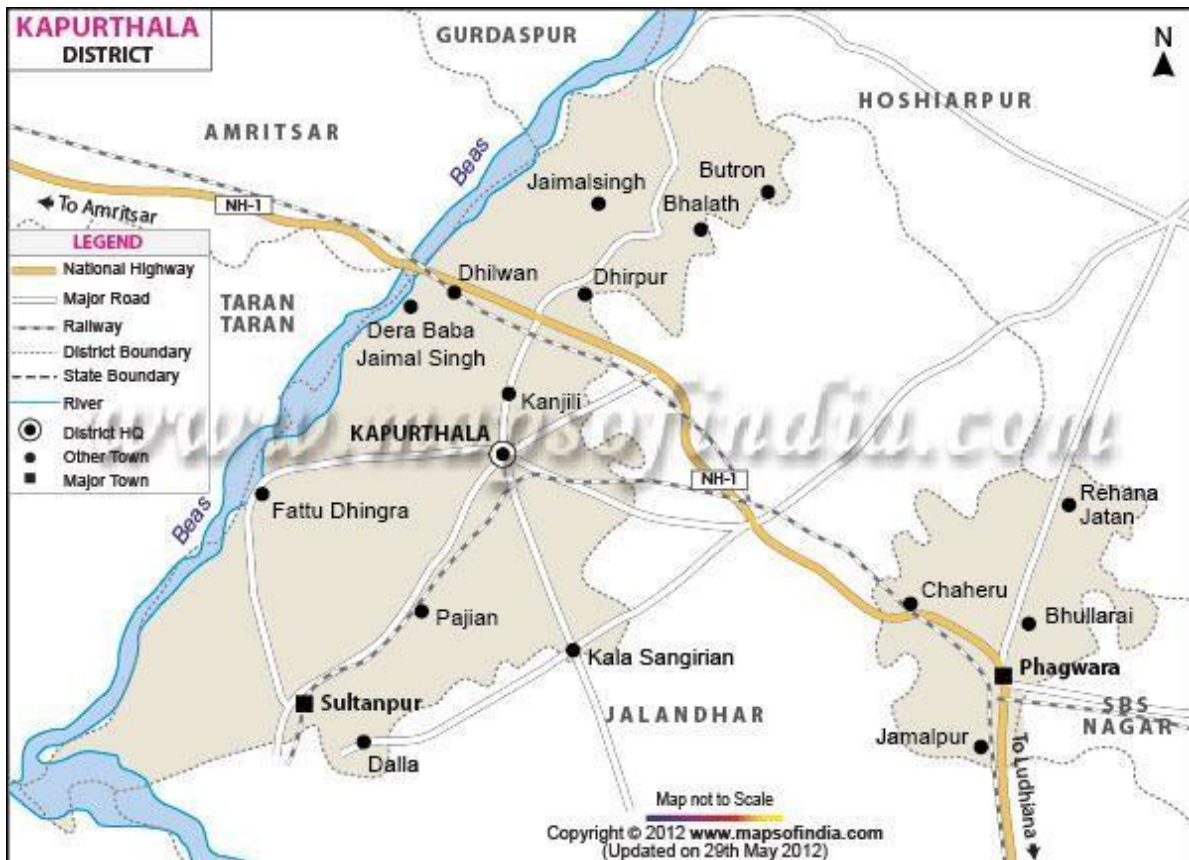


# DISTRICT SURVEY REPORT

## Kapurthala District



**DISTRICT SURVEY REPORT OF KAPURTHALA DISTRICT IN COMPLIANCE TO THE NOTIFICATION DATED 15.1.2016 AND 20.1.2016 ISSUED BY MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE.**



In compliance to the notification issued by **Ministry of Environment, Forest and climate change** issued on dated **15.1.2016**, the preparation of District Survey report of River bed mining and other minor mineral is in accordance with appendix 10 of the notification. It is also mentioned here that the procedure of preparation of District Survey Report is as per guidelines of the Notification.



## **DISTRICT SURVEY REPORT DISTRICT KAPURTHALA.**

With reference to Gazette Notification of 15-1-2016 of Ministry of Environment, Forest and Climate Change, the District Environment Impact Assessment Authority (DEIAA) and District Environment Assessment Committee (DEAC) are to be constituted by the Divisional Commissioner for prior environmental clearance of mining of minor minerals. The DEIAA and DEAC will scrutinize and recommend the prior environmental clearance of mining of minor minerals on the basis of District Survey Report. This will be a model and guiding document which is a compendium of available mineral resources, geographical set up, environmental and ecological set up of the district and is based on the data of various departments, published reports, journals and websites information.

