



**DISTRICT SURVEY REPORT (DSR)**

**OF**

**JAJPUR DISTRICT, ODISHA.**

**FOR**

**KHONDALITE**

**(FOR PLANNING & EXPLOITATION OF SPECIFIED MINOR MINERAL RESOURCES)**

ODISHA

JAJPUR



**As per Notification No. S.O. 3611(E) New Delhi**

**dated 25<sup>th</sup> July 2018 of**

**Ministry of Environment, Forest & Climate Change**

**(MoEF & CC)**

**COLLECTORATE JAJPUR**

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**PREAMBLE**

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, the preparation of district survey report of road metal/building stone mining has been prepared in accordance with Clause II of Appendix X of the notification. Every effort has been made to cover Khondalite mining locations, future potential areas and overview of Khondalite mining activities in the district with all its relevant features pertaining to geology and mineral wealth. This report will act as a compendium of available mineral resources, geological set up, environmental and ecological set up of the district and is based on data of various departments like Revenue, Water Resources, Forest, Geology and Mining in the district as well as statistical data uploaded by various state Government departments. The main purpose of preparation of District Survey Report is to identify the mineral resources and developing the mining activities along with other relevant data of the District.

**1. INTRODUCTION**

Jajpur District was formed by 'Jajati Keshari', the Somavanshi King in early 10th Century. The District takes its name from its head quarter town, Jajpur.

The history of Jajpur dates back to the prehistoric times. The name Jajpur itself a testimony to this. Some scholars attribute it to the word Yajnapura, while others opine that the name originated from Jajatipura Sasanas in Jajpur area. Jajati is also said to have made Jajatipur as his capital and renamed the city as Jajapura. King Jajati, it is said, had organized a great yajna called Daswamedha at this place. For this, he brought 10,000 Brahmins from North India and got them settled in various localities later on. Preceding this event, Jajpur finds mention in ancient Indian mythology texts and the Puranic literatures alike where it is referred to as Viraja and Baitarini Tirtha, one of the most important tirthas of India. The place has also been described in the Kapilasamhita, Brahmanda Purana, VayuPurana, Brahma Purana, Tantrachintamani, Astapithamahatmaya and Chaitanya Charitamrita.

The place holds great significance among the Hindus as it is considered to be one of the Sakti Pithas where the amputated corpse of Sati, the consort of Shiva, fell having been chopped off by Lord Vishnu. Thus Jajpur is referred to as Parvati Tirth sometimes.

Jajpur has also been mentioned in the Mahabharat where it is stated that, at the Viraja in the banks of Baitarini, the Pandava brothers had taken holy dip along with the saint Lomash. Historical anecdotes about the place can however be found only after 7th century A.D with the rise of the Bhaumkaras who ruled over Odisha with Guheswar Patak near Viraja as their Capital.

Earlier Jajpur was a breeding ground for both Buddhism and Jainism. Accounts from Hieun Tsang in 639 A.D. go on to prove the existence of Puspagiri Vihar in the precincts of Jajpur. Tantrayan sprang upon the decadence of Buddhism towards the 8th century. The Kubija Tantra describes Viraja as the Maheswari of Uddiyan.

A great revival of Brahmanism in India and Odisha happened with the emergence of the imperial Guptas. Royal houses encouraged Brahminism by getting Brahmins en masse from Banaras and other north Indian township and making them settled in their provinces. Accordingly Kings were known to perform yajnas to preserve their strength and reputation.

In all probability Jajatikeshari also performed the Daswamedhayajna under Brahmanical practices on the banks of the Baitarani River. He is in fact known to have performed a series of different yajnas on the banks of the river. Virajakshetra is triangular. In each corner we find a Siva temple at equal distance. These are Bileswar, Khiltateswar and Baruneswar. The first two temples have received land grants from king Ananga Bhimadeva, as is evident from Madalapanji. Beautiful ancient Buddhist and Jaina images are found in the architectural aspects of the temples. The Brahma Purana says that there were one less to one crore Sivalingas in jajpur area, which indicates the religious importance of the place.

Much of the architectural pomp of the place was destroyed in later periods as jajpur was subject to constant attacks by the muslim invaders. It was witness to many politically significant battles. One of the battles that changed the course of Odisha history by transferring power to the Afghans was also fought near Jajpur at Gohira Tikiri between the reigning king Mukundadeva Harichandan and Ramachandra Bhanja.



Few people of Jajpur in Odisha know that the writer of the national song, Bankim Chandra Chatterjee was working as the Deputy Magistrate from 1882 to 1884 in Jajpur. Bankim worked as a deputy magistrate in Jajpur for about two years during his three decade long stint as a deputy magistrate in Bengal and Odisha as during that period Odisha was under the Bengal province. Bankim Chandra joined as a deputy magistrate in 1859 and retired in 1891. Jajpur became a sub-division in 1859. The noted writer savoured the tranquility of the riverside in his official residence at Jajpur and penned 'Devi Chaudharani' based on a real story . It was published in 1884.

Earlier Jajpur was part of undivided Cuttack district. On 1st April 1993 it got its separate administrative identity. The district consists of 10 Blocks, 09 tahasils, 280 GPs, 4286 wards. Now Jajpur is poised as country's largest steel hub with many major units starting production and yet others are trying to find their place in its rich industrial scenario. Ever a land of fertile soil and rich mineral resources, Jajpur is also known as a melting pot of many religions, faiths and beliefs steadily holding in its rich mosaic the essence of fraternity and peace.

The District is bounded by Keonjhar and Bhadrak Districts on its North, Cuttack on its South, Dhenkanal District on its West and Kendrapada District on its South East. The Jajpur District is located in between 20 degree 30' to 21 degree 10' North Latitude and 85 degree 40' to 86 degree 44' East Longitude. The District covering an area of 2887.69 sq km is moderately populated having total population of 18,26,275 as per 2011 census.



**Biraja Temple At Jajpur**

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

Minerals found in the district include iron ore, chromite, quartzite, pyroxenite apart from minor minerals like building stone, sand, laterite, Khondalite and brick earth.

**Minerals found within the district:**

**Chromite:** Chromite deposits are located in the Sukinda Ultramafic complex around Bhimtangar, Kaliapani, Sukarangi, Saruabil and Gurjang areas. The total reserve of chromite is estimated in the order of 164.24 million tonnes with 30% Cr<sub>2</sub>O<sub>3</sub>.

Geological Map and Mining Leases of Chromite Mines of Sukinda Valley Under Jajpur District.

**Nickel:** Nickel ore is associated with chromite bodies within the Sukinda Ultramafic Complex and found around Kansa sector, Kamarda-Saruabil sector, Kaliapani sector and at Tisco sector. The total reserve of all grades (high + low) of Nickel ore is estimated in the order of 140 million tonnes.

**Iron ore:** Iron ore occurs at Daitari and Mahagiri hill ranges.

**Platinum group of elements (PGE):** The PGE occurs in dunite, peridotite and granite occurring in Sukinda valley area. The PGE values vary from 2ppb to 12ppb in these rocks and 50ppb in chromite and is relatively high, i.e. 60ppb to 500ppb in chromite horizons at places.

**Red ochre:** Small occurrences of red ochre are observed in Daitari hill ranges.

**Plastic clay:** The non swelling plastic clay occurs in north of Bhimtangar.

**Soapstone:** Small occurrences of soapstone are reported to the north of Brahmani River around 292m hill.

**Khondalite:** India has a Great Variety of Natural Stones that have been extensively used as dimension, ornamental and sculptural stone for numerous temples and monuments over many centuries. These temples and monuments, now heritage sites, have a major role in showcasing India's natural stone resources that occur in diverse geological formations of different geological systems across Indian subcontinent. The formations contain a variety of Stones, with colours and textures produced by varied geological features thus providing house of diverse decorative stone resources.

Since most of our ancient temples are built using Khondalite stones, we can term, Khondalite as heritage stone. Lingaraj Temple, Konark Sun Temple, Shree Jagannath Temple and many other temples has been built in ancient times by using khondalite. The artisans have got clear cut idea to choose stones for the particular purposes. Because of their aesthetic sense and efforts then, we can see several of the architectural marvels today. Generation after generation are still continuing in Stone Carving business to make beautiful Sculptures which are sought after in national and international markets.

