



# **DISTRICT SURVEY REPORT (DSR) 2024**

*OF*

## **KEONJHAR DISTRICT, ODISHA**

**FOR**

### **SPECIFIED MINOR MINERALS**

**(FOR PLANNING & EXPLOITING OF MINOR  
MINERAL RESOURCES)**



**As per Notification No. S.O. 3611(E) New Delhi  
25<sup>th</sup> July, 2018.**

**MINISTRY OF ENVIRONMENT, FOREST AND  
CLIMATE CHANGE (MoEF & CC)**

**COLLECTORATE, KEONJHAR**

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## PREFACE

The District Survey Report (DSR) of Keonjhar District of Odisha for Specified Minor Mineral mining was is being prepared by the district administration in compliance to the notification issued by the Ministry of Environment and Forest and Climate Change Notification no. S.O.3611 (E) NEW DELHI dated 25-07-2018. Preparation of district survey report of Specified Minor Mineral mining has been prepared in accordance with Clause II of Appendix X of the notification. Presently, it was felt necessary to incorporate some new sources as well as delete some existing sources from the least of source areas of the district survey report. Hence step was taken by the district administration to prepare the district survey report afresh considering the present situation of the minor mineral mining. Every effort has been made to cover potential building/road metal mining locations, future potential areas and over view of metal mining activities in the district with all its relevant features pertaining the geology and mineral wealth. This report will act as a compendium of available mineral sources, geological set up, environmental and ecological set up of the district.

## 1. INTRODUCTION

The Keonjhar District emerged as one of the district of Odisha on 1st January, 1948. The district is bounded by Mayurbhanj district and Bhadrak district to the east, Jajpur district to the south, Dhenkanal district and Sundargarh district to the west and West Singhbhum district of Jharkhand State to the north. Covering a geographical area of 8303 sq km, the Keonjhar district lies between 21° 1' N to 22° 10' N latitude and 85° 11' E to 86° 22' E longitude.

The whole district of Keonjhar was a princely state before its merger with Odisha. From the history it reveals that a part of the old Khijjinga territory with headquarters at Khijjinga Kota, identified with modern Khiching. It became a separate state with Jyoti Bhanja as its ruling chief sometime during the first half of the 12th century A.D.

The then State of Keonjhar comprised only the northern half of the modern district for a long time prior to the incarnation of Jyoti Bhanja as King. During the latter part of the 15th century the southern half of the district was occupied by King Govinda Bhanja under whose rule Keonjhar was extended from Singbhum in the north to Sukinda in the South and from Mayurbhanj in the East to the borders of the States of Bonai, Pallahara and Anugul in the West.

During the rule of Pratap Balabhadra Bhanja (1764–1792 A.D.) two small areas of Tillo and Jujhpada were purchased from the Zamindar of Kantajhari and were added to the district. These were recognised as parts of Keonjhar in the Sanad granted by the East India Company to Raja Janardan Bhanja in 1804. Since then, there had been no territorial changes of the district till its merger with the Province of Odisha. But after merger largely for the reasons of administrative expediency the areas of Tillo (7.51 sq.km) and Jujhpada (9.06sq.km.) were transferred to the districts of Balasore and Cuttack respectively, while a number of villages called Ambo group (14.84 sq.km.) of Balasore district were added to Keonjhar district.

Keonjhar is one of the major minerals producing districts of Odisha. Iron ore, Manganese ore, Chromite, Quartzite, Bauxite, Gold and Pyrite are the major minerals found in this district apart from minor minerals like dimension stone, Pyrophyllite , Talc-soapstone, China clay, River Sand , Road Metal and morrum.

## **2. OVERVIEW OF MINING ACTIVITIES IN THE DISTRICT.**

### **Minerals:**

#### **IRON ORE:**

The main iron ore deposits are found along the classic Bonai-Keonjhar Horse Shoe shaped synclinorium which spared over an area of about 60KmX25Km.

Hematite is the chief mineral resource of this district. Important deposits were found in Thakurani, Bolani, Joda east, Khandbhanda, Sidhmath, Belkundi, Kasia-Barapada, Bolani, Kiribura, Gurudia, Jharibahal, Dubuna, Bamebari, Murga, Palsa, Jajang, Malangtoli, Chamakpura, Gandhamardhan, Daitari, Tomka, Inganijaran, Horomoto Guali and Uliburu. Iron ore bands occur in layered BIF bands along with volcano-sedimentary rock piles known as Iron Ore Super Group. Usually, four types of ore are seen i.e. hard massive, laminated, lateritic and blue dust.

A total of 3142.70 million tonnes of iron ore resource of all categories have been assessed with 64-68% Fe in massive, 62-65% Fe in laminated, 65-68% Fe in powdery blue dust type of ore.

Besides, investigation of iron ore by the Directorate in Horomoto-Guali area has established a possible reserve of 46.75 million tonnes of iron ore of grade varying from 51.20% to 65.24% Fe.

**MANGANESE:** The Keonjhar manganese belt is a part and partial of Singhbhum Bonai belt and one of the most important manganese ore producing regions of India. this is confined to shale formation of Pre-Cambrian Iron Ore Super Group as stratiform, stratabound and lateritoid types.

Important deposits in the Keonjhar district are located in the areas of Roida-Bhadrasahi, Silijhora-Kalimati, Guruda, Chormalda, Sarkunda, Dubna Kolarudkela, Podadihi-Langini-Jharan, Lasarda, Pacheri, Balani, Baneikala, Kendudihi-Purulipada, Horomoto-Jajang, Katasahi, Joribahal, Joda west and Belkundi etc.

The reserve of manganese ore is estimated as 127.27 million tonnes.

The grade of the ore is variable from deposit to deposit as also from body to body within the same deposit. out of the total production,

about 10% to 15% forms the High Grade (more than 46% Mn), 25% to 30% Medium Grade (36-45% Mn) and the rest Low (less than 30-35% Mn) and still lower (less than 30% on Mn)

**CHROMITE:** The chromite deposits of the district are associated with the ultramafic rocks of Nuasahi, Boula and Phuinjhorhuli area. The body extends for about 3Kms in an N-S direction. It is a dyke like body dipping steeply to the east and is widest in the centre and gradually tapering towards north and south. The ultrabasic occurs as intrusive in Precambrian metamorphites as well as differentiated layered igneous complex. It has a peridotite core with subordinate amount of chromite, peripheral pyroxenite and enstatite. the ultramafites include enstatite, bonzite, pyroxenite, serpentinised dunites, talc schist, silicified dunites and chromitites with chromite loads. The chrome ore available are mostly of lumpy type.

The estimated reserve is 11.43 million tonnes with  $\text{Cr}_2\text{O}_3$  content varies from 40% to 45%.

**BAUXITE:** Industrial and chemical grade Bauxite occurs on Dholkata pahar area of the district. The area is represented by metavolcanites characterized by metatholeiitic basalt. The different flows are separated by tuffaceous shale. Outcrops of metagabbro have been noticed to the east and south east of Dholkata pahar. Apart from these minor occurrences of bauxite in pockety or poddy nature has been reported along Keonjhar-Banai belt. The occurrences has been located around Kodalia, Khajurdi Pahar, east of Kasiara and Jaladihi area.

The Dholkata Bauxite is of high alumina, high iron, low silica and low titanium grade having 60 to 70% tri-hydrated as gibbsite and rest bohemite. the predominant iron minerals are goethite and hematite occurring as colloidal bands.

A total of 5.986 million tonnes of bauxite reserve has been estimated around Dholkata pahar area of the district.

**VANADIFEROUS MANGANESE:** Deposits of vanadiferous magnetite occur in association with gabbro-anorthosite suite of rocks in the Precambrian metamorphic. A deposit of vanadiferous magnetite is seen near Phulinjhorhuli in Anandapur subdivision. The mineral occurs in a band of ultrabasic rocks about 4Km long.

**GOLD:** The occurrence of gold is reported in Telkoi and Banspal block of Keonjhar district. Several old workings of the gold in the shape of elongated trenches, deep circular pits, wells and tunnels have been recognised around Saleikena, Sirisbahal, Dublapal, Bangadiha, Odal, Gopur, Gajipur and Kusuguda etc. The area covering the gold deposits constitute the rock units belonging to Iron Ore Super Group comprising of basic lava, tuffites, basic intrusive, metagabbro, metadiorite, amphibolites, quartzite and chlorite schist. The granitic suites of rocks are intrusive into the above rock types and are represented by micro granites, fracture, shear zone and faults might have acted both as channel ways and receptacles for gold deposition in the vein quartz bodies.

Few important fire assay result done by Hutti Gold Mines shows gold values ranging from 1.8gm/tonne to 18.68gm/tonne in Gopur, traces to 5.3gm/tonne in Odal, traces to 2gm/tonne in Gajipur.