## 1) INTRODUCTION

<b>Kapurthala district</b>	
<b>District</b>	
	
<p>Location in Punjab, India  Coordinates:  <a href="#">31°22′46″N 75°23′05″E</a></p>	
<b>Country</b>	 India
<b>State</b>	Punjab
<b>Named for</b>	Nawab Kapur Singh
<b>Headquarters</b>	Kapurthala
<b>Government</b>	
• Deputy commissioner	Deepti Uppal
<b>Area</b>	
• Total	1,633 km <sup>2</sup> (631 sq mile)

<b>Population (2011)</b> <sup>‡[↗]</sup>	
• <b>Total</b>	817,668
• <b>Density</b>	500/km <sup>2</sup> (1,300/sq mile)
<b>Languages</b>	
• <b>Official</b>	<a href="#">Punjabi</a>
<b>Time zone</b>	<a href="#">IST (UTC+5:30)</a>
<b>Literacy</b>	80.20%
<b>Website</b>	<a href="http://www.kapurthala.gov.in">www.kapurthala.gov.in</a>

**Kapurthala** is a district of [Punjab](#) State in northern [Republic of India](#). The city of [Kapurthala](#) is the district headquarters.

Kapurthala District is one of the smallest districts of Punjab in terms of both area and population, with 754,521 people by the 2001 census. The district is divided into two noncontiguous parts, the main [Kapurthala - Sultanpur Lodhi](#) portion and the [Phagwara tehsil](#) or block.

The Kapurthala-Sultanpur Lodhi part lies between north latitude 31° 07' and 31° 22' and east longitude 75° 36'. In the north it is bounded by [Hoshiarpur](#), [Gurdaspur](#), and [Amritsar](#) districts, in the west by the [Beas River](#) and Amritsar and Tarntaran district, and in south by the [Sutlej River](#), [Jalandhar district](#), and Hoshiarpur district.

Phagwara tehsil lies between north latitude 31° 22' and east longitude 75° 40' and 75° 55'. Phagwara lies on the National Highway No 1 and the tehsil is much more industrially developed

than the remainder of Kapurthala District. Phagwara is situated at a distance of 19 kilometers (12 mile) southwest of Jalandhar and the tehsil is bounded on all sides by Jalandhar District except in the northeast, where it is bounded by Hoshiarpur district and Shaheed Bhagat Singh Nagar. The district has four subdivisions/**tehsils**: Kapurthala, Phagwara, Sultanpur Lodhi and Bholath. The total area of the district is 1633 km<sup>2</sup> (630 mi<sup>2</sup>) of which 909.09 km<sup>2</sup> (350.91 mi<sup>2</sup>) is in Kapurthala tehsil, 304.05 km<sup>2</sup> (117.36 mi<sup>2</sup>) in Phagwara tehsil and 451.0 km<sup>2</sup> (174.1 mi<sup>2</sup>) in Sultanpur Lodhi tehsil. The economy of the district is still predominantly agricultural. The major crops are **Wheat, Rice, Sugarcane, Potato** and **Maize**. The major portion of Kapurthala district lies between the **Beas River** and the Kali-Bein River and is called the 'BET' area. This area is prone to floods. Water logging and alkalinity in the soil is the major problem of the area. A flood protection **bundh** called 'Dhussi Bundh' has been constructed along the left bank of the Beas River and it has saved the area from the ravages of flood. The entire district is an **alluvial plain**. To the south of the river Kali-Bein lies the tract known as 'Dona' meaning the soil formed of two constituents i.e. the sand and clay. The climate is typical of the Punjab plains i.e. hot in summers and cold in winters. It has sub-tropical continental **Monsoon** type climate. Intensive cultivation in the district leaves no scope for forest cover and the wild life is practically non-existent.

## Demographic

According to the 2011 census Kapurthala district has a population of 817,668, roughly equal to the nation of Comoros or the US state of South Dakota. This gives it a ranking of 481st in India (out of a total of 640). The district has a population density of 501 inhabitants per square kilometre (1,300/sq mile) . Its population growth rate over the decade 2001- 2011 was 8.37%. Kapurthala has a sex ratio of 912 females for every 1000 males and a literacy rate of 80.2%.



## **2. OVERVIEW OF MINING ACTIVITY**

Mainly three types of Minor Mineral constituents such as Stone, Bajri and sand are required for any type of construction apart from other material like cement and steel. In the earlier time the mud houses/buildings were constructed with the use of mud. However with the passage of time, new technique of development activities were started. As such the demand of Minor Mineral started an increasing trend. In order to meet the requirement of raw materials for construction, the extraction of sand carried out exclusively from the river beds and out side river beds. The demand of sand is mainly met through by river borne sand.

