

MINERAL
SURVEY
REPORT
FOR
DISTRICT
BHARATPUR



1.0 Introduction

The district of Bharatpur , takes its name from the town of Bharatpur, which is also the district headquarter prior to the formation of Dolphur.

District, Bharatpur was the eastern most districts in Rajasthan. The district lies between 26°44 to 27°50. North latitude and 76° 53' to 77° 40 east longitude. The district covers an area of about 5066 sq. kms. The district is irregularly rectangular in shape. The district has an area of 5,066 km². It is bounded by Nuh-Mewat district of Haryana on the north, Mathura and Agra districts of Uttar Pradesh on the east, and the district of Dholpur on the south, Karauli on the southwest, Dausa on the west and Alwar district in the north-west.

Bharatpur is well connected by road and rail to other cities in India. The National Highway No. 11 passes through Bharatpur connecting it with Jaipur (181 Kms.) and Agra. Bharatpur is an important junction on Delhi-Bombay main broad gauge line of western railway with branch lines to Agra & Jaipur. The nearest airport is Agra in U.P.

1.1 Bharatpur is a city and newly created municipal corporation in the Indian state of Rajasthan. Located in the Brij region, Bharatpur was once considered to be impregnable and unbeatable. The city is situated 180 km south of India's capital, New Delhi, 178 km from Rajasthan's capital Pink City Jaipur, 55 km west of Agra and 34 km from Lord Krishna's birthplace Mathura. It is also the administrative headquarters of Bharatpur District and the headquarters of Bharatpur Division of Rajasthan. The Royal House of Bharatpur traces its history to the 11th century. Bharatpur is part of National Capital Region (NCR).^[1]

The city has an average elevation of 183 metres (600 ft) and is also known as "Lohagarh" and the "Eastern Gateway to Rajasthan". It is famous for Keoladeo National Park (A UNESCO's World Heritage Site).

Bharatpur lies on the Golden Tourism Triangle of Delhi–Jaipur–Agra and hence a large number of national and international tourists visit Bharatpur every year.

2 Overview of Mining activity in the District

District Bharatpur is endowed with variety of minerals and are being produce since 1975 onward.

Now a days, closure of mining activity due to banning of mining activity in Aravali hill in Haryana and adjoining Alwar distt. of Rajasthan, a boom has been observed for mining of masonry stone and value addition in form of establishing crusher at pit head.

Masonry stone mining cluster in northern part of distt i.e. near village Nangal, Dholet, Chhapra, Chinawara, Bijasana, Gangora, Papra etc are main feeder to Gurugram of Haryana and Delhi region.

Whereas, masonry stone mining cluster in southeastern part of distt i.e. near village Ghatri, Jaswar, Ghata, Ghatoli, Lakhanpur, Gujarbalai etc are main feeder to Agra and adjoining areas of Uttarpradesh.

Sandstone are quarried at Bansi Pharpur (26°56' : 77°03'). White-spotted reddish Sandstone of the Bhandar Group is in great demand as Building stone.

2.1 Mineral Administration

Mineral administration work in the district is being looked after by Mining Engineer Bharatpur, which is supervised by Superintending Mining Engineer Bharatpur. To check & curb the unauthorised mining activities, one Mining Engineer vigilance is also posted at Bharatpur. The geological work is carried out by office of Senior Geologist, Bharatpur which is supervised by Superintending Geologist Bharatpur . This office looks after geological work in Bharatpur, Dholpur and Dausa districts. The telephone numbers of these offices are given below:

1. Suptdg. Mining Engineer, Bharatpur (05644)-22421
2. Mining Engineer, Bharatpur (05644) 22128
3. Superintending Geologist Bharatpur
4. Senior Geologist, Bharatpur (09509815666

2.2 Mineral occurrences:-

Bharatpur district is an excellent building stone as it is amenable to receive good polish and intricate carving meant for lattices and arches. The sandstone occurs in the form of the hill range crossing across district from Roopwas to Bayana. The important silica sand deposits are located mainly in Bayana tehsil and Weir tehsils. Mainly revenue collection mineral masonry stone areas are Nangal, Chhapra, Bijaasana, Chinawra in Pahari Tehsil, Ghatoli, Mertha in Roopwas tehsil and Weir and Bhusawar tehsil are also produced a mineral masonry stone. Mill stone mineral is available in Roopwas tehsil,