To support these artisans Govt of Odisha has reserved six Nos of Khondalite Blocks. These minor mineral Blocks have been reserved in favour of Odisha Mining Corporation (OMC) which will explore these blocks and supply material to Heritage Projects as well as artisans all around, as per market demand.

All the heritage projects of Odisha to be developed, by using Khondalite stones, to maintain the Kalinga style of architecture. The Stone will be abundantly used for development of heritage security zone around 12th Century Jagannath Temple, JagannathBallav Pilgrim Centre, for exterior wall of the Municipal market complex, Atharnala Heritage Project, Puri Lake development Project, development of Acharya Harihar Square and renovation of heritage lakes of Puri such as Sweta Ganga, Markanda, Narendra and Indradyumna. The Khondalite rocks will also be used for repair and renovation of Jagannath Temple in Puri, Konark Sun Temple and for other heritage projects taken up under EkamraKshetra redevelopment plan in Bhubaneswar.

Besides these projects, the Craftsmen also use these stones for Stone carving purpose to make different kind of sculptures. There is a demand for Stone carving sculptures from a very long period.



Hand Carving Ancient Image made from Khondalite

The major production of Khondalite as decorative stones comes from the Archaean supracrustal formation of the state of Odisha. The important Khondalite zones are located in the western and southern parts of this state. Availability of Artisan grade stone for the craftsmen of the state is dwindling day by day. Keeping in view the livelihood of the craftsmen and need to keep the Odia handicraft industry alive, Department of Handloom, Textiles & Handicraft, Govt. of Odisha took the initiative for sustainable supply of stones suitable for carving. Accordingly, Shree Jagannath Temple Administration identified few khondalite hills around Bandareswar and Kesharaipur Village in Sukuapada Area and Teligarh Khondalite Block at village Chandital under Darpana Tehsil, to preserve the areas for craftsmen. As per directive of the Govt, Shree Jagannath Temple administration approached the Govt., prepared a Geological Report after due field investigation to make the blocks amenable for exploitation.

The concessions granted within the district for different minerals/ores other than minor minerals are as below:

<b>Name of ore/mineral</b>	<b>No of concessions</b>	<b>Tent Area covered in Ha</b>
Chromite	14	4112
Quartzite,	3	20
Pyroxenite	1	10
Iron ore	1	1813
Khondalite	2	50
<b>Total</b>	<b>21</b>	<b>6005</b>



### Khondalite Block

### DSR of Jajpur District.

Other than the above mentioned minerals, minor minerals such as river sand, laterite bricks, building stone/black stone/road metals, Khondalite, brick earth etc. are also available in the district. Most of the building stone/black stone/road metals potential are located in Dharmasala, and Sukinda Tahsils of the district. Others like laterite, Khondalite, sand and earth are distributed in almost in all tahsils.

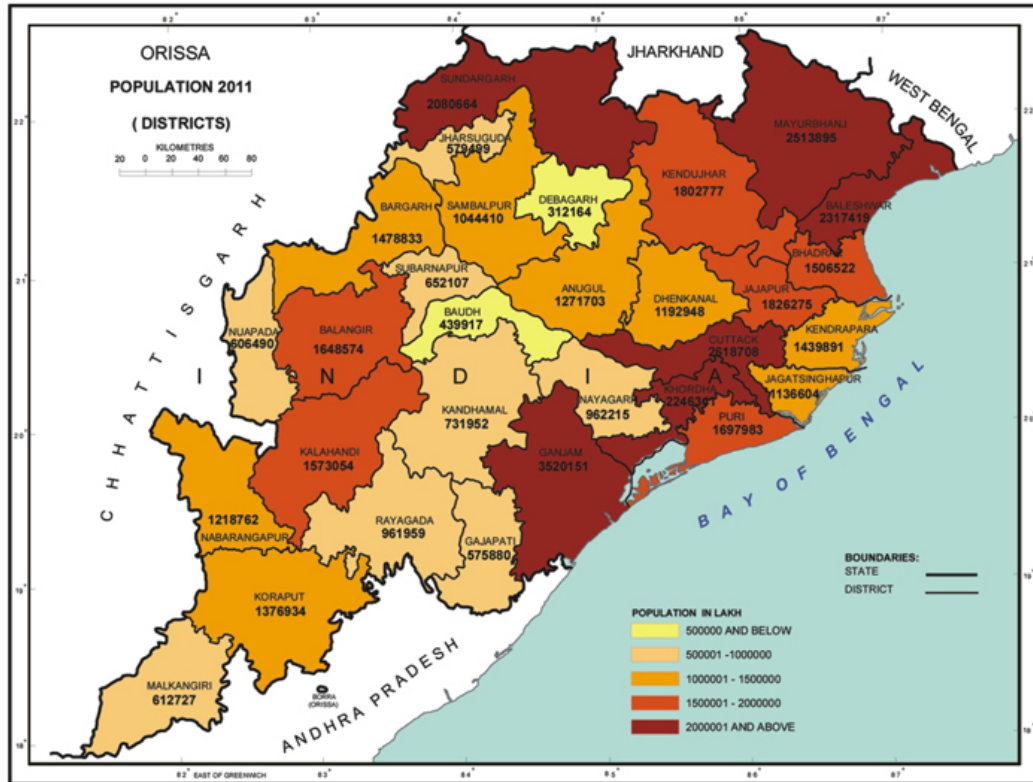
### 3. General Profile of the District

#### a. Administrative set up:

SI No	Item	Unit	Magnitude
1	Location		
	Longitude	Degree	85°40' to 86°44' East
	Latitude	Degree	20°33' to 21°10' North
2	Geographical area	Sq.Km.	2899
3	Sub-division	Numbers	1
4	Tahsils	Numbers	10
5	C D Blocks	Numbers	10
6	Towns	Numbers	2
7	Municipalities	Numbers	2
8	NACs	Numbers	0
9	Police Stations	Numbers	21
10	Gram Panchayats	Numbers	311
11	Villages	Numbers	1783
	Inhabited	Numbers	1598
	Uninhabited	Numbers	185
12	Parliament constituencies	Numbers	1
13	Assembly constituencies	Numbers	7

#### b. Area and Population:

The district has an area of 2899 sq.kms and 18.27 lakhs of population as per 2011 census. The district accounts for 1.86 percent of the state's territory and shares 4.35 percent of the state's population. The density of population of the district is 630 per sq. km. as against 270 person per sq.km of the state. As per 2011 census the schedule caste population is 433387 (23.7%) and schedule tribe population 151432 (8.3%). The literacy rate of Jajpur Dist is 80.44 .



**c. Climate:**

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.

**d. Economy:**

The district of Jajpur being rich in mineral deposit and having skilled human resources there is huge potential for establishment of SMEs. This is the only sector next to agriculture which can provide maximum employment to the unemployed mass. In the decreasing trend to employment in Govt. and public sector under taking the only option left for our young mass is for establishment of self-employment ventures. The state Govt.'s present policy of employment mission will be successful through SMEs mostly.

**e. Industry :**

No. of MSME units set up	Investment (In Rs. crores)	Employment Generated				Employment of women
		SC	ST	General	Total	
2240	13038.95	1112	148	4813	6073	933

Apart from these the heavy industries within the district are:

SI No	Name of the Industry	Location	Production Items	Capacity	Status
1	Nilachal Ispat Nigam Ltd.	Kalinganagar	Pig iron	492000MT	Working
2	Tata Steel Ltd	Duburi	steel	No	Working
3	Jindal Industries	Kalinganagar	Stainless	1600000MT	Working
4	VISA Steel	Jakhapura	Mid steel	320000MT	Working
5	Rohit ferro tech ltd	Kalinga Nagar	Ferro	80,000MT	Working
6	K.J. Ispat Limited	Kalinganagar	Sponge	30000MT	Working
7	IDCOL ferrocrome	Jajpur Road	High	18000MT	Working
8	Maithan Ispat Ltd	Kalinganagar	Sponge	740000MT	Working
9	MESCO	KHURUNTI	Pig Iron	600000MT	Working
10	Dinabandhu steel and Power	Kalinganagar	Steel	250000MT	Working

**f. Agriculture :**

During the year 2023-24, the net area sown was 141.681 thousand hectares against 6180 thousand hectares of the state. The production of paddy was 427867.176 thousand MT, 21.6 thousand MT wheat, 6156.8 thousand MT maize, 8135.6 thousand MT mung, 7001.662 thousand MT biri, 3154.95 thousand MT kulthi, and 49.98 thousand MT til, 38705.515 thousand MT groundnuts, 673.65 thousand MT mustard, 19425 thousand MT potatoes, 1873.41 thousand MT jute and 86.09 thousand MT sugarcane. During 2023-24, the total fertilizers used in Jajpur district is about 19016 MT with a breakage of 10296 MT nitrogenous, 5050 MT phosphatic and 3170 MT pottasic and the consumption of fertilizer per hectare is 76.93 kg.