The local residents used to lift sand from the river beds and outside river beds to meet out their bonafide requirement. However after coming into being the Punjab Minor Mineral rules 1964 and ammended rules in 2013, the mining is regulated in accordance with the rules. About 10 no's of mining quarries had granted/executed under the above said rules in the different parts of the Kapurthala District and four quarries namely Mand Sabk Desal, Gurmukh Singh Wala, Fatehwala and Safderpur is under process for getting Environment Clearance.

**LIST OF MINING QUARRIES IN THE DISTRICT KAPURTHALA AND  
LOCATION AREA AND AREA IN MTR. SQR.:-**

<b>S.No.</b>	<b>LOCATION</b>	<b>AREA IN Hect.</b>	<b>Hadbas t no.</b>	<b>Kasra No.</b>
<b>1</b>	<b>Gurmukh Singh Wala</b>	<b>4.76</b>	<b>34</b>	<b>5/4, 5/6, 5/7, 5/8, 5/13, 5/14,5/15, 5/16, 5/17, 5/18, 5/23, 5/24, 5/25</b>
<b>2</b>	<b>Mand Sabk Desal</b>	<b>4.80</b>	<b>77</b>	<b>15//5(8-0), 18//11(8-0), 18//12(8-0), 18//13(8-0), 18//14(8-0), 18//17(8-0), 18//18(8-0), 18//19(8-0), 18//20(4-5), 18//21(2-12), 8//23(8-0), 18//24(8-0), 18//25(8-0)</b>
<b>3</b>	<b>Safderpur</b>	<b>3.43</b>	<b>67</b>	<b>20//1,2,8,9,10,11,12,13,18,1 9, 20</b>
<b>4</b>	<b>Mand Faridpur</b>	<b>3.80</b>	<b>83</b>	<b>14//11(8-0), 14//14(8-0), 24//16(5-0), 25//1(8-0), 24//5(8-0), 24//6(8-0), 24//15/1(4-0), 24//15/2(4- 0), 21//25(8-0), 21//23(8-0), 21//24(8-0)</b>
<b>5</b>	<b>Fatehwala</b>	<b>3.14</b>	<b>197</b>	<b>11//2, 7//12, 7//13, 7//14,15,19,22, 11//9/1, 11//12/1, 11//22/1</b>

**DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST YEARS.**

<b>SR. NO</b>	<b>YEAR</b>	<b>ROYALTY ( IN RS.) Sand</b>
<b>1</b>	<b>2013</b>	<b>25,92,984</b>
<b>2</b>	<b>2014</b>	<b>58,00,250</b>
<b>3</b>	<b>2015</b>	<b>15,08,625</b>
<b>4</b>	<b>2016</b>	<b>Nil</b>
<b>5</b>	<b>2017</b>	<b>Nil</b>
<b>6</b>	<b>2018</b>	<b>Nil</b>
<b>7</b>	<b>2019</b>	<b>Nil</b>

**DETAIL OF PRODUCTION OF SAND OR BAJRI OR MINOR  
MINERAL IN LAST YEARS IN DISTT.**

<b>SR. NO</b>	<b>YEAR</b>	<b>SAND ( IN MT)</b>
<b>1</b>	<b>2013</b>	<b>39830.175</b>
<b>2</b>	<b>2014</b>	<b>40064.931</b>
<b>3</b>	<b>2015</b>	<b>39896.762</b>
<b>4</b>	<b>2016</b>	<b>Nil</b>
<b>5</b>	<b>2017</b>	<b>Nil</b>
<b>6</b>	<b>2018</b>	<b>Nil</b>

### **3. PROCESS OF DEPOSITION OF SEDIMENTS IN THE RIVERS OF THE DISTRICT:-**

The deposition in a river bed is more pronounced during rainy season although the quantum of deposition varies from stream to stream depending upon numbers of factors such as catchment, lithology, discharge, river profile and geomorphology of the river course. where annual deposition is much more even one to two metres, but it is noticed that during flood season whole of the pit so excavated is completely filled up and as such the excavated area is replenished with new harvest of minerals.

In order to calculate the mineral deposits in the stream beds, the mineral constituents have been categorized as clay, silt and sand. However during present calculation, the waste material i.e silt which vary from 15 to 25% in different streams has also been included in the total production. Further the Survey of India Topo-Sheets are used as base map to know the extent of river course. The mineral reserves have been calculated only upto 2.00 metre depth although there are some portions in the river beds

such as channel bars, point bars and central islands where the annual deposition is raising the level of river bed thus causing shifting of the rivers towards banks resulting in to cutting of banks and at such locations, removal of this material up to the bed level is essential to control the river flow in its central part to check the bank cutting. While calculating the mineral potentials, the mineral deposits lying in the sub-tributaries of that particular stream/river has not been taken into consideration. Since these mineral deposits are adding annually to the main river, the mineral deposits will be much more.

There is One river Beas in District Kapurthala.