3 The List of Mining Lease in the District with location area and period of validity

In Bharatpur district there are 673 mining leases of mineral sandstone , massonary stone ,silica sand are operating . list of mining leases and production deatils are inclosed

S. No.	Name of Mineral	No. of Mining Leases	Total area under leasing	Period of Validity	Year wise Production	
					Year	Metric Tonne
1.	Silica Sand			30 Years	2013-14	
					2014-15	
					2015-16	
2.	Sandstone				2013-14	
					2014-15	
					2015-16	
3.	Masonary Stone				2013-14	
					2014-15	
					2015-16	

4 Details of Royalty or Revenue received in last three years

The main revenue receipts in Mining Engineer Bharatpur and Assitant Mining Engineer Roopwas collected as dead rent, royalty, panalty, applicatins fee etc. dead rent paid by all leases as annual fixed amount and adjusted against royalty paid on dispatches of minearls from lease area . Over and above dead rent , lessee pay excess royalty for dispatches of minerals at prescribed royalty rates at that time. Dead rent for mineral sandstone ,Massonary stone is collected by department in advance installment and excess roylyt through ERCC contractors

S. No.	Name of Mineral	Year wise Royalty or Revenue received	
		Year	In Rs. in lakh
1.	Silica Sand	2013-14	35.97
		2014-15	79.00
		2015-16	52.82
2.	Sandstone	2013-14	463.83
		2014-15	547.76
		2015-16	63.64
3.	Masonry Stone	2013-14	3065.45
		2014-15	4443.9
		2015-16	6507.29

5 Details of production of Sand or Bajri or minor minerals in last three years

Production of Sand or Bajri is very difficult due to lack of deposit in rivers flowing through the Distt.

Production of minor minerals Masonaroy stone , Sand stone and Silica sand are enclosed to the report in Annuxre

6 Process of Deposition of Sediments in the rivers of the District

Rivers flowing through the district are of non-perennial nature.

7 General profile of the District

7.1 Administrative Division

Bharatpur is the district and Divisional Head Quarter. Bharatpur District has eleven revenue subdivisions and eleven tehsils. They have the same names and borders, . The eleven tehsils are: Bayana, Bharatpur, Bhusawar, Deeg, Kaman, Kumher, Nadbai, Nagar, Pahari, Roopwas (Rupbas) and Weir .

7.2 Climate

The climate is generally dry except during rainy season . Bharatpur district has amazing view and climate in monsoon and winters. Bird watching of beautiful migratory birds can be seen in the Keoladeo National Park during that period. Maximum temperature is 47 C during summers and minimum temperature is 3 C during winters. The normal annual rainfall is 671.5 mm.

7.2 Area and Population

Bharatpur district area is 5066 square km . According to the 2011 census Bharatpur district population of 25,48,462. The district has a population density of 503 inhabitants per square km. Its population growth rate over decade 2001-2011 was 21.29%. Bharatpur district has a sex ratio 880 female for every 1000 male and a literacy rate of 70.1%.

➤ **8 Land utilization pattern in the District: Forest, Agriculture, Horticulture, Mining etc.**

Major findings in land use pattern of Bharatpur district are

(a) that the land use pattern in Bharatpur district is not similar to that of general land use pattern prevalent in Rajasthan State as a whole.

(b) Agriculture is the predominant user of land occupying about 75 percent of the reporting area.

(c) Forest cover in the district is not very significant and it has been depleted from 5.6 percent to 3.1 percent.

(d) the area under pastures and tree crops is also negligible and

(e) Area under waste land (eroded land, undulating terrain with or without scrub and rock out crops has been increased from 6.34 percent to 7.89 percent.

The area under salt affected land, sandy area and water logged area has been decreased from 6.83 percent to 2.09 percent.



9 Physiography of the District

Physiographically, the district comprises alluvial plains, with detached hills in north and low narrow ranges in western & northwestern parts.

The terrain in Bharatpur & Nadbai is plain while that of Bayana & Rupbas tehsils is diversified by hills.

There are only three main seasonal rivers in this District, namely Ban Ganga, Rooparel and Gambhir. Ban Ganga starts from Ramgarh Dam of Jaipur district , passes from Bharatpur and meets in river Gambhir near tehsil Bayana of District Bharatpur. Gambhir river starts from Panchna Dam of district Karauli and after passing from Bharatpur meets River Yamuna in Uttar Pradesh. Rooparel River starts from hills of district Alwar and enters into Bharatpur from tehsil Kaman. Instead of this, a Dam, namely, Bandh Baretha is situated near the village Baretha on river Kakund which starts from the hills of district Karauli. The water of this dam is used for drinking and irrigation purpose for this district. The capacity of this dam is 684.00 million cubic feet (29 Gaze feet).