**g. Power :**

Consumption of electricity in Jajpur district during the year covers 82 million units per month and villages so far electrified as on 30.08.2019 is 1619 which constitutes almost 100% to the total villages of the district.

**h. Transport & Communication :**

Railway route length (14-15) km	131.66
No of Rly stations and PH(14-15)	17
Forest road (17-18) km	42
National Highway (16-17) km	202.02
State Highway (17-18) km	31.447
Major district road (17-18) km	56.334
Other dist road (17-18) km	901.021
Rural road(17-18) km	14352.264
Inter village road (16-17) km	886.349
Intra village road (16-17) km	1471.24

**i. Health :**

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

Govt. Allopathic medical institutions	75
Beds facilities	539 in 14 facilities
Homoeopathic dispensaries	21
Ayurvedic dispensaries	25

**j. Tourist places :**

There are 13 nos. of tourist center such as Ashokjhan, Baruneswarpitha, Chandikhol, Chhatia, Gokarnika, Jajpur, Kuransa, Mahavinayak, Patharajpur, Ratnagiri and Udayagiri, Satyapira, Singhapur and Vyasa Sarovar identified by department of Tourism and Culture, Odisha.

**k. Forest areas:**

<b>Category of forest</b>	<b>Area in sq km</b>
Reserve Forest	6.35
Unclassified Forest	0.01
Demarcated Protected Forest (DRF)	299.32
Undemarcated Protected Forest	0
Other forest under Revenue Dept	419.59
<b>Total</b>	<b>725.27</b>

**l. Education:**

Primary School (2023-24)	No. of Schools	949
	Enrolment (No)	55905
	Pupil Teacher Ratio	24
Upper Primary School 2023-24	No. of Schools	750
	Enrolment (No)	93075
	Pupil Teacher Ratio	27
General College 2023-24	Junior	57
	Degree	
Secondary School	No. of Schools	456
	Enrolment (No)	100270
	Pupil Teacher Ratio	24
Literacy Rate, 2011	Male	87.36
	Female	73.37
	Total	80.44

**m. Culture & Heritage:**

Once Jajpur District was a great centre of art and culture in ancient Odisha. This district is declared as a heritage district 'Biraja Khetra' is one of the ancient cities of Odisha rich in archaeological remains. It is reputed to be one of the important Tantra Khetras in the state. The ancient monuments like Biraja Temple, Lord Baraha Temple, Daswasamedhaghat, Jagannath Temple, Trilochaneswar Temple, Ratnagiri, and Udayagiri and so many other places of historical importance add tourist attraction.



### **Khondalite Block**

### **DSR of Jajpur District.**

Jaipur is also known as Navigaya. People all over the state and neighboring state come here to offer SRADDHA on the Bank of River Baitarini.

A land of rich and diverse artistic achievement, Jajpur's art and culture are the product of a long historical process in which the spiritual, philosophical and the humane dimensions have merged to yield the finest effects of culture and civilized life. The cultural heritage of Jajpur is reflected in its vibrant Art forms. The district has village tradition of painting, architectures, sculpture, and handicrafts. The Jajpur school of painting has three streams such as Jhoti, Chita and Muruja.



Birajakhetra



Chandikhol Chandi Temple



Ratnagiri

### The Culture & Heritage sites located in Jajpur district

#### **4. Geology of the District**

Geologically the district can be broadly divided into four sectors. The northwestern and southwestern hilly areas comprise the meta-sediments of Iron Ore Group Tomka-Daitari belt and Eastern Ghat Supergroup with basic and ultramafic intrusions. The laterite covers the central and northwestern part of the district. The horizontally disposed Quaternary sediments occupy the southeast, east and northern part of the

## Khondalite Block

## DSR of Jajpur District.

district. The Eastern Ghat Supergroup consists of quartz-feldspar-garnet-sillimanite  $\pm$  graphite

schist/gneiss, garnetiferous quartzite, calcsilicate and charnockites. All these rocks have undergone intensive migmatization. The Tomka-Daitari Iron Ore Group comprises banded hematite/magnetite quartzite, banded hematite jasper, banded chert, quartzite, ferruginous shale, fuchsite quartzite, conglomerate, gritty quartzite, ortho quartzite. These are associated with metavolcanics, pyroxenite and chromiferous ultramafics. Granite and granophyres are intrusive into these rocks. The meta-sedimentaries and ultramafics have undergone intensive lateritization and the thickness varies from 5m to 15m. These rocks are overlain by Quaternary sediments of sub-recent to recent period. These sediments constitute transported laterite at the base, sandy clay with kankar, black clay and present flood plain deposits consisting of coarse to fine sand. The meta-sediments of Eastern Ghat Supergroup have undergone polyphase deformation. The trend of first generation of folds is represented by NE-SW trend; the second generation is represented by NW-SE trend and the youngest one by the N-S trend. The shear zone is noted along the axial plane. The Tomka-Daitari Iron Ore Group of meta-sediments has undergone three phases of deformation. The first and second generation of folds are co-axial and trend in N70°E-S70°W direction. The second generation of folds is of open type and plunges towards west. These folds are cross folded along N-S axis and are represented by broad warps.

The Gorumahisani Group of meta-sediments has undergone three phases of deformation. The first and second generation of folds are co-axial and trend in N70°E-S70°W direction. The second generation of folds is of open type and plunges towards west. These folds are cross folded along N-S axis and are represented by broad warps.

Age	Supergroup	Group	Formation	Lithounit
Late Holocene			Brahmani	Fine Sand
Middle to			Bankigarh	Brownish Silty Clay (Upper Deltaic Facies)
Late Holocene				Black Clay (Lower Deltaic Facies)
Early Holocene			Kaimundi	Clay with calcareous

**Khondalite Block**  
to Late Pleistocene

**DSR of Jajpur District.**  
concretions

Early Pleistocene to  
Late Tertiary

Bolgarh

Laterite/ Latosol (Insitu)

Proterozoic

Intrusive

Granophyre

Hornblende granite  
Basic lava  
Pyroxenite, Ultramafics  
Bonai granite  
Ortho quartzite  
Gritty quartzite  
Conglomerate

Archaean

Gorumahisani

Fuchsite quartzite/  
andalusite quartz-  
schist / ferruginous shale

Charnockite

Granetiferous granite  
and gneiss

Eastern Ghat

Khondalite

Quartz-Feldspar-  
Garnet-Sillimanite ±  
Graphite Schist/ Gneiss

Calc silicate

**Local Geology**

The area of investigation is a part of Eastern Ghat Mobile Belt comprising khondalite and its variants. The valleys are occupied by soil. Rare lateralization on the surface is noticed, thickness of which varies from few cm to 0.2 m. The general trend of foliation of the litho units varies from NW–SE to N75°E-S75°W with dip varying 32° to 78° due SW and NW respectively.