## 1. BEAS RIVER

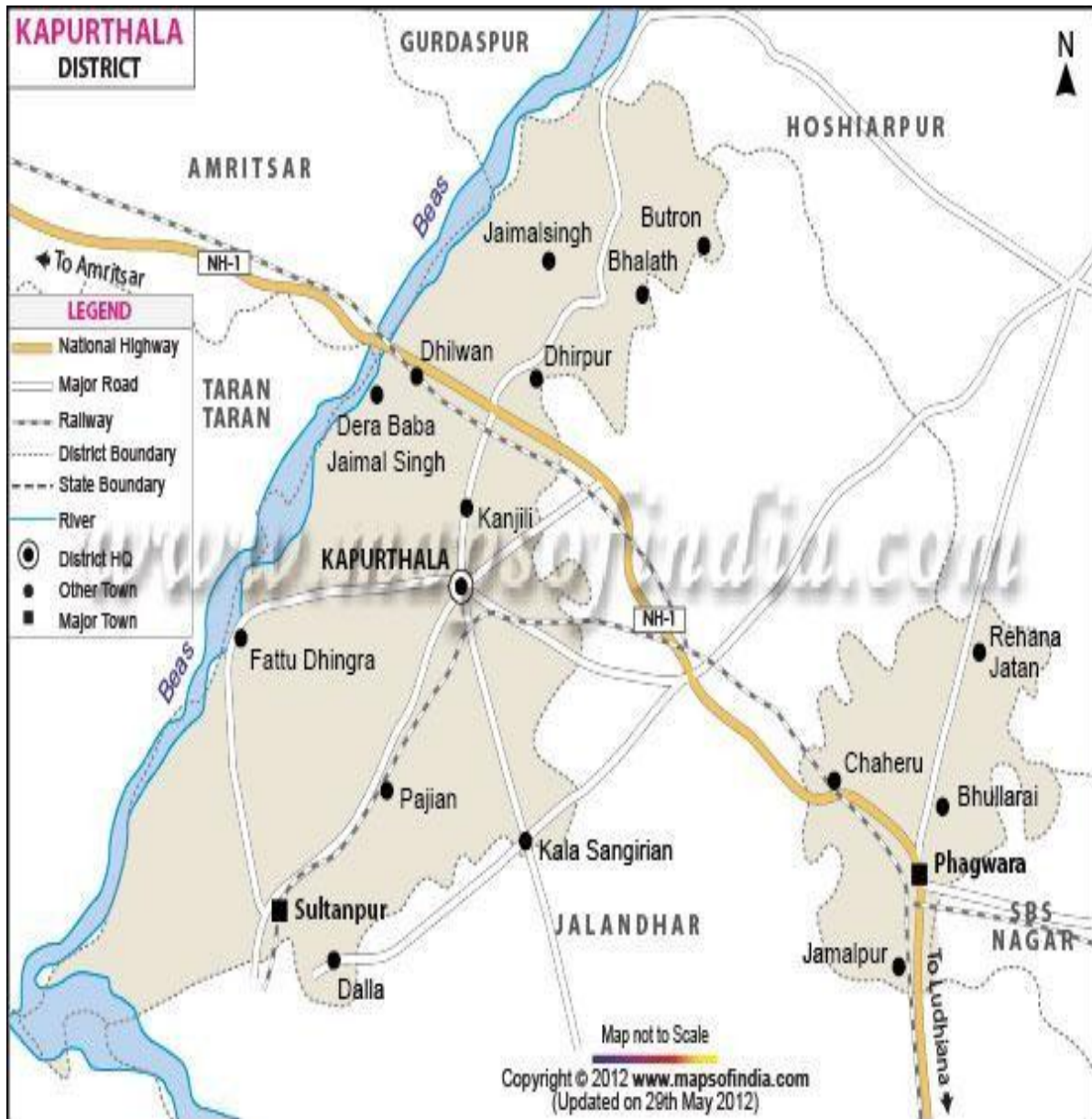


Beas River in District Kapurthala

The river rises 4,361 metres (14,308 ft) above sea-level on the southern face of [Rohtang Pass](#) in [Kullu](#). It traverses the [Mandi District](#) and enters the [Kangra District](#) at Sandhol, 590 metres (1,940 ft) above sea-level.

During its lower course the Beas is crossed by numerous ferries, many of which consist of inflated skins (darais). Near Reh in Kangra District it divides into three channels, which reunite after passing Mirthal, 300 metres (980 ft.) above sea-level. On meeting the [Shivalik Hills](#) in [Hoshiarpur](#), the river sweeps sharply northward, forming the boundary with Kangra District. Then bending round the base of the Shivalik Hills, it takes the southerly direction, separating the districts of Gurdaspur and Hoshiapur. After touching the Jullundur district for a short distance, the river forms the boundary between [Amritsar](#), [Tarntaran](#) and [Kapurthala](#). Finally the Beas joins the river [Sutlej](#) at the south-western boundary of Kapurthala District of [Punjab](#) State. The Beas River ends before merging in Sutlej River taking the course through the Southern West route of District Kapurthala in the State of Punjab traversing the total path of 290 miles.

