niwania and Kikawas villages about 60 km. east of Udaipur. Apatite occurs as thin veins and stringers, crisscrossing a large mass of crystalline limestone of Aravalli Supergroup over about 1.5 sq. km. area. Based on geological investigations by 915.52 m. drilling spread over 28 boreholes, 30,000 and 500 tonnes of apatite containing 32-35%  $P_2O_5$  have been estimated in Kikawas and Niwania areas, respectively. Besides, one million tonne of low grade apatite containing 6 to 9%  $P_2O_5$  has been assessed in Kikawas area.

### **Soapstone:**

Rajasthan, contributes about 80% share in soapstones production of the country. Major production of soapstone comes from Udaipur, Dungarpur, Bhilwara, Dausa and Banswara districts. Out of these,

about 50% state's production comes from Udaipur district where it is associated with ultrabasics and dolomites. In this district soapstone occurs in 6 major belts. These are :

**Undithal-Rathoron-Ka-Gurha-Bansra-Jharol belt:** This belt extends from Mordi- Bhutala in north through Undithal to Jharol in south-west over a strike length of 40 km. The soapstone is associated with post-Aravalli ultrabasic intrusives. It occurs as swelling & pinching irregular veins and lenses varying in length from 7 to 40 m. and in thickness from 0.5 to 8 m. The inferred reserves are 0.536 million tonnes. The grade is mixed type i.e., it is 60-90% is of low grade and 10-40% is of high grade. The important working deposits in this belt are Jhanjhar- Ki-Pal, Undithal, Banera, Magwas, Sultanji-Ka-Kherwara, Khakhad and Phuliya (Gogunda).

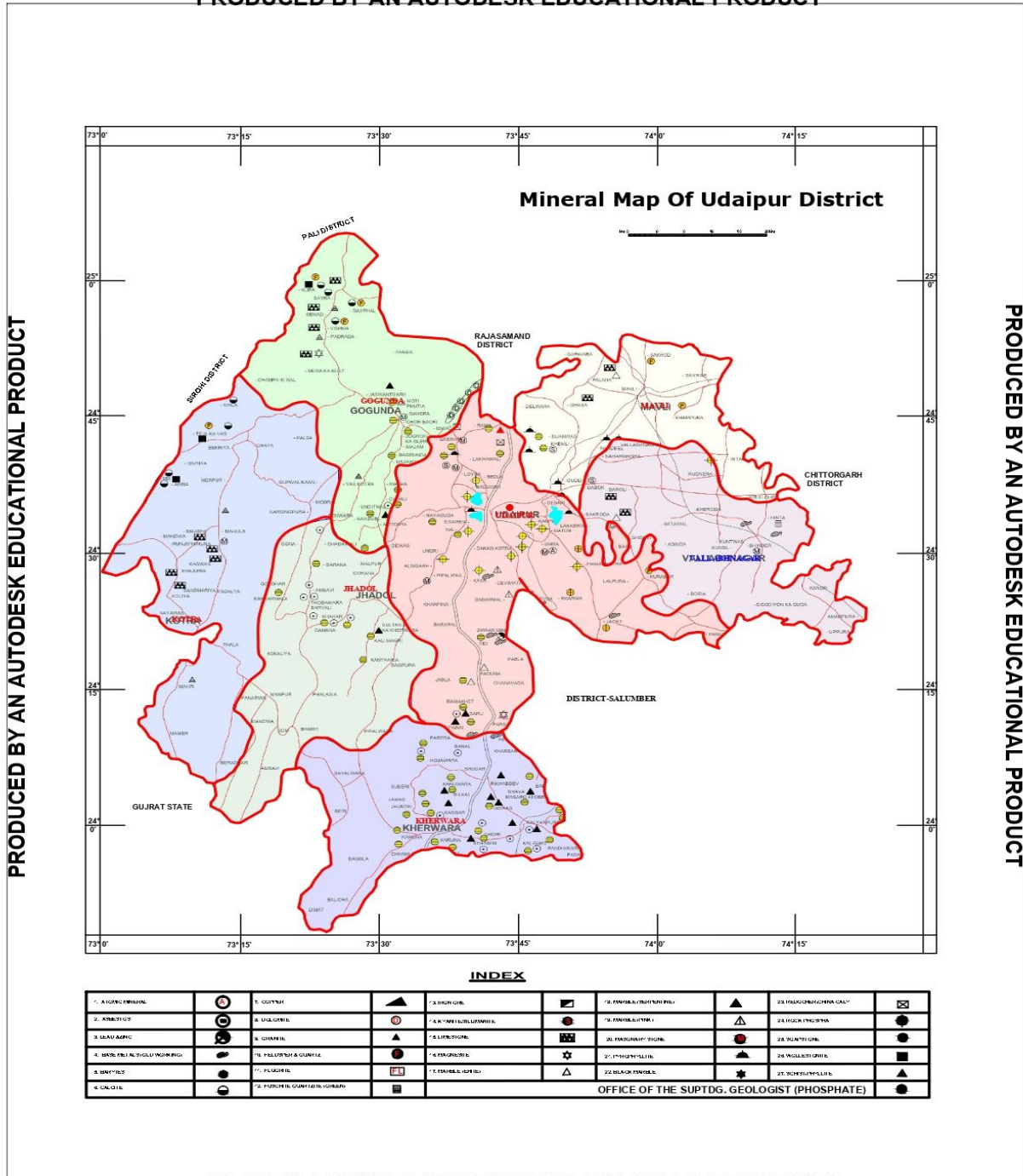
**Rikhabdeo- Chiklan- Khojawara- Mundwara Chhani belt:** This belt runs from Rikhabdeo in northeast to Channi in south-west over a length of 35 km. The soapstone is associated with post-Aravalli ultrabasic intrusives and occurs as irregular lenses and veins varying in length from 30 to 100 m. and width from 1 to 3 m. It is pale green to greenish-white in colour and normally massive in nature. The inferred reserves are 0.570 million tonnes. It is estimated that 70 to 90% deposits are of low grade and only 10-30% are of high grade. The important working deposits are Chiklan, Jawas, Juntri, Kharkha, Khojawara, Mundwara and Channi.

**Rikhabdeo -Kagdar- Kalyanpur belt:** This belt runs from Rikhabdeo in south-east to Kalyanpur in north-west over 20 km. length. The soapstone is associated with post-Aravalli ultrabasic intrusives. It occurs as lenses which vary from 30 to 150 m. in length and 0.50 to 2.00 m. in width. The mineralization exhibits pinching and swelling tendency. The soapstone is of flaky type-varying in colour from pale green to greenish white. The inferred reserves of soapstone in this area are 0.654 million tonnes of which 70-80% is of low grade and 20-30% is of high grade. The important working deposits are Kagdar, Tapan, Kalighati, Khanmin, Bilkhai, Kalyanpur, Dhulana etc.

**Lakhawali- Rama belt:** This belt runs from Naya Guda, west of Udaipur to Paraya in north-east for 25 kms. length. The mineralization is confined to dolomitic limestone and quartzites associated with talc-chlorite schist of Aravalli Supergroup.

## MINERAL MAP OF THE DISTRICT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



## Mineral Map of the Udaipur District

\*\*\*\*\*

## **CHAPTER -8**

### **THE LIST OF MINING LEASES IN THE DISTRICT WITH LOCATION, AREA AND PERIOD OF VALIDITY**

#### **4.1 Details of the Major Mineral Mining Leases in the District (in jurisdiction of ME Udaipur)**

<b>S. No.</b>	<b>Lease No.</b>	<b>Lessee Name</b>	<b>Mineral Name</b>	<b>Village</b>	<b>Tehsil</b>	<b>Area in Hectare</b>
1	3/1989	Hindustan Zinc Limited	Lead, Silver, Zinc	Zawar, Jawar	Sarada	3620
2	1/1988	R.S.M.M.Limited	Rock Phosphate	Jhamar Kotra	Girwa	1370.37
3	186/2008	Udaipur Cement Works Limited	Limestone (Cement Grade)	Manderia	Vallabhnagar	704.94
4	23/2001	Udaipur Cement Works Limited	Limestone (Cement Grade)	Manderia	Vallabhnagar	213.33
5	36/1980	Hindustan Mineral Transection	Calcite, Felspar, Quartz, Wollastonite	Tajakawas	Kotra	112.5
6	39/1983	Shivshakti Minerals Prop Saraswati Devi	Bauxite, China Clay, Red Ochre	Bansliiya	Badgaon	123.2
<b>Total</b>						<b>6144.34</b>

**Details of the Minor Mineral Mining Leases in the District  
(in jurisdiction of ME Udaipur)**

S No	Lessee Name	ML	Year	Mineral Name	Area	Village	Tahsil
1	Haldigati Mineral & Traders	40	1970	Soapstone	127.9	Undithal	Gogunda
2	Aravali Minerals And Chemical Industries Pvt. Ltd.	35	1973	Soapstone	93.69	Piprach	Badgaon
3	Priti Mehta	42	1982	Quartz	5	Suratpura	Vallabhnagar
4	Aravali Minerals And Chemical Industries Pvt. Ltd.	7	1983	Soapstone	57.38	Sangat	Badgaon
5	Kalpna Mineral & Chemicals	37	1983	Calcite	14.52	Bisma	Gogunda
6	Kumuand Parbha Poarwal	22	1984	Soapstone	49.5	Jogiyon Ka Guda	Gogunda
7	Prakash Chandr Porwal	20	1985	Soapstone	49.15	Undithal	Gogunda
8	Shiv Ganpati Marbles Pvt. Ltd.	83	1986	Marble	1	Bichhiwara	Vallabhnagar
9	Real Limestone Pvt. Ltd.	69	1987	Limestone	1	Runjiya Khuna	Kotra
10	Vardhman Tiles Pvt Ltd	219	1987	Marble	2	Bhutala	Badgaon
11	Balaji Marble And Minerals	11	1988	Serpentine	1	Undithal	Gogunda
12	Real Limeshell Pvt. Ltd.	131	1988	Limestone	1	Rujiya Khuna	Kotra
13	Eklingnath Marble	169	1988	Marble	1	Devimata	Girwa
14	Real Limeshell Pvt. Ltd.	245	1988	Limestone	1	Goriya	Kotra
15	Maa Shakit Stone Crushing Company	264	1988	Masonarystone	0.77	Nela (Dakankotra)	Girwa
16	Sohan Singh Jogindra Singh And Co.	4	1989	Dolomite, Soapstone	32.37	Kaloda	Badgaon
17	Sohan Singh Jogindra Singh And Co.	13	1989	Dolomite, Soapstone	405.5	Semal	Badgaon
18	Mewar Industrial And Commercial Syndicate	14	1989	Soapstone	32.37	Lakhavali	Badgaon
19	Real Limeshell Pvt. Ltd.	28	1989	Limestone	1	Kagwas	Kotra
20	Super Max Lime	476	1989	Marble	1	Palana	Mavli
21	Charbhujia Crushing Plant	599	1989	Masonarystone	1	Dakankotra	Girwa
22	Utkarsh Goyal	803	1989	Masonarystone	1	Bansliya	Badgaon
23	Rajrajeshwari Lime Minchem	940	1989	Limestone	0.75	Bikarni	Kotra
24	Khetan Business Corporation Pvt. Ltd.	3A	1989	Dolomite, Soapstone	49.84	Losing	Badgaon
25	Bajrang Minerals	6	1990	Pyrophyllite	4.95	Nagadia	Mavli
26	Om Prakash Kumawat	597	1990	Masonarystone	1	Gindoly	Badgaon
27	Real Mining Exploration Private Limited	962	1990	Limestone	1	Rujiya Khuna	Kotra
28	Calcatie Limestone Private Limited	1257	1990	Limestone	1	Palana Khurd	Mavli
29	Babu Lal Teli	2629	1990	Masonarystone	1	Shrimaliyo Ki Kadiya	Badgaon
30	Keshu Lal Teli	2630	1990	Masonarystone	1	Shrimaliyo Ki Kadiya	Badgaon
31	Kamla Devi Joshi	7	1991	Pyrophyllite	4.98	Gasiyar	Badgaon
32	Rajasthan Barytes Private Limited	10	1991	Calcite	49.5	Relpatliya	Gogunda
33	Real Limestone Pvt. Ltd.	16	1991	Limestone	0.73	Khajuria	Kotra

**DISTRICT SURVEY REPORT UDAIPUR**  
(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

34	Kalpna Minerals	16	1991	Soapstone	5	Sarana	Jhadol
35	M/S Labh Minstone Pvt Ltd	21	1991	Soapstone	5	Bansda	Gogunda
36	Rudra Infratech	289	1991	Masonarystone	1	Bansliya	Badgaon
37	Rudra Infratech	290	1991	Masonarystone	1	Banshliya	Badgaon
38	Real Mining Exploration Private Limited	326	1991	Limestone	1	Ranjia Khuma	Kotra
39	Real Mining Exploration Private Limited	554	1991	Limestone, Limestone(Burning)	1	Rujiya Khuna	Kotra
40	Sanjay Singh Barahath	642	1991	Masonarystone	1	Iswal	Badgaon
41	Dhruv Agarwal	664	1991	Limestone	1	Khajuriya	Kotra
42	Aranyani Resources Pvt. Ltd.	860	1991	Marble	1	Thamla	Mavli
43	Arihant Crushing Plant	940	1991	Masonarystone	1	Iswal	Badgaon
44	Real Limestone Pvt. Ltd.	944	1991	Limestone	0.75	Sandmariya	Kotra
45	Real Limestone Pvt. Ltd.	947	1991	Limestone	0.75	Dabiyawas	Kotra
46	Real Limestone Pvt. Ltd.	951	1991	Limestone	1	Dabiawas	Kotra
47	Ubn Minerals	2	1992	Soapstone	4.95	Rama	Badgaon
48	Bindu Mehta	4	1992	Soapstone	24.78	Nagdia 1	Mavli
49	Krishna Miners & Traders	5	1992	Soapstone	4.92	Nagdia,Nagaria	Mavli
50	Real Limeshell Pvt. Ltd.	466	1992	Limestone	1	Goriya	Kotra
51	Real Limeshell Pvt. Ltd.	582	1992	Limestone	1	Dadhamata	Kotra
52	Rahamat Ali	4	1993	China Clay, Red Ochre, Silica Sand, Yellow Ochre	10	Chotisar	Badgaon
53	Super Max Lime	6	1993	Limestone	0.94	Suthardi	Mavli
54	Super Max Lime	59	1993	Limestone	0.99	Suthardi	Mavli
55	Heera Lal Dangi	75	1993	Masonarystone	1	Iswal	Badgaon
56	Maa Shakti Stone Crushing Company	7	1994	Masonarystone	1.2	Nela (Dakankotra)	Girwa
57	Tanmay Mines And Minerals	20	1994	Masonarystone	0.5	Gasiyar	Badgaon
58	Neera Vaishnav	106	1994	Masonarystone	1	Bansliya	Badgaon
59	Dinesh Vaishnav	107	1994	Masonarystone	1	Bansliya	Badgaon
60	Eco Minerals	109	1994	Limestone	1	Suthardi	Mavli
61	Eco Minerals	168	1994	Limestone	1	Suthardi	Mavli
62	Rudra Infratech	171	1994	Masonarystone	1	Bansliya	Badgaon
63	Archana Vaishnav	185	1994	Masonarystone	2	Bansliya	Badgaon
64	Kukda Stone Crusher	12	1995	Masonarystone	1	Sabalpura	Badgaon
65	Mewar Industrial And Commercial Syndicate	13	1995	Soapstone	88.72	Lakhawali,Outer Lakhavali	Udaipur
66	Prakash Chandra Chandaliya	15	1995	Marble	1	Jaspura	Vallabhnagar
67	Raj Mineral Crushing Plant	17	1995	Masonarystone	1	Bansliya	Badgaon
68	Raj Mineral Crushing Plant	18	1995	Masonarystone	1	Bansliya	Badgaon
69	Manish Sahu	19	1995	Masonarystone	1	Bansliya	Badgaon
70	Ambika Minerals And Stone Crusher	20	1995	Masonarystone	1	Bansliya	Badgaon
71	Daulat Singh Rathore And Brothers	24	1995	Marble	1	Jaspura	Vallabhnagar
72	Real Marbles	44	1995	Marble	1	Jaspura	Vallabhnagar
73	Badam Dangi	45	1995	Marble	1	Jaspura	Vallabhnagar