**PYROPHYLLITE:** The occurrences of pyrophyllite are stretched over a 90Km long belt extending from Rebna-Palabahal in the south to Dhobakuchuda-Balabhadrapur in the north. These are associated with the border area of Singhbhum Granite and quartzite hills such as Madrangajori, Macchakandana, Jodiaghat and south of Uchakabeda, eastern slope of Chantrabhangapahar, Dalimpur and Sidhamath area. The Pyrophyllite occurrences mentioned above are in the form of very fine flakes, typically soapy feel and associated with pyrophyllite quartz

schist, quartz tourmaline pyrophyllite rocks and quartz tourmaline pyrophyllite schist as irregular patches.

A total reserve of 12.28 million tonnes have been assessed in Keonjhar district. The average percentage of  $Al_2O_3$  is 20-23%,  $SiO_2$ -65-75%,  $Fe_2O_3$ - 0.77% and LOI-3-4%.

**QUARTZITE:** High grade quartzite mining activities are continuing near Barapada, Barang, Paharpur, Parsala area of the district. Besides, cherty and massive quartzite with 99%  $SiO_2$  are marked intermittently in the iron ore series near Rebna-Palaspal, Magarmuhan, Jaypur, Dalmaposi, Chauthia and Nawabeda area.

A total reserve of 45.68 million tonnes of quartzite has been estimated in the district. the average  $SiO_2$  content varies from 95 to 99.66%.

**CHINA CLAY:** Pockets of china clay are encountered near Judiapahar, Tarreni pokhari, Aupura, Fakirpur, Padmakesharpur, Jaypur, Kankadajodi, Adakata, Govindpur area of the district. The clay is yellowish white, gritty and occurs as pocket type.

The reserve of china clay has been estimated as 1.41 million tonnes in the area. The  $Al_2O_3$  content varies from 18.25% to 22.77%.

**DIMENSION STONE:** Singhbhum granite, dolerite dykes and ultrabasic rocks of the district are suitable for dimension stone/ decorative stones. The 150Km long Palaspanga dyke from Keonjhar to Chainbasa, the longest dyke in Asia is being used for the above purpose in view of its colour, texture, composition and hardness. These are quarried at number of places around Dhurpada and Keonjhar. A part of dyke to the east of Kaliaprasad village has been estimated to contain 500Cu.m. of dimension stone of block size 0.5mx0.5mx0.5m. Lower shale formations found near village Lunagothani was found to be suitable for decorative purpose.

However, 1606900Cu.m. of black granite, 18044200Cu.m. of Grey granite and 8379000Cu.m. of Green granite have been reported in the district.

**TALC-SOAPSTONE:** This is reported from the northern slope of hill ranges immediately south and west of Kendujhargarh and Dalimpur. The talc-schist occurs as gently undulating slabby layers underlying the Kolhan sandstone. The highly foliated talc-schist are traversed by veins of quartz as impurities. Besides these, soapstone occurrence is encountered near Dholkata, Dalangpur, NE of Sayedmulia, Suramundi, Kuladhamkuni, Sapghosara, Pithagola, Alanga area. These are locally utilized for preparation of stone ware and statues. The MgO content varies from 11.397 to 22%.

**PYRITE:** Pyrite crystals have been recorded in dark grey shaly formation underlying the Kolhan sandstone west of Balibandha on the Keonjhar-Chainbasa road. The occurrence is of no economic importance.

**GLASS SAND:** Some of the Kolhan sandstones in the northern portion of the district (near Barangam) is suitable for glass industry.

**BUILDING STONE & ROAD MATERIAL:** Granite gneisses, aplites, dolerites and quartzite are being used as road metal and in concrete mixtures. Laterite blocks are extensively used as a very common building material. All these materials are found in plenty.

**OTHER MINERALS:** A few occurrences of asbestos are encountered near Gopalpur and Ranki. Thin bands of slip fibres were marked in the peridotite body, but the economic aspect of this occurrence appears not to be viable. A patch of travertine limestone is also encountered near Asurkhol area.

The district is the major producer of iron and manganese ore of the state. Other than the above-mentioned minerals, minor minerals such

as river sand, laterite slabs, building stone/black stone/road metals, morrum, brick earth etc. are also available in the district.

### 3. GENERAL PROFILE

#### a. Administrative set up:

Sl. No	Item	Unit	Magnitude
1	Location		
	Longitude	Degree	85° 11' E to 86° 22' E
	Latitude	Degree	21° 1' N to 22° 10' N
2	Geographical area	Sq.Km.	8303
3	Sub-division	Numbers	3
4	Tahasils	Numbers	13
5	C D Blocks	Numbers	13
6	Municipalities	Numbers	4
7	NACs	Numbers	1
8	Police Stations	Numbers	25
9	Gram Panchayats	Numbers	297
10	Villages	Numbers	2123
	Inhabited	Numbers	2064
	Uninhabited	Numbers	59
11	Assembly constituencies	Numbers	6

#### b. Area and Population:

The district has an area of 8303 sq. km and 18.02 lakh of population as per 2011 census. The district accounts for 4.09 percent of the state's territory and shares 3.03 percent of the state's population. The density population of the district is 217. per sq. kms. as against 270 person per sq. km. of the state.

**c. Climate:**

The climate condition of the district is generally hot and high humidity during April to May and cold during November to December. The monsoon generally breaks during the month of July, Average annual rainfall of last three years (2021-22 to 2023-24) in the district was 1449.94 mm, which is slightly more than the normal rainfall 1487.7 mm.

**d. Agriculture:**

The production of different agriculture products during last five years is given below(in MT)

Year	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Paddy	405646	405997	519403	465015	506300	515701
Wheat	419	360	317	428	414	486
Maize	39987	40625	61605	60534	50536	72360
Mung	6311	6079	5796	4861	4246	4323
Biri	7275	7445	6518	6335	8456	8680
Kulthi	6131	6719	6846	7740	5469	9820
Til	1955	1862	2019	1880	2032	2572
Groundnut	4644	3529	5963	5921	4995	4220
Mustard	2306	2707	4032	4495	3258	4367
Potato	26135	28078	33780	37236	28900	37296
Jute	2984	2984	2662	4412	3354	3575
Sugarcane	556	316	446	805	302	453

During last five years, the total fertilizers used in the district was about

Type of fertilizer consumed/Used (MT)	Nitrogenous	Phosphatic	Pottasic	Total	Consumption in kg per Ha
2019-20	9230.635	5227.914	1468.990	15927.539	42.74
2020-21	9298.907	5117.283	1509.340	15985.530	43.13
2021-22	7956.879	5373.939	1669.106	14999.924	41.14

2022-23	8420.544	4480.403	1081.621	13982.567	36.76
2023-24	10322.882	5706.882	1226.048	17255.812	42.97

**e. Power:**

Consumption of electricity in the district during the year five years (upto July 24) and villages so far electrified during last five years is given below.

Financial Year	Consumption of Electricity (in Units)
Fy 2020-21	925.30 x10 <sup>6</sup>
Fy 2021-22	1057.46 x10 <sup>6</sup>
Fy 2022-23	1754.74 x10 <sup>6</sup>
Fy 2023-24	1856.49 x10 <sup>6</sup>
Fy 2024-25(April to July 24)	686.37 x10 <sup>6</sup>

Village Electrification during last five years

Item	No. of Villages
Electrification in completely unelectrified villages	36
Electrification in partially electrified villages	1968

**f. Transport & Communication:**

Railway route length (14-15) km	158.06
No of Rly stations and PH (14-15)	16
Forest road (17-18) km	249.98
National Highway (16-17) km	341.30
State Highway (17-18) km	52.74
Major district road (17-18) km	34.29
Other dist. road (17-18) km	885.98
Rural road (17-18) km	1945.90
Inter village road (16-17) km	3912.49
Intra village road (16-17) km	3143.74

**g. Health:**

The medical facilities are provided by different agencies like Govt., Private individuals and voluntary organizations in the district.

No of Hospitals	26 No.
Beds facilities	832 No.
Homoeopathic dispensaries	48 No.
Ayurvedic dispensaries	34 No.