### SHOWING BEAS RIVER CATCHMENT IN KAPURTHALA DISTRICT





#### 4. GENERAL PROFILE OF THE DISTRICT

##### Location:-

**Kapurthala district** is a district of **Punjab** state in northern **Republic of India**. The city of **Kapurthala** is the district headquarters.

Kapurthala District is one of the smallest districts of Punjab in terms of both area and population, with 754,521 people by the 2001 census. The district is divided into two noncontiguous parts, the main Kapurthala-**Sultanpur Lodhi** portion and the **Phagwara tehsil** or block.

The Kapurthala-Sultanpur Lodhi part lies between north latitude 31° 07' and 31° 22' and east longitude 75° 36'. In the north it is bounded by **Hoshiarpur**, **Gurdaspur**, and **Amritsar** districts, in the west by the **Beas River** and Amritsar, Tarntaran district, and in south by the **Sutlej River**, **Jalandhar district**, Hoshiarpur district. Phagwara tehsil lies between north latitude 31° 22' and east longitude 75° 40' and 75° 55'. Phagwara lies on the National Highway No 1, and the tehsil is much more industrially developed than the remainder of Kapurthala District. Phagwara is situated at a distance of 19 kilometers (12 mi) southwest of Jalandhar, and the tehsil is bounded on all sides by Jalandhar District except in the northeast, where it is bounded by Hoshiarpur district and Shaheed Bhagat Singh Nagar district.

The district has four subdivisions/**tehsils**: Kapurthala, Phagwara, Sultanpur Lodhi and Bholath. The total area of district is 1633 km<sup>2</sup>(630 mi<sup>2</sup>) of which 909.09 km<sup>2</sup> (350.91 mi<sup>2</sup>) is in Kapurthala tehsil,304.05 km<sup>2</sup> (117.36 mi<sup>2</sup>) in Phagwara tehsil and 451.0 km<sup>2</sup> (174.1 mi<sup>2</sup>) in

Sultanpur Lodhi tehsil. The economy of the district is still predominantly agricultural. The major crops are [wheat](#), [rice](#), [sugarcane](#), [potato](#) and [maize](#). The major portion of Kapurthala district lies between the [Beas River](#) and the Kali-Bein River and is called the 'BET' area. This area is prone to floods. Water logging and alkalinity in the soil is the major problem of the area. A flood protection [bundh](#) called 'Dhussi Bundh' has been constructed along the left bank of the Beas River, and it has saved the area from the ravages of flood. The entire district is an [alluvial plain](#). To the south of the river Kali-Bein lies the tract known as 'Dona' meaning the soil formed of two constituents i.e. the sand and clay. The climate is typical of the Punjab plains i.e. hot in summers and cold in winters. It has sub-tropical continental [monsoon](#) type climate. Intensive cultivation in the district leaves no scope for forest cover and the wild life is practically non-existent.

## Tehsils

S. No.	Subdivison /Tehsil	In-habited Villages	Un-inhabited Villages	Area (Hactare)
1	Kapurthala	247	16	67551
2	Sultanpur Lodhi	170	45	45102
3	Phagwara	94	22	30446
4	Bholath	87	20	23492
	<b>Total</b>	<b>598</b>	<b>103</b>	<b>166591</b>

**Sub Tehsils (Total : 2]**

Sub-Tehsil	
Sr. No.	Sub Tehsil Name
1.	Dhilwan
2.	Talwandi Chaudhrian

**Blocks (Total : 5)**

Blocks	
Sr. No.	Block Name
1.	Kapurthala
2.	Sultanpur Lodhi
3.	Phagwara
4.	Nadala.
5.	Dhilwan

**NAGAR COUNCILS/NAGAR PANCHAYATS**

S.No.	Name
1	Sultanpur Lodhi
2	Bholath
3	Begowal
4	Dhilwan
5	Nadala

**MUNICIPAL CORPORATION**

<b>S.No.</b>	<b>Name</b>
<b>1</b>	<b>Kapurthala</b>
<b>2</b>	<b>Phagwara</b>

**IMPROVEMENT TRUST**

<b>S.No.</b>	<b>Name</b>
<b>1</b>	<b>Kapurthala</b>
<b>2</b>	<b>Phagwara</b>

**Population.**

According to the [2011 census](#) Kapurthala district has a [population](#) of 8,15,168 roughly equal to the nation of Comoros or the US state of South Dakota. This gives it a ranking of 481<sup>st</sup> in India (out of a total of [640](#)). The district has a population density of 501 inhabitants per square kilometre (1300/sq mi). Its [population growth rate](#) over the decade 2001– 2011 was 8%. Kapurthala has a [sex ratio](#) of 912 [females](#) for every 1000 males, and a [literacy rate](#) of 79.1%.