**DISTRICT SURVEY REPORT UDAIPUR**  
(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

74	Vishnu Lal Teli	49	1995	Masonarystone	1	Bansliya	Badgaon
75	Swastik Crushing Plant	53	1995	Masonarystone	1.68	Bhinder	Bhinder
76	Shreenath Crushing Plant Pro.Sukhlal Teli	58	1995	Masonarystone	1.5	Junakhada	Vallabhnagar
77	Shreeram Stone Crusher	60	1995	Masonarystone	1	Savina	Girwa
78	Inani Granites India Pvt.Ltd	65	1995	Marble	1	Bichawera	Vallabhnagar
79	Kritarth Infra Projects Pvt. Ltd.	68	1995	Marble	1	Jaspura	Vallabhnagar
80	Om Prakash Kumawat	69	1995	Masonarystone	1	Bansliya	Badgaon
81	Nakoda Traders	70	1995	Marble	1	Jaspura	Vallabhnagar
82	Shubh Marble And Granite	71	1995	Marble	1	Jaspura	Vallabhnagar
83	Mewar Marble And Minerals	72	1995	Marble	4	Jaspura	Vallabhnagar
84	Bharat Babel	77	1995	Marble	1	Jaspura	Vallabhnagar
85	Bansal Marble Udhog	79	1995	Marble	1	Jaspura	Vallabhnagar
86	Mewar Marble And Minerals	80	1995	Marble	1	Jaspura	Vallabhnagar
87	Sushil Kumar Singhvi	87	1995	Marble	1	Jaspura	Vallabhnagar
88	Shree Balaji Marble And Minerals	88	1995	Marble	0.6	Jaspura	Vallabhnagar
89	Shri Krishna Marbels Prop. Shri Gopal Krishn Sharm	89	1995	Marble	1	Jaspura	Vallabhnagar
90	Sunil Kothari	91	1995	Marble	1	Jaspura	Vallabhnagar
91	Lalita Jain	92	1995	Marble	0.32	Jaspura	Vallabhnagar
92	Ramchandra Teli	95	1995	Masonarystone	1.6	Bansliya	Badgaon
93	Raj Mineral Crushing Plant	97	1995	Masonarystone	1	Bansliya	Badgaon
94	Eklingnath Granites	118	1995	Granite	2.25	Juda	Kotra
95	Kritarth Infra Projects Pvt. Ltd.	7	1996	Marble	1	Jaspura	Vallabhnagar
96	Shyam Sunder Sahu	15	1996	Masonarystone	1.4	Khajuriya	Vallabhnagar
97	Purnima Suhalka	24	1996	Marble	1	Jaspura	Vallabhnagar
98	Mukesh Kumar Surana	45	1996	Limestone	1	Palana Khurd	Mavli
99	Vishnu Lal Teli	49	1996	Masonarystone	1.23	Bansliya	Badgaon
100	Balwant Sharma	50	1996	Limestone	1	Kham Ki Madri	Mavli
101	Chandmal Sahu	53	1996	Masonarystone	1.06	Dakan Kotra	Girwa
102	Anil Kumar Inani	64	1996	Marble	1	Bichiwara	Vallabhnagar
103	Aravali Polyart Pvt Ltd	4	1997	Dolomite, Soapstone	72.01	Piparach	Badgaon
104	Natu Lal Jain	7	1997	Marble	1	Jaspura	Vallabhnagar
105	Ambika Minerals And Stone Crusher	16	1997	Masonarystone	1	Basliya	Badgaon
106	Dilpreet Singh	17	1997	Masonarystone	1.79	Bansliya	Badgaon
107	Hansmukh Lal Jain	18	1997	Marble	1	Jaspura	Vallabhnagar
108	Charbhuj Construction	21	1997	Masonarystone	1.96	Iswal	Badgaon
109	Bheru Singh Gaur	23	1997	Marble	1	Jaspura	Vallabhnagar
110	Shreejee Minerals	44	1997	Masonarystone	2	Selu	Badgaon
111	Charbhuj Minerals	45	1997	Masonarystone	1.99	Selu	Badgaon
112	Charbhuj Minerals And Crushing Plant	61	1997	Masonarystone	2	Umarda	Girwa
113	Moinuddin Kazi	1	1998	Pyrophyllite, Soapstone	170	Kheri	Vallabhnagar
114	Athena Resources Llp	3	1998	Calcite	4.9	Rabach	Gogunda

**DISTRICT SURVEY REPORT UDAIPUR**  
(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

115	Rajasthan Barytes Private Limited	4	1998	Barytes	31	Relpatlia	Girwa
116	Latita W/O Shri Subhkaran Jain	5	1998	Masonarystone	2.22	Basliya	Badgaon
117	Shubhkaran Jain	6	1998	Masonarystone	2.25	Bansliya	Badgaon
118	Lake City Minchem	8	1998	China Clay, Ochre, Silica Sand	5	Khuman Pura, Khuman Pura	Badgaon
119	Libra Mining Company	10	1998	Soapstone	4.98	Phutya	Gogunda
120	Haveli Marble Pvt. Ltd.	13	1998	Marble	2.25	Akodra	Jhadol
121	Prabhash Chandar Pande	13	1998	Soapstone	5	Rama	Badgaon
122	Jagdish Dan Charan	53	1998	Masonarystone	1	Lai	Girwa
123	Rajesh Mehta S/O Manak Chand Mehta	56	1998	Serpentine	3.52	Modi	Gogunda
124	Kalu Lal Jain	4	1999	Masonarystone	1.5	Titardi	Girwa
125	Shri Kalika Minerals	55	1999	Limestone, Limestone(Dimensional)	1.09	Rodi	Mavli
126	Charbhuj Minerals And Crushing Plant	70	1999	Masonarystone	1	Umarda	Girwa
127	Rajendra Prasad Gupta	1	2000	Soapstone	42.73	Sonariya	Badgaon
128	Mukesh Crushing Plant Pro. Anil Kothari	5	2000	Masonarystone	1	Padwal	Vallabhnagar
129	Krishna Miners & Traders	9	2000	Soapstone	83.49	Chanawda	Girwa
130	Prabhat Didvania	13	2000	Red Ochre	44	Kumavatoka Guda	Badgaon
131	Shreeram Stone Crusher	29	2000	Masonarystone	1	Umarda	Girwa
132	Sandal Buildcon Pvt Ltd	47	2000	Masonarystone	1.5	Umarda	Girwa
133	Bholenath Marble Pro. Shambu Lal Tak	57	2000	Serpentine	1	Modi	Gogunda
134	Mohsin Khan	58	2000	Serpentine	0.57	Bhutala	Badgaon
135	Prakash Chandra Porwal	3	2001	Serpentine	2.25	Undithal	Gogunda
136	Praveen Porwal	4	2001	Serpentine	2.25	Undithal	Gogunda
137	Wollmine India Private Limited	12	2001	Calcite	24.91	Shanchli	Gogunda
138	Bhavna Nihalani	18	2001	Pyrophyllite	4.82	Bichhri	Kurabad
139	Jitendra Kelwani	26	2001	Masonarystone	1	Selu	Badgaon
140	Pankaj Sahu	27	2001	Masonarystone	1	Selu	Badgaon
141	Babu Lal Teli	34	2001	Masonarystone	1	Shrimaliyo Ki Kadiya	Badgaon
142	Shreeram Stone Crusher	36	2001	Masonarystone	1.89	Savina	Girwa
143	Shri Arihant Mineral	44	2001	Masonarystone	2	Parola	Girwa
144	Premi Devi Patel	1	2002	Masonarystone	1.5	Lakadwas	Girwa
145	Om Prakash Nagda	4	2002	Pyrophyllite	4	Bhesdakhurd	Girwa
146	Hemant Chaploat	5	2002	Calcite	5	Jalo Ka Kalwana, Jhalon Ka Kalwana, Banka Kuwa	Gogunda
147	Super Max Lime	8	2002	Limestone	1.38	Palana Khurd	Mavli
148	V. K. Engineers	30	2002	Masonarystone	1	Lay	Girwa
149	Rakesh Jagetiya	31	2002	Quartz	4	Thamla	Mavli
150	Vijaylaxmi Jagetia	32	2002	Quartz	4	Thamla	Mavli

**DISTRICT SURVEY REPORT UDAIPUR**  
(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

151	Charbhujia Crushing Plant	36	2002	Masonarystone	1	Savina	Girwa
152	Anil Inani	63	2002	Marble	3.24	Bichhwera, Bichwera	Vallabhnagar
153	Inani Granites India Pvt.Ltd	64	2002	Marble	4	Bichawera	Vallabhnagar
154	Sunil Sahu	79	2002	Masonarystone	1	Lakadwas	Girwa
155	Kailash Chips Industries Pro. Shanti Lal Mehta	108	2002	Limestone	1	Rodi	Mavli
156	Vijaylaxami Ranawat	5	2003	Calcite	4.22	Rabch	Gogunda
157	Sayed Zilly Akbar	6	2003	Pyrophyllite	4.03	Sakroda	Girwa
158	Barimata Stone Crusher	8	2003	Masonarystone	1	Lakadwas	Girwa
159	Real Cem Shail	13	2003	Calcite	4.93	Palana	Gogunda
160	Mahadev Mines And Minerals	15	2003	Masonarystone	1	Shrimaliyo Ki Kadiya	Badgaon
161	Mahadev Mines And Minerals	16	2003	Masonarystone	1	Shrimaliyo Ki Kadiya	Badgaon
162	Champa Bai	25	2003	Masonarystone	1	Bari	Jhadol
163	Zircon Marbles And Minerals Pvt. Ltd.	28	2003	Calcite	5	Rawach	Gogunda
164	Kalpna Mineral & Chemicals	37	2003	Calcite	4.9	Shanchli	Gogunda
165	V. K. Engineers	37	2003	Masonarystone	1	Lay	Girwa
166	Rajendra Kumar Kalal	4	2004	Masonarystone	1	Salu, Selu	Girwa, Badgaon
167	Satyendra Upman	9	2004	Calcite	4.5	Velu Ka Kaet	Gogunda
168	Pandey Minerals Pvt.Ltd.	16	2004	Felspar, Quartz	4.5	Thoriakheri	Mavli
169	Ativeer Earthmin Private Limited	17	2004	Felspar, Quartz	4.01	Dholimangri	Mavli
170	Rohit Pande	18	2004	Felspar, Quartz	4.63	Mangthala	Mavli
171	Shreeram Stone Crusher	24	2004	Masonarystone	1	Umarda	Girwa
172	Preeti Sharma	25	2004	Masonarystone	1	Umarda	Girwa
173	Basanti Lal Jain	68	2004	Masonarystone, Masonarystone	1	Doriya Ka Khada	Vallabhnagar
174	Prem Marble	71	2004	Marble	4	Karawadi	Badgaon
175	Jitendar Kumar Surana	73	2004	Limestone	1	Planakhurd	Mavli
176	Mukesh Kumar Surana	85	2004	Limestone	1	Planakhurd	Mavli
177	Kailash Devi	97	2004	Marble	4	Kumawato Ka Guda	Badgaon
178	Rajrajeshvari Marbles	157	2004	Serpentine	1.06	Chali	Gogunda
179	Shashikant Khetan	182	2004	Masonarystone	1	Umarda	Girwa
180	Kiran Kumar Joshi	3	2005	Serpentine	4	Bagad	Gogunda
181	Super Max Lime	12	2005	Limestone	1	Vallara	Mavli
182	Suresh Kumar Jain	24	2005	Masonarystone	0.91	Dakankotra	Girwa
183	Swastik Crushing Plant	27	2005	Masonarystone	1		Bhinder
184	Mahendra Singh Sisodiya	29	2005	Masonarystone	1	Umarda	Girwa
185	Ganesh Lal	33	2005	Masonarystone	1	Lakadwas	Girwa
186	Mohit Panday	33	2005	Quartz	4.75	Khem Ki Madri	Mavli
187	Sayed Iqbal	38	2005	Masonarystone	1	Umarda	Girwa
188	M/S V.M.Minerals	41	2005	Quartz	4.95	Sagvadi	Girwa
189	Akhtar Ali	44	2005	Felspar, Quartz	4.4	Rathoro Ka Guda	Vallabhnagar
190	Mohammad Rijvan	48	2005	Masonarystone	1	Umarda	Girwa

**DISTRICT SURVEY REPORT UDAIPUR**  
(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

191	Rajendra Kumar Kalal	49	2005	Masonarystone	1	,Selu	Badgaon
192	Arjun Lal Menariya	50	2005	Masonarystone	1	Umarda	Girwa
193	Kharka Mining Llp	53	2005	Felspar	4.9	Karmal	Girwa
194	Megha Minerals	60	2005	Quartz	4.88	Bharori	Gogunda
195	Rajdeep Mineral	61	2005	Quartz	4.56	Kachaba	Gogunda
196	M/S Wonder Machine Sand Pvt. Ltd.	64	2005	Felspar	4.98	Karmal	Girwa
197	Kharka Mining Llp	66	2005	Felspar	4.98	Karmal	Girwa
198	Jadiya Corporation Private Limited	67	2005	Felspar	4.8	Rawat Pura	Girwa
199	Mineral Wealth	82	2005	Quartz	4	Thamla	Mavli
200	Nakoda Marbel & Grenight	83	2005	Felspar, Quartz	4.51	Bhiloy Ka Guda	Gogunda
201	Quartz Syndicate	85	2005	Quartz	4	Thamla	Mavli
202	Kishan Lal Yogi	89	2005	Felspar, Quartz	4.5	Ukar	Girwa
203	Shri Nakoda Marbles & Granites	92	2005	Felspar, Quartz	4.8	Ranna	Gogunda
204	Kharka Mining Llp	93	2005	Felspar	4.98	Karmal	Girwa
205	Charbhuj Mines And Minerals	97	2005	Felspar, Quartz	4.9	Gudli	Kurabad
206	Salma Sheikh	101	2005	Felspar	4.05	Karmal	Girwa
207	G.J.Minerals Private Limited	108	2005	Quartz	4.8	Bharori	Gogunda
208	Bhoomi Minerals	127	2005	Felspar, Quartz	4.79	Mokhi,Bhilon Ka Guda	Gogunda
209	Ashok Kumar Karwa	132	2005	Felspar, Quartz	4.95	Pindolia	Vallabhnagar
210	Ashok Kumar Karwa	133	2005	Felspar	4.95	Pindolia li	Vallabhnagar
211	Surendar Kumar Lata	134	2005	Quartz	5	Jawana	Mavli
212	Charbhuj Minerals And Crushing Plant	2	2006	Masonarystone	1	Umarda	Girwa
213	Shishumitra Singhwi	3	2006	Masonarystone	1	Gasiyar	Badgaon
214	Charbhuj Mines And Minerals	9	2006	Felspar	4.98	Rawatpur	Girwa
215	Gayatri Stone Crasher	9	2006	Masonarystone	1	Moriyon Ki Kadiya	Badgaon
216	Shamboo Singh Ranawat	13	2006	Pyrophyllite, Soapstone	4.75	Gudli	Mavli
217	Arihant Stone	15	2006	Phyllite, Schist	1	Mathatha	Badgaon
218	Variety Stone	17	2006	Phyllite, Schist	2.25	Mathata	Badgaon
219	Variety Stone	18	2006	Phyllite, Schist	2.25	Mathata	Badgaon
220	Arihant Stone	19	2006	Phyllite, Schist	1	Mathatha	Badgaon
221	Charbhuj Crushing Plant	23	2006	Masonarystone	1	Selu	Badgaon
222	Manoj Kothari	25	2006	Marble	4	Kumawaton Ka Gura	Badgaon
223	Tahir Ahamd	25	2006	Quartz	4.75	Dundia	Mavli
224	Vimal Minerals	28	2006	Masonarystone	1.81	Dakankotra	Girwa
225	Arjun Lal Menariya	34	2006	Masonarystone	1	Umarda	Girwa
226	Dharmendra Nalwaya	41	2006	Masonarystone	1	Japa Dadkiya	Girwa
227	Shale Minerals	49	2006	Felspar, Quartz	4.38	Unkar	Girwa
228	Bhanwari Bai	49	2006	Masonarystone	1	Parola	Girwa
229	Shale Minerals	50	2006	Felspar, Quartz	4.47	Unkar	Girwa
230	Shri Arihant Mineral	51	2006	Masonarystone	1	Parola	Girwa