Detail of the Allopathic hospitals is as below:

<b>Sl. No</b>	<b>Name of the Institutions</b>	<b>No. of hospital beds</b>
1	DHH Keonjhar	330
2	SDH Anandapur	128
3	SDH Champua	102
4	CHC Fakirpur	6
5	CHC Banspal	16
6	CHC Jhumpura	16
7	CHC Bhandra	16
8	CHC Siankul	16
9	CHC Ghatgaon	30
10	CHC Harichandanpur	16
11	CHC Salania	16
12	CHC Basudevpur	16
13	CHC Padampur	16
14	CHC Patna	16
15	CHC Udaypur	6
16	CHC Telkoi	16
17	CHC Barbil	16
18	CHC Joda	6
19	CHC Bhagamunda	6

20	Kesudarapal CHC	6
21	Hadagada OH	6
22	Hatadihi OH	6
23	Ukhunda OH	6
24	Dumuria OH	6
25	Sirigida OH	6
26	Kaliahata OH	6
	<b>Total</b>	<b>832</b>

#### h. Tourist places:

Kushaleswar Temple, Kanjipani Ghati, Keshari Kunda, Murga Mahadev Temple, Gonasika Temple, Hadagada Reservoir, Handibhanaga, Ghagra & Gundichaghagi waterfalls are the tourist spots of the district.

#### i. Forest areas:

Category of forest	Area in sq km
Reserve Forest	1834.09
Unclassified Forest	0.26
Demarcated Protected Forest (DRF)	273.64
Undemarcated Protected Forest	220.79
Other forest under Revenue Dept	768.40
<b>Total</b>	<b>3097.18</b>

**j. Education:**

Primary School (2023-24)	No. of Schools	1530
	Enrolment (No)	129573
	Pupil Teacher Ratio	35.70
Upper Primary School (2023-24)	No. of Schools	745
	Enrolment (No)	72172
	Pupil Teacher Ratio	48.4
General College	Junior	80
	Degree	38
Secondary School	No. of Schools	410
	Enrolment (No)	73866
	Pupil Teacher Ratio	----
Literacy Rate, 2011	Male	79.6
	Female	60.7
	Total	68.24

**k. Culture & Heritage:**

Keonjhar district is very much rich in its fairs and festivals like Sarhul, Sohrai, Karmapuja, Bodam, Chaitra parab or Uda parab, Makara sankranti, Nuakhai, Raja parab, Baruni jatra, Ratha jatra, Sivaratri etc. Famous folk dances are CHANGU, CHHAU, JUANG, HO etc.

**4. GEOLOGY**

The district can be broadly divided into seven geological units viz.: (i) The patchy occurrences of metamorphites belonging to Older metamorphics of Archaean age (ii) Huge batholiths of Singhbhum Granite with swarms of newer dolerites dykes in the eastern part of the district, (iii) Meta-sedimentary rocks belonging to Gorumahisani Group of Archean age in the southwestern part of the district (iv) Volcano-sedimentary sequence intruded by Bonai granite belonging to

Lower Bonai group of age ranging between Archean to Paleo-Proterozoic in the south-west and on the north-west (v) Intrusives like chromiferous ultramafics, gabbro-anorthosite, dolerite and quartz veins of Archean to Proterozoic age (vi) Sedimentary and meta-sedimentary rocks belonging to Kolhan Group ranging in age from lower to middle Proterozoic (vii) Laterites of Cenozoic age and (viii) Quaternary sediments represented by Kaimundi formation and unclassified alluvium.

The Singhbhum granite shows wide variation from highly foliated biotite-epidote granodiorite to grayish white medium grained weakly foliated to nearly massive muscovite-biotite granodiorite. It contains enclaves of Older metamorphics represented by hornblende schist, chlorite schist and meta-gabbros. However, the Keonjhar granite has more feldspar content than Mayurbhanj granite. Gorumahisani Group consists of sheared pebbly quartzite, hornblende schist and BHQ. The Volcano-sedimentary rocks of lower Bonai Group comprise of Basic Volcanics, BHQ, BHJ, ferruginous shale, quartzite, iron ore bodies and tuff with or without manganese. The chromiferous ultra-basics of Nuasahi and the mafic-ultramafic complex of Baula are rich in Cr-Fe-Ni and is probable locale for PGE. This is followed by late magmatic gabbro-anorthosite suite of rocks. The dolerite and gabbro occur as the younger intrusives. The Kolhan Group of rocks comprise of conglomerate, sandstone, shale and quartzite. The insitu laterites are wide spread in the area. The Kaimundi formation consists of sandy sticky clay impregnated with caliche and unclassified Quaternary sediments represented by black to brown clay and coarse to fine sand.

**STRATIGRAPHY:**

**The geological succession in the district is as follows:**

<b>Age</b>	<b>Formation/Group</b>	<b>Lithology</b>
Holocene		Alluvium
Late Pleistocene to Early Holocene	Kaimundi Formation	Clay with Calcareous concentration
Cainozoic		Laterite and lateritic bauxite (Lbx)
Palaeo to Meso Proterozoic	Kolhan Group	Conglomerate, sandstone and shale
Palaeo Proterozoic		Dangoaposi lava
Proterozoic (Undifferentiated)		Granophyre/ gabbro/ anorthosite
Archaean to Proterozoic		Newer Ddolerite
		Ultramafic rocks+Chromite
Archaean to Palaeo Proterozoic	Lower Bonai Group	Basalt, tuff, meta gabbro
		Granite
		Shale, tuff and manganese
		BHQ, BHJ, ferruginous shale and quartzite
		Gritty sandstone, orthoquartzite, conglomerate
Archaean	Gorumahishani Group	Hornblende schist, chlorite schist, amphibolite and meta-gabbro
		Quartzite, quartz sericite schist, cherty quartzite, fuchs site quartzite and black chert
		Quartzite, chert
		BHQ, BMQ, BCQ, BJQ

		Ferruginous shale, carbonaceous shale phyllite and mica schist
		Pebbly quartzite, gritty quartzite and quartzite
	Older Metamorphic Group	Singhbhum granite/ Hornblende Granite
		Pellitic schist, quartzite and amphibolite

### 5. DRAINAGE AND IRRIGATION PATTERN.

The district is mainly drained by the river Baitarani and tributaries barring a very small patch in the extreme south –western part, falling in Brahmani basin. The major tributaries are Kanjhari, Sita Nadi, Salandi, Mushala Nadi, Orali Nadi, Remal, Kusei, Deo Nadi, etc and these are the mostly perennial. The drainage pattern is mostly dendritic in nature. Sub-parallel drainage pattern is well developed in south-eastern part of the district. The drainage density is moderately high in western part of the district representing high hill ranges constituted mostly by iron ore group of rocks and volcanic which suggest high run off and low infiltration. Hydro geological survey and remote sensing studies have revealed that the drainage pattern in the district is controlled by the fracture system which is developed due to tectonic deformation occurred in the area in several phases.

SI. No	Name of the River	Place of Origin	Altitude at Origin	Total length in the district (in Km) (Total length)
1	2	3	4	5
1	Baitarani	Gonasika	Longitude- 21 <sup>0</sup> -31'-00" N Longitude- 85 <sup>0</sup> -33'-00"E	240Km upto Anandapur
2	Kangira	Haladi		40Km

		Pokhari		
3	Aradei	Sidha Matha	Longitude- 22 <sup>0</sup> -009'-00" N Longitude- 85 <sup>0</sup> -68'-00"E	72.40Km
4	Khairibandhan	Smimlipal R.F.	Longitude- 21 <sup>0</sup> -924'-00" N Longitude- 85 <sup>0</sup> -794'-00"E	152Km
5	Deo	Sidha Matha	Longitude- 21 <sup>0</sup> -804'-00" N Longitude- 85 <sup>0</sup> -826'-00"E	80Km
6	Kanjhari	Kanjharibani Pira	Longitude- 21 <sup>0</sup> -685'-00" N Longitude- 85 <sup>0</sup> -851'-00"E	60Km
7	Sita	Barabanki Hill	Longitude- 21 <sup>0</sup> -497'-00" N Longitude- 86 <sup>0</sup> -017'-00"E	26Km
8	Musal	Rebana R.F.	Longitude- 21 <sup>0</sup> -32'-00" N Longitude- 86 <sup>0</sup> -066'-00"E	60Km
9	Kusei	R. Bera R.F.	Longitude- 21 <sup>0</sup> -139'-00" N Longitude- 86 <sup>0</sup> -178'-00"E	80Km
10	Salandi	Banjhi Kusaghat R.F.	Longitude- 20 <sup>0</sup> -79'-00" N Longitude- 86 <sup>0</sup> -678'-00"E	144Km
11	Bhirol		Longitude- 21 <sup>0</sup> -606'-00" N Longitude- 85 <sup>0</sup> -945'-00"E	
12	Mermenda		Longitude- 21 <sup>0</sup> -958'-00" N Longitude- 85 <sup>0</sup> -775'-00"E	

## 6. LANDUSE PATTERN

Sl. No	Land use	Area in '000Ha
1	Forest Area	310
2	Misc. trees & Grooves	6
3	Permanent Pasture	20
4	Culturable Waste	26
5	Land put to Non Agril Use	70
6	Barren & Unculturable Land	93

7	Current Fallow	10
8	Other Fallow	0
9	Net Area Sown	288
10	Mining	7
	<b>Geographical Area</b>	<b>830</b>

## 7. SURFACE WATER & GROUND WATER SCENARIO

The drainage systems i.e. rivers of the district get filled with water during the monsoon and the gradually it decreases from the month of January to June of each year. In the summer season all rivers become almost dry excepting narrow flow of water within the basin.