10 Rainfall : Month wise

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2004	8.2	0	0	3	28.4	72.2	59.7	273.4	19.7	41.1	0	0	505.7
2005	0.2	7.2	16.8	1.2	3.9	20	486.9	92.2	69.7	0	0	0	698.1
2006	0	0	14.3	0	13.1	38.6	163.6	61.8	72.4	0.8	0	0.5	365.1
2007	0	7.8	7.2	0.5	1.7	115.4	111.4	99.2	79.1	0	0	0	422.3
2008	0	0	0	0	0	231.6	264.5	188.8	99.5	0	0	0	784.4
2009	0	0	0	0	0	29	185.1	188.4	115.8	9.8	27	0.4	555.5
2010	3.4	1.4	0	1.4	0.5	17.9	172.2	184.5	328.6	0	40.5	0.6	751

Units in mm

➤ **11 Geology and Mineral Wealth:**

11.1 Geology:

Almost the entire northern part of the district is covered by alluvium, with few isolated hills of schist & quartzites belonging to Aravalli & Delhi Groups.

Geologically Bharatpur district comprises of rocks belonging the Aravalli Super group, Delhi Super group and Vindhyan Super group. **Map enclosed**

The Pre Delhi rocks include schists, Phyllites, quartzite and highly altered basic rocks (probably Volcanics). The Delhi Super group is characterised by a thick pile of conglomerate - quartzite assemblage of Alwar Group, and lower part of the Raialo Group, basic volcanics and quartzite inter beds of the upper part of Raialo Group, arenaceous rocks of weir formation and phyllites and shales of Kushalgarh formation of Ajabgarh Group. During the first phase of Delhi orogeny the Bayana sub-basin is reported to have suffered northerly monoclinal tilting. Resulting in very open monoclinal fold with NW –SE to WNW- ESE axial trend superimposed in the limb of earlier folds.

Ajabgarh group disconfirmably overlies the Alwar group comprising litho assemblage of carbonaceous shale, phyllite ferruginous quartzite & white quartzite. Nature of contact between Alwar and Ajabgarh groups is not clear though it's observable near village Hathori. Milky white, grey and pink quartz veins and also the jasper veins are the abundant post Delhi intrusive of the area. These are either along the regular joint planes, irregular fractures or in the Form of gash veins. In places, quartz veins occupy the tensional fractures in the hige zone and in other places they are cofolded with the primary bedding. The Delhi Super Group sedimentations has taken place in the coastal environment of unstable shelf, characterized by intermittent vertical tectonics. Vindhyan Super group of rocks assemblage is represented by sand stone and shales etc, which are exposed in the north eastern part of the district in Rupbas Tehsil. Bhandar sandstone is underlain at places by light green to olive green shales.

Statigraphic succession of the rock units of Bharatpur region is as given below:
(Based on the classifications proposed by Hacket, Heron, Sant & Sharma, Singh etc.

Soil / Alluvium

Recent to sub recent

---- Un conformity----

Vindhyan Super group

Upper Bhandar Group.

Rewa Group.

---- Un conformity----

Delhi Super group

Ajabgarh group –weir

- Kushalgarh

---- Dis conformity -----

Alwar group-

Damdama:-Lakhanpur sandstone

: - Kanawar Quartzite

: - Umraind Conglomerate

Bayana : - Mahloni conglomerate

:- Mor Talab Quartzite

Badalgarh: - Alipuri Quartzite

Baghrain sandstone

Nithar :- Jogipura formation

----- Un Confirmity -----

:- Jahaj Govindpura Vocanics

:- Nithar

-----Un Confirmity -----

Pre Delhi

Aravalli Súper group

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11.2 Mineral Wealth:

Barytes, Building Stone and Quartz are the important minerals of the district. Barytes closely associated with the basic intrusive occurs in the rock of the Delhi Supergroup. Barytes veins occur as fissure filling in Quartzite. Occurrances are reported from Hatori (27°00' : 77°06'), Karwar (27°00' : 77°03') etc. Small deposit of Copper with an indicated reserve of 1 Million tonne with 1% Cu is located near Khankhera (26°55' :

77°08'). Minor Occurrence of Lead is reported from Jotri (27°35' : 76°58'). Quartz is available at many places in the district. Quartzite and sandstone are quarried at Bansi Pharpur (26°56' : 77°03'), Deeg (27°27' : 77°19') etc. White-spotted reddish Sandstone of the Bhandar Group is in great demand as Building stone.