231	Vimal Mines And Minerals Llp	52	2006	Felspar, Quartz	4.69	Unkar	Girwa
232	Bhanwari Bai	52	2006	Masonarystone	1	Parola	Girwa
233	Shashikant Khetan	54	2006	Masonarystone	1	Umarda	Girwa
234	Babita Khetan	55	2006	Masonarystone	1	Umarda	Girwa
235	Premdevi	60	2006	Masonarystone	1	Umarda	Girwa
236	Baba Mines & Minerals	63	2006	Felspar, Quartz	4.25	Jawar	Mavli
237	Maa Mahakali Mines And Minerals	70	2006	Felspar, Quartz	4.88	Jawar	Mavli
238	Preeti Sharma	2	2007	Masonarystone	1	Japa	Girwa
239	Bhavna Suthar	10	2007	Masonarystone	1	Japa	Girwa
240	Barimata Stone Crusher	16	2007	Masonarystone	1	Lakadwas	Girwa
241	Dilip Jain	17	2007	Masonarystone	1	Dadkiya(Umarda)	Girwa
242	Meena Jain	18	2007	Masonarystone	1	Dadkiya(Umarda),Umarda	Girwa
243	Kalulal Jain	19	2007	Masonarystone	1	Dadiya(Umarda)	Girwa
244	Bhagwan Lal Gameti	20	2007	Masonarystone	1	Parola	Girwa
245	Kanak Rathore	24	2007	Masonarystone	1	Japa	Girwa
246	Rajlakshmi Stone Crusher Company	25	2007	Masonarystone	1	Japa	Girwa
247	Sandal Buildcon Pvt Ltd	34	2007	Masonarystone	1	Umarda	Girwa
248	Sandal Buildcon Pvt Ltd	35	2007	Masonarystone	1	Umarda	Girwa
249	Sandal Buildcon Pvt Ltd	36	2007	Masonarystone	1	Umarda	Girwa
250	Sandal Buildcon Pvt Ltd	37	2007	Masonarystone	1	Umarda	Girwa
251	Vaya Proprateis Pvt. Ltd.	39	2007	Felspar, Quartz	4	Alu Ka Khera	Vallabhnagar
252	Sumit Singh	40	2007	Quartz	4.81	Aslion Ki Madri	Mavli
253	Sumit Singh	41	2007	Quartz	-	Asolion Ki Madri	Mavli
254	Ganeshlal Audichya	43	2007	Masonarystone	1	Umarda	Girwa
255	Durga Gameti	44	2007	Masonarystone	1	Lakadwas	Girwa
256	Ganeshlal Audichya	45	2007	Masonarystone	1	Umarda	Girwa
257	Sukhlal Sahu	48	2007	Masonarystone	1	Juna Khada	Vallabhnagar
258	B.N Enterprises	49	2007	Masonarystone	1	Umarda	Girwa
259	Rajendra Kumar Kalal	50	2007	Masonarystone	1	Selu	Badgaon
260	Bhavana Suthar.	51	2007	Masonarystone	1	Japa	Girwa
261	Puja Suthar	52	2007	Masonarystone	1	Japa	Girwa
262	Shailesh Mehta	55	2007	Phyllite, Schist	2.25	Mathata	Badgaon
263	Arihant Microns Private Limited	63	2007	Felspar, Quartz	1	Chaura	Vallabhnagar
264	Pushpa Pichouliya	64	2007	Masonarystone	1	Dadkiya	Girwa
265	Puja Suthar	65	2007	Masonarystone	1	Dedkiya	Girwa
266	Pushpa Pichouliya	72	2007	Masonarystone	1	Dadkiya	Girwa
267	Ridhdhi Sidhdhi Minerals	76	2007	Quartz	4.08	Morath	Mavli
268	Premlata Sahu	77	2007	Masonarystone	1	Umarda	Girwa
269	Kesar Bai	80	2007	Masonarystone	1	Lakadwas	Girwa
270	Sunil Kumar Sipani	83	2007	Felspar, Quartz	4.88	Dhaulikhera	Girwa
271	Kamal Crushing Plant	83	2007	Masonarystone	1	Padwal	Vallabhnagar
272	Ganesh Minerals Prop.Vishal	85	2007	Quartz	4	Nagariya	Mavli

**DISTRICT SURVEY REPORT UDAIPUR**  
(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

	Chouhan						
273	Charbhuj Minerals And Crushing Plant	93	2007	Masonarystone	1	Umarda	Girwa
274	Ratan Lal Soni	130	2007	Masonarystone	1	Juna Khera	Vallabhnagar
275	Charbhuj Minerals And Crushing Plant	6	2008	Masonarystone	1	Umarda	Girwa
276	Pratap Ram Porhit	64	2008	Serpantine	1	Mada	Gogunda
277	Vashishtha Marbles	65	2008	Serpantine	4	Bhevida	Gogunda
278	Sanmati Minerals	69	2008	Masonarystone	1	Umarda	Girwa
279	Manish Khandelwal	115	2008	Limestone	1	Budal	Udaipur
280	Jalaj Sanghvi	117	2008	Masonarystone	1	Padwal	Vallabhnagar
281	Abhishek Chhabra	118	2008	Masonarystone	1	Padwal	Vallabhnagar
282	Harsh Sanghvi	119	2008	Masonarystone	1	Padwal	Vallabhnagar
283	Delwara Marbles And Granites Pvt. Ltd.	143	2008	Phyllite, Schist	2.25	Mathata	Badgaon
284	Delwara Marbles And Granites Pvt. Ltd.	144	2008	Phyllite, Schist	2.25	Mathata	Badgaon
285	Natural Stone Recourses	145	2008	Phyllite, Schist	2.25	Bansra	Gogunda
286	Ronak Mines & Minerals	188	2008	Quartz	4	Alu Ka Khera	Vallabhnagar
287	Ganash Mines & Minerals	271	2008	Felspar, Quartz	4.29	Gadwal	Mavli
288	Fortcity Mines Private Limited	286	2008	Felspar, Quartz	4.9	Chotiya	Girwa
289	Fortcity Mines Private Limited	287	2008	Felspar, Quartz	4.9	Chotiya	Girwa
290	Ramesh Jain	292	2008	Felspar, Quartz	4.95	Banra Bawari	Mavli
291	Ganpati Mining	296	2008	Felspar, Quartz	4.75	Jodha Ka Talab	Badgaon
292	Chunda Mines And Minerals	327	2008	Felspar, Quartz	960	Hariyav	Vallabhnagar
293	Prism Cement Limited	2	2009	Felspar, Quartz	4.6	Hariyav	Vallabhnagar
294	Prism Cement Limited	3	2009	Felspar, Quartz	4.45	Hariyav	Vallabhnagar
295	Ramesh Jain	10	2009	Felspar, Quartz	4.9	Uparli Orden	Mavli
296	Devendra Nath Chouhan	13	2009	Masonarystone	1	Phalichada	Mavli
297	Mukesh Kumar Kothari	14	2009	Masonarystone	1	Padwal	Vallabhnagar
298	Govind Singh	35	2009	Masonarystone	1	Japa-Dedkiya	Girwa
299	Govind Singh	36	2009	Masonarystone	1	Japa Dedkiya	Girwa
300	Surveer Singh	37	2009	Masonarystone	1	Japa-Dedkiya	Girwa
301	Surveer Singh	38	2009	Masonarystone	1	Japa-Dedkiya	Girwa
302	Sanmati Minerals	51	2009	Masonarystone	1	Umarda	Girwa
303	Classic Marbles	78	2009	Phyllite, Schist	2.25	Mathatha, Mathatha	Badgaon
304	Daksh Marmograni Llp	116	2009	Marble	0.98	Jaspura	Vallabhnagar
305	Mewar Minerals	1	2010	Felspar, Pyrophyllite, Quartz	600	Hariyav	Vallabhnagar
306	Panchratana Minerals	38	2010	Felspar, Quartz	4.8	Banu	Girwa
307	Bajrang Minerals	40	2010	Felspar, Quartz	4.98	Dhavadia	Vallabhnagar
308	Soha Enterprises	48	2010	Calcite	4.59	Dhikora	Gogunda
309	Kamla Devi Sahu	48	2010	Masonarystone	1	Khajuria Khera	Vallabhnagar
310	Radiant Minerals	64	2010	Felspar, Quartz	980	Hariyav	Vallabhnagar
311	Meredian Marble And Decorative Stone	73	2010	Serpantine	1	Kankan-Ka-Gurha	Gogunda

312	Varsha Sahu	74	2010	Masonarystone	1	Sawina	Girwa
313	Gopal Sahu	75	2010	Masonarystone	1	Sawina	Girwa
314	Kirti Sahu	76	2010	Masonarystone	1	Sawina	Girwa
315	Charbhuj Construction	77	2010	Masonarystone	1	Sawina	Girwa
316	Lalita Sahu	78	2010	Masonarystone	1	Sawina	Girwa
317	Chanchal Daya	79	2010	Masonarystone	1	Sawina	Girwa
318	Radiant Minerals	137	2010	Felspar, Quartz	4.96	Hariya	Vallabhnagar
319	Dhartidhan Export	141	2010	Felspar, Quartz	4.5	Hariyav	Vallabhnagar
320	Dwarkadhish Mines And Minerals	144	2010	Felspar, Quartz	900	Hariav	Vallabhnagar
321	Sunita Kumawat	151	2010	Felspar, Quartz	1725	Hariav	Vallabhnagar
322	Balveer Singh Rathore	152	2010	Felspar, Quartz	1725	Hariav	Vallabhnagar
323	Jeen Mines And Minerals	153	2010	Felspar, Quartz	4.87	Hariav	Vallabhnagar
324	Guru Ashish Minerals	154	2010	Felspar, Quartz	4.55	Hariav	Vallabhnagar
325	Mahant Shri Neminath Ji Minechem	158	2010	Felspar, Quartz	4.98	Hariav	Vallabhnagar
326	Minal Associates	159	2010	Felspar, Quartz	4.97	Hariav	Vallabhnagar
327	Sushila Shyam Mines & Minerals	160	2010	Felspar, Quartz	4.93	Hariav	Vallabhnagar
328	Manak Shyam Minerals	161	2010	Felspar, Quartz	4.99	Shishvi	Kurabad
329	Ganshyam Baldua	165	2010	Felspar, Quartz	600	Hariav	Vallabhnagar
330	Siddhi Minerals, Kareda	170	2010	Felspar, Quartz	980	Hariav	Vallabhnagar
331	Bhagwan Kanwar	175	2010	Felspar, Quartz	4.6	Hariav	Vallabhnagar
332	M.D. Minerals	179	2010	Felspar, Quartz	4.92	Hariav	Vallabhnagar
333	Kamdhenu Mines & Minerals	184	2010	Felspar, Quartz	4.98	Hariyav	Vallabhnagar
334	Sohan Singh	196	2010	Felspar, Quartz	750	Tank	Vallabhnagar
335	Narendra Singh Rathor	197	2010	Felspar, Quartz	1000	Hariav	Vallabhnagar
336	Shree Bajrang Mines & Minerals	200	2010	Felspar, Quartz	4.94	Hariav	Vallabhnagar
337	Sanjay Gehlot	201	2010	Felspar, Quartz	1000	Hariav	Vallabhnagar
338	Dimple Sahu	3	2011	Masonarystone	1	Sawina	Girwa
339	Neelam Sahu	4	2011	Masonarystone	1	Sawina	Girwa
340	Chanchal Daya	12	2011	Masonarystone	1	Sawina	Girwa
341	Radha Shree Minerals	23	2011	Felspar, Quartz	988	Kkham Ki Madri	Mavli
342	Mitra Mines And Minerals	24	2011	Felspar, Quartz	4.97	Kham Ki Madri	Mavli
343	Sanwariya Mines And Minerals	28	2011	Felspar, Quartz	4.28	Kham Ki Madri	Mavli
344	Haveli Marble Pvt. Ltd.	36	2011	Granite	3	Madra	Gogunda
345	Chanda Bhatt	46	2011	Felspar, Quartz	1000	Chotiya	Girwa
346	Charbhuj Crushing Plant	59	2011	Masonarystone	1	Savina	Girwa
347	Lalita Sahu	60	2011	Masonarystone	1	Savina	Girwa
348	Nimdi Mines Llp	87	2011	Quartz	4	Bharori	Gogunda
349	Sajjan Kunvar	97	2011	Felspar, Quartz	4.55	Mal Ki Tus	Vallabhnagar
350	Surya Minerals	102	2011	Felspar, Quartz	4.26	Kham Ki Madri	Mavli
351	Bheru Singh Sisodiya	169	2011	Felspar, Quartz	4.5	Kheda,Bhansol	Mavli
352	Ramesh Jain	181	2011	Felspar, Quartz	4.93	Garwara	Mavli
353	Shree Unique Stone Industries	264	2011	Felspar, Quartz	961	Garwara	Mavli