**Stratigraphy**

The geological succession of the area can be ascribed as follows:

Recent to Sub-recent	Soil Laterite
Eastern Ghats Super Group	Khondalite Charnockite



Typical Khondalite Rock



In situ Khondalite exposure, BANDARESWAR AND KESHARAIPUR (Sukhuapada)

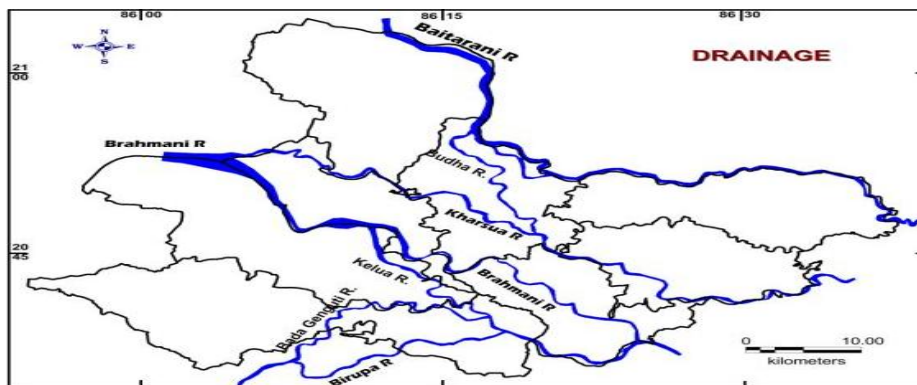
**Khondalite:**

Khondalite is exposed as a gentle sloping low lying attaining an elevation of about 65 m from surrounding valleys in the NE & southern part of the block area. Megascopically, the rock is medium to coarse grained, dark brown light brownish white in color, partially altered, moderately hard with in filled solutions of iron oxide in the inter granular spaces. The rock is essentially composed of quartz, plagioclase, orthoclase, garnet and sillimanite with accessory opaques.

**5. Drainage of Irrigation Pattern**

The drainage of the district is mainly controlled by rivers like Brahmani, Kharasuhan, Birupa, Baitarani & Kelua. Detail of the river system is narrated below.

Sl. No.	Name of the river	Place of origin	Altitude at origin	Total length in the district (in km)	Area drained (Sq. Km)	% Area drained in the district	Process of deposition of sediments
A	B	C	D	E	F	G	H
1	Brahmani	Bedavyasa-Rourkela	22-14-45-N	68.5	28.4	30%	Flord water
2	Kharasuhan	Pankpal	20-82-12-N	26.5	12.34	30%	Flord water
3	Kelua	Bedapur	20-76-41-N	20.1	8.04	12%	Flord Water
4	Birupa	Jobra	20-3-20-n	13.38	0.9	55	Flord Water
5	Tangighala	Hasinpur	20-72-57-N	28	1.94	40%	Flord Water
6	Baitarani	Gonasika	900 mts (3000 Ft )	78	13482	23%	Due to settlement of sand particulars
7	Kharsuhan	Jokadia	-	45 km from NH-5 to Singhpur	-	15%	Due to settlement of sand particulars





The drainage pattern of the Jajpur district.

**Irrigation area (2023-24) in 000 Ha**

Major & Medium	Kharif	13099
	Rabi	Nil
Mega Lift	Kharif	Nil
	Rabi	Nil
Minor Flow	Kharif	10.03
	Rabi	1.67
Minor Lift	Kharif	51.20
	Rabi	27.68

**6. Land Utilisation Pattern in the District: Forest, Agricultural, Horticultural, Mining etc.;**

SI No	Landuse	Area in '000Ha
1	Forest Area	72
2	Misc. trees & Grooves	4
3	Permanent Pasture	4
4	Culturable Waste	4
5	Land put to Non Agril Use	41
6	Barren & Unculturable Land	5
7	Current Fallow	21
8	Other Fallow	5
9	Net Area Sown	124
10	Mining	10
	GeographicalArea	281

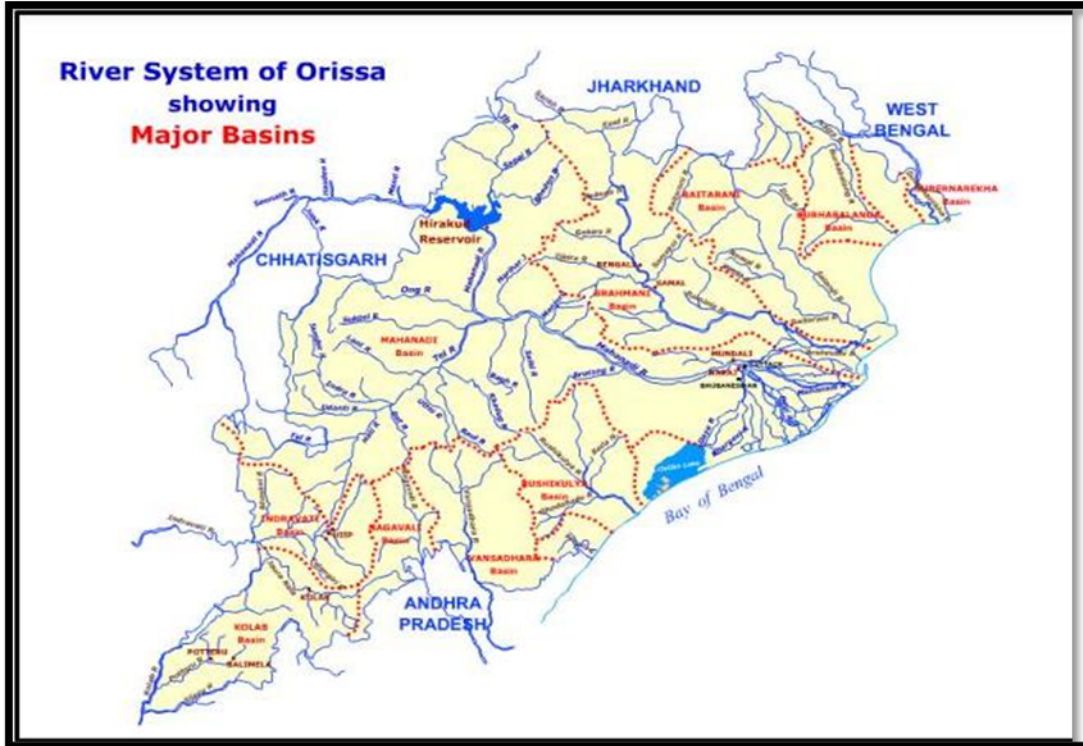
**7. Surface Water and Ground Water scenario of the district;**

The drainage systems i.e. rivers of the district gets filled with water during the monsoon

## Khondalite Block

## DSR of Jajpur District.

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



Map Showing River System of State Odisha

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

Depth of water level (mbgl)/ Period	April	August	November	January
Minimum	2.63	0.41	1.1	1.9
Maximum	14.1	8.75	8.75	6.88

### 8. Rainfall of the district and 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 average wind speed in Jajpur Road is 6.3 kmph with the maximum wind speed of around 19.1 kmph. The temperature goes as high as up to 43°C in the summer and up to 170 -180 °C during peak winter. The average humidity varies from 41% to 78%. The Windrose of Jajpur Road shows that predominantly wind blow from the

**Khondalite Block****DSR of Jajpur District.**

SSW - about 13.2% of all wind directions.

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

Year/ Month	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2020	17.1	36.1	52.3	156.5	164.0	172.3	171.1	695.8	91.5	215.1	0.0	0.0
2021	0.1	0.0	1.6	24.7	413.4	197.6	139.6	164.1	551.1	126.7	34.9	55.2
2022	47.7	26.0	0.0	0.0	137.7	179.2	341.3	345.9	189.9	152.3	0.0	0.0
2023	0.0	0.9	80.2	48.5	68.5	147.7	221.7	274.6	326.7	113.4	5.0	9.0
<b>AVG</b>	<b>16.2</b>	<b>15.8</b>	<b>33.5</b>	<b>57.4</b>	<b>195.9</b>	<b>174.2</b>	<b>218.4</b>	<b>370.1</b>	<b>289.8</b>	<b>151.9</b>	<b>10.0</b>	<b>16.1</b>

The temperature statistics &amp; Graph of the district for last five years is given below:

<b>Month-wise Temperature data (in °C) from 2019 to 2023 of Jajpur District</b>											
YEAR/ MONTH	2019		2020		2021		2022		2023		
	Max.	Min	Max.	Min	Max.	Min	Max.	Min	Max.	Min	
January	28	18	27	18	29	12	29	11	31	11	
February	32	21	29	20	30	20	33	13	34	16	
March	35	24	34	24	36	22	38	20	36	18	
April	40	27	38	25	41	26	41	24	42	19	
May	41	29	38	26	41	27	41	20	41	25	
June	38	29	37	29	40	26	41	22	42	24	
July	34	28	35	28	36	24	35	23	36	24	
August	33	27	33	27	32	26	34	22	36	24	
September	32	26	34	27	36	25	34	24	34	25	
October	31	24	32	25	35	20	34	21	35	21	
November	30	21	30	21	31	16	32	18	34	20	
December	27	18	29	18	28	14	30	15	34	14	

The Humidity statistics and Graph of the district for last five years is given below:

<b>Month-wise Humidity data (in %) from 2019 to 2023 of Jajpur District</b>												
Year/M onth	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>2019</b>	45	48	58	54	59	61	68	75	80	78	66	57
<b>2020</b>	55	55	56	57	61	62	68	74	76	75	53	46
<b>2021</b>	60	58	57	61	60	65	72	78	82	75	67	66
<b>2022</b>	64	59	59	68	63	66	73	82	80	85	85	81
<b>2023</b>	81	90	71	66	67	72	81	79	85	83	77	79

The wind speed statistics and Graph of the district for last five years is given below:

<b>Month-wise Average wind Speed data (in kmph) from 2019 to 2023 of Jajpur District</b>												
<b>Year/Mo nth</b>	<b>Jan.</b>	<b>Feb.</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug.</b>	<b>Sept.</b>	<b>Oct.</b>	<b>Nov.</b>	<b>Dec.</b>
<b>2019</b>	7.1	9.2	10.8	15.1	18.6	16.4	16.2	13.3	10.5	7.8	7.6	7.3
<b>2020</b>	8.3	8.7	10.8	15.3	19.1	15.1	15.6	13.4	10.9	9.2	8.5	7.1
<b>2021</b>	8.1	9.1	10.2	15.4	18.9	15.2	15.9	13.2	10.8	9.1	8.4	6.9
<b>2022</b>	8.4	8.8	10.6	14.9	19.2	15.9	16.1	13.1	10.6	8.7	8.1	7.2
<b>2023</b>	7.9	9.3	10.9	15.2	19.1	16.1	15.8	13.5	10.9	8.9	8.3	7.4

**9. Details of the mining leases of Khondalite in the District:-**

Attached as **Annexure I&II**

**10. Details of Royalty or Revenue received in last three years:-**

**Year-wise Calculation of Royalty (Rs) of Khondalite**

<b>Sl.No.</b>	<b>Name Of Tahasil</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>Total Amount</b>
<b>1</b>	Jajpur	-	-	-	-
<b>2</b>	Bari	-	-	-	-
<b>3</b>	Vyasanagar	-	-	-	-
<b>4</b>	Binjharpur	-	-	-	-
<b>5</b>	Dasarathpur	-	-	-	-
<b>6</b>	Danagadi	-	-	-	-
<b>7</b>	Rasulpur	-	-	-	-
<b>8</b>	Darpan	-	1263071	1347646	2610717
<b>9</b>	Dharmasala	-	-	-	-
<b>10</b>	Sukinda	-	-	-	-
<b>TOTAL</b>		-	<b>1263071</b>	<b>1347646</b>	<b>2610717</b>

**11. Details of Production of Minor Mineral in last three years:-**

**Year wise Production of Khondalite in cum**

Sl.No.	Name Of Tahasil	2020-21	2021-22	2022-23	Total Quantity (Cubic meter)
1	Jajpur	-	-	-	-
2	Bari	-	-	-	-
3	Vyasanagar	-	-	-	-
4	Binjharpur	-	-	-	-
5	Dasarathpur	-	-	-	-
6	Danagadi	-	-	-	-
7	Rasulpur	-	-	-	-
8	Darpan	-	-	1737.272	1737.272
9	Dharmasala	-	-	-	-
10	Sukinda	-	-	-	-
<b>TOTAL</b>		-	-	<b>1737.272</b>	<b>1737.272</b>

**12. Mineral Map of the District;**

Attached as Plate No 4.

**13. List of Letter of Intent (LOI) Holders in the District alongwith its validity.**

List of Letter of Intent (LOI) Holders for Khondalite

Sl. No.	Name of the Mineral	Name of the lessee	Address	Letter of Intent Grant Order No. & date	Area of Mining lease to be allotted	Validity of LoI	Use (Captive/ Non-Captive)	Location of the Mining lease (Latitude & Longitude)
1	2	3	4	5	6	7	8	9
Details of the areas is submitted as Annexure I & II.								



**14. Total Mineral Reserve available in the District.**

The tentative total mineable reserve of Khondalite stone is 57,85,936 cum which may increase after detail investigation and survey.

Sl. No.	Name of the mineral	Name of the lessee	Address and contact No. of the lessee	Letter of Intent Grant Order No. and date	Area of mining lease to be allotted	Validity of Lol	Use (Captive / Non-Captive)	Location of the Mining lease (Latitude & Longitude)
1	2	3	4	5	6	7	8	9
Details of the areas is submitted as <b>Annexure I &amp; II.</b>								

**15. Quality /Grade of Mineral available in the district;**

Khondalite of the district is very much suitable for Sculpture carving purposes due its softness due to the effect of weathering in Khondalite. After recovery Balance material may be used for filling purposes particularly of road.

**16. Use of Minerals;**

Khondalite blocks for use in the projects to be undertaken under the scheme for "Augmentation of Basic Amenities and Development of Heritage and Architecture"(ABADHA) and/or projects for development of Puri as World Heritage City.

**17. Demand and Supply of the Mineral in the last three years;**

The demand for Khondalite is moderate in the district and is approximately to the tune of 50,000 cum per annum. The demand will be mainly fulfilled from the production of Darpan tahsil.

**18. Mining leases marked on the map of the district**

Attached as Plate No 5.

**19. Details of the area of where there is a cluster of mining leases viz. number of mining leases, location (latitude and longitude);**

Not applicable.

**20. Details of Eco-Sensitive Area, if any, in the District;**

There is no village coming under Eco-sensitive Zone in Jajpur District as per Notification No. 1659 (E) dt 17.06.2015 of the Govt. of India. Ministry of Environment, forest and Climate, New delhi. However, Kolha PRF of Jajpur district comes under Eco-Sensitive Zone of Kapilash Sanctuary, Dhenkanal.

**21. Impact on the Environment (Air, Water, Noise, Soil Flora & Faunal , land use , agriculture, forest etc.) Due to mining activity;**

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 like, excavation, loading, handling of blocks 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 nuisance for the surrounding land

user and potential health risk in some circumstances.

### **Water Impact**

Sometimes the mining operation leads to intersection of the water table causing ground water depletion. Due to the interference with surface water sources like river, nallahetc 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 bring about 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 it's 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 statusof 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:

- 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 diction 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.
- Retaining wall and garland drain and adequate treatment system like settling ponds shall be provided around the OB dump for proper surface runoff management
- 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, if any provided within ML/QL areas is to be discharged in septic tank followed by soak pits.

**NOISE**

- Periodic maintenance of machineries, equipment's 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.
- 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.

**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 leaves 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 (Khondalite) 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 to be a dynamic 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 savage operations in this same order of priorities. For effective implementation of the disaster management plan, it should be widely circulated through Mock Drill/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

### **Khondalite Block**

### **DSR of Jajpur District.**

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 proponent's will take necessary precautions to fulfill 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 equipments such as helmet, safety goggles, earplugs, earmuffs are to be provided to mine workers as per Mines Rules. All operators and mechanics are to be trained to handle fire fighting equipments.

Following diseases have been notified as the diseases connected with mining operations for the purpose of sub-section (1) of Section 25 of the Mines Act, 1952:

S.R.O. 1306 dated the 21st July, 1952

1. Silicosis
2. Tuberculosis

S.R. O. 2521 dated the 26th June, 1986

Cancer of lung or the stomach or the pleura and peritoneum (i.e. mesothelioma)

25 S.O. 399(E) dated 21st February, 2011

1. Noise Induced Hearing Loss
2. Contact Dermatitis caused by direct contact with chemical.
3. Pathological manifestations due to radium or radioactive substances.