The variation of ground water table in the district is as follows:

<b>Depth of water level (mbgl)/ Period</b>	<b>April</b>	<b>August</b>	<b>November</b>	<b>January</b>
Minimum	4.0	0.60	1.48	0.3
Maximum	10.4	5.09	7.01	13.1

## 8. RAINFALL & CLIMATIC CONDITION

The district is generally hot with high humidity during April and May and cold during December and January. The monsoon generally breaks during the month of July and continues till end of October. The temperature goes as high as up to 41.8<sup>0</sup>C in the summer and up to 6.4<sup>0</sup> C during peak winter.

The rainfall statistics of the district for last four years is given below:

Year	2021-22	2022-23	2023-24	2024-25 (30.8.24)
MONTH	(mm)	(mm)	(mm)	(mm)
APRIL	37.32	17.94	68.44	7.5
MAY	342.68	90.88	60.83	96.94
JUNE	154.15	137.65	212.52	109.64
JULY	232.85	326.95	274.4	208.21
AUGUST	178.73	404.79	392.42	299.73
SEPT	361.19	175.46	266.13	0
OCT	88.15	87.35	128	0
NOV	27.8	0	10.28	0
DEC	60.21	0	25.52	0
JAN	32.66	0.61	29.3	0
FEB	17.58	0	6.13	0
MARCH	0.43	51.86	49.06	0
<b>TOTAL</b>	<b>1533.75</b>	<b>1293.04</b>	<b>1523.03</b>	<b>722.02</b>

#### 9. DETAILS OF MINING LEASES OF ROAD METAL:

Attached as Annexure 1

#### 10. DETAILS OF ROYALTY COLLECTED

##### Year-wise Calculation of Royalty (Rs)

Sl.No	Name of Tahasil	2021-22	2022-23	2023-24
1	Barbil	0	0	0
2	Patna	9593997.00	14513837.00	20400810.64
3	Saharapada	0	0	0
4	Anandpur	368864.00	682148.00	682148.00
5	Banspal	2759035.00	18506049.00	18030979.00
6	Champua	3242671.00	4577486.00	2837370.00
7	Ghasipura	16093810.00	7343664.00	1610898.00
8	Ghatagaon	4221742.00	12311803.00	1789736.00
9	Harichandanpur	78559.00	271266.00	0

10	Hatadihi	0	0	0
11	Jhumpura	2655630.00	0	0
12	Keonjhar	4986061.00	14622333.00	17864847.00
13	Telkoi	428919.00	1866089.00	1866089.00
	<b>Total</b>	<b>4,44,29,288.00</b>	<b>7,46,94,675.00</b>	<b>6,50,82,877.64</b>

### 11. DETAILS OF PRODUCTION OF MINOR MINERAL

#### Year wise Production of Road metal in cum

Sl. No	Name of Tahasil	2021-22	2022-23	2023-24
1	Barbil	0	0	0
2	Patna	9593997.00	14513837.00	20400810.64
3	Saharapada	0	0	0
4	Anandpur	368864.00	682148.00	682148.00
5	Banspal	2759035.00	18506049.00	18030979.00
6	Champua	3242671.00	4577486.00	2837370.00
7	Ghasipura	16093810.00	7343664.00	1610898.00
8	Ghatagaon	4221742.00	12311803.00	1789736.00
9	Harichandanpur	78559.00	271266.00	0
10	Hatadihi	0	0	0
11	Jhumpura	2655630.00	0	0
12	Keonjhar	4986061.00	14622333.00	17864847.00
13	Telkoi	428919.00	1866089.00	1866089.00
	<b>Total</b>	<b>4,44,29,288.00</b>	<b>7,46,94,675.00</b>	<b>6,50,82,877.64</b>

### 12. MINERAL MAP OF THE DISTRICT

Attached as Plate No 4.

### 13. LIST OF LOI HOLDERS ALONG WITH VALIDITY

Attached as Annexure I

**14. TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT**

Total mineral reserve of road metal/building stone/black stone/white stone is 66,82,607.14 cum which may change after detail investigation.

Details of the potential areas submitted as Annexure II.

**15. QUALITY/GRADE OF MINERAL**

Road metal/building metal of the district is very much suitable for various construction purposes after its crushing and screening. The in-situ rocks are fractured making these unsuitable for decorative purpose.

**16. USE OF MINERAL**

Road metal/building metal of the district is used mainly for various construction purposes like road making, concrete making, dams etc.

**17. DEMAND & SUPPLY OF THE MINERAL**

The tentative annual demand is to the tune of 5,00,000 cum of road metal and is mainly supplied from different tahasils of the district and adjoining districts of Mayurbhanj and Sundergarh.

**18. MINING LEASES MARKED ON THE MAP OF THE DISTRICT.**

Attached as Plate No 5.

**19. DETAILS OF AREAS WHERE THERE IS A CLUSTER OF MINING LEASES**

Not applicable

**20. DETAILS OF ECO-SENSITIVE AREA**

Eco-sensitive Zone has been identified around Hadagarh Wildlife Sanctuary and submitted to the Ministry of Environment & Forests and Climate Change, Govt. of India, New Delhi through Govt. of Odisha, Forest & Environment Department for final Notification which is being awaited. In absence of Notification of Eco-sensitive Zone as per Hon'ble Supreme Court of India direction the 10 km. radius from boundary of Hadagarh Wildlife Sanctuary is being treated as Eco-sensitive Zone.

Further, as per direction of the Hon'ble Supreme Court of India, no mining and quarry activities will be allowed within 1 km. radius of Hadagarh Wildlife Sanctuary.

**21. IMPACT ON THE ENVIRONMENT (AIR, WATER, NOISE, SOIL FLORA & FAUNAL, LAND USE, AGRICULTURE, FOREST ETC.) DUE TO MINING****Activities attributed to Mining: -**

Generally, the environment impact can be categorized as either primary or secondary. Primary Impacts are those, which are attributed directly by the project. Secondary impacts are those which are indirectly induced and typically include the associated investment and changed pattern of social and economic activities by the proposed action.

The impact has been ascertained for the project assuming that the pollution due to mining activity has been completely spelled out under the base line environmental status for the entire ROM which is proposed to be exploited from the mines.

**Impact on Ambient Air**

Mining operation are carried out by opencast manual, semi mechanized/ mechanized methods generating dust particles due to various activities likes, excavation, loading, handling of mineral and transportation. The air quality in the mining areas depends upon the nature and concentration of emissions and meteorological conditions.

The major air pollutants due to mining activities include: -

- Particulate matter (dust) of various sizes.
- Gases, such as sulphur dioxide, oxides of nitrogen, carbon monoxide etc from machine & vehicular exhaust.

Dust is the single air pollutant observed in the open cast mines. Diesel operating drilling machines, blasting and movement of machineries/ vehicles produce NO<sub>x</sub>, SO<sub>2</sub> and CO emissions, usually at low levels. Dust can be of significant nuance surrounding land user and potential health risk in some circumstances.

**Water Impact**

Sometimes the mining operation leads to intersect the water table causing ground water depletion. Due to the interference with surface water sources like river, nallah etc drainage pattern of the area is altered.

**Noise Impact**

Noise pollution mainly due to operation of machineries and occasional plying of machineries. These actives will create noise pollution in the surrounding area.

**Impact on Land environment**

The topography of the area will change certain changes due to mining activity which may cause some alteration to the entire eco system.

**Impact on Flora & Fauna**

The impact on biodiversity is difficult to quantify because of its diverse and dynamic characteristics.

Mining activities generally result in the deforestation, land degradation, water, air and noise pollution which directly or indirectly affect the faunal and flora status of the project area.

However, occurrence and magnitude of these impacts are entirely dependent upon the project location, mode of operation and technology involved.

**22. REMEDIAL MEASURES TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT: -****Air**

Mitigation measures suggested for air pollution controls are to be based on the baseline ambient air quality of the project/cluster area and would include measures such as:

- Dust generation shall be reduced by using sharp teeth of shovels.
- Wet drilling shall be carried out to contain the dust particles.
- Controlled blasting techniques shall be adopted.
- Water spraying on haul roads, service roads and overburden dumps will help in reducing considerable dust pollution.
- Proper and regular maintenance of mining equipment's have to be undertaken.
- Transport of materials in trucks are to be covered with tarpaulin.
- The mine pit water can be utilized for dust suppression in and around mine area.
- Information on wind direction and meteorology are to be considered during planning, so that pollutants, which cannot be fully suppressed by engineering techniques, will be prevented from reaching the nearby agricultural land, if any.