**5. LAND UTILISATION PATTERN IN THE DISTRICT****Total area of the Distt. is (in Hac.)****1) 1.FOREST :- 2350.24 Hac.****2) AGRICULTURE:- 272398 Hac****3) HORTICULTURE:- 377.4 Hac****4) MINING:- 57.88 Hac.**

**5(i) FOREST**

The district is rich in animals and birds which include some of the rare species. The animals and birds that are found in the district are- (1) Blue Cows (2) Non resident birds (3) Monkeys. Apart from the important game animals described above animal like Sambar, Pig and Snakes etc. also met within the area. There is a variety of birds in the district like Snow cock, Juguriam, Pea-cock, Ring dove, Spotted dove, Shikara, Parrot, tawny eagle, pigeon, gritton vulture, tits, nut cracker, Pies, Wood peaker, Crow, Fly catcher, etc. which are found in the tract of this district.

5(ii) Table-1:

Vernacular Name	Botanical Name
Bil	Aegle marmelos
Neem	Azadirachta indica
Tun	Toona ciliata
Aam(cultivated)	Mangifera indica
Deodar	Cidrus deodara
Kikar	Acacia arbaica
Khair	Senegation Catechu
Behera	Terminalia belerica
Harrer	Metrosideros polymorpha
Toot(cultivated)	Morus Nigra
Palakh	Ficus rumphii
Shisham	Delbergia Sissoo
Drek	Melia azadarach



## 5.2 AGRICULTURE

Agriculture is the main occupation of the people in the District, having different types of soil and agro-climate conditions which are quite suitable for the growing of various types of cereals, vegetables, fruits and other crops. The major crops grown in the district are Wheat, Paddy, Maize, Barley, and Millet. Besides these, Potato and a variety of vegetable like green-peas, cauliflower, cabbage, spinach tomatoes, etc. are also grown in the district. The economy is mostly agrarian and majority of population is depending on agriculture and activities allied to it for earning their lively hood. The un-irrigated land depends upon the rainy season for irrigation. Soil in the district varies from sandy loam to clay. The Major part of the lands are irrigated and the irrigation facilities are provided by lifting water from streams, shallow, dug wells and medium to deep tube wells in the area.

AGRICULTURE TABLE

S.No.	Name of Sub Division	Agriculture Area in Hac
1	Kapurthala	110882
2	Phagwara	45419
3	Sultanpur Lodhi	74767
4	Bholath	41330
	G.Total	272398

### **5.3 HORTICULTURE:**

The topography and agro-climatic conditions of the district are quite suitable for the production of various fruits. The topography of the district is plain and low lying areas. Fruits of various kinds depending upon the terrain, climatic condition and soil are grown in the district. The Main horticulture produce of the area can be classified into four categories.

- 1 Citrus Fruits
- 2 Sub-tropical Fruits
- 3 Nuts and dry fruits
- 4 Other temperate fruits

### 5.3 (a) Area under each fruit and their production

Table-2:

<b>A. Citrus</b>		
Name of fruit	Area in Hect.	Production in Tonnes
Kinnow	88.8	904.85
Sweet Orange	10.4	61.00
Lemon	6.8	17.34
<b>Sub Total</b>	<b>106.0</b>	<b>983.19</b>
<b>B. Sub tropical Fruits</b>		
Mango	46	113.00
Litchi	03	17.28
Guava	134	1727.7
Ber	10	103.45
Others	22.3	177.4
<b>Sub Total</b>	<b>215.3</b>	<b>2138.83</b>
<b>C. Nuts and dry fruits :</b>		
No Plantation		
<b>D. Other Temperate fruits :</b>		
Plum	1.0	9.6
Peach	5.0	40.4
Pear	50.1	336.07
<b>Sub Total</b>	<b>56.1</b>	<b>386.7</b>
<b>Grand Total</b>	<b>377.4</b>	<b>3508.09</b>

## 6. PHYSIOGRAPHY OF THE DISTRICT

### Location

The Kapurthala district is the northernmost district of Punjab state. It falls in the Jalandhar division and River Beas touches it in Westren side . The district lies between north-latitude 31°-36' and 32°-34' and east longitude 74°-56' and 75°-24' and shares common boundaries with district in the north, Beas River in the north-east, Hoshiarpur district in the south-east, Moga and Ferozpur district in the south, Amritsar, Tarntaran district in the North-west and Pakistan in the north-west.

