Mineral Resources of Sikar

The district derives its name from the town of Sikar, which is also headquarter of the district administration. The district lies in the northeastern region of Rajasthan at an average altitude of 431 mts. It stretches between 27^0 07' to 28^0 12' latitudes and 74^0 41' to 76 05' longitudes. It is bounded in north by Churu and Jhunjhunu district of Rajasthan and Mahendragarh district of Haryana, on the west by Churu and Nagaur districts, on the south by Jaipur and Nagaur districts and on the east by Jaipur district.

The district has an area of 7732 sq kms and a population of 18,36,572 (1991 census). The district is part of Jaipur division and is divided in three sub divisions, Sikar, Fatehpur and Neem-Ka-Thana. It comprises six tehsils namely Fatehpur, Lachhmangarh, Sikar, Neem-Ka-Thana, Sri Madhopur and Danta Ramgarh. The district headquarter is 116 kms from Jaipur and is well connected by road and metergauge railway link to Jaipur, Delhi, Bikaner, etc.

The general shape of the district is of an irregular cresenct or a bowl. The district can be broadly divided into three natural divisions namely (i) the desert area in north western portion (ii) the semi desert area with hillocks on the central portion and (iii) the undulating and hilly area in north and north easten portion. The major part of the district is a sandy tract but it is more so towards the north of Sikar which forms a part of the great Indian desert. The hills in the district forms part of the Aravalli ranges. These run from south to north dividing the district intwo equal parts. Area south of Khandela in Sri Madhopur tehsil in central portion of district is an undulating plain. There are no perrenial rivers in the district.

Geology

The major part of the land which is now district Sikar seems to have witnessed a storm in ocean which washed this area and left its marks in the shape of sand layers visible everywhere. This area is semi desert, which formed the bed of an ocean. The southern and southeastern part of the district is occupied by loamy soil and hills of the Aravalli range.

The geological succession of Sikar district is as follows:

Formation	**Rock Types**
Recent to Sub Recent	Sand, alluvium etc.
Post Delhi	Granite & Pegmatites (Intrusive)
Ajabgarh Group	Schist, Dolomite, Marble, Phyllites
Delhi	Supergroup
Alwar Group	Quartzite, Schist, Conglomerate

The rock types exposed in the area belong exclusively to Delhi Supergroup of meta sediments, which are separated from the older Aravallies by a

conspicuous unconformity. The prominent exposures are seen on Neem-Ka-Thana hills situated in the eastern and northeastern parts of the district. The Delhi Supergroup rocks are divided into Alwar and Ajabgarh Group. The metasediments of Alwar Group are characterized by dominance of erinaceous rock consisting of quartzite of various types. These rocks types are seen in the eastern part of the district along the continuation of Khetri belt in the south central part. Besides many isolated out crops occur in Saladipura, Sevli, Khandela and Kotri. The regional strike of these rocks is north south.

In Saladipura area a major anticline exposes the amphibole quartzite, marbles and schist. Its core is occupied by basic intrusive later metamorphosed to epidermises and amphibolites. Exposures seen near Byore, Roopgarh and surroundings areas in the south central part of the district consist of quartzite of different types with subordinate amount of mica schist. The general trend of rocks is NE-SW to NNE-SSW with variable dips towards west.

The rocks of Ajabgarh formation are charactereised by large portion of calcareious rocks. The main rock types are marble, calc-gneisses, calc silicates, phyllites and mica schist. The general trend of the rocks is northeast south west (NE-SW) dipping low towards west. The Ajabgarh formation represented by quartzite, gneisses and amphibole marble are best exposed south of Kotri Rampura and around Atheaga.

Igneous intrusive of both basic and acidic rock types are exposed throughout the district. The basic intrusive including epidiorities and amphibolites in form of veins sheets. The acids intrusive include granite and pegmatite occurring as sills and dykes.

The important mineral deposits of the district are described below:

Minerals of Sikar District

Sikar district is endowed with some important mineral deposits of the state. It has vast resources of pyrite near Saladipura and limestone in Neem-Ka-Thana areas. Other minerals available in the district are copper, iron, appetite, calcite, beryllium, fluorspar, feldspar and barites.

The details of mineral deposits are given below.

Copper

Copper mineralisation occurs as parallel zones from Mothoka in the north to Ahirwala in the south (over a length of 35 kms.) with in the rocks of Delhi Super group.