- Comprehensive greenbelt around overburden dumps and periphery of the mining projects/clusters has to be carried out to reduce to fugitive dust transmission from the project area in order to create clean & healthy environment.

**Water**

- Construction of garland drains and settling tanks to divert surface run off of the mining area to the natural drainage.
- Construction of checks dams/ gully plugs at strategic places to arrest silt wash off from broken up area.
- Retaining walls with weep hole are to be constructed around the mine boundaries to arrest silt wash off.
- The mined out pits shall be converted in to the water reservoir at the end of mine life. This will help in recharging ground water table by acting as a water harvesting structure.
- Periodic analysis of mine pit water and ground water quality in nearby villages are to be undertaken.
- Domestic sewage from site office & urinals/latrines provided within ML/QL areas is to be discharged in septic tank followed by soak pits.

**NOISE**

- Periodic maintenance of machineries, equipment shall be ensured to keep the noise generated within acceptable limit.
- Development of thick green belt around mining/cluster area, haul roads to reduce the noise.
- Provision of earplugs to workers exposed to high noise generating activities like blasting, excavation site etc. Worker and operators at work sites will be provided with earmuffs.
- Conducting periodical medical checkup of all workers for any noise related health problems.
- Proper training to personnel to create awareness about adverse noise related effects.

- Periodic noise monitoring at locations within the mining area and nearby habitations to assess efficacy of adopted control measures.
- During blasting optimum spacing, burden and charging of holes will be made under the supervision of competent qualified mines foreman, mate etc.

**Biological Environment**

- Development of green belt/gap filling saplings in the safety barrier left around the quarry area/ cluster area.
- Carrying out thick greenbelt with local flora species predominantly with long canopy laves on the inactive mined out upper benches.
- Development of dense poly culture plantation using local floral species in the mining areas at conceptual stage if the mine is not continued much below the general ground level.
- Adoption of suitable air pollution control measures as suggested above.
- Transport of materials in trucks covered with tarpaulin.

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

As per statute all mines/quarries are to be properly reclaimed before final closure of the mine. Reclamation of exhausted mines are planned to be undertaken in below three possible means:

1. If, substantial amount of waste is there, the exhausted quarry can be fully or partly backfilled using the stored waste. The backfilled areas are to be brought under plantation of local species.
2. If the generation of waste is much less as in the case of minor mineral mining, the exhausted quarries can be reclaimed by
  - a. Plantation on the broken-up surface if the depth of quarry is not much below the surrounding surface level.

- b. Converted to water reservoir after stabilization of the slopes if the exhausted quarry continues much below the surrounding surface level. It is preferred to cordon the water reservoir either through wire fencing or retaining wall with plantation from the safety point of view.

Most of the quarry/mining lease areas are yet to be exhausted from ore point of view. Hence, reclamation would be taken up only after exhaustion of the ore/mineral content from these areas. The exhausted minor mineral quarries of the district have been converted to water reservoirs.

#### **24. RISK ASSESSMENT & DISASTER MANAGEMENT PLAN**

The only risk involved related to mining of minor mineral excepting natural calamities is slope failure and probable accidents due to high and ill maintained bench walls. This can only be addressed through making of regular benches and undertaking mining in benching pattern. The disaster management plan (DMP) is supposed be a dynamic, changing, document focusing on continual improvement of emergency response planning and arrangements.

The disaster management plan is to be aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities. For effective implementation of the disaster management plan, it should be widely circulated through rehearsal/induction conducted by the respective department from time to time.

##### **General responsibilities of employees' during an emergency:**

During an emergency, it becomes more enhanced and pronounced when an emergency warning is raised, the worker in charge, should adopt safe and emergency shut down and attend to any prescribed duty. If no such responsibility is assigned, the workers should adopt a safe course to assembly point and wait instructions. He should not resort to spread

panic. On the other hand, he must assist emergency personnel towards objectives of DMP.

**Co-ordination with local authorities:**

The Mine Manger who is responsible for emergency will always keep a jeep ready at site. In case of any eventuality, the victim will be taken to the nearby hospitals after carrying out the first aid at the site. The Manger should collect and have adequate information of the nearby hospitals, fire station, police station, village panchayat heads, taxi stands, medical shops, district revenue authorities etc. and use them efficiently during the case of emergency.

**25. DETAILS OF THE OCCUPATION HEALTH ISSUES IN THE DISTRICT. (LAST FIVE- YEAR DATA OF NUMBER OF PATIENTS OF SILICOSIS & TUBERCULOSIS IS ALSO NEEDS TO BE SUBMITTED): -**

As per the guidelines of the Mine Rules 1995, occupational health safety has been stipulated by the ILO/WHO. The proponents will take necessary precautions to fulfil the stipulations. Normal sanitary facilities have to be provided within the lease area. The management will carry out periodic health checkup of workers.

Occupational hazards involved in mines are related to dust pollution, noise pollution, blasting and injuries from moving machineries & equipment and fall from high places. DGMS has given necessary guidelines for safety against these occupational hazards. The management has to strictly follow these guidelines.

All necessary first aid and medical facilities are to be provided to the workers. The mine shall be well equipped with personal protective equipment (PPE). Further, all the necessary ported equipment such as helmet, safety goggles, earplugs, earmuffs etc are to be provided to mine workers as per Mines Rules. All operators and mechanics are to be trained to handle firefighting equipment.

**Details of occupational health issues in the district since last 5 years.**

Incidence of Patients of Tuberculosis.

<b>Year</b>	<b>Total TB Cases Notified</b>	<b>Total Silicosis Notified</b>
2019	2,675	0
2020	2,646	0
2021	2,854	0
2022	3,422	0
2023	3,477	0
<b>Total</b>	<b>15,074</b>	<b>0</b>

There is no case of Silicosis found in the district within the time frame mentioned above.

**26. PLANTATION OF GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT:**

As most of the minor mineral mines/quarries of the district are yet to be exhausted of their mineral content no sort of reclamation measures including plantation has been undertaken excluding gap plantation of local species in the peripheral safety zones of the quarries/ clusters and in some of the haul roads.

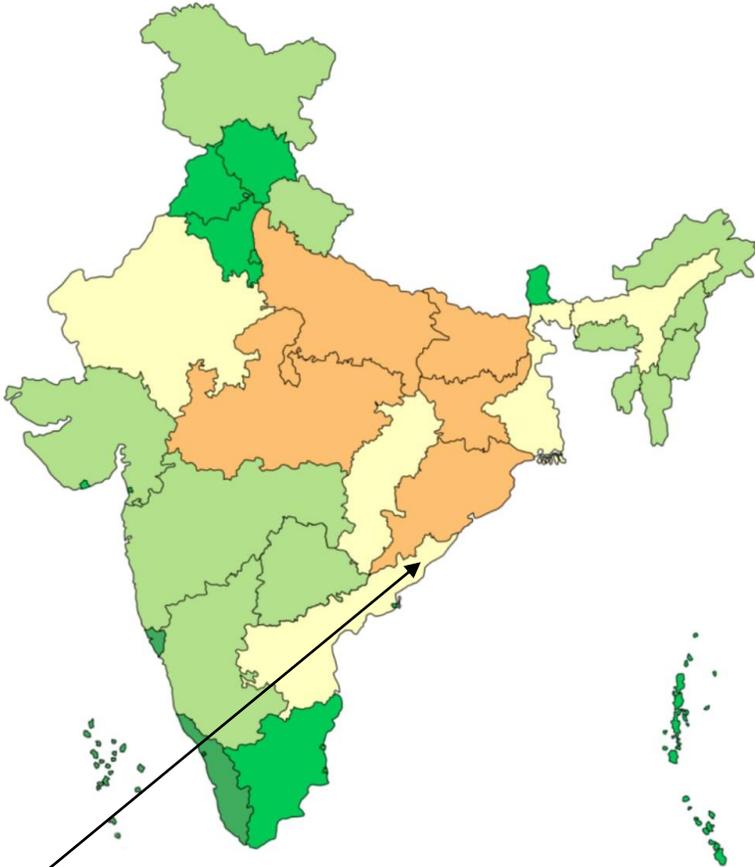
**27. CONCLUSION:**

The District Survey Report for Specified Minor Mineral in respect of Keonjhar District in accordance with Appendix-X, Para-7 (iii) (a) of S.O. 3611(E) dt. 25.07.2018 of Ministry of Environment, Forest and Climate Change, New Delhi, Enforcement & Monitoring Guideline for Sand Mining-2020. To meet the requirement of minerals in the present scenario, it is proposed to identify such potential areas at certain interval and get the data bank of DSR to be updated regularly. The mining activity in any area is on one hand bring revenue and

employment (Direct and indirect) and on other hand if not done properly potential pollution and ecological imbalance increases, the ability of the ecosystem can also be reduced. Particulate matter transported by the wind as a result of excavations, blasting, transportation of materials, heavy equipment used raise these particulate levels; and Gas emissions from the combustion of fuels in stationary and mobile sources, explosions, and mineral processing. All these activities indirectly affected the biodiversity of area. Larger potential and smaller areas have been identified in Keonjhar District on the basis of geological study carried out during field observation, which can be considered for mining concession after all the parameters for statutory clearances are verified by consulting with concerned authorities. The DSR is being submitted to SEIAA, Odisha, Bhubaneswar for necessary evaluation and approval.