**DISTRICT SURVEY REPORT UDAIPUR**  
(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

354	Devi Lal Dangi	294	2011	Felspar, Quartz	4.01	Kuntwas	Vallabh Nagar
355	Bheru Singh Sisodiya	316	2011	Felspar, Quartz	4.98	Philla	Kurabad
356	Meena Kanwar	317	2011	Felspar, Quartz	4.28	Philla	Kurabad
357	Rai Singh Sisodiya	318	2011	Felspar, Quartz	4.43	Philla	Kurabad
358	Sun Minerals	326	2011	Felspar, Quartz	900	Tori	Girwa
359	Sayed Zilley Akbar	344	2011	Felspar, Quartz	4.5	Gandoli	Mavli
360	Udai Lal Dangi	437	2011	Felspar, Quartz	4.98	Kham Iki Madri	Mavli
361	Laxmi Minerals	459	2011	Felspar, Quartz	4.96	Kham Ki Madri	Mavli
362	Charbhujia Crushing Plant	3	2012	Masonarystone	1	Savena(Nela)	Girwa
363	Sunrise Minerals	10	2012	Felspar, Quartz	4.98	Bambora	Kurabad
364	Alak Stones Pvt. Ltd.	21	2012	Marble, Serpentine	1.23	Chipala	Gogunda
365	Shree Chawanda Mines & Mineral	30	2012	Felspar, Quartz	4.33	Kurdi	Mavli
366	Kishan Singh Rao	94	2012	Felspar, Quartz	4.65	Kham Ki Madri	Mavli
367	Ramesh Jain	152	2012	Felspar, Quartz	4.97	Gadwara	Mavli
368	Shree Nath Mines & Minerals	180	2012	Felspar, Quartz	4.72	Bhansol (Gadwara)	Mavli
369	Mayura Minerals	198	2012	Felspar, Quartz	4.02	Kham Ki Madri	Mavli
370	Hinglaj Export	250	2012	Felspar, Quartz	4.5	Kham Ki Madri	Mavli
371	Bishan Singh Sekhawat	322	2012	Felspar, Quartz	4.69	Bhansol	Mavli
372	Khyali Lal Kothari	323	2012	Felspar, Quartz	4.63	Bhansol	Mavli
373	Bhagawati Devi Teli	324	2012	Felspar, Quartz	4.78	Bhansol	Mavli
374	Khema Dangi	325	2012	Felspar, Quartz	4.98	Kham Ki Madri	Mavli
375	Shubham Minerals	396	2012	Felspar, Quartz	4.73	Sindu	Mavli
376	Sukhveer Singh Choudhary	5	2013	Felspar, Quartz	4.96	Kham Ki Madri	Mavli
377	Mahakal Construction	24	2013	Felspar, Quartz	4.94	Bijanwas,Vitholi	Mavli
378	Moti Singh Ranawat	37	2013	Felspar, Quartz	4.19	Gadwara Bhansol	Mavli
379	Bheru Singh Sisodiya	57	2013	Felspar, Quartz	4	Khera Bhansol	Mavli
380	Shikha Mines & Minerals	88	2013	Felspar, Quartz	4.99	Sindu	Mavli
381	Padam Shree Minerals And Mines	93	2013	Felspar, Quartz	4.81	Bharori	Gogunda
382	Vikas Mor	94	2013	Felspar, Quartz	4.09	Sindu	Mavli
383	Ar Mines & Minerals	70	2014	Felspar, Quartz	4.96	Kajoria	Girwa
384	Padmawati Minerals	78	2014	Felspar, Quartz	4.1	Kham Ki Madri & Gandoli,Kham Ki Madri & Candoli	Mavli
385	Shree Mateshwai Minerals	117	2014	Felspar, Quartz	4.04	Khera Bhansol	Mavli
386	Mukesh Mundra	11	2015	Granite	3	Madara	Gogunda
387	Laxmi Lal Mundra	12	2015	Granite	3	Madara	Gogunda
388	Ajay Choudhary	4	2017	Masonarystone	1	Bikarni	Mavli
389	Hansraj Dangi	5	2017	Masonarystone	1	Bikarni	Mavli
390	Kailash Chand Patel	1	2018	Felspar, Quartz	1.76	Shishavi	Girwa
391	Dinesh Chandra Samriya	4	2018	Granite	2.65	Khandewara	Vallabh Nagar
392	Prabhu Singh	7	2018	Felspar, Quartz	1.02	Runija	Kurabad
393	Mahendra Kumar Gehlot	12	2018	Felspar, Quartz	3.26	Bitholi	Mavli

**DISTRICT SURVEY REPORT UDAIPUR**  
(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

394	Khem Singh Rao	13	2018	Felspar, Quartz	3.88	Rakhiyawal	Mavli
395	Narayan Lal Meena	13	2018	Masonarystone	1.18	Bhallo Ka Guda	Kurabad
396	Gamer Singh Chundawat	14	2018	Masonarystone	1.03	Bhallo Ka Guda	Kurabad
397	Narayan Lal Meena	15	2018	Masonarystone	1.07	Bhallo Ka Guda	Kurabad
398	Om Pal Singh Chundawat	16	2018	Masonarystone	1.09	Bhallo Ka Guda	Kurabad
399	Rinku Kumpawat	17	2018	Masonarystone	1.01	Bhallo Ka Guda	Kurabad
400	Priyanka Kunwar	18	2018	Masonarystone	1.02	Bhallo Ka Guda	Kurabad
401	Bajrang Enterprises	19	2018	Dolomite, Red Ochre	4.07	Selo	Badgaon
402	Girdhari Lal Agal	20	2018	Masonarystone	1	Chandesara	Mavli
403	Chandmal Sahu	22	2018	Masonarystone	1.21	Bhinder	Bhinder
404	Rajendra Sahu	28	2018	Masonarystone	1.89	Bhinder	Bhinder
405	Madan Das Vaishnav	B15	2018	Felspar, Pyrophyllite, Quartz	1	Kacher	Vallabhnagar
406	Pushpendra Singh	1	2019	Felspar, Masonarystone	1.54	Taja Ka Vas	Kotra
407	Suraj Kunwar	5	2019	Masonarystone	1.66	Dhol	Gogunda
408	Sohan Bai	10	2019	Felspar, Masonarystone, Quartz	3.93	Kham Ki Madri	Mavli
409	Bhag Chand	11	2019	Felspar, Quartz	1.03	Runija	Kurabad
410	Dhanna Kumhar	12	2019	Felspar, Quartz	1.04	Runija	Kurabad
411	Shri Krishna Crushing Plant	15	2019	Masonarystone	1.51	Bhinder	Bhinder
412	Shiv Lal Meena	16	2019	Dolomite, Masonarystone	1.96	Selu	Badgaon
413	Rahul Daya	17	2019	Dolomite, Masonarystone	2.29	Selu	Badgaon
414	Varsha Daya	18	2019	Dolomite, Masonarystone	2.46	Selu	Badgaon
415	Dinesh	19	2019	Felspar, Pyrophyllite, Quartz	3.71	Karmal	Girwa
416	Prem Lal Megwal	20	2019	Felspar, Quartz	1.27	Jawad	Mavli
417	Viram Singh	22	2019	Felspar, Quartz	2.75	Kham Ki Madri	Mavli
418	Siddhi Stone Minerals Llp	25	2019	Felspar, Quartz	3.98	Panoond	Vallabhnagar
419	Jeta Ji Bhil	2	2020	Felspar, Quartz	1.09	Thamla	Mavli
420	Ram Lal Dangi	3	2020	Felspar, Quartz	3.22	Kham Ki Madri	Mavli
421	Laxmi Chand Bhansali	5	2020	Felspar, Quartz	3.4	Runija	Kurabad
422	Arpit Bhansali	6	2020	Felspar, Quartz	2.32	Runija	Kurabad
423	Pratibha Mehta	9	2020	Felspar, Quartz	1.05	Shishvi	Kurabad
424	Nikhil Jangir	11	2020	Felspar, Quartz	1.69	Kochla	Jhadol
425	Vaktawar Gurjar	14	2020	Felspar, Quartz	1.86	Sindhu	Mavli
426	Hakim Ali Khan	8	2021	Felspar, Quartz	3.89	Todi	Girwa
427	Tulsi Minerals	11	2021	Felspar, Quartz	2.03	Hariyav	Vallabhnagar
428	Raj Minerals Crushing Plant	13	2021	Dolomite, Masonarystone	3.28	Bansliya	Badgaon
429	Ganpatsingh Rao	14	2021	Felspar, Masonarystone, Quartz	1.33	Kharvado Ka Guda	Mavli
430	Ms Panchwati Finlease Private Limited	15	2021	Calcite, Felspar, Quartz	4	Sinhad	Bhinder

431	Onkar Lal	16	2021	Felspar, Masonarystone, Quartz	3.64	Panund	Kanore
432	Lokesh Kumar Dangi	19	2021	Felspar, Quartz	1.9	Kham Ki Madri	Mavli
433	Bhagwan Mahaveer Minerals	20	2021	Felspar, Quartz	3.99	Panund	Vallabh Nagar
434	Ms Sky Stone	27	2021	Felspar, Quartz	4.18	Gudli	Kurabad
435	Ms Sky Stone	28	2021	Felspar, Quartz	4.2	Gudli	Kurabad
436	Dev Karan	1	2022	Felspar, Quartz	1.43	Runija	Kurabad
437	Ms Stone Age Minerals	2	2022	Felspar, Quartz	1.43	Sajilai	Kurabad
438	Bhanwar Singh	4	2022	Felspar, Quartz	3.05	Aakola	Kanore
439	Kkg Infraprojects Private Limited	5	2022	Granite	1.4	Pipalwas	Vallabh Nagar
440	Sampann Granite	6	2022	Granite	2.48	Semal	Kanore
441	Tila	7	2022	Felspar, Quartz	1.74	Sejlai	Kurabad
442	Charbhuj Construction	8	2022	Dolomite, Masonarystone	1.06	Iswal	Badgaon
443	Babu Lal Dangi	9	2022	Felspar, Quartz	2.31	Kacher	Vallabh Nagar
444	Ajay Kumar Dubey	11	2022	Felspar, Quartz	2.71	Panund	Vallabh Nagar
445	Ms Balaji Minerals	12	2022	Felspar, Masonarystone, Pyrophyllite, Quartz	1.04	Gandoli	Mavli
446	Sunil Sahu	13	2022	Dolomite, Masonarystone, Soapstone	1.78	Kaloda	Badgaon
447	Bhagwati Lal Gameti	19	2022	Felspar, Masonarystone, Quartz	1.95	Bhansol	Mavli
448	Bhagwat Lal Gameti	20	2022	Felspar, Masonarystone, Quartz	1.41	Kheda Bhansol	Mavli
449	Shree Pashupati Granite	22	2022	Granite	1.43	Rodada	Kurabad
450	Shree Pashupati Granite	23	2022	Granite	3.44	Rodada	Kurabad
451	Kavita Mewara	24	2022	Felspar, Quartz	1.18	Mayda	Kurabad
452	M/S Shree Kesari Granite	26	2022	Felspar, Granite, Masonarystone, Quartz	4.37	Rodada	Kurabad
453	Rajesh Jindal	1	2023	Felspar, Quartz	1	Sihad	Bhinder
454	Mahadev Crusher And Minerals	2	2023	Masonarystone	1.12	Kumawato Ka Guda	Badgaon
455	Asr Mines And Minerals	16	2023	Felspar, Quartz	4.47	Bambora	Kurabad
456	Suresh Kumar Pachar	28	2023	Felspar, Quartz	2.43	Jawad	Mavli

#### Details of the Minor Mineral Mining Leases in the District (AME, Rishabhdeo)

S.N o.	Lease No.	Lessee Name	Mineral Name	Village/Tehsil/District	Tehsil	Area in Hectare
1.	(B)/ML/6/1991	Parshwanath Minerals	Soapstone	Tapana	Kherwada	4.00
2.	ML/9/1997	Prop.Kamlesh Devi Keshriya Ji Marbel And Minerals	Serpentine	M. Obri	Kherwada	1.00

3.	ML/31/1996	Meena Marble	Serpentine	M. Obri	Kherwada	1.00
4.	ML/263/2008	Dream Marble	Serpentine	Masaro Ki Obari	Kherwada	1.00
5.	ML/34/1996	Ashoka Minerals	Serpentine	Tapana	Kherwada	2.5
6.	ML/2/2011	Madan Singh Rathor	Serpentine	Masaro Ki Obri	Kherwada	1.00
7.	ML/12/2006	Jai Buildcon Pvt. Ltd.	Masonarystone	Kagdar Bhatiya	Kherwada	1.00
8.	ML/1/1999	Babita Gupta	Serpentine	Bhauwa	Kherwada	0.87
9.	ML/1/1998	Rishabh Vardiya Marble Pvt. Ltd.	Serpentine	Massarow Ki Obri	Kherwada	0.48
10.	ML/16/2010	Rishabh Vardiya Marble Pvt. Ltd.	Serpentine	Masoron Ki Obri	Kherwada	0.57
11.	(B)/ML/23/1978	Om Prakash Swarnkar	Soapstone	Baliya	Kherwada	4.98
12.	ML/233/2008	Smt Asha Virani	Serpentine	Masaro Ki Obri	Kherwada	1.39
13.	ML/4/2009	Aarti Marble And Granite Pvt. Ltd.	Serpentine	Bhauwa	Rishabhdeo	1.2812
14.	ML/39/1996	Mangalam Stone Crusher	Masonarystone	Banjariya	Kherwada	1.00
15.	ML/38/2011	Ekling Nath Granite And Marble	Serpentine	Masoran Ki Obri	Rishabhdeo	1.00
16.	ML/28/1994	Jagmahendra Sing	Serpentine	Odwas	Kherwada	1.95
17.	ML/29/1994	Mukhtiyar Sing	Serpentine	Odwas	Kherwada	1.00
18.	ML/5/2011	Shankar Singh Sisodiya	Serpentine	Masaro Ki Obri	Kherwada	1.00
19.	ML/1/2010	Agrawal Exports	Serpentine	Odwas	Kherwada	1.00
20.	ML/968/1992	Balaji Green Marble	Serpentine	Khanmin	Kherwada	1.00
21.	ML/260/2008	Mahadev Marmo Pvt. Ltd.	Serpentine	Odwas	Rishabhdeo	0.45
22.	ML/22/2011	Hari Priya Enterprises Pvt. Ltd.	Serpentine	Masaron Ki Obri	Kherwada	1.00
23.	ML/37/2009	Jeevan Jyoti Industries Pvt. Ltd.	Serpentine	Odwas	Kherwada	1.00
24.	(B)/ML/14/1981	Haldighati Mineral	Soapstone	Oda	Kherwada	24.38
25.	(B)/ML/21/1976	Ashoka Minerals	Soapstone	Tapana	Kherwada, Rishabhdeo	4.97
26.	ML/24/2010	Shri Karni Marmo	Serpentine	Odwas	Kherwada	1.00
27.	ML/8/2009	K V Marble	Serpentine	Bilkhai ,Kagdar	Kherwada	3.87