**26. Plantation and Green Belt Development in respect of leases already granted in the district.**

Plantation has to be undertaken all around the safety zone area within the ML area wherever the soil to support plantation within the Mining plan period.

**27. Any other information.**

There is a need of systematic survey and delineation of new Khondalite Blocks sources which can be leased out in future.

**Khondalite Block****DSR of Jajpur District.****The List of Khondalite Sources**

Sl . No .	Name of the Tahasil	Name of the Mineral	Name of Source	Village	Khata No.	Plot No.	Kisam	Tenant	Area in Ha.
1	2	3	4	5	6	7	8	9	10
1	Darpan	Khondalite	Sukhuparha Khondalite Block	Bandareswar No-1219	389	29	Pahada	Govt. Land	37.686 Acre
					388	31	Pahada		37.170 Acre
				Kesharaipur No-1218	261	248	Pahada	AAA	39.206 Acre
<b>Total</b>									<b>114.062 Acr / 46.159 Ha.</b>
2	Darpan	Khondalite	Teligarh Khondalite Block	Chandital	876	6	Pahada	AAA	10.05 Acr / 4.067 Ha.

The District Survey Report for Khondalite in respect of Jajpur District in accordance with Appendix-X, Para-7 (iii) (a) Clause (II) 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 and in compliance with the orders of Hon'ble Supreme Court dt. 10.11.2021 in connection with C.A Nos. 3661-3662 of 2020. Before preparation of this report, a survey has been conducted by District Environment Impact Assessment Authority (DEIAA) with the assistance of Irrigation Department, Forest Department, Public Works Department, Mining Department, Ground Water Boards, Remote Sensing Department, Mining Departments. The DSR is being submitted to SEIAA, Odisha, Bhubaneswar for necessary evaluation and approval.

**Field Visit Memorandum of Sub-Divisional Committee on dated 19.4.2024 at 9.00 a.m for inclusion of Teligarh Khondalite Block in District Survey Report (DSR) under Darpan Tahasil, Mouza Chandital over Khata No. 876, Plot No. 6 bearing an Area of 4.067 Ha. in the district of Jajpur.**

As per the programme, the following members under the Chairmanship of the Sub-Collector, Jajpur visited Teligarh Khondalite Block in village Chandital under Darpan Tahasil on dt. 19.04.2024 to ascertain the feasibility of the spot for preparation of DSR in respect of the Teligarh Decorative Stone (Khondalite) under Darpan Tahasil vide Order No 4293 dt. 12.04.2024 of Collectorate & District Magistrate Jajpur. Besides, the Tahasildar, Darpan accompanying with Amin of Darpan Tahasil office, Revenue Inspector, Khaira and Revenue Supervisor have also visited the spot, to identify and to demarcate the land.

**Members Present during the visit.**

1.	Sub-Collector-Cum-Sub-Divisional Magistrate, Jajpur	Chairman
2.	Executive Engineer, Irrigation Division, Jaraka.	Member
3.	Regional Officer, State Pollution Control Board, Jajpur Road.	Member
4.	Asst. Conservator of Forest, Office of the DFO, Cuttack	Member
5.	Deputy Director Mines, (Minor Mineral), Jajpur	Member
6.	Deputy Director Mines, (Specified Minor Minerals), Jajpur Road	Member
7.	Geologist, Office of the Joint Director, Geology, Dhenkanal	Member
8.	Mining Officer, Minor Mineral, Jajpur	Member


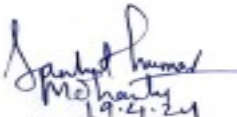
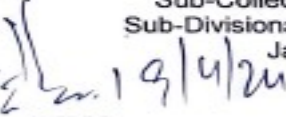
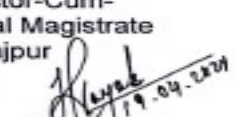


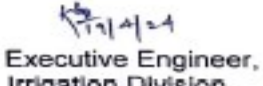

During the field visit, it is found that, the following land has been selected for operation of the Teligarh Decorative Stone (Khondalite) in village Chandital under Darpan Tahasil.

**Land Schedule**

Mouza	Plot No.	Khata No.	Kisam	Area
Chandital	6	876	Pahada	10.05 Ac. / 4.067 Ha.

During field visit, it is found that there is an approach road existing on the field to the proposed mines. Further, it is found that, the proposed area is free from any unauthorized encroachment. There is no plantation & forest growth over the proposed site. The source is not affecting any river embankment, irrigation canal, ayacut area & habitation area etc. Mahavinayak Reserve Forest is at a distance of 1 km from the proposed site

**Signature of the Members Present**

 Mining Officer, Minor Mineral, Jajpur	 Geologist Dhenkanal	 D.D.M (Specified Minor Mineral, Jajpur)	 D.D.M (Minor Mineral) Jajpur
 A.C.F, Cuttack	 R.O, SPCB, Jajpur Road	 Executive Engineer, Irrigation Division, Jaraka	 Tahasildar Darpan

**DETAIL INFORMATION ON KHONDALITE STONE IN RESPECT OF JAJPUR DISTRICT**

**ANNEXURE - II**

**DETAIL OF ROYALTY / REVENUE RECEIVED & DETAIL OF PRODUCTION OF KHONDALITE STONE IN LAST THREE YEARS**

Name of the Tahasil	SL NO	Name of the Quarry Lease	Name of the lessee	Address & Contact number of the Lessee	Mining Lease Grant order No & Date	Area of Mining Lease in (Ha.)	Period for Mining Lease		Period of Mining Lease 1st/ 2nd renewal		Date of Commencement of Mining Operation	Status (working /Non working/ temp. Working for dispatch etc	captive/ Non captive	Obtained Environmental Clearance (yes/No). If yes Letter No with Date of grant of EC	Location of the Minor lease (Longitude/Latitude )	Method of Mining (open cast /under ground)	Geological Reserve (in Cum.)	Mineable Reserve (in Cum.)	Royalty/Revenue Received in last 3 years (In Rupees)			Production of Mineral in last 3 years (In Cum)		
							From	To	From	To									2020-21	2021-22	2022-23	2020-21	2021-22	2022-23
							1	2	3	4									5	6	7	8	9	10
Darpan	1	Sukhuaparha Decorative Stone Mine	OMC Ltd.	OMC Ltd. Khondalite Group of Mines OMC House, Bhubaneswar-751001 7008217921	No.434/17.01.2022	46.159 Ha.	21.01.2022	20.01.2052	NA	NA	07.02.2022	Non-Working	Non-Captive	EC22B001OR111201/06.01.2022	Longitude : 86°15'32.39" E to 86°16'11.07"E Latitude: 20°35'31.95N to 20°36'2.8N	Opencast	6199785	5727717	0	1263071	1347646	0	0	1737.272
Darpan	2	Teligarh Decorative Stone Mine	OMC Ltd.	OMC Ltd. Khondalite Group of Mines OMC House, Bhubaneswar-751001 7008217921	-	4.067 Ha.	28.12.2023	27.12.2053	NA	NA	NA	New	Non-Captive	No	Longitude : 86°05'29.27" E to 86°05'34.11"E Latitude: 20°41'10.55N to 20°41'20.17N	Opencast	118423	58219	0	0	0	0	0	0