All the Tehsils of the district namely Kapurthala, Phagwara Sultanpur Lodhi and Bholath are plain and similar to the rest of the Punjab plains in structure. The landscape of the district has varied topography comprising undulating plan, the flood plains of the Beas and the upland plain.

The flood plains of the Beas are separated from the upland plain by sharp river-cut bluffs. They are low lying, with slightly uneven topography. Sand dominates in the soil structure of the flood plains, but it diminishes in both quantity and coarseness in the upland plain. The upland plain covers a large part of the district particularly. Its elevation ranges from about 305 metres above sea level in the north-east to about 213 metres above sea level in the south-west, with a gentle gradient of about 1 metre in 1.6 km. This is the most important physiographic unit in the district.

## **7.1 CLIMATE**

There are mainly two seasons i.e. summer and winter. The summer season falls between the months of April to July and the winter November to March. In summer season the temperature touches 44 °C and sometimes higher. June is the hottest month and January is the coldest one. Mostly the rain falls in the month of July. The winter rains are experienced during January and February. Dust storms occurs in the month of May and June.

## **7.2 RAINFALL**

The south-west monsoon generally arrives in the first week of July and continues up to the end of August. Seventy percent of the rainfall occurs during this period.

## **7.3 ECOLOGY**

The changes in ecology system are inevitable, consequences of development process. The denudation of forests due to increasing population, urbanization industrialization have accelerated the process of environmental degradation in the district. Therefore, preservation of the ecology is one of the most important goals of the district planning.

The vegetation varies in the district depending on the soil, topography and elevation. In the plain, large scale of afforestation has been undertaken by the forest department. Where water facilities are available, Shisham, mulberry, eucalyptus and poplar are being planted. In the Kallar area, kinkar, prosopis and eucalyptus has been planted. Besides mango and mulberry, other fruit trees cultivated in the district include orange, Kinnow, lemon tree and others.

#### **7.4 HYDROLOGY**

The ground water in this region is suitable for irrigational and domestic uses. The sub soil water depth ranges from 5 to 8 metres in most part of the district. Due to Dhusi bandh and stepped floods the water table has gone very low.

#### **7.5 SOILS**

The soils are loamy with a clay content below 7.5 to 8.5 percent. They contain small quantities of lime but the magnesium content is high. They are well supplied in potash and phosphoric acid but the quantities available are low. The agriculture is dependent to a large extent on the nature of its soils which in turn, is influenced materially by climatic factors. The soil of the district is quite alluvial and fertile.

The district consists of 5 kinds of soils viz, Bet, Loamy, Sandy, Sierozems and Sodic & Saline soil. The area falls near Beas River is called Bet and Sandy. The area of Phagwara and Central part of Kapurthala District is called Loamy soil. The western Parts of Kapurthala District cover with Sierozems soil. The Sultanpur Lodhi Tehsil and South Western part of District Kapurthala have un-cultivated Moderately to severly Sodic & Sline soil which are water logged pockets.

## **7.6 MINERALS**

The sand is found from the River bed of the Beas river and outside river Beas Bed due to flood situation in rainy season.

## **7.7 Infrastructure**

### **River system and power resources**

The Beas is the main river which flow through the district, which originates near the Rohitang Pass in the adjoining state of Himachal Pradesh. Like other rivers of the Punjab the water of the Beas fluctuates from season to season and from year to year. This fluctuating discharge of the rivers does not permit their navigational use depending upon the rainfall. The major portion of Kapurthala District lies between the Beas River and Kali Bein River is called Bet Area. The area is prone to floods. A flood protection Bundh called Dhusi Bundh has been constructed along the left bank of

the Beas River and it has saved the area from the ravages of flood. The entire District is an alluvial plain to the south of the river Kali Vein lies the Tract known as "Dona" meaning the soil formed of two Constituents i.e. sand and clay.



**8. ROADS:-****KAPURTHALA DISTRICT.**

LINK ROADS	1866.56 KM.
STATE HIGHWAY	311.03 KM
NATIONAL HIGHWAYS	39.49 KM

## 9. Rainfall Data: Month wise

### District Kapurthala.

Month	Year 2012- 13		Year 2013- 14		Year 2014- 15		Year 2015- 16	
	Kpt	Phg.	Kpt	Phg.	Kpt	Phg.	Kpt	Phg.
June	--	--	271.8	175	78	82	47.2	70
July	44	255	290.8	150	97.4	134	140.1	185
Aug	100.4	87	273.6	141	92.6	67	56.8	135
Sept	220	129	21.6	79	184.4	140	106.8	184
Oct	--	--	29.8	18	13.4	--	15.6	14
Nov	0.5	--	--	--	--	--	--	--
Dec	13	19	32	13	48	35	--	5
Jan	8.4	3	45	36	18.8	22	--	17
Feb	109.1	69	52.8	73	77.1	32	--	--
March	7.4	5	48.4	36	146.6	115	52	34
April	8	3	87.4	35	39.5	43	--	--
May	20.8	10	19	26	83.2	32	--	--