28.	ML/32/2010	Vineet Udhyog Pvt. Ltd.	Serpentine	Bhelana	Kherwada	1.00
29.	ML/11/2010	Shri S. Pyari Stones	Serpentine	Masaro Ki Obari	Rishabhdeo	1.00
30.	ML/9/2007	Ganesh Lal Kalal	Masonary stone	Banjariya	Kherwada	1.00
31.	ML/4/1998	M/S Ratnamani Mines Pvt Ltd	Serpentine	Dhelana	Rishabhdeo	2.07
32.	(B)/ML/15/1994	Parmatma Mining And Minerals	Soapstone	Chani	Kherwada	4.95
33.	ML/23/2009	Tribhuvan Singh Kothari	Serpentine	Odwas	Kherwada	1.00
34.	ML/22/2010	Tribhuwan Singh Kothari	Serpentine	Odwas	Kherwada	1.00
35.	ML/48/2010	Manoj Garg	Serpentine	Bhuwa	Kherwada	1.00
36.	ML/762/1991	Shakeel Ansari	Serpentine	Ugmana Kotra	Kherwada	1.00
37.	ML/233/1993	Rajvinayak Natural Stone Pvt. Ltd.	Serpentine	M. Obri	Kherwada	1.00
38.	ML/259/2008	Mahadev Marmo Pvt. Ltd.	Serpentine	Odwas	Kherwada	0.42
39.	ML/601/1991	Lalgaria Mines	Serpentine	Odwas	Kherwada	1.00
40.	(B)/ML/14/1995	Associated Minerals	Soapstone	Karchha	Kherwada	4.99
41.	ML/17/2010	Veersukha Green Marble	Serpentine	Masaron Ki Obri	Kherwada	1.00
42.	(B)/ML/45/1980	Gautam Minerals	Soapstone	Dhelana	Kherwada	24.25
43.	ML/13/2001	Goodluck Green Marbles	Serpentine	Odwas	Kherwada	1.00
44.	ML/23/2010	Sunlight Marmo Pvt. Ltd.	Serpentine	Odwas	Rishabhdeo	1.00
45.	ML/23/2011	S.M.T. Marble	Serpentine	Masaro Ki Obri	Kherwada	1.00
46.	ML/215/2008	D J Neelam Marble Ind. Pvt. Ltd.	Serpentine	Odwas	Kherwada	0.38
47.	(B)/ML/9/2001	Kedar Nath Khetan	Soapstone	Chorai	Kherwada	24.89
48.	(B)/ML/15/1983	Ramesh Kumar	Soapstone	Panisala & Babri Khera, Oda	Rishabhdeo ,Kherwada	4.9
49.	ML/42/2002	Manju Devi Jain	Serpentine	Odwas	Kherwada	1.00
50.	ML/32/1994	S.M. Traders Kesharyaji	Serpentine	Dhelana	Kherwada	1.00
51.	ML/5/1997	Rishabh Marble	Serpentine	Masaro Ki Obari	Kherwada	2.25
52.	(B)/ML/11/1994	M/S Pooja Construction	Soapstone	Barna	Kherwada	4.86
53.	(B)/ML/30/1981	Anil Chelawat	Soapstone	Rishabhdev	Kherwada	4.99
54.	ML/17/2011	Neeraj Purohit	Serpentine	Odwas	Kherwada	1.00
55.	ML/219/1993	Rajvinayak Natural Stone Pvt. Ltd.	Serpentine	M. Obri	Kherwada	1.00
56.	ML/176/1991	K V Ramesh	Serpentine	Pipali	Kherwada	1.00

57.	ML/27/2011	Mount Stone And Mineral	Serpentine	Odwas	Rishabhdeo	1.00
58.	ML/25/1996	Chunka Devi Chaudhry	Serpentine	Odwas	Kherwada	1.00
59.	(B)/ML/83/1976	Jagdambe Bhawani Minchem	Soapstone	Mahudara	Kherwada	4.95
60.	ML/49/2011	Bonafide Marble Pvt Ltd	Serpentine	Odwas	Kherwada	1.00
61.	(B)/ML/37//1984	Pyare Krishan Agarwal	Soapstone	Mundwara	Kherwada	26.57
62.	ML/38/2009	Jeevan Jyoti Industries Pvt. Ltd.	Serpentine	Odwas	Kherwada	1.00
63.	ML/36/2009	Arihant Minerals	Serpentine	Masaro Ki Obari	Kherwada	1.00
64.	ML/675/1990	Priti Karnawat	Serpentine	Dhelana	Kherwada	1.00
65.	ML/11/2006	Jai Buildcon Pvt. Ltd.	Masonarystone	Kagdar Bhatiya	Kherwada	1.00
66.	ML/31/2010	Vineet Udhyog Pvt. Ltd.	Serpentine	Dhelana	Kherwada	1.00
67.	ML/28/2010	Govind Dham Natural Resources Pvt Ltd	Serpentine	Masaro Ki Obri	Kherwada	1.00
68.	ML/8/2011	Rishabha Minerals Pvt. Ltd	Serpentine	Masaro Ki Obri	Rishabhdeo	1.00
69.	(B)/ML/1/1998	Shree Noormohammad	Soapstone	Godiyo Ka Wada,Ghodiya Wara	Kherwada	4.97
70.	ML/1022/1991	Shri Rishabh Mining	Serpentine	M. Obri	Kherwada	1.00
71.	ML/12/1998	Jyoti Mineral P. Ltd.	Serpentine	Odwas	Kherwada	1.00
72.	(B)/ML/34/1974	Rakesh Vardiya	Soapstone	Khojawara	Kherwada	4.81
73.	ML/2/2019	Chandu Lal Meena	Masonarystone	Banjariya	Kherwada	1.00
74.	(B)/ML/8/1994	M/S Riddhi Siddhi Minerals	Soapstone	Karcha	Kherwada	23.22
75.	(B)/ML/4/1995	M/S Marudhar Mineral	Soapstone	Kharcha	Kherwada	23.39
76.	ML/4/2010	Chakrawati Marble Pvt. Ltd.	Serpentine	Odwas	Kherwada	1.00
77.	ML/6/2011	Karishma Marbles	Serpentine	Odwas	Rishabhdeo	1.00
78.	ML/21/1998	Tarachand Jain	Serpentine	Odwas	Kherwada	0.47
79.	ML/128/1985	Sanjeev Modi	Serpentine	Dhelana	Kherwada	1.00
80.	ML/4/1997	Himmat Lal Kalal	Serpentine	Khanmeen	Kherwada	1.00
81.	(B)/ML/4/2002	Kezar Ali Kurabadwala	Soapstone	Khanmim	Kherwada	4.99
82.	ML/13/2010	Sh. Anil Kumar Singh Ranawat	Serpentine	Masaro Ki Obari	Kherwada	1.00
83.	ML/12/2010	Sh. Anil Kumar Singh Ranawat	Serpentine	Masaro Ki Obari	Kherwada	1.00
84.	ML/25/2010	Delwara Marbles And Granites Pvt. Ltd.	Serpentine	Odwas	Rishabhdeo	1.00
85.	ML/288/1991	Everest Marble	Serpentine	Odwas	Kherwada	1.00

86.	ML/14/1998	Sarla Exports Pvt. Ltd.	Serpentine	M. Obri	Kherwada	1.00
87.	ML/20/2011	Hari Priya Enterprises Pvt. Ltd.	Serpentine	Masaron Ki Obri	Kherwada	1.00
88.	ML/18/2010	Bhanwraram Choudhary	Serpentine	Masoran Ki Obri	Rishabhdeo	1.00
89.	ML/47/2010	Anil Kumar Singh Ranawat	Serpentine	Masaro Ki Obri	Rishabhdeo	1.00
90.	ML/10/1994	Rishabh Marble	Serpentine	M. Obri	Kherwada	1.00
91.	ML/20/2010	Hari Om Marmo Grani Pvt. Ltd.	Serpentine	Masaro Ki Obri	Kherwada	1.00
92.	ML/160/1993	Ms Vardhman Mining Pvt. Ltd.	Serpentine	Masaro Ki Obri	Kherwada	1.00
93.	(B)/ML/8/1974	M/S Ganga Mines	Soapstone	Khojawara	Kherwada	4.98
94.	ML/33/1999	Ram Kumar Choudhary	Serpentine	M. Obri	Kherwada	1.00
95.	ML/18/2009	Rajesh Kumar Inani	Serpentine	Masari Ki Obari	Rishabhdeo	1.00
96.	(B)/ML/7/1995	Basanti Lal Babel	Soapstone	Dasera (Kagdr)	Kherwada	4.80
97.	ML/46/1996	Hakshi Damor	Serpentine	Khanmin	Kherwada	1.00
98.	ML/251/2008	Dilip Singh Rathore	Serpentine	Masaro Ki Obri	Kherwada	1.00
99.	ML/48/2011	Vardhman Mining Pvt. Ltd.	Serpentine	Odwas	Kherwada	1.00
100.	ML/13/1997	Nilesh Suthar	Masonarystone	Bhauwa	Kherwada	1.00
101.	ML/145/1992	Dalpat Ram Meena	Serpentine	Dhelana	Kherwada	1.00
102.	ML/19/2010	Baba Ramdev Marmo Grainee Pvt. Ltd.	Serpentine	Odwas	Kherwada	1.00
103.	ML/6/1998	Jain Iron	Serpentine	Odwas	Kherwada	1.60
104.	ML/1193/1992	Ghevarchad Sankhala	Serpentine	M. Obri	Kherwada	2.00
105.	(B)/ML/2/1981	R. P. Gupta	Soapstone	Kotra	Kherwada	4.80
106.	ML/250/2008	N.H. Marble	Serpentine	Masaro Ki Obri	Kherwada	1.00
107.	(B)/ML/7/2002	Kedar Nath Khetan	Soapstone	Chhani	Kherwada	4.99
108.	(B)/ML/8/1993	Kedar Nath Khetan	Soapstone	Bayri	Kherwada	4.99
109.	ML/14/2009	Harish Kumar Aroda	Serpentine	Tapaan	Kherwada	1.00
110.	ML/149/1994	Evergreen Marbles	Serpentine	Dhelana	Kherwada	1.00
111.	ML/27/2010	S. Pyari Stones Pvt Ltd	Serpentine	Masaro Ki Obri	Kherwada	1.00
112.	ML/202/2008	Sidharth Marble And Granite Pvt. Ltd	Serpentine	Masoran Ki Obri	Kherwada	1.66
113.	(B)/ML/1/1999	Mukesh Jain	Soapstone	Narethi	Kherwada	4.82
114.	ML/47/2009	Vinod Bhai Patel	Serpentine	Garnala	Rishabhdeo	1.00

115.	ML/4/2000	Meena Singhvi	Serpentine	M. Obri	Kherwada	1.00
116.	ML/16/2011	Kanak Dhing	Serpentine	Masoran Ki Obri	Rishabhdeo	1.00
117.	ML/40/2010	Rajputana Export	Serpentine	Odwas	Rishabhdeo	1.00
118.	ML/11/2000	Maa Kamal Marble	Serpentine	Pipali	Kherwada	1.00
119.	ML/754/1991	Budha Ram Choudhary	Serpentine	Odwas	Kherwada	1.00
120.	ML/24/2009	Meena Singhvi	Serpentine	Masaro Ki Obari	Kherwada	1.00
121.	ML/40/2009	Ganpati Impax	Serpentine	Garnala	Kherwada	1.00
122.	ML/4/2006	Baba Ramdev Marmo Graineer Pvt. Ltd.	Serpentine	Odwas	Kherwada	1.00
123.	ML/7/2011	Rishabh Green Marble Pvt. Ltd.	Serpentine	Odwas	Kherwada	1.00
124.	ML/21/2009	Mount Stone And Minerals	Serpentine	Masaro Ki Obari	Kherwada	1.00
125.	ML/5/2004	N.H. Marbles	Serpentine	M.Obari	Kherwada	2.04
126.	ML/228/2008	Rajendra Kumar Virani	Serpentine	Masoran Ki Obri	Kherwada	1.50
127.	ML/285/1991	Shalibhadra Kumar	Serpentine	Odwas	Kherwada	1.00
128.	(B)/ML/13/1994	Ashoka Minerals	Soapstone	Chourai	Kherwada	4.98
129.	ML/13/2009	Ashoka Minerals	Serpentine	Tapana	Kherwada	4.98
130.	(B)/ML/7/2001	Kedar Nath Khetan	Soapstone	Khanmin	Kherwada	24.7
131.	ML/26/2010	S. Pyari Stones Pvt Ltd	Serpentine	Odwas	Rishabhdeo	1.00
132.	ML/783/1990	Kanhaiya Lal Meena	Serpentine	Khanmeen	Kherwada	1.00
133.	(B)/ML/8/1992	Patel Mining Company	Soapstone	Dholpura	Kherwada	52.03
134.	ML/232/2008	Smt Asha Virani	Serpentine	Masaro Ki Obri	Kherwada	0.64
135.	ML/551/1991	Vpr Marbo Minerals Pvt Ltd	Serpentine	Odwas	Kherwada	1.00
136.	ML/14/2010	Tirupati Stones Pvt .Ltd.	Serpentine	Masaro Ki Obari	Rishabhdeo	1.00
137.	(B)/ML/1/1996	Singh Mining Company	Soapstone	Juthri	Kherwada	4.96
138.	ML/36/2010	Trivedi Impex Ahemdabad	Serpentine	Odwas	Rishabhdeo	2.00
139.	ML/10/2004	Narayan Lal Pandya	Serpentine	Dhelana	Kherwada	4.00
140.	ML/482/1990	Kanhaiya Lal Kalal	Serpentine	Odwas	Kherwada	1.00
141.	ML/63/2004	Anil Mundra	Serpentine	Odwas	Kherwada	1.00
142.	ML/7/2009	Tarachand Jain	Serpentine	Odwas	Rishabhdeo	1.30

143.	ML/33/2010	Gunsagar Karnavat	Serpentine	Dhelana	Kherwada	1.00
144.	ML/29/2010	Madhu Devi Wanawat	Serpentine	Masaro Ki Oberi	Rishabhdeo	1.00
145.	ML/339/1991	Suner Marble And Granitespvt Ltd	Serpentine	Odwas	Kherwada	1.00
146.	ML/45/2010	Rekharam Choudhary	Serpentine	Odwas	Kherwada	1.00
147.	ML/24/2011	Narayan Marble	Serpentine	Odwas	Kherwada	1.00
148.	ML/8/1997	Rishabhdeo Marble Kesharyaji	Serpentine	Khanmin	Kherwada	1.00
149.	ML/41/1991	Sagar Sharma	Serpentine	Odwas	Kherwada	1.00
150.	(B)/ML/11/1991	Sai Minerals	Soapstone	Padliya	Kherwada	4.99
151.	ML/252/2008	Trivedi Impex Pvt. Ltd.	Serpentine	Kagdar	Kherwada	1.00
152.	(B)/ML/16/1994	Kedar Nath Khetan	Soapstone	Khanmin	Kherwada	4.70
153.	ML/62/2004	Suraj Narayan Mohta	Serpentine	Odwas	Kherwada	1.00
154.	ML/7/2010	Dattatreya Mining Pvt Ltd	Serpentine	Masaro Ki Obari,Masaron Ki Obri	Rishabhdeo	3.99
155.	ML/10/2010	Govind Dham Natural Resources Pvt Ltd	Serpentine	Masaro Ki Obari	Kherwada	1.00
156.	ML/3/2010	Dhulchand Meena	Serpentine	Khanmin	Kherwada	1.00
157.	(B)/ML/13/1992	Bhudhara Minerals	Soapstone	Karchha	Kherwada	4.87
158.	ML/1023/1991	Shri Rishabh Mining	Serpentine	M. Obri	Kherwada	0.78
159.	ML/5/2010	Kohinoor Green Stones Pvt Ltd	Serpentine	Khanmeen	Kherwada	1.00
160.	(B)/ML/43/1980	Cosmos Marble Pvt. Ltd.	Soapstone	Kagder	Kherwada	35.00
161.	ML/15/1998	Dilip Singh Rathore	Serpentine	M. Obri	Kherwada	1.00
162.	ML/47/2011	Vardhman Mining Pvt. Ltd.	Serpentine	Odwas	Rishabhdeo	1.00
163.	ML/572/1990	Lalit Dalal	Serpentine	Odwas	Kherwada	1.00
164.	ML/34/2010	Gunsagar Karnavat	Serpentine	Dhelana	Kherwada	1.00
165.	ML/10/2006	Kauva Meena	Masonarystone	Bhauwa	Kherwada	1.00
166.	ML/41/2010	Rajputana Export	Serpentine	Odwas	Rishabhdeo	1.00
167.	ML/42/2010	Kritika Rathore	Serpentine	Odwas	Rishabhdeo	1.00
168.	(B)/ML/2/1987	Ashok Kumar Karva	Soapstone	Kalyanpur (Rajol)	Kherwada	19.1881
169.	ML/16/2004	Shree Neelkanth Marbles	Serpentine	Odwas	Kherwada	1.00
170.	(B)/ML/10/1990	Navdurga Minchem	Soapstone	Karchha	Kherwada	83.97