11.2.1 Barytes

Barytes mineralisation occurs over a length of 5.5 km. from west of Hathori to 2 km. WNW of Ghatri. The area has been divided in to three blocks. These are Hathori, Karwan and Ghatri blocks. The mineralisation is confined to the volcanic rocks related to Jahaz-Govindpura volcanics of Delhi Super group.

Hathori Block - Five groups of barytes veins have been classified in .this block. The barytes veins having 1.5 km. length and 5 to 10 cm width are emplaced along strike joints in the oldest flow of this section. The mineral is transparent, white to grey in colour in the form of tabular crystals. At places it has iron stains and shows association of hematite, limonite and vuggy quartz, besides traces of chalcopryrite, pyrite and malactite. Good quality barytes from 2nd group analyses Sioz-1.2-2%, Fe2O3 0.4%, Cao &Mgo in traces, Bao-64.4% & SO3-33.54%. A barytes sample from the third group contains Sio2 2.43%, Fe2O3 0.28%, Al2O3 0.12%, alkalies less than 0.1%BaSO4- 97.02%.

Karwan Block: Barytes veins are emplaced along the cross & strike joints and irregular fractures in flows, tuffbreccias and overlying quartzites. In general, veins are thin and show poor quality. Barytes is grey showing iron staining and association of hematite and biotite.

Ghatri block: Barytes veins are emplaced along bedding and cross joints and irregular fractures in flows, barytes veins with pinch and swell structures show maximum length of 4 m and 1 m width. Mineral is translucent to opaque, with white to grey colour and massive to crystalline in nature.

11.2.2 Sandstone

Sandstone of Vindhyan age is extensively mined in .Bharatpur. Splittable sand stone is available near village Bansi Paharpur, Bandh Baretha, Turtipura, Tarsuman, Singhwali etc. Sand stone varies in colour from buff-red to pink and creamish pink, at places spotted pink .is also seen.

11.2.3 Silica sand

Ferruginous-silica sand is located near Jaggiwanpura village 35 kms.away from Bayana railway station. The sand occurs as thin bands of friable quartzite within the massive layers. Occurrences of silica sand are reported near village Doravli and in the north of Karwan village. The sand is ferruginous. The silica sand is being mined from the mines located in tehsil Bayana near village Acholi, Gudakhar, Navali, Agawali, Bajoli, Talimpur & Jaswant nagar. In Kaman tehsil it is being worked near village Kalawata, Nanerawas, Bol-kheda, Lahsar In Weir tehsil it is being worked near village Mangren, Gothra and Mansapura. This district is the second largest producer in the state next to Jaipur. On average sand contains 96 to 97% SiO_2 and 0.15% to 0.5% Fe_2O_3 and sand recovery is about 50%. The silica sand of Kaman area is ferruginous but on beneficiation in the ceramic ore dressing laboratory of the state department, it was upgraded to 98.2% SiO_2 and 0.05% Fe_2O_3

11.2.4 Soapstone

Soapstone mineralisation is located near village Nidar (Teh. Bayana) Mangren (Teh. weir) Bilung (Teh. Kaman). The soap stone is of low grade.

11.2.5 Saltpeter

A belt of nearly 800 sq. kms. Stretching from S.E. of Bharatpur to the N.W. of Kaman has been located where the KNO_3 efflorescence occurs, during the hot months from April to July.

Saltpetre appears as a very thin, slightly brownish yellow having moisture like appearance, crisp encrustation on the earth surface. When the encrustation of the saltpeter is scrapped off from the surface, it again appears within a weak, which can be again scrapped. If the scrapping is done beyond the crisp layer, and the settled earth is scrapped the mineral may altogether stop to appear by efflorescence. It is found that nearly 80 Kgs. of Potassium Nitrate is available from 2400 kgs. of Potassium Nitrate soil i.e. the efflorescent soil contains 3 to 4% of KN_3 , though the proportion varies from place to place. The villages producing good amount of KN_3 are AghapurDarapur, Bharatpur, Karot, Jogina, Gunsara, Sinsini, Deeg, Bhej, Kaman, Sikripatti, Gopalgarh, Pipal Khera, Jorera etc.