**ADDITIONAL INFORMATION ON ROAD METAL (STONE) IN RESPECT OF BALASORE DISTRICT**

**Annexure-II**

Name of the Tahasil	SL NO	Name of the Quarry/Lease	Name of the lessee	Address & Contact number of the Lessee	Letter of Intent Grant Order No. and date	Mining Lease Grant order No & Date	Area of Mining Lease in (Ha)	Period for Mining Lease		Period of Mining Lease 1st/ 2nd renewal		Date of Commencement of Mining Operation	Status (working /Non working/t emp. Working for dispatch etc)	captive / Non captive	Obtained Environmental Clearance (yes/No). If yes Letter No with Date of grant of EC	Location of the Minor lease (Longitude/Latitude)	Method of Mining (open cast /under ground)	Included in Eco Sensitive Zone/ Wild life Sanctuary	Whether the site is non- forest land for any forest Kissam	DLC status of the Source	Whether there is any cluster situation
								From	To	From	To										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Darpan	1	Sukhuaparha Decorative Stone Mine	OMC Ltd.	OMC Ltd. Khondalite Group of Mines OMC House, Bhubaneswar-751001 7008217921	5686/ 28.07.2021	No.434/ 17.01.2022	46.159 Ha.	21.01.2022	20.01.2052	NA	NA	07.02.2022	Non-Working	Non-Captive	EC22B0010 R111201/ 06.01.2022	Longitude : 86°15'32.39" E to 86°16'11.07"E Latitude: 20°35'31.95N to 20°36'2.8N	Opencast	No	Non- Forest Land	Not under DLC	No
Darpan	2	Teligarh Decorative Stone Mine	OMC Ltd.	OMC Ltd. Khondalite Group of Mines OMC House, Bhubaneswar-751001 7008217921	12072/ 01.12.2023	-	4.067 Ha.	28.12.2023	27.12.2053	NA	NA	NA	NA	Non-Captive	No	Longitude : 86°05'29.27" E to 86°05'34.11"E Latitude: 20°41'10.55N to 20°41'20.17N	Opencast	No	Non- Forest Land	Not under DLC	No



**List of Potential Mining Leases (existing & proposed)**

Quarry Details	Lease Details	Area (in Ha)	Distance (in KM) from PA/BR/WC/	Distance from Forest Area (in KM)	Mining leases within 500 meters (if yes cluster area)	Total excavation in (Cum/Yr) As per approved Mining Plan	Mineral to be mined	Existing /Proposed
Sukhuaparha Decorative Stone Mines	BandaeswarNo-1219	46.159 Ha.	Nearest bridge on River Birupa at a distance of 5.5 Km	No reserved or protected forest located within 10 KM radius of the lease boundary.	N/A	1 <sup>ST</sup> Year: 26650 2 <sup>nd</sup> year: 28975 3 <sup>rd</sup> year: 27450 4 <sup>th</sup> year: 27300 5 <sup>th</sup> year: 27650	Khondalite	Existing
	Kesharaipur No-1218							
Teligarh Decorative Stone Mine	Teligarh Decorative Stone Quarry over an area of 10.05 Acrs or 4.067 Ha. in village Chandital under Darpan Tahasil, District: Jajpur, Odisha	4.067 Ha.	Nearest bridge on River Birupa at a distance of 6.60 Km	Mahavinaya k Reserve Forest- 1KM	N/A	1 <sup>ST</sup> Year: 42861.89 2 <sup>nd</sup> year: 42872.14 3 <sup>rd</sup> year: 42858.19 4 <sup>th</sup> year: 42862.51 5 <sup>th</sup> year: 42858.09	Khondalite	Proposed

**Patta Lands/Khatedari Land: (existing & proposed)**

Owner	Sy. No	Area	District	Tehsil	Village	Total Reserve (Cum)	Total Mineral to be mined (Cum)	Existing /Proposed
Odisha Mining Corporation Ltd.	Survey Toposheet No: F-45U6(New)	46.159 Ha.	Jajpur	Darpan	BandareswarNo-1219 & Kesharaipur No-1218	Mineable Reserve: 5,72,771.158 M <sup>3</sup>	For 5 year plan as per approved Mining Plan: 138025 M <sup>3</sup>	Existing
Odisha Mining Corporation Ltd.	Survey Toposheet No: F-45U2(73L/2) Khata No:876 Plot No:06	4.067 Ha	Jajpur	Darpan	Chandital	Mineable Reserve: 58,219 M <sup>3</sup>	For 5 year plan as per approved Mining Plan: 30,004 M <sup>3</sup>	Proposed

**De-Siltation Location: (Lakes/Ponds/Dams etc.) (Existing & proposed)**

Name of Reservoir/ Dams	Maintain/ Controlled by State Govt./PSU etc.	Location	Distt.	Tehsil	Village	Size(Ha)	Quantity MT/Year	Existing/ Proposed
NA	NA	NA	NA	NA	NA	NA	NA	NA

**M-Sand Plants :( existing & proposed)**

Plant Name	Owner	District	Tehsil	Village	Geolocation	Quantity MT/Annum	Existing/Proposed
NA	NA	NA	NA	NA	NA	NA	NA

**List of Cluster & Contiguous Cluster Clusters:**

Quarry Name	Cluster No.	Lease No	Location (Riverbed / Patta Land)	Village	Area (in Ha)	Total Excavation (Cum)	Total Mineral Excavation (Cum)
<b>Sukhuaparha Decorative Stone Mines</b>	NA	ML No:02	NA	BandareswarNo-1219 & Kesharaipur No-1218	46.159 Ha.	17978.272 M <sup>3</sup> during 2022-23	1737.272 M <sup>3</sup> during 2022-23
<b>Teligarh Decorative Stone Mine</b>	NA	ML No:05	NA	Chandital	4.067 Ha.	For 5 year plan as per approved Mining Plan: 2,14,313 M <sup>3</sup>	For 5 year plan as per approved Mining Plan: 30,004 M <sup>3</sup>

**Contiguous Clusters:**

Quarry Name	Contiguous Cluster No.	Cluster No	Number of leases in the cluster	Location (Riverbed /Patta Land)	Distance between clusters	Village	Area of Cluster (in Ha)	Total Mineral Excavation (Ton)
NA	NA	NA	NA	NA	NA	NA	NA	NA

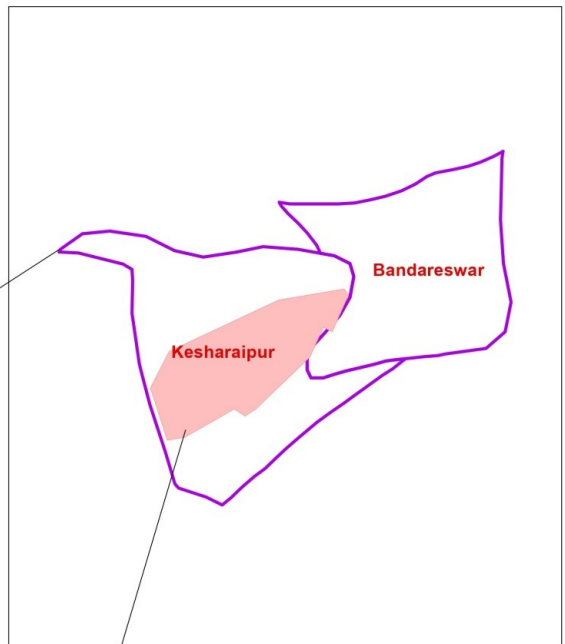
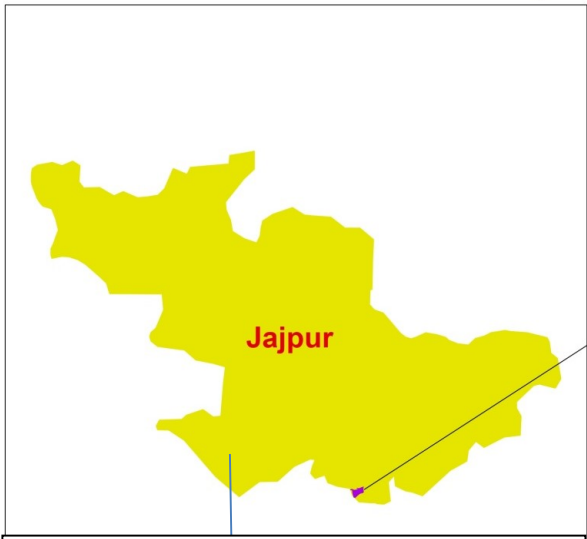
**Transportation Routes for individual leases and leases in Cluster**