\*\*\*\*\*

# DISTRICT SURVEY REPORT UDAIPUR

(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018)

## CHAPTER -9

### DETAILS OF ROYALTY OR REVENUE RECIVED IN LAST THREE YEARS

#### No. of Major Mineral Leases with Area, Production, Sale Value, Revenue and Employment

##### Employment in Udaipur district (Year 2021-2024)

Mierals	Area in Hectare	No of Leases	2021-22		2022-23		2023-24	
			Producion	Revenue	Producion	Revenue	Producion	Revenue
LeadZinc, Silver	3620	1	267638	42.55 cr	295581	431.68 cr	321554	450.73cr
Rock-Phosphate	1530.25	1	802798	48.07cr	1260662	144.88 cr	1004654	150.27 cr
Limestone	916.64	2	1706384	15.78 cr	1943047	11.99	2913083	23.32

#### No. of Minor Mineral Leases with Area, Production, Sale Value, Revenue and

Mierals	Area in Hectare	No of Leases	2021-22		2022-23		2023-24	
			Producion	Revenue	Producion	Revenue	Producion	Revenue
Barytes	31	1	6749	492326	6617	485662	6002	488668
Calcite	130.97	12	18615	2978326	24435	3909608	69971	12200831
China clay	15	2	102644	6671842	77303	5024734	45650	3467271
Dolomite	577	11	169249	22002377	208753	27134686	226478	39702532
Felspar	15568	146	817126	73687567	1669550	150560164	2262517	247629456
Granite	27.2	10	11049	2959258	4345	1259931	6492	1861660
Limestone	28.38	29	91412	13254747	218947	31747337	220607	31987970
Marble	84.8	62	140635	33848177	180227	42334012	200822	45491611
MasonryStone	210	171	1923789	61473565	2592752	90746320	3216871	112590473
Phyllite	17.75	9	12194	1966307	21489	3843064	22451	4026956
Pyrophyllite	802	10	46673	4667337	42571	4257072	18131	2044558
Quartz	15604	155	78380	7054178	76849	6914765	69329	8088397
Ochre	63	4	21849	860675	0	0	86967	3913493
Schist	17	9	1496	249362	1942	7779	2585	465336
Serpentine	23	12	10623	1766296	7179	2151636	9922	3174998
Soapstone	1740	34	166894	25866685	146867	22854596	172979	27076437
Silica Sand	15	2	4792	429366	0	0	0	0
Total	34954.1	679	3624169	260228390	5279826	393231368	6637773	544210647
AME Rishabhdeo Jurisdiction								
Serpentine	43.77	129	309707.44	56408442	336649.43	107727818	329437.31	105419939
Soapstone	515.1	34	265334.41	26533441	333460.91	33346091	337416.85	37439294
MasonrySton	7	7	82141.79	1170095	127840.57	4474420	157612.57	5516440

## **CHAPTER -10**

### **Details of Employment in Udaipur district (Year 2021-2024)**

Mierals	Area in Hectar e	No of Leas es	2021-22		2022-23		2023-24	
			Em plo yment	Sell Value	Empl oyment	Sell Value	Emp loyment	Sell Value
Barytes	31	1	11	4923260	13	4856620	13	4886680
Calcite	130.97	12	60	29783260	55	39096080	52	122008310
China clay	15	2	20	66718420	25	50247340	25	34672710
Dolomite	577	11	100	220023770	95	271346860	90	397025320
Felspar	15568	146	500	736875670	470	1505601640	450	2476294560
Granite	27.2	10	30	29592580	30	12599310	30	18616600
Limestone	28.38	29	30	132547470	30	317473370	30	319879700
Marble	84.8	62	500	338481770	475	423340120	460	454916110
MasonryStone	210	171	450	614735650	438	907463200	430	1125904730
Phyllite	17.75	9	27	19663070	27	38430640	27	40269560
Pyrophyllite	802	10	30	46673370	30	42570720	30	20445580
Quartz	15604	155	300	70541780	290	69147650	270	80883970
Ochre	63	4	10	8606750	10	0	10	39134930
Schist	17	9	50	2493620	50	77790	50	4653360
Serpentine	23	12	100	17662960	97	21516360	92	31749980
AME Rishabhdeo Jurisdiction								
Serpentine	161.04	132	1400	464561160	1320	521806617	1280	5155569390
Soapstone	513.66	35	260	119400484	250	153392060	270	155211751
MasonrySton	6	6	60	7393050	55	12144855	75	16549320

\*\*\*\*\*

## **CHAPTER -11**

### **GENERAL PROFILE OF THE DISTRICT**

**Udaipur** is a beautiful city, set amidst the Aravalli Ranges of Rajasthan, India. Known for its picturesque lakes, Udaipur also called 'the city of lakes'. The elevated hills and the beautiful lakes make a picture-perfect backdrop to the Udaipur city. Udaipur is regarded as one of the most romantic cities of the World and subsequently, also known as the 'Venice of East'. In context of Rajasthan, Udaipur is the second most-sought after tourist destination of the state, the first being Jaipur. Udaipur had been the capital of Mewar for centuries. Though termed as the city of lakes, Udaipur has many more attractions that catch the attention of the tourists with their charm. The city boasts of various museums, palaces, gardens, monuments and colourful festivals that allure tourists to visit the city for once. The mighty palaces with their exquisite locations transport you directly into the royal Rajputana era; Lake Palace, for one, has been accredited for being one of the most romantic places all across the globe. The massive forts of Udaipur grab the interest of people with their sheer structure and architecture.

<b>Location:</b>	24° 58° N 73° 68 E
<b>Altitude:</b>	598 m above sea level
<b>Area:</b>	37 sq. kms

#### Geographical and Physical Features

Population (2011)	3,068,420
Growth	23.69%
Sex Ratio	958
Literacy	61.82
Area (km <sup>2</sup> )	13430
Density (/km <sup>2</sup> )	242
Tehsils	Girwa, Gogunda, Jhadol, Kherwara, Kotra, Mavli, Rishabhdeo, Vallabhagar
Lok Sabha Constituencies	Udaipur, Chittorgarh

Assembly Constituencies	Gogunda, Jhadol, Kherwara, Mavli, Udaipur, Udaipur Rural, Vallabnagar
Languages	Hindi, Rajasthani including Mewari
Rivers	Sabarmati, Som, Ahar, Mahi, Banas
Lat-Long	24.20689,73.661728
Travel Destinations	Pichola Lake, Fateh Sagar, Udai Sagar, Jaisamand Lake, Swaroop Sagar, Jiyan Sagar, City Palace Museum, Vintage Collection Of Classic Car Museum, Bhartiya Lok Kala Museum, Shilpgram Museum, Ahar Museum, Jagdish Temple, Eklingji Temple, Neemach Mataji Temple, Shri Manshapurna Karni Mata Temple, Sajjan Niwas Garden, Saheliyon-Ki-Bari, Maharana Pratap Memorial, Nehru Garden, Sukhadia Circle, Rajeev Gandhi Park, Doodh Talai Garden, City Palace, Lake Palace, Jag Mandir Palace, Bagore Ki Haveli, Sujjangarh Palace etc.
Government Colleges/Universities	Government College (Kherwara), Government College (Kotra), Govt. College (Sarada), Govt. Girls College (Kherwara), Hadarani Government College (Salumber), Meera Government Girls College (Udaipur) etc.

## **CHAPTER – 12**

### **LIST OF LETTER OF INTENT (LOI) HOLDERS IN THE DISTRICT ALONG WITH ITS VALIDITY**

S.No.	Office Name	ML No.	Application Type	Applicant Name	Mineral Name	N/V	Tehsil	District
1	ME,Udaipur	3/2018	ML	HIRALAL DANGI	Quartz, Felspar	Kham Ki Madri	Ghansa	Udaipur
2	ME,Udaipur	16/2018	ML	SUMAN TANWAR	Felspar, Quartz	Hariyav	Vallabhnagar	Udaipur
3	ME,Udaipur	32/2018	ML	RAJESHWARI MEENA	Serpentine	Sultan Ji Ka Kherwada	Jhadol	Udaipur
4	ME,Udaipur	3/2022	ML	SURENDRA KATARIA	Quartz, Felspar	Padund	Kanore	Udaipur
5	ME,Udaipur	16/2022	ML	HEMANT KUMAR TRIVEDI	Quartz, Granite, Masonarystone, Felspar	Akola	Kanore	Udaipur
6	ME,Udaipur	27/2022	ML	SANJAY SUKHWAL	Felspar, Quartz	Vasu	Kurabad	Udaipur
7	ME,Udaipur	28/2022	ML	Mayhigh Minerals	Felspar, Quartz	Vasu	Kurabad	Udaipur
8	ME,Udaipur	31/2022	ML	SACHIN AGARWAL	Felspar, Quartz	Padund	Kanore	Udaipur
9	ME,Udaipur	32/2022	ML	Mahadev Mineral	Felspar, Quartz	Kachher	Vallabhnagar	Udaipur
10	ME,Udaipur	6/2023	ML	BABU LAL TELI	Masonarystone, Dolomite	Selu	Badganv	Udaipur

11	ME,Udaipur	11/2023	ML	Maruti Mines And Minerals	Felspar, Quartz	Mal ki Tus	Vallabh nag ar	Udaipur
12	ME,Udaipur	29/2023	ML	Ultrafine Minerals	Masonarystone	Nandesh ma	Sayra	Udaipur
13	ME,Udaipur	4/2024	ML	RADHA SHREE MINCHEM LLP	Felspar, Quartz	Budhel	Kurabad	Udaipur
14	ME,Udaipur	6/2024	ML	MANGI LAL SAHU	Felspar, Masonarystone, Quartz	Varnoda	Kanore	Udaipur
15	ME,Udaipur	3/2024	ML	SHYAM SUNDAR SAHU	Masonarystone	Varnoda	Kanore	Udaipur
16								

### **CHAPTER - 13**

#### **TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT**

S.NO.	Mineral	Resources MT ( million tonnes)	Remarks N/V or Tehsil (also occurs here)
1	Marble	130.0	Jaspura, Bansliya ect.
2	Barytes	0.576	Babarmal,Tikhi, Chanda,-Kharwa ect.
3	Granite	0.2	Tehsil Gogunda, Sarada, Kurabad,Vallabhnagar ect.
4	Limestone(burning)	0.1	Tehsil Macli ect.
5	Masonry stone	10.0	Tehsil- Mavli, Sarada, Badgaon,Girwa, Gogunda, Vallabhnagar ect.
6	Phylite-Shist	0.01	Tehsil- Gogunda , Badgaon ect,
7	Serpentine	100.0	Rishabhdev,Gogunda Badgaon ect.
8	Soapstone	5.0	Sarada, Rishabhdev,Gogunda , , Khairwara , Badgaon ect
9	Dolomite	15.0	Tehsil - Badgaon ect.
10	Phyrophyllite	1.0	Girwa, Mavli, Kurabad, Badgaon ect.
11	Ochers (Red Ocher)	0.4	Badisar, Iswal ect.
12	China Caly	0.1	Tehsil- Badgaon , Kurabad ect.
13	Calcite	5.83	Gogunda, Kotra ect.
14	Feldsper	2.0	Kurabad, Vallabhnagar ect.
15	Quartz	0.1	Gogunda , Kurabad, Vallabhnagar, ect.

## **CHAPTER - 14**

**USE OF MINERAL:** Mining industry plays an important role in economic sector in India. Rajasthan is rich in mineral wealth. The state is endowed with major and minor mineral resources. The region, where the project is situated is mostly dependent on agriculture and mineral resources. The developments of mining provide direct and indirect employment opportunities, infrastructure development, communication and socio-economic infrastructure.

**Copper:** The major applications of copper are electrical wire (60%), roofing and plumbing (20%), and industrial machinery (15%). Copper is an excellent conductor of electricity (second only to silver) and electrical motors, generators and wiring are its primary use. Copper is used mostly as a pure metal, but when greater hardness is required, it is put into such alloys as brass and bronze (5% of total use). For more than two centuries, copper paint has been used on boat hulls to control the growth of plants and shellfish. A small part of the copper supply is used for nutritional supplements and fungicides in agriculture. Machining of copper is possible, although alloys are preferred for good machinability in creating intricate parts.

**Lead:** It is still widely used for car, batteries, pigments, ammunition, cable, sheathing, weights for lifting, weight belts for diving, lead crystal glass, radiation protection and in some solders. It is often used to store corrosive liquids.

**Zinc:** Its uses range from metal products to rubber and medicines. About three-fourths of zinc used is consumed as metal, mainly as a coating to protect iron and steel from corrosion (galvanized metal), as alloying metal to make bronze and brass, as zinc-based die casting alloy, and as rolled zinc.

**Silver:** The major use of silver besides coinage throughout most of history was in the manufacture of jewellery. Silver is invaluable to solder and brazing alloys, batteries, dentistry, glass coatings, LED chips, medicine, nuclear reactors, photography, photovoltaic (or solar) energy, RFID chips (for tracking parcels or shipments worldwide), semiconductors, touch screens, water purification, wood preservatives. Silver-plated glass (as opposed to metal) is used for mirrors, vacuum flasks, and Christmas tree decorations and many.

**Rockphosphate:** It is Approximately 90% of rock phosphate production is used for fertilizer and animal feed supplements and the balance for industrial chemicals. In addition, phosphorus from rock phosphate is also used in food preservatives, baking flour, pharmaceuticals, anticorrosion agents, cosmetics, fungicides, insecticides, detergents, ceramics, water treatment and metallurgy.

**Serpentine:** It is used as an architectural stone for lots of years. It is available in a huge type of inexperienced and greenish shades, often has an attractive sample, works without difficulty, and polishes to a pleasant luster. It has a Mohs hardness of three to six that's softer than granite, and usually harder than most marble. This low hardness limits its appropriate use to surfaces so that it will not get hold of abrasion or put on, such as facing stone, wall tiles, mantles, and window sills. Some varieties of serpentine have a fibrous habit. These fibers resist the transfer of heat, do not burn, and serve as excellent insulators. Attractive serpentine can be cut into a wide variety of gemstones. It is most often cut into cabochons. Some varieties of serpentine can be carved into beautiful stone sculptures.

**Granite:** Granite is used in buildings, bridges, paving, monuments, and many other exterior projects. Indoors, polished granite slabs and tiles are used in countertops, tile floors, stair treads and many other design elements. Granite is a prestige material, used in projects to produce impressions of elegance and quality.