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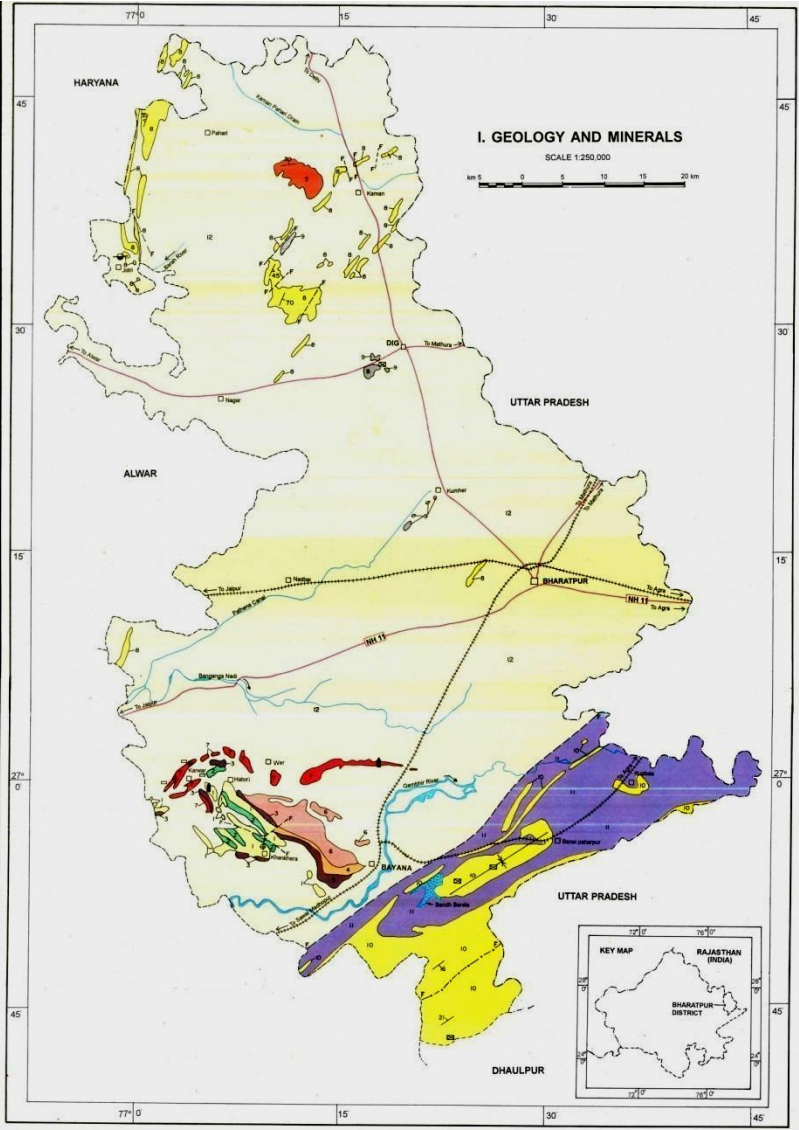
11.2.6 Copper

Copper mineralisation is located near Khankhera and Ker village, nearly 25 kms. Due west of Bayana Railway Station by road. The state department has done

detailed prospecting work in the area during 1976-77 and established 0.22 million tonnes of 1.05% Copper in Kher block over a strike length of 180 metre. Copper mineralisation is in form of lensoid body and largely restricted to the silicified portions of metavolcanics

11.2.7 Lead

Lead mineralisation is located near Jotri and Piraka areas, located about 16 kms. due west of Nogaon village. The area was investigated by state department. Lead mineralisation is confined to quartz veins of superficial nature. The chemical analysis indicates very low values of Pb (less than 1%)



Lithology	Group	Supergroup	Age
12 Alluvium and blown sand			Quaternary
11 Dhaulpur Shale	Bhander Group	Vindhyan Supergroup	Upper Proterozoic
10 Upper Bhander (Malhar) Sandstone			
9 Phyllite and quartzite	Ajabgarh Group	Delhi Supergroup	Lower to Middle Proterozoic
8 Gritty quartzite and quartzite			
7 Quartzite and calcareous shale			
6 Conglomerate and quartzite			
5 Massive quartzite	Alwar Group		
4 Interlayered conglomerate and quartzite			
3 Flaky quartzite, shale and tuffaceous sandstone			
2 Basic Volcanic			
1 Quartzite			