# INDEX MAP

**INDIA**



**ODISHA**

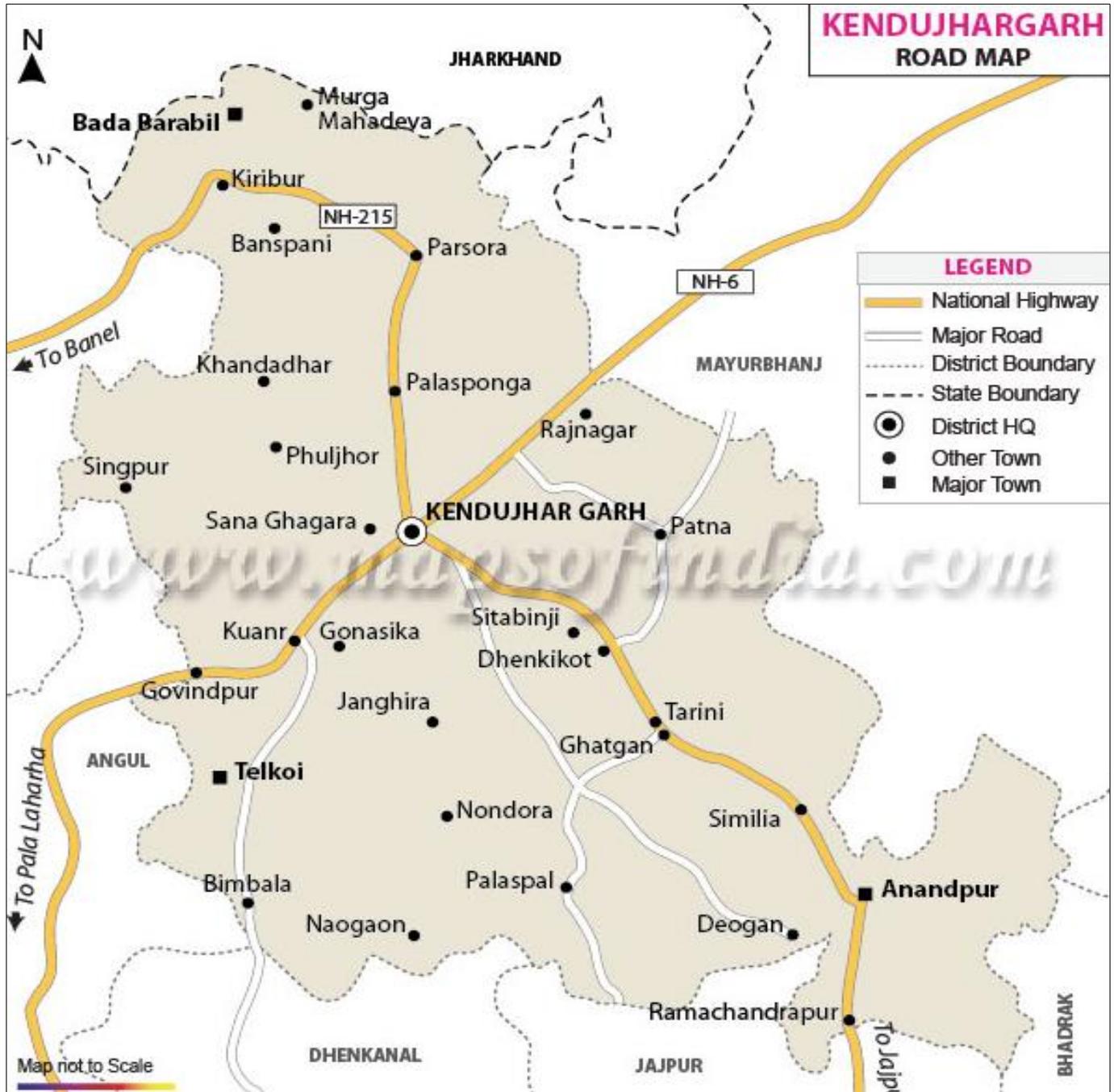


**KEONJHAR**

# MAP SHOWING THE TAHASILS OF KEONJHAR DISTRICT.



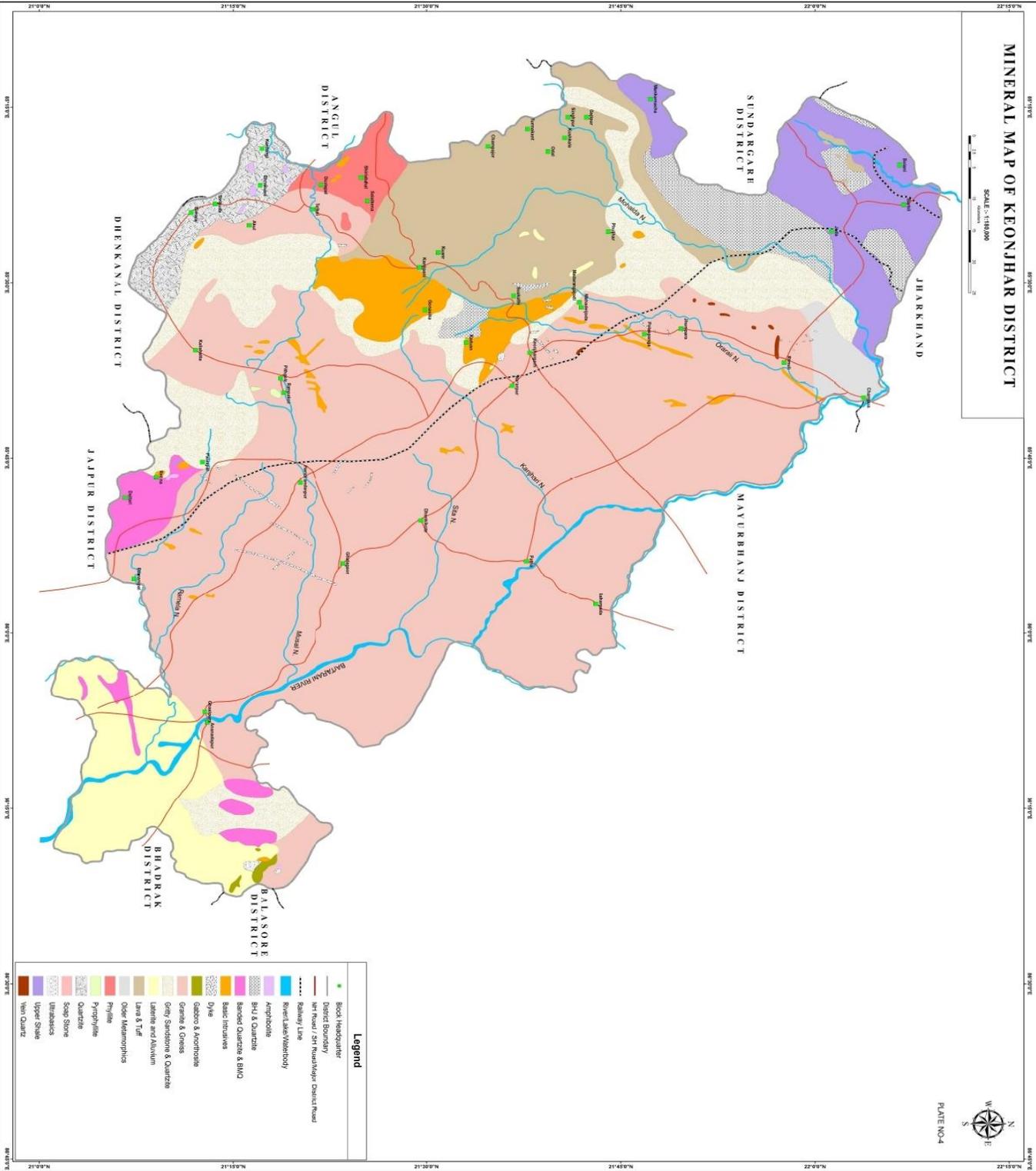
# MAP SHOWING THE MAJOR ROADS OF KEONJHAR DISTRICT



# MINERAL MAP OF KEONJHAR DISTRICT

MINERAL MAP OF KEONJHAR DISTRICT

SCALE - 1:100,000



**Legend**

- Block Headquarter
- District Boundary
- Ner Road / Sri Karmajyoti District Road
- Railway Line
- River/Lake/Waterbody
- Amphibole
- BtH & Quartzite
- Sandstone Quartzite & BtH
- Basal Ironstones
- Dyke
- Gedron & Amphibole
- Granite & Gneiss
- Grny. Sandstone & Quartzite
- Lignite and Alluvium
- Other Metamorphics
- Lava & Tuff
- Pyrophyllite
- Quartzite
- Soap Stone
- Ultrabases
- Upper Shale
- Vein Quartz