**Quartz:** It is used in ceramic, glass manufacturing, ferrosilicon, induction furnace lining and electric lighting indicators and in paints. For this purpose quartz is ground to size 200 to 300 mesh in grinding units.

**Feldspar:** It is used glass, ceramic, abrasives and electrodes as flux coating, welding rods and inductors. For these purposes, Feldspar is ground to size of 200 to 30 mesh in grinding units.

**Iron ore:** The primary use of iron ore is in the production of iron. Most of iron produced is then used to make steel. Steel is used to make automobiles, locomotives, ships, furniture, tools and so many purposes.

**Calcite:** Calcite crystal's properties make it one of the most widely used minerals. It is used as a building material, abrasive, agricultural soil treatment, construction aggregate, pigment, pharmaceutical, and other applications. It has more applications than nearly any other mineral.

**Soapstone:** It is most commonly used for architectural applications, such as counter tops, floor tiles, showerbases, and interior surfacing. Soapstone is sometimes used for construction of fireplace surrounds, cladding on wood-burning stoves, and as the preferred material for woodburning masonry heaters because it can absorb, store, and evenly radiate heat due to its high density and magnesite ( $\text{MgCO}_3$ ) content. It is also used for countertops and bathroom tiling because of the ease of working the material and its property as the "quiet stone".

**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.

**Dolomite:** Dolomite is used as a source of magnesium metal and of magnesia ( $\text{MgO}$ ), 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. Dolomitic limestone is also used as a Masonry stone due to low grade quality.

**Marble:** It is used in construction as building material, monuments, interior decoration, statuary, table tops, novelties and making of Sculptures.

**China clay:** It is used in white cement, Refractory bricks and in port, it acts as fog removing agent, dust collecting agent on road and fireproof agent of textile.

**Ochre:** Ochre has been used for body decoration, sun protection, mortuary practices, cave painting, bark painting and other artwork, and the preservation of animal skins, among other uses.

**Phyllite & Schist :** It is a durable and soft rock and used as decorative aggregates, floor tiles, paving and as exterior building, or facing stone. The other uses include cemetery markers, commemorative tablets, creative artwork, and writing slates.

**Lime stone:** It is the raw material for the manufacture of quicklime (Calcium oxide), slaked lime (calcium hydroxide), cement and mortar. Pulverized limestone is used as a soil conditioner to neutralize acidic soils (agricultural lime). As a reagent in flue-gas de sulfurization, it reacts with sulfur dioxide for air pollution control.

**Silica sand:** Silica Sand will be used in various forms in various industries to manufacture various products. Silica Sand shall be used in ceramics, glass manufacturing, ferrosilicon, induction furnaces lining and electric lining industries and in paints.

**Masonry stone:** It is used as building stone and preparation of gritt /concrete etc. Such gritt/concrete is used in RCC work for building and roads.

## **CHAPTER - 15**

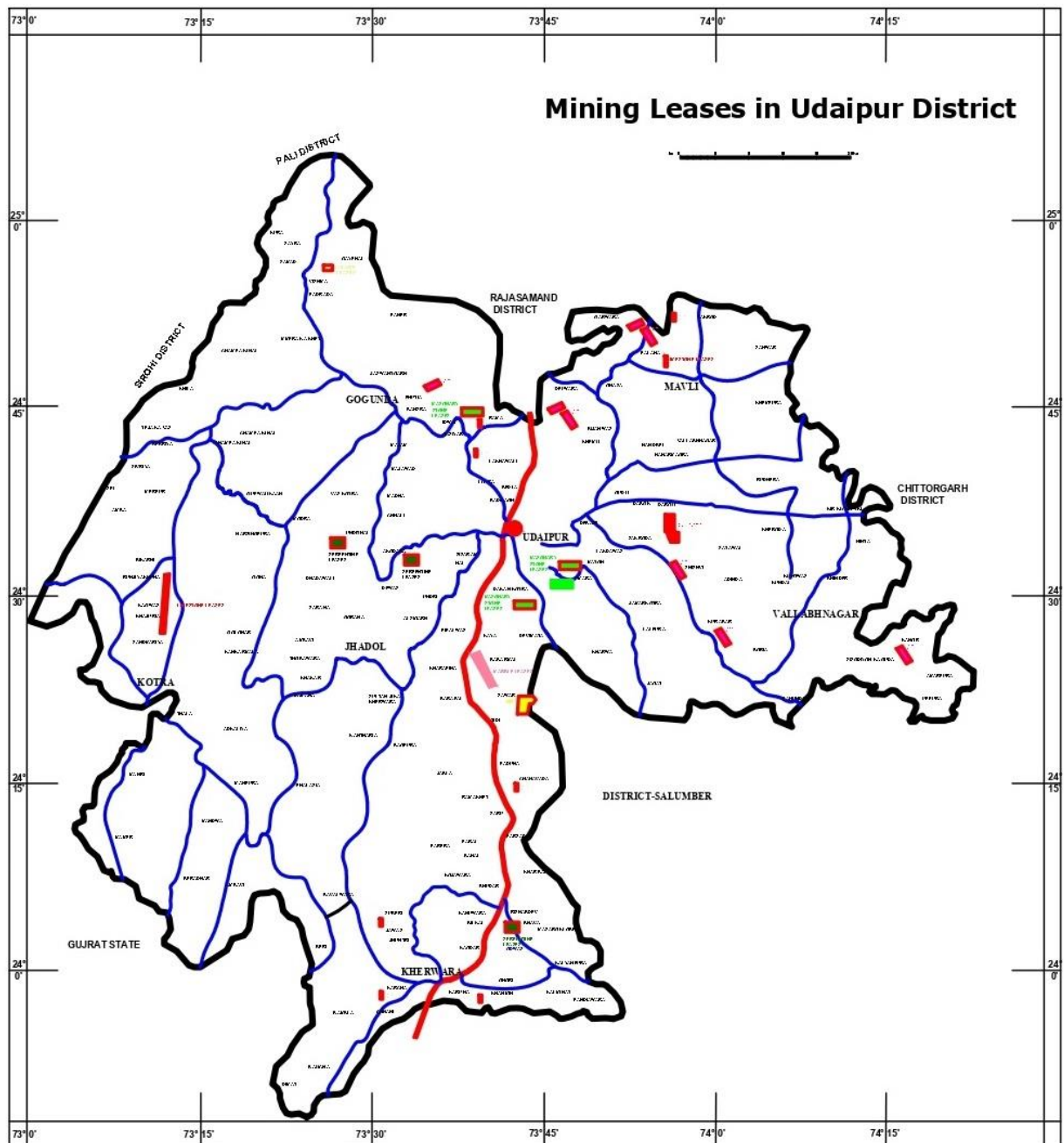
### **DEMAND AND SUPPLY OF THE MINERAL IN THE LAST THREE YEARS**

#### **Details of Demand and Supply for Minor Minerals in Last Three Years**

Office of Mining Engineer, Udaipur							
S.N o.	Mineral	Year 2019-2020		Year 2020-2021		Year 2021-2022	
		Demand(M T)	Supply(M T)	Demand(M T)	Supply(M T)	Demand(M T)	Supply(M T)
1	Barytes	6748.96	6748.96	6617.4	6617.4	6001.91	6001.91
2	Calcite	18614.54	18614.54	24435.05	24435.05	69971.27	69971.27
3	China clay	102643.73	102643.7 3	77303.61	77303.61	45650.39	45650.39
4	Dolomite	169249.05	169249.0 5	208753.01	208753.0 1	226477.59	226477.5 9
5	Felspar	817086.38	817086.3 8	1469983.5 1	1469983. 51	1166500.2 8	1166500. 28
6	Granite	11049.29	11049.29	4344.59	4344.59	7003.01	7003.01
7	Limestone	91412.05	91412.05	218947.15	218947.1 5	220606.69	220606.6 9
8	Marble	65275.7	65275.7	112623.78	112623.7 8	130543.32	130543.3 2
9	Masonry Stone	1908539.8	1908539. 8	2560476.5 1	2560476. 51	2907612.7 1	2907612. 71
10	Phyllite	12194.18	12194.18	21488.64	21488.64	22450.95	22450.95
11	Pyrophyllite	44872.6	44872.6	42249.8	42249.8	18131.18	18131.18
12	Quartz	66192.02	66192.02	76812.83	76812.83	68103.98	68103.98
13	Red Ochre	12345.78	12345.78				
14	Schist	0	0	1941.55	1941.55	2585.2	2585.2
15	Serpentine	10623.13	10623.13	7179.2	7179.2	9921.87	9921.87
16	Silica Sand	4792.38	4792.38				
17	Soapstone	50660.72	50660.72	64662.18	64662.18	82060.06	82060.06
18	Yellow Ochre			35.8	35.8		
Demand and supply of mineral in AME Rishabhdeo Jurisdiction							
19	Serpentine	479344	479344	331051	331051	309708	309708
20	Masonry Stone	919473	919473	461842	461842	82142	82142
21	Soapstone	510112	510112	305529	305529	265335	265335

## CHAPTER - 16

### MINING LEASE MARKED ON THE MAP OF THE DISTRICT



## **CHAPTER - 17**

### **DETAILS OF THE AREA OF WHERE THERE IS A CLUSTER OF MINING LEASES viz. NUMBER OF MINING LEASES, LOCATION (LATITUDE AND LONGITUDE)**

#### Detail of Leases with Cluster Area

Office of Mining Engineer, Udaipur					
S.no	Cluster name	Location (near village)	Cluster area (Hect.)	Mineral	No. of leases
1	UD-1	Hariyav,Jaspura,Ukar	242.2436	Quartz,Feldsper	70
2	UD-2	Kham Ki Madri	155.2801	Quartz,Feldsper	32
3	UD-3	Karmal,Junakhera,Bhinder,Pa dwal	99.07	Quartz,Feldsper, Masonary stone	34
4	UD-4	Gadwara,Bhansol	161.78	Quartz,Feldsper	53
5	UD-5	Rabach,Ballabara,Sachali	96.5	Calcite	14
6	UD-6	Rujiyakhuna,Kajuriya	137.62	Limestone	21
7	UD-7	Selu, Bansliya	403.62	Masonary stone	90
8	UD-8	Umarda,Babarmal,Japa	152.89	Marble,Masonar y stone	125
9	SLM-1	Morela, Sarvedi Ven, Bamnia, Broda, Bassi	47.01	Marble, Soap Stone (Dolomite) ,Masonary stone	26
10	SLM-2	Khandel ki Pal, Sanjela, Dagocha, Manpur, Kelakuwa	175.73	Marble, Soap Stone (Dolomite) ,Calcite	11
11	RISH-1	Masaron ki obri,Odwas,Bhauwa,Dhelana, Khamin,Garnala, Kagdar	352.76	Serpentine	184
12	RISH-2	Karcha,Banjaria,Byadi,Chani ,Mundwara,Japri,Larathi	398.41	Soapstone,Maso nary stone	19

## **CHAPTER - 18**

### **DETAILS OF ECO-SENSITIVE AREA, IF ANY, IN THE DISTRICT**

The details of forest available in the district mentioned below:

S.No.	Classification of forest	No.of Blocks	Area (Ha.)
1.	Reserved forest	163	265406.08
2.	Protected forest	225	149464.859
3.	Unclassified forest	30	1320.5733
<b>Total forest area</b>		<b>418</b>	<b>416191.5123</b>

<b>Type of Forest</b>	As per the Champion & Seth Classification of Forest Type (1968), (Southern Tropical Dry Deciduous, Northern Tropical Dry Deciduous Forest and Northern dry mixed deciduous forest.
<b>Number of Ranges</b>	Udaipur North :- ( six ranges Udaipur north, Bhindar, Kurabad, Mavli, Gogunda and Sayra) Udaipur South:- (Five Ranges- Udaipur (west), Salumbar, Parsad, Sarada and Kherwada) Udaipur Middle :- (Six Ranges- Devla, Kotra, Kukawas, Jhadol, Phalasia and Augana) Pratapgarh:- Two Ranges- Bansi and Dhariyawad
<b>Source:</b> <a href="https://forest.rajasthan.gov.in/content/dam/raj/forest/ForestDepartment/PDFs/Department%20Wing/Forest%20Working%20Plan/Sanctioned%20Working%20Plan/text/udaipur_final.pdf">https://forest.rajasthan.gov.in/content/dam/raj/forest/ForestDepartment/PDFs/Department%20Wing/Forest%20Working%20Plan/Sanctioned%20Working%20Plan/text/udaipur_final.pdf</a>	

#### **As per India State of Forest Report (Forest Cover in Rajasthan):**

Forest cover in the states & UTs of the country as per the 2021 assessment and change therein with respect to the previous assessment (2019) is presented in the below table:

(Area in sq km)

State	Geographical Area (GA)	2021 assessment							
		VDF	MD F	OF	Total Cover	Percentage of GA	Change in Forest cover w.r.t. ISFR 2019	Change percentage w.r.t. 2019 assessment	Scrub
Rajasthan	3,42,239	78	4,369	12,208	16,655	4.87	25	0.15	4,809
<b>Source:</b> <a href="https://fsi.nic.in/isfr-2021/chapter-2.pdf">https://fsi.nic.in/isfr-2021/chapter-2.pdf</a>									

**As per India State of Forest Report (Forest Cover in Udaipur District)**

(Area in sq.Km)

District	Geographical Area (GA)	2019 assessment						
		VD F	MDF	OF	Total Cover	Percentage of GA	Change in Forest cover w.r.t. ISFR 2017	Scrub
Udaipur	11724	0.00	1213.88	1543.66	2757.54	23.51	-6.46	224.36
Source: <a href="https://fsi.nic.in/isfr19/vol2/isfr-2019-vol-ii-rajasthan.pdf">https://fsi.nic.in/isfr19/vol2/isfr-2019-vol-ii-rajasthan.pdf</a>								

(Area in sq.Km)

District	Geographical Area (GA)	2021 assessment						
		VDF	MDF	OF	Total Cover	Percentage of GA	Change in Forest cover w.r.t. ISFR 2019	Scrub
Udaipur	11724	0.00	1212.93	1540.46	2753.39	23.49	-4.15	239.53
Source: <a href="https://forest.rajasthan.gov.in/content/dam/raj/forest/ForestDepartment/PDFs/Public%20Information/Annual%20Reports/Annualreport2021-22/Annual%20Administrative%20Report%20Year%202021%2022.pdf">https://forest.rajasthan.gov.in/content/dam/raj/forest/ForestDepartment/PDFs/Public%20Information/Annual%20Reports/Annualreport2021-22/Annual Administrative Report Year 2021 22.pdf</a>								

<b>Main Flora found in district</b>	Tectona grandis, Anogeissus latifolia, (Lannea coromandelica) Boswellia serrata, Diospyros Montana, Acacia catechu, Emblica officinalis, Terminalia tomentosa, Pterocarpus marsupium, Mitragyna parviflora, Ziziphus mauritiana, Miliusa tomentosa, Butea monosperma, Aegle marmelos, Boswellia serrata, Syzygium heyneanum, Madhuca indica, etc
<b>Main Fauna found in district</b>	<p><b>Mammals:-</b> Panther, Jungle Cat-, Rusty spotted cat, Hyaena hyaena, Bengal Fox, Civets, Sloth Bear, Chinkara etc</p> <p><b>Avifauna :-</b> Shikara- Accipiter badius, Babblers, Barbets, Bee-eaters, Bulbul, Buzzard / Kite, Crane &amp; Floricans, Doves, Drongo, Eagles and Hawk, Egrets &amp; Herons, Falcon, Francolins / Spurfbowls, Hornbill, Ibises etc.</p> <p><b>Reptiles:-</b> Monitor Lizard, Indian python, Cobra, turtles, crocodiles,</p>

### Wildlife in district

S.No	Wildlife Sanctuary	Area (In Sq km)		Remarks
		In Udaipur District	Total	
1	Jaisamand	52.2124	52.2124	-
2	Kumbhalgarh	120.7786	610.528	Remaining 485.749 Sq Kms area in Pali and Rajsamand District
3	Sitamata	78.260	422.950	344.69 sq.km in Chittorgarh
4	Phulwari Ki Nal	495.6978	495.698	-
5	Sajjan garh	5.2011	5.200	-
<p><b>Source:</b><a href="https://forest.rajasthan.gov.in/content/dam/raj/forest/ForestDepartment/PDFs/Department%20Wing/Forest%20Working%20Plan/Sanctioned%20Working%20Plan/text/udaipur_final.pdf">https://forest.rajasthan.gov.in/content/dam/raj/forest/ForestDepartment/PDFs/Department%20Wing/Forest%20Working%20Plan/Sanctioned%20Working%20Plan/text/udaipur_final.pdf</a></p>				

## **CHAPTER - 19**

### **IMPACT ON THE ENVIRONMENT (AIR, WATER, SOIL, FLORA & FAUNA, LAND USE, AGRICULTURE, FOREST ETC.) DUE TO MINING ACTIVITY**

Impact on Environment due to mining activities varies based on the quantum of production rate proposed. The different activities involved before & during mining are narrated below, which helps to assess the impact on environment.