The investigation carried out in this belt has revealed a number of isolated and detached prospects. In Baleswar, a reserve of 1.5 million tones containing 1.1% has been established. Copper molybedenum mineralisation has been reported from Tejwala-Ahirwala, Chiplata prospects. In Tejwala block 0.5 million tones reserves with 0.5%% Cu have been estimated. Stains of malachite-azurite and disseminations of primary suphides have also been observed near Harsnath Ghateswar, Dariba and Patan.

Pyritc

Investigations carried out by G.S.I. near Saladipura established the presence of Sulphide mineralisation consisting chiefly of pyrite and pyrrhotite with minor amount of sphalerite over a strike length of 7 km. in two zones. The deposit is located about 1.5 km northwest of Saladipura village, which is 120 km from Jaipur via Sri Madhopur. The exploratory drilling has revealed that gossan body extends to a depth of 36 to 47 mts from the surface beyond which there is rich sulphide mineralisation consisting of pyrite and pyrrohotite with minor amounts of sphalerite. The mineralisation has taken place along sheared biotite, quartzite, biotite-amphibole, quartzite and phyllites belonging to the Ajabgarh Group of the Delhi Super group. The width of the ore body varies from 6.47 to 52.41 meters and tis depth persistence is beyond 300 meters. Based on the detailed drilling the total ore reserves estimated in three blocks are given below: -

Block	Ore reserves (in m tones)	A. grade %s	Sulphate content (in m tones)
A	25.82	27.65	7.12
B	25.64	18.24	4.67
C	22.42	19.10	4.27
	73.88		16.06

The area is leased out to M/s. Pyrite, Phosphate and chemicals Ltd., a Govt. of India undertaking.

Beryllium (Beryl)

The occurrence of beryl are reported from Torda, Buchara, Churla and Sanwalpura areas in Bairath tehsil. The areas are about 35 kms east of Neem-Ka-Thana railway station. Here the granite pegmatites are exposed in wide area in which beryl occurs as one of the constituents.

Feldspar

Green variety of feldspar has been obtained from Kachrada mica mines in Torawati area and the soda feldspars have been obtained from the granite pegmatites of Buchara area as a by product of beryl mining.

Mica

The mica mines of the district are located in the schistose formation of Delhi Supergroup. A few mines of the district are at Kachrada, Makri and Maonda situated in Neem-Ka-Thana tehsil. The achorada mines have produced green variety of mica while the others are of heavily stained ruby quality. The mines are now closed.

Soap Stone

Impure talc occurs near Dariba about 20 kms from Neem-Ka-Thana railway station. No detailed work on the same has yet been done.

Fluorspar

Fluorspar mineralisation is found to occur around Salwari (Chokri) village in 10 kms area. It is located at a distance of about 6 kms from the main bus route from Khandela to Udaipurwati. The mineral occurs in a very fine grained pink granite which is intrusive into biotite-schist of Ajabgarh Group and is aplitic in nature.

On the basis of detailed prospecting and exploratory drilling carried out by D.M.G. 3,50,900 tones of proved reserves containing 11 to 21% CaF_2 3,44,000 tones of probable reserves (10 to 15% CaF_2) have been calculated.

Iron Ore

Dable area: Several scattered iron ore deposits around Dabla railway station have been reported. The area comprises medium grained pink, gray coloured granite rocks, partially weathered at surface. Iron oxide is an accessory mineral in these granites. Small segregated rolled masses of iron oxide in the form of haematite are seen. The iron content varies from 50 to 60%.

Thoi area: Occurrences of iron ore are observed east and north of Thoi village. The micaceous haematite was being mined till some time back.

Neem-Ka-Thana area: This includes two deposits (i) Bagoli Sarai-papra-pachlangi area, which is about 10 km west of Neem-Ka-Thana railway station. The other one is (ii) Raipur-Nanawa-Toda Chiplata area which is about 16 to 22 km east of Neem-Ka-Thana railway station. In the first deposit ore occurs as haematite quartzite bands at the contact of schists and quartzites. In the second locality the ore body occurs as bands in the schists. The iron content varies from 59 to 67%.

The ore occurs as micaceous haematite, magnetite and massive haematite bands app. 7 mts in thickness striking over a length of 1.5 kms. In the same continuation small bands of iron ore occurs near Toda-Chiplata. The ore is of inferior grade and contains high phosphorous. The average Fe content is 47% and about 0.6 million tones reserves have been assessed in this area. There are 3 leases of iron ore in district.