PLATE NO.4















144	38	35	8	54	144	144	144	111	97	111	50	8	49	37	35	27	128	144	144	144	144	78	144	144	99
###	1169/P	1167/P	###	1165/P	###	###	###	1160/P	1149/P	1148/P	1146/P	1145/P	1143/P	1327/P	1326/P	1325/P	###	###	###	###	###	1310/P	###	###	###

Champua

RARUANGODA PYROPHYLLITE MINES

EXISTING

CAPTIVE

78	146	47	78	78	78	47	5	5	48	49	144	147	60	144	144	145	145	38	60	60	60	144	144
1199/1670	1199/1759	1199/1758	1227/P	1226/P	1199/P	1199/P	###	###	1190/P	###	###	###	###	###	###	1183/P	1181/P	1177/P	###	###	###	###	###

62.780 Acres or 25.406 Hectares

Quartzite

N/A

27	45	144	144	144	128	131	144	127	120	111	38	128	26	99	27	8	146	43	141/43	144	60
582/P	561	559/P	558/P	557	556/P	555/P	554	553	552/P	551/P	549/P	547/P	546/P	1307/1763	1309/1581	1166/1533	1294/1548	1294/1761	1286/1783	1187/1757	1187/1756

60	145	138	128	144	146	120	4	35	50	128	120	38	59	96	26	141/26	128	38	37	49	8	50	147	144	144	144	144
###	1183/P	###	###	###	1551/P	1637/P	611/P	609/P	607/P	603/P	602/P	601/P	600/P	599/P	598/P	597/P	596/P	595/P	594	593	592	591	590	589	588	587/P	583/P

Banspal

BHALIADIHI PYROPHYLLITE MINES

EXISTING

CAPTIVE

41	41	41	41	40	10	40	34	34	16	40	40	40	40	518	513	504	503	502	501	500	498	496	495	494	492	422	421	420	419	418	414	413	412	411	410	14	120	99	78	144
680	44	527	526	525	524	523	522	521	520	519	518	513	504	503	502	501	500	498	496	495	494	492	422	421	420	419	418	414	413	412	411	410	409	###	###	###	###	###	###	###

44.4871 Hectares

Pyrophyllite & Quartzite

N/A









			21	141		N/A	N/A	N/A	N/A	N/A	N/A
			21	142		N/A	N/A	N/A	N/A	N/A	N/A
			21	143		N/A	N/A	N/A	N/A	N/A	N/A
			21	144		N/A	N/A	N/A	N/A	N/A	N/A
			21	145		N/A	N/A	N/A	N/A	N/A	N/A
			17	160		N/A	N/A	N/A	N/A	N/A	N/A
			15	161		N/A	N/A	N/A	N/A	N/A	N/A
3	KEONJHAR SADAR	MADRANGAJURI PYROPHYLLITE MINES	150	1051	M.L area 130.50 Acres or 52.81	N/A	N/A	N/A	N/A	N/A	N/A
4	Banspal	MEDINAPURA PYROPHYLLITE MINES	47	139	144.068 Hectres Or 356.00 Acres	N/A	N/A	N/A	N/A	N/A	N/A
			46	140		N/A	N/A	N/A	N/A	N/A	N/A
			47	141		N/A	N/A	N/A	N/A	N/A	N/A
			8	142		N/A	N/A	N/A	N/A	N/A	N/A
			8	143		N/A	N/A	N/A	N/A	N/A	N/A
			47	144		N/A	N/A	N/A	N/A	N/A	N/A
			47	145		N/A	N/A	N/A	N/A	N/A	N/A
			47	162		N/A	N/A	N/A	N/A	N/A	N/A
			47	165		N/A	N/A	N/A	N/A	N/A	N/A
			47	166		N/A	N/A	N/A	N/A	N/A	N/A
			47	169		N/A	N/A	N/A	N/A	N/A	N/A
			47	170		N/A	N/A	N/A	N/A	N/A	N/A
			47	171		N/A	N/A	N/A	N/A	N/A	N/A
			47	172		N/A	N/A	N/A	N/A	N/A	N/A
			47	173		N/A	N/A	N/A	N/A	N/A	N/A
			47	174		N/A	N/A	N/A	N/A	N/A	N/A
			47	175		N/A	N/A	N/A	N/A	N/A	N/A
			47	176		N/A	N/A	N/A	N/A	N/A	N/A
			47	177		N/A	N/A	N/A	N/A	N/A	N/A
			44	178		N/A	N/A	N/A	N/A	N/A	N/A
	46	140/585	N/A	N/A		N/A	N/A	N/A	N/A		
	Keonjhar Sadar	SIDHAMATHA PYROPHYLLITE MINES	35	7		N/A	N/A	N/A	N/A	N/A	N/A
			32	79		N/A	N/A	N/A	N/A	N/A	N/A
			415	1681		N/A	N/A	N/A	N/A	N/A	N/A
			458	1756		N/A	N/A	N/A	N/A	N/A	N/A
			459	1759		N/A	N/A	N/A	N/A	N/A	N/A
			460	1760		N/A	N/A	N/A	N/A	N/A	N/A
			460	1762		N/A	N/A	N/A	N/A	N/A	N/A
			460	1763		N/A	N/A	N/A	N/A	N/A	N/A
			460	1764		N/A	N/A	N/A	N/A	N/A	N/A
			415	1768		N/A	N/A	N/A	N/A	N/A	N/A
			460	1769		N/A	N/A	N/A	N/A	N/A	N/A
			460	1770		N/A	N/A	N/A	N/A	N/A	N/A
		415	1771	N/A	N/A	N/A	N/A	N/A	N/A		
		460	1832	N/A	N/A	N/A	N/A	N/A	N/A		
		341	1833	N/A	N/A	N/A	N/A	N/A	N/A		
		341	1834	N/A	N/A	N/A	N/A	N/A	N/A		
		415	1835	N/A	N/A	N/A	N/A	N/A	N/A		