Population growth, economic development and environmental degradation are interlinked with each-other. The high growth in population speeds-up economic activities. Meanwhile, it also deteriorates environment as for the high level of economic development, plenty of natural resources are exploited. Similarly, mining activities have considerable impacts on environment.

Land degradation is one of the significant impacts arising out of mining and quarrying activity which is mainly in the form of alternation of land structure due to excavation, stacking of top soil and loss of land due to dumping of mine waste and overburden soil. Stone and sand quarrying causes damage to property, depletion of ground water, loss of fertile top soil, degradation of forest land, adverse effect on the biodiversity and public health. Mining and quarrying, either open cast or underground, destroys landscape and forest ecosystems.

The waste materials that remain after the extraction of usable ores are dumped on the surrounding land, thus causing loss of top soil, nutrients and supportive micro flora and vegetation.

Air pollution, due to dust from the mines, is a common environmental problem in mines and quarries especially open cast operations. Stone Mining activities are normally associated with different types of pollution. Air pollution is regarded as the most notable one, where particulate matter (dust) is generated and found in the surrounding areas of such activities. Particles with aerodynamic diameters of less than 50µm (termed Total Suspended Particulate matter, or TSP) can become suspended in the atmosphere, and those with aerodynamic diameters of less than 10µm termed PM10 (inhalable particles) can be transported over long distances, and enter the human respiratory system.

Noise pollution is associated with many types of equipment used in mining operations, but blasting is considered the major source. Loud sound disturbed the vegetable nearby the area. It also affects stability of infrastructures, buildings, and homes of people living near to

these working sites. In this regard, noise pollution may include noise from vehicle engines, loading and unloading of rock into steel dumpers, chutes, power generation, and other sources.

Mining operations impact the environment in several ways, and water pollution is a major concern in such operations. For instance, quarry dust can change the chemistry of water resources by dissolving in them, it can also settle in water bodies and cause pollution. Furthermore, these operations disrupt the existing movement of surface water and groundwater; they interrupt natural water recharge and can lead to reduced quantity and quality of drinking water for residents and wildlife near or downstream from a quarry site.

The pollution potential of the proposed project, its possible impacts on the surrounding environment during pre-operational and operational phases and the necessary management actions proposed for control and abatement of pollution are furnished here under.

**Impact on some component of the environment is as below:**

**Air Environment:**

Although mining does not cause any direct change in air environment, transportation etc in stone mining operations, the source of air pollution may cause deterioration of air quality due to the fugitive dust emission during blasting, scooping, loading-unloading operations and transportation.

Loading and unloading of mineral would be associated with the fugitive emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to road side. Another source of air pollution would be emission from the trucks/tractor/other vehicles to be used for transportation of soil.

**Water Environment:**

As far as impact on surface water is concerned, during mining and transportation, there are chances of contamination of surface water resources (pond, well etc.) with dust or by other means.

The laborer's working in stone mining come from neighboring districts and colonies in the surrounding areas with inadequate facilities for waste disposal. This, in due course, leads to disposal of various things into surface water bodies which in due course of time results into surface water contamination through misuse / mismanagement and decomposition of the trash.

### **Land Environment:**

There shall be no major impacts of stone mining on land due to rocky terrain having no soil cover generation of top soil shall be nil. Other impacts on land include Disposal of packing material, carried by the workers. This packing material would include used sachet/gutka/pan masala pouches. Polythene bags are used by the workers to bring their foods etc.

### **Noise Environment:**

As far as noise pollution is concerned, blasting is considered the major source of noise Pollution. The Machinery used in mining of stone mineral creates sound and vibrates. As well as vehicles used for transport, loading-unloading of mineral etc. put impact on noise environment. Noise level in the working environment should be compared with the standards prescribed by Central Pollution.

Control Board which has been adopted and enforced by the Govt. of India through The Noise Pollution (Regulation and Control) Rules, 2000.

### **Flora and Fauna:**

The mining is a destructive activity generated by human being for providing strength and security to his living standard. The mining in the concerned zones provides raw materials in the form of crusher, gravels and stones, etc. for construction of roads, railway lines and other infrastructures.

From the last few years, the mining rate has increased several times. It results in the loss of biodiversity of both flora and fauna and physiographic features of the concerned region.

## **CHAPTER - 20**

### **REMEDIAL MEASURES TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT**

#### **Air Environment:**

##### **Mitigation Measures**

a) For Fugitive Dust Emission:

- All trucks should be covered by tarpaulin sheet to prevent dust emission.
- Water spraying should be there in haul road, crusher and mining area.
- Wet drilling should be preferred
- Sharp drill rods should be used to reduce dust generation
- Dust extractor should be used to reduce dust generation

b) For Vehicular Emission

- Overloading of trucks and trolleys should be prevented.
- Vehicular emission can pose serious health hazard. During the earth mining extraction, tractor/truck should be used for transportation. Tractor/truck comprises of diesel engine produce particles are dangerously fine of PM10 & PM2.5. It is well known fact that combustion of diesel generates small particulate matter, nitrogen oxides and Sulphur dioxide.
- Ultra-lowSulphur diesel should be used in vehicle. CPCB prescribed emission Standards for the vehicle would be followed.
- Monitoring of dust fall at land located nearby the mining area.

#### **Water Environment: -**

##### **Mitigation measures**

- Safeguards will be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation.
- Laboure's should not be allowed to through trashes in water bodies.
- Utmost care should be taken to minimize or control oil spills or leakage from vehicles used for soil transportation.
- Water Quality Monitoring for the, ground water should be carried out seasonally to ensure that the water quality is not affected by the project activities.

- The contractor should adhere all guidelines and rules for proper and scientific method of mining during the period of extracting of minerals that the project activities should not have any adverse effect on the physical components of the environment including recharge of ground waters or water quality.

#### **Land Environment:**

##### **Mitigation measures**

- Foreign materials like polythene bag, jute bag and useless articles should not be allowed to remain/spill on the land, or no pits/pockets should be allowed to be filled with such material.
- Mining should not exceed beyond the agreed extraction depth.
- Development of thick plants around mining lease areas.

#### **Noise Environment:**

##### **Mitigation measures**

- Well maintained vehicles should be used in order to reduce the noise during movement of vehicles.
- Regular and proper maintenance of transportation vehicles (trucks, tractor etc.) should be ensured.
- Proper and timely maintenance of machineries
- Major noise generating Equipments like DG set shall be housed.

#### **Flora and Fauna:**

##### **Mitigation measures**

- Sediment and erosion control by planting native trees and shrubs to stabilize degraded farming land.
- Regular monitoring of plants and animals on site.
- Salvaging and reusing materials where practical.
- Establishing and maintaining habitat corridors.
- Controlling access to the site to protect habitats.

## **CHAPTER - 21**

### **RECLAMATION OF MINED OUT AREA (BEST PRACTICE ALREADY IMPLEMENTED IN THE DISTRICT, REQUIREMENT AS PER RULES AND REGULATION, PROPOSED RECLAMATION PLAN)**

The reclamation of mined out lands by simultaneous backfilling and development of plantation in the backfilled areas will be the best practice of reclamation.

Several places of mining now serving as water body. Near Udaipur minedout land serving poatable water as well as floating solar power plan.

## **CHAPTER - 22**

### **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 and 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 the 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.

#### **24.1 Risk Assessment:**

The proposed project involves Stone mining through semi mechanized Open cast mining. The anticipated risks are mentioned below:

##### **Inundation**

There is no chance of inundation of mine pits from surface waters such as rivers or nalas as it is situated a long away from river.

The lease hold areas in terms of temporary permits are located in the Amravati district of Maharashtra and the area in general receives appreciable amount of rain fall, which is in the range of 848 mm (annual average).

##### **Pit slope & dump slope failures**

Mining is restricted to an average depth of 18 m from surface levels. No permanent dumps are proposed.

##### **Dust from the screening & crushing operations**

The hazard is the inhalation of dust which is created during the screening & crushing operations which may result in the various respiratory diseases to the workers. While it is not presently possible to totally remove the hazard, properly applied control measures can substantially reduce the risk. The dust generated during the screening & crushing

operations can be controlled by providing proper enclosure to the plant area and by installing rain guns at transfer points inside the plant.

Water sprinkling at the crushing and screening plant units also forms an effective measure of controlling dust generation. Provision of green belt surrounding the plant area will further suppress the spread of airborne dust to the surrounding atmosphere. The workers engaged in these operations will be provided with dusk masks.

### **Noise**

Loading, screening & crushing operations give rise to harmful levels of noise. Noise generated by screening & crushing can be well controlled by providing enclosure and the green belt. The workers engaged will be provided with ear muffs.

### **Loading**

The main hazard associated with loading is the Mineral falling on to the loading labour/tractor, tractor toppling over due to uneven ground, failure of hydraulic systems. Good housekeeping practices, regular cleaning of the haulage roads and regular maintenance of the tractors, loading operations under supervision of competent persons, etc. will be done to avoid such accidents.

### **Explosives**

No magazine is within lease hold area. Contractual blasting is proposed. Personal Protective Equipment (PPE) The PPE should be of good construction, where ever possible ISI certified, suitable for the hazard e.g., a dust respirator fitted with the correct filter to capture the particular hazardous dust and maintained to recommended standards. As personal protective

Equipment only affords limited protection it should only be used as a last resort and then as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

### **Disaster Management Plan:**

The following natural/industrial hazards may occur during normal operation: -

- Inundation of mine pit due to flood/excessive rains;
- Slope failure of pits
- Accident due to explosives;
- Accident due to heavy mining equipment

### **Mine Disaster:**

Thousands of miners die each year around the globe due to mining accidents, especially from underground coal mining, although hard rock mining is not immune from accidents. Underground mining has considerably less impact than Open cast mining on land; it causes enough damage through subsidence. Apart from this, explosive natural gases, especially firedamp, dust explosions, collapsing of mine stones, mining-induced seismicity, flooding, or general mechanical errors from improperly used or malfunctioning mining equipment and improper explosives underground can also cause to catastrophe.

## **CHAPTER - 23**

### **DETAILS OF THE OCCUPATIONAL HEALTH ISSUES IN THE DISTRICT (LAST FIVE-YEAR DATA OF NUMBER OF PATIENTS OF SILICOSIS & TUBERCULOSIS IS ALSO NEED TO BE SUBMITTED)**

#### **Health Hazards in Mining:**

Some are the major health Hazards in mining as below:

Airborne particulate hazards: Free crystalline silica is the most abundant material in the crust of the earth and is therefore the most common airborne powder encountered by miners and quarry employees. Although quartz may also appear as tridymite or cristobalites, the most common form of silica. Once silica-bearing rock is drilled, blasted, crushed or otherwise pulverized into fine particles, breathable particles are produced. The quantity of silica in different rock species varies but is not a reliable indicator of how much silica dust in an air sample can be found.

With sufficient exposure, silica can cause silicosis, a typical pneumoconiosis that develops insidiously after years of exposure. Exceptionally high exposure can cause acute

or accelerated silicosis within months with significant impairment or death occurring within a few years. Exposure to silica is also associated with an increased risk of tuberculosis, lung cancer and of some autoimmune diseases, including scleroderma, systemic lupus erythematosus and rheumatoid arthritis

Physical hazards: Noise in mining is omnipresent. It is created by the ore's powerful machines, fans, blasting and transport. Typically, the underground mine has limited space, producing a reverberant environment. Noise sensitivity is higher than in a more open environment where the same sources are present.

The use of conventional means of noise control on mining machinery will reduce exposure to noise.

Chemical hazards: Crystalline silica has long been a serious hazard in mining, with the risk of silicosis. Silicosis has been subject to considerable investigation. Axial water-fed rock drills, wet techniques, ventilation, enclosed cabins and respiratory protection facility largely control silicosis.

## **CHAPTER - 24**

### **PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES**

#### **ALREADY GRANTED IN THE DISTRICT**

The basic approach to green belt / plant growth in the lease area is to provide an esthetic look, reduce fugitive pollution, and monitor noise effect, etc.

#### **Green Belt will be developed based on the following principles:**

- Protect natural or semi-natural environments;
- Improve air quality within urban areas;
- Protect the unique character of rural communities that might otherwise be absorbed by expanding suburbs.
- Plants that grow fast should be preferred
- Preference for high canopy covers plants with local varieties
- Perennial and evergreen plants should be preferred
- Plants having a high Air Pollution Tolerance Index (APTI) should be preferred.

#### **The green belt has many benefits for people:**

- Walking, camping, and biking areas close to the cities and towns.
- Contiguous habitat network for wild plants, animals and wildlife.
- Cleaner air and water.
- Better land use of areas within the bordering cities.

#### **Greenbelt Development & Plantation Programme**

Plantation should be developed at 2 M x 2 M spacing; the rate of survival should be aimed at 80% by regular watering & fencing to keep plants safe from animal grazing. Local species will be planted in consultation with local horticulturist. Diseased plants should be replaced by planting new saplings.

#### **Recommendation for Green Belt Development**

It is strongly recommended to create greenbelt around the project site or in case lease failed the authority should take proper action to stop mining operation or revoke mining permission with necessary action.

It is necessary to develop greenbelt in and around the polluted site with suitable species to reduce the air pollution effectively. Implementation of afforestation program is of paramount

importance. In addition to augmenting existing vegetation, it also checks soil erosion, make the ecosystem more complex and functionally more stable and make the climate more conducive.

Simultaneous backfilling method will be followed in most of the mining areas. During the operations, the plantation will be proposed and will be carried out on the safety barrier areas and also on the mined out and backfilling areas.

The plantation work done by HZL, RSMML, Udaipur cement work in their own lease area as well as outside lease area. By the small lease plantation is being done on land allotted by UIT Udaipur. Till now approx. 75,000 plants have been planted on this land.

Thanks