Lease No	Transportation Route No.	Number of tippers /day of lease	Number of tippers /day of all the lease on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road(Black Topped/ unpaved)	The road will be Constructed by Govt/Lea se Owner	Route Map & Location
ML No:02	The mine road directly connect to NH 5A which is 200 m from the lease boundary.	08	08	NH-5A: 200 meter	unpaved	Black Topped	Govt of Odisha	Attached as <b>Plate No-4</b>
ML No:05	Teligarh Lease to NH-16(5.10 KM) Via Purusottampur, Barchana. Through NH-16 transportation till Shree Mandira Parikrama Project, Puri under ABADHA Scheme or Other destination under Non-ABADHA Scheme as required by Works Department, Govt of Odisha & Other agencies.	04	NA	Till NH-16: 5.10 KM	Black Topped	Black Topped	Govt of Odisha	Attached as <b>Plate No-4</b>

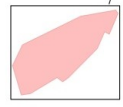
Cluster No	Transportati on Route No	Number of tippers /day of cluster	Number of tippers /day of all the clusters on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road(Black Topped/ unpaved)	The road will be Constructed by Govt/Lease Owner	Route Map & Location
NA	NA	NA	NA	NA	NA	NA	NA	NA

PLATE NO-01

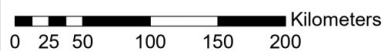
INDEX MAP



TELIGARH DECORATIVE STONE (KHONDALITE)

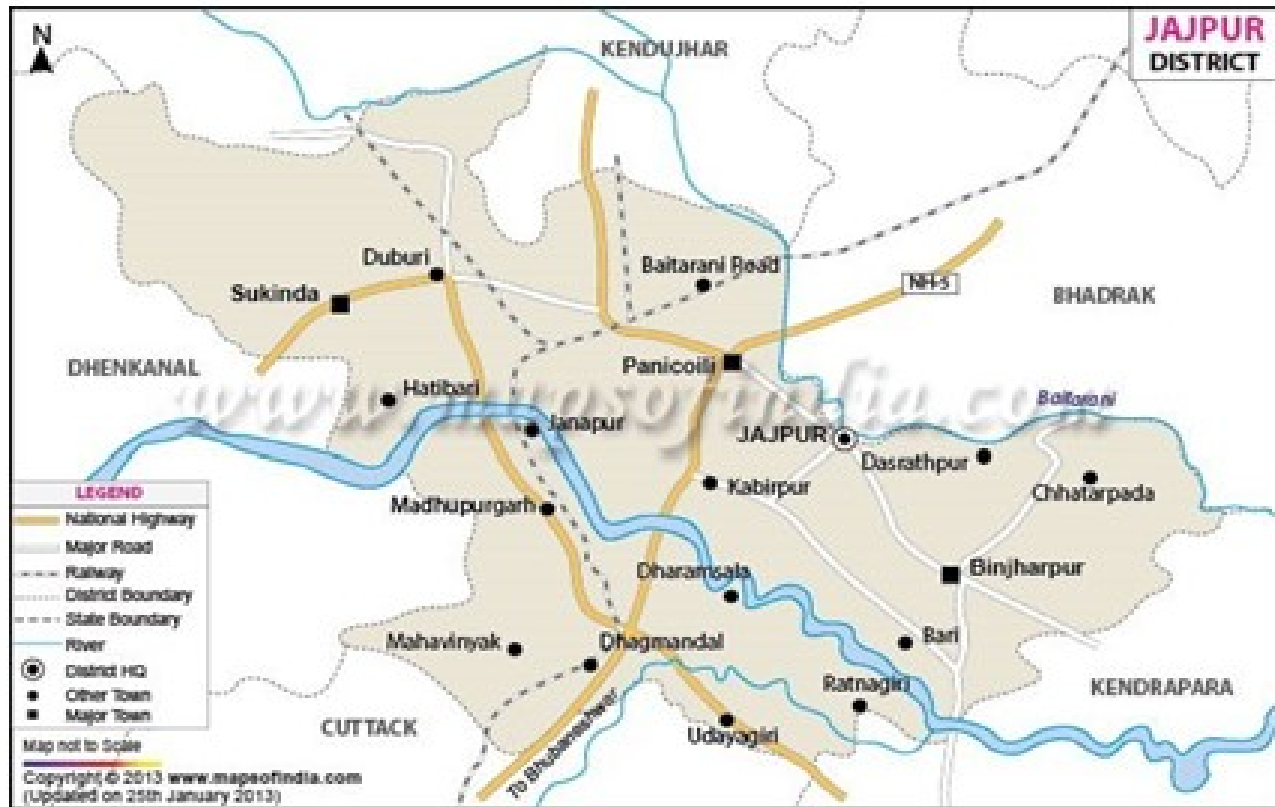


SUKHUAPADA DECORATIVE STONE (KHONDALITE)

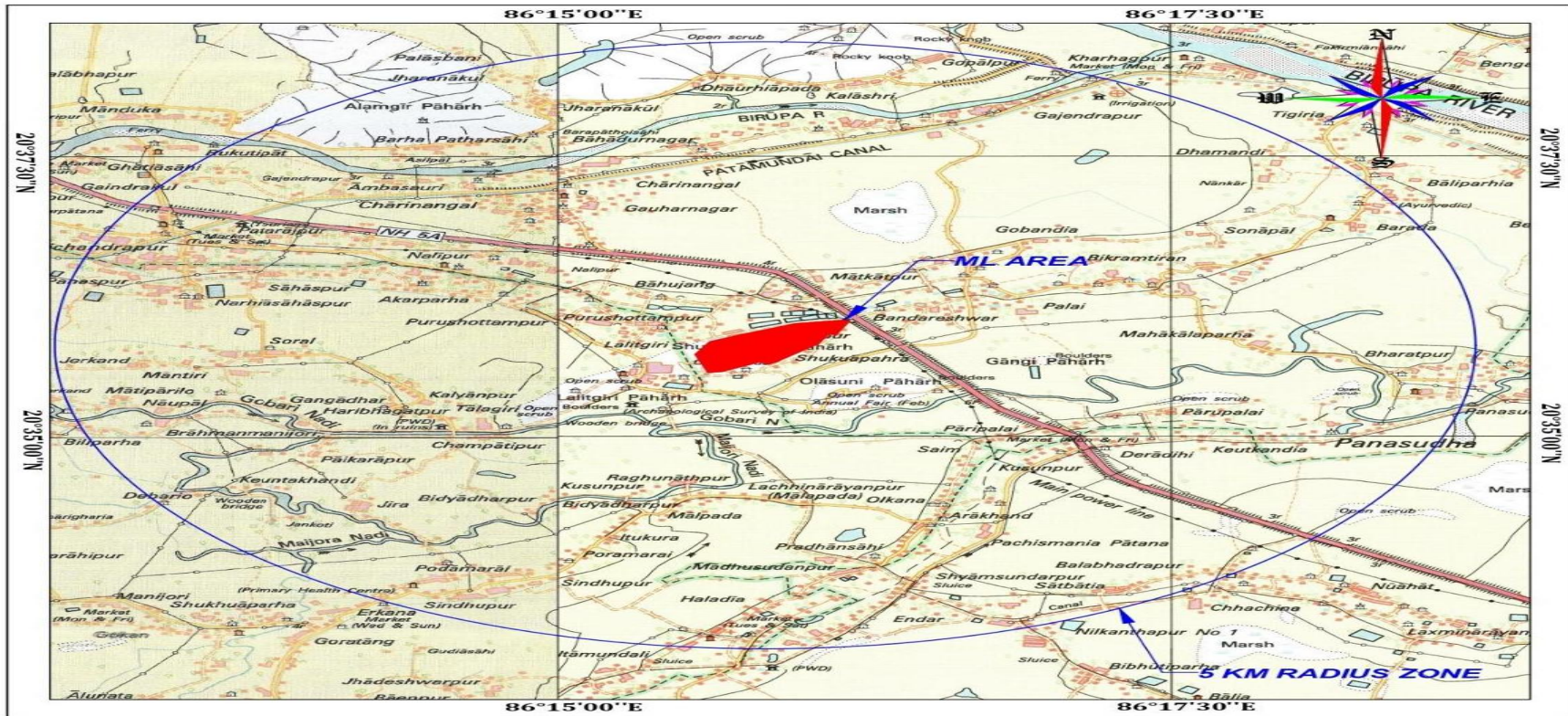




MAP SHOWING THE MAJOR ROADS OF JAJPUR DISTRICT