			415	1839		N/A	N/A	N/A	N/A	N/A	N/A
			415	1840		N/A	N/A	N/A	N/A	N/A	N/A
			415	1841		N/A	N/A	N/A	N/A	N/A	N/A
			460	1842		N/A	N/A	N/A	N/A	N/A	N/A
			460	1843		N/A	N/A	N/A	N/A	N/A	N/A
			458	1844		N/A	N/A	N/A	N/A	N/A	N/A
			458	1845		N/A	N/A	N/A	N/A	N/A	N/A
			458	1846		N/A	N/A	N/A	N/A	N/A	N/A
			458	1847		N/A	N/A	N/A	N/A	N/A	N/A
			460	1848		N/A	N/A	N/A	N/A	N/A	N/A
			460	1849		N/A	N/A	N/A	N/A	N/A	N/A
			460	1850		N/A	N/A	N/A	N/A	N/A	N/A
			459	1851		N/A	N/A	N/A	N/A	N/A	N/A
			460	1852		N/A	N/A	N/A	N/A	N/A	N/A
			460	1853		N/A	N/A	N/A	N/A	N/A	N/A
			460	1854		N/A	N/A	N/A	N/A	N/A	N/A
			460	1855		N/A	N/A	N/A	N/A	N/A	N/A
			460	1856		N/A	N/A	N/A	N/A	N/A	N/A
			460	1857		N/A	N/A	N/A	N/A	N/A	N/A
			460	1858		N/A	N/A	N/A	N/A	N/A	N/A
			460	1859		N/A	N/A	N/A	N/A	N/A	N/A
			460	1860		N/A	N/A	N/A	N/A	N/A	N/A
			460	1861		N/A	N/A	N/A	N/A	N/A	N/A
			460	1862		N/A	N/A	N/A	N/A	N/A	N/A
			459	1863		N/A	N/A	N/A	N/A	N/A	N/A
			460	1864		N/A	N/A	N/A	N/A	N/A	N/A
			458	1865		N/A	N/A	N/A	N/A	N/A	N/A
			460	1866		N/A	N/A	N/A	N/A	N/A	N/A
			458	1868		N/A	N/A	N/A	N/A	N/A	N/A
			460	1919		N/A	N/A	N/A	N/A	N/A	N/A
5	Banspal	AMBADAHARA PYROPHYLLITE MINES	42	37	64.26 acres or 26.006 Hectars	N/A	N/A	N/A	N/A	N/A	N/A
			42	40							
				41							
6	Banspal	NITIGOTHA PYROPHYLLITE MINES	15	4	3.920 Hectares	N/A	N/A	N/A	N/A	N/A	N/A
			15	5							
7	Keonjhar Sadar	TIKARAPADA PYROPHYLLITE MINES	274	1050	M.L area 67.139 Hectares	N/A	N/A	N/A	N/A	N/A	N/A
			274	1142							
			43	1273/P		N/A	N/A	N/A	N/A	N/A	N/A
			29	1284/P		N/A	N/A	N/A	N/A	N/A	N/A
			75	1285		N/A	N/A	N/A	N/A	N/A	N/A
			75	1286		N/A	N/A	N/A	N/A	N/A	N/A
			96	1287/P		N/A	N/A	N/A	N/A	N/A	N/A
			96	1288/P		N/A	N/A	N/A	N/A	N/A	N/A
			20	1293/P		N/A	N/A	N/A	N/A	N/A	N/A
			43	1294/P		N/A	N/A	N/A	N/A	N/A	N/A
			144	1295/P		N/A	N/A	N/A	N/A	N/A	N/A
			147	1296/P		N/A	N/A	N/A	N/A	N/A	N/A







			41	44		N/A	N/A	N/A	N/A	N/A	N/A	
			41	680		N/A	N/A	N/A	N/A	N/A	N/A	
			41	681		N/A	N/A	N/A	N/A	N/A	N/A	
			40	622		N/A	N/A	N/A	N/A	N/A	N/A	
			41	675		N/A	N/A	N/A	N/A	N/A	N/A	
10	Hatadihi	SIADIMALIA KHA PYROPHYLLITE MINES	8	404	9.035 Acres or 3.656 Hectares	N/A	N/A	N/A	N/A	N/A	N/A	
			199	405		N/A						
			27	412		N/A						
			18	413		N/A						
			52	414		N/A						
			51	419		N/A						
			116	420		N/A						
			75	421		N/A						
			18	422		N/A						
			93	551		N/A						
			116	552		N/A						
			116	553		N/A						
			104	554		N/A						
			68	555		N/A						
			21	561		N/A						
			40	562		N/A						
			93	562/698		N/A						
			8	420/728		N/A						
11	Harichandapur	REBENA R.F PYROPHYLLITE MINES	Rebena R.	Rebena R.F	3.5936 Hectares or 8.88 Acres	N/A	N/A	N/A	N/A	N/A	N/A	
						N/A	N/A	N/A	N/A	N/A	N/A	
						N/A	N/A	N/A	N/A	N/A	N/A	
						N/A	N/A	N/A	N/A	N/A	N/A	
						N/A	N/A	N/A	N/A	N/A	N/A	
			47	24	M.L area 179.20 Acres or 72.520 Hectres	N/A	N/A	N/A	N/A	N/A	N/A	
			44	35		N/A	N/A	N/A	N/A	N/A	N/A	
			47	57		N/A	N/A	N/A	N/A	N/A	N/A	
			46	58		N/A	N/A	N/A	N/A	N/A	N/A	
			46	59		N/A	N/A	N/A	N/A	N/A	N/A	
			46	60		N/A	N/A	N/A	N/A	N/A	N/A	
			46	61		N/A	N/A	N/A	N/A	N/A	N/A	
			15	62		N/A	N/A	N/A	N/A	N/A	N/A	
			17	63		N/A	N/A	N/A	N/A	N/A	N/A	
			27	64		N/A	N/A	N/A	N/A	N/A	N/A	
			44	26		N/A	N/A	N/A	N/A	N/A	N/A	
			44	16		N/A	N/A	N/A	N/A	N/A	N/A	
			47	17		N/A	N/A	N/A	N/A	N/A	N/A	
			47	22		N/A	N/A	N/A	N/A	N/A	N/A	
			47	23		N/A	N/A	N/A	N/A	N/A	N/A	
			47	56		N/A	N/A	N/A	N/A	N/A	N/A	
			47	65		N/A	N/A	N/A	N/A	N/A	N/A	
			47	66		N/A	N/A	N/A	N/A	N/A	N/A	
47	67	N/A	N/A	N/A	N/A	N/A	N/A					

12	Banspal	MEDINAPURA PYROPHYLLITE MINES	40	637	M.L area 179.20 Acres or 72.520 Hectres	N/A	N/A	N/A	N/A	N/A	N/A
			40	638		N/A	N/A	N/A	N/A	N/A	N/A
			40	639		N/A	N/A	N/A	N/A	N/A	N/A
			38	640		N/A	N/A	N/A	N/A	N/A	N/A
			40	641		N/A	N/A	N/A	N/A	N/A	N/A
			40	642		N/A	N/A	N/A	N/A	N/A	N/A
			40	643		N/A	N/A	N/A	N/A	N/A	N/A
			40	644		N/A	N/A	N/A	N/A	N/A	N/A
			40	645		N/A	N/A	N/A	N/A	N/A	N/A
			40	646		N/A	N/A	N/A	N/A	N/A	N/A
			40	647		N/A	N/A	N/A	N/A	N/A	N/A
			40	648		N/A	N/A	N/A	N/A	N/A	N/A
			40	649		N/A	N/A	N/A	N/A	N/A	N/A
			40	650		N/A	N/A	N/A	N/A	N/A	N/A
			40	651		N/A	N/A	N/A	N/A	N/A	N/A
			40	651/727		N/A	N/A	N/A	N/A	N/A	N/A
			40	647/728		N/A	N/A	N/A	N/A	N/A	N/A
			40	646/729		N/A	N/A	N/A	N/A	N/A	N/A
			40	645/730		N/A	N/A	N/A	N/A	N/A	N/A
			41	634		N/A	N/A	N/A	N/A	N/A	N/A
			38	635		N/A	N/A	N/A	N/A	N/A	N/A
			41	636		N/A	N/A	N/A	N/A	N/A	N/A
			38	712		N/A	N/A	N/A	N/A	N/A	N/A
			38	670		N/A	N/A	N/A	N/A	N/A	N/A
			40	1		N/A	N/A	N/A	N/A	N/A	N/A
			40	652		N/A	N/A	N/A	N/A	N/A	N/A
			40	653		N/A	N/A	N/A	N/A	N/A	N/A
			40	654		N/A	N/A	N/A	N/A	N/A	N/A
			40	655		N/A	N/A	N/A	N/A	N/A	N/A

Patta Lands/Khatedairi Land(Existing/Proposed)

Owner	Sy No.	Area	District	Tahasil	Village	Total reserve(MT)	Total Mineral to be mined(MT)
De-Siltation Location (lakes/ponds/dams etc.(Existing/Proposed))							

1	2	3	4	5	6	7	8	9	10	11
Name of reservoir /Dams				Maintain/Collected by state Government/PSU etc.	Location	District	Tahasil	Village	Size(Ha)	Quantity(MT/Year)
Not applicable for Keonjhar District										

d) M-Sand Plants:

Plant Name	Owner	District	Tahasil	Village	Geo-Location	Quantity Tonnes/Ann m	Existing/Proposed
Not applicable for Keonjhar District							



















  
Executive Engineer, Irrigation Division  
Keonjhar

  
Superintendent Engineer, Irrigation Division  
Anandapur

  
Mining Officer Cum Competent Authority  
Keonjhar Sub division (Member Convenor)

  
Mining Officer Cum Competent Authority  
Anandapur Sub-Division

  
Mining Officer Cum Competent Authority  
Champua Sub-Division

  
Geologist  
JDG Office, Keonjhar

  
Deputy Director of Mines  
Joda

  
Deputy Director of Mines  
Keonjhar

  
ACF  
Sader Sub-Division Keonjhar

  
ACF  
Anandapur Sub-Division Keonjhar

  
ACF  
Champua Sub-Division Keonjhar

  
Regional Officer  
SPCB, Keonjhar

  
Sub Collector  
Anandapur

  
Sub Collector  
Keonjhar

  
Sub Collector  
Champua

  
Collector Cum District Magistrate  
Keonjhar