Phosphate

Phosphate occurs in form of apatite. The apatite deposit is located near Kerpura Salwari village in rocks of Delhi Super Group and Post Delhi intrusives. Apatite occurs as irregular veins, stringers and disseminations in quartz veins, amphibolites and granite, pegmatites intruded in garnetiferous biotite schist. A reserve of 21,520 tones of ore containing 15.14% P_2O_5 has been proved with another 16,000 tones of 15% P_2O_5 grade in probable category.

Calcite

Maonda: The mineral occurs in steeply dipping veins near Maonda village about 7 km from railway station. The veins are about 0.75 mt. to 1 mt. in thickness and seen criss-crossing limestone and microgranites. It is quarried in small pits. Two important quarries viz. the Bhilkajiwali and Bada Khet in this locality have given good production.

Raipur: It is about 10 km from the Dabla railway station on the Rewari-Phulera chord line. Calcite occurs in the form of pockets and veins in metamorphosed impure limestone. Department of Mines and Geology has carried out detailed prospecting work in this area and 39,300 tones calcite reserves have been proved.

Barytes

Barytes deposits are located about 2 km NE and SSW of the villages Kharakbingpur and Naroda respectively. The area lies 20 kms NE of Neem-Ka-Thana to Patan road. Barites is found as fissure filling in weak zones trending in N-S direction along bedding planes and is associated with calc-schists of Ajabgarh Group of Delhi Super Group. There are two veins of barites with 1 to 2.5 mts. partings and are traceable fro a strike length of about 80 mts. The barites samples on analysis shows that the percentage of $BaSO_4$ varies from 67.80 to 87.80%.

Limestone

Patan: The patan limestone is located 16 kms. SE of Dabla railway station on Phulera-Rewari section. The limestone of Ajabgarh Group of Delhi Super Group occurs as a series of large and small low lying hillocks extending from Daulatpura to Balupra through Rampura and Jhamas. It is off white to gray in colour and crystalline in nature. On the basis of 255 mts. core drilling spread over 9 boreholes reserve of 6.98 million tones containing 46% to 54% CaO and 2 to 3.5% MgO have been estimated by the Department.

Maonda: The Maonda limestone deposits are found to occur in and around Sikarwari, Kala Khokhra, Lamba Marhi, Dhamani hill, Kali-Pahari villages.

The nearest railway station Maonda is about 11 kms. from the deposit and is located on Phulera-Rewari metergauge section. The limestone is dark gray to white in colour, crystalline, fine to coarse grained and compacit. On the basis of the 20 boreholes totaling 614.0 mts. core drilling a reserve of 23 million tones up to 30 mts. depth containing 46% CaO, 1.75 to 2.24% MgO has been assessed by the Department.

Small bands of dolomitic limestone have been reported near Rasampura, Choja-Ki-Nangal, Bhopja, Kalyanpura, Kinharu villages of Neem-Ka-Thana tehsil. It is pink and gray in colour, fine to medium grained and can be used as ornamental and flooring stone. The limestone of Raghoji-Ki-Dhani and Kud-Ki-Dhani is being used for limestone burning.

Length of the limestone band varies from 200 to 1000 mts. and width 50 to 200 mts.

Marble

Marble (dolomitic limestone) bands occur at places near Kotri, Kerpura, Karoi, Kotriluharwas, etc. villages in Sri Madhopur tehsil and Rajampura, Kalyanpura, etc. area in Neem-Ka-Thana tehsil. These are white, pink to gray in colour, fine to medium grained. Department has carried out investigations in Sri Madhopur tehsil and delineated thrity plots in government land. These plots were notified for leasing in 1995. At present there are 55 leases of marble in the district.

Granite

A number of granite outcrops have been reported. Important places are Dabla, Jeetala, Kharbipura, Ajitgarh, Sirohi, Saladipura and Chapoli. The granite occur as high hillocks and in the form of isolated boundary outcrops. The colour is mostly light earth to pinkish with red garnet spots. It is mostly medium to coarse-grained forming an overall granular texture. Some famous varieties are Ajitgarh gray and Ajigarh white. Department has demarcated the blockable granite areas and notified them as under.

Location	**No. of Plots**
Ladi-Ka-Bas	402
Kala Khera	225
Jugalpura	51
Dabla	186
Biharipura	201
Jetpura	111