**10.DRAINAGE SYSTEM WITH DESCRIPTION OF MAIN RIVERS**

SR.NO	NAME OF THE RIVER	AREA DRAINED (Sq.Km)	% AREA DRAINED IN THE DISTRICT
1	River Beas	713.49	43.69
2	East Bein	304.05	18.61
3	Kali Bein	615.46	37.70

**11.SALIENT FEATURES OF IMPORTANT RIVERS AND STREAMS.**

S. No.	Name of the River or Stream	Total Length in the District (in Km.)	Place of origin	Altitude at origin
1	River Beas	70.43	Beas Kund in Himachal Pradesh	4361.00 Mtr

Portion of the River or Stream Recommended for Mineral	Length of area recommended for mineral concession (in kilometer)	Average width of area recommended for mineral concession (in meters)	Area recommended for mineral concession (in square meter)	Mineable mineral potential (in metric tonne) (60% of total mineral potential)
River Bed	22 kilometer	400 meters	8800000	22769683.2

**12. MINERAL POTENTIAL**

Boulder (MT)	RIVER BED BAJRI (MT)	SAND(MT)	Total Mineable Mineral Potential (MT)
Nil	Nil	22769683.2	22769683.2

### **13.ANNUAL DEPOSITION**

The sudden increase in rainfall in rainy season the carrying capacity of the river increases as a result of which all the Sand Minerals carrying by the river is deposited.

The Sand beds are considered the prominent source of river borne deposits and during monsoon the stream carries heavy sediments of Sand and deposits annually on the river bed. This stream has developed a high flood plain near the confluence of rivers as during flood season.

The velocity of this stream is checked by the water of rivers and most of Sand sediment is deposited near the confluence point.

The annual replenishment in the river depends upon the velocity of the river. Annual replenishment is depended upon the period of rainy season and rainfall at different places of the flow of River. To calculate the replenishment data at this stage is very difficult. It is suggested that before considering the report for environment clearance Joint inspection Team report must be collected as per Punjab Minor Mineral rules 2013 because the regular demand of sand for the development activities in this respective areas. Before approval of the quarries is suggested that joint inspection committee report may be demanded as per Punjab Minor Mineral rules 2013.

#### **14. GENERAL RECOMMENDATION/ CONCLUSIONS**

During the preparation of the present report prominent rivers/ streams has been studied in detail, as the rest of the streams/rivers either have very insignificant annual replenishment/ approachability problem or are very narrow at most of the places and as such are not fit for grant of mineral concession for mineral based industries, however it is also important to mention here that because of the regular demand of sand, for the developmental activities in the respective areas, such streams are prone to illegal mining. It is suggested that the regularly auction of quarries meet out the mineral demand of the area subject to the approval from the joint Inspection Committee as per Punjab Minor Mineral Rules, 2013. These mineral concessions shall also reduce demand load and will be helpful to minimize illegal extraction of minerals, failure of which may result in to illegal mining at odd hours and shall be haphazard and more detrimental to the local ecology.

Irrespective of it following geoscientific considerations are also suggested to be taken into account during the river bed mining in a particular area:

- a. Abandoned stream channels or terrace and inactive floodplains may be preferred rather than active channels and their deltas and floodplains.
- b. Stream should not be diverted to form inactive channel.
- c. Mining below subterranean water level should be avoided as a

safeguard against environmental contamination and over exploitation of resources.

- d. Large rivers and streams whose periodic sediment replenishment capacities are larger, may be preferred than smaller rivers.
- e. Segments of braided river system should be used preferably falling within the lateral migration area of the river regime that enhances the feasibility of sediment replenishment.
- f. Mining at the concave side of the river channel should be avoided to prevent bank erosion. Similarly meandering segment of a river should be selected for mining in such a way so as to avoid natural eroding of banks and to promote mining on naturally building (aggrading) meander components.
- g. Continued riverbed material mining in a given segment of the river will induce seasonal scouring and intensify the erosion activity within the channel. This will have an adverse effect not only within the mining area but also both in upstream and downstream of the river course. Hazardous effects of such scouring and enhanced erosion due to riverbed mining should be evaluated periodically and avoided for sustainable mining activities.
- h. Mining area should be demarcated on the ground with Pucca pillars so as to avoid illegal, unscientific mining.
- i. The auction shall be done as per the recommendation/approval of the Sub-Divisional Level Committee as per Punjab Minor Mineral rule 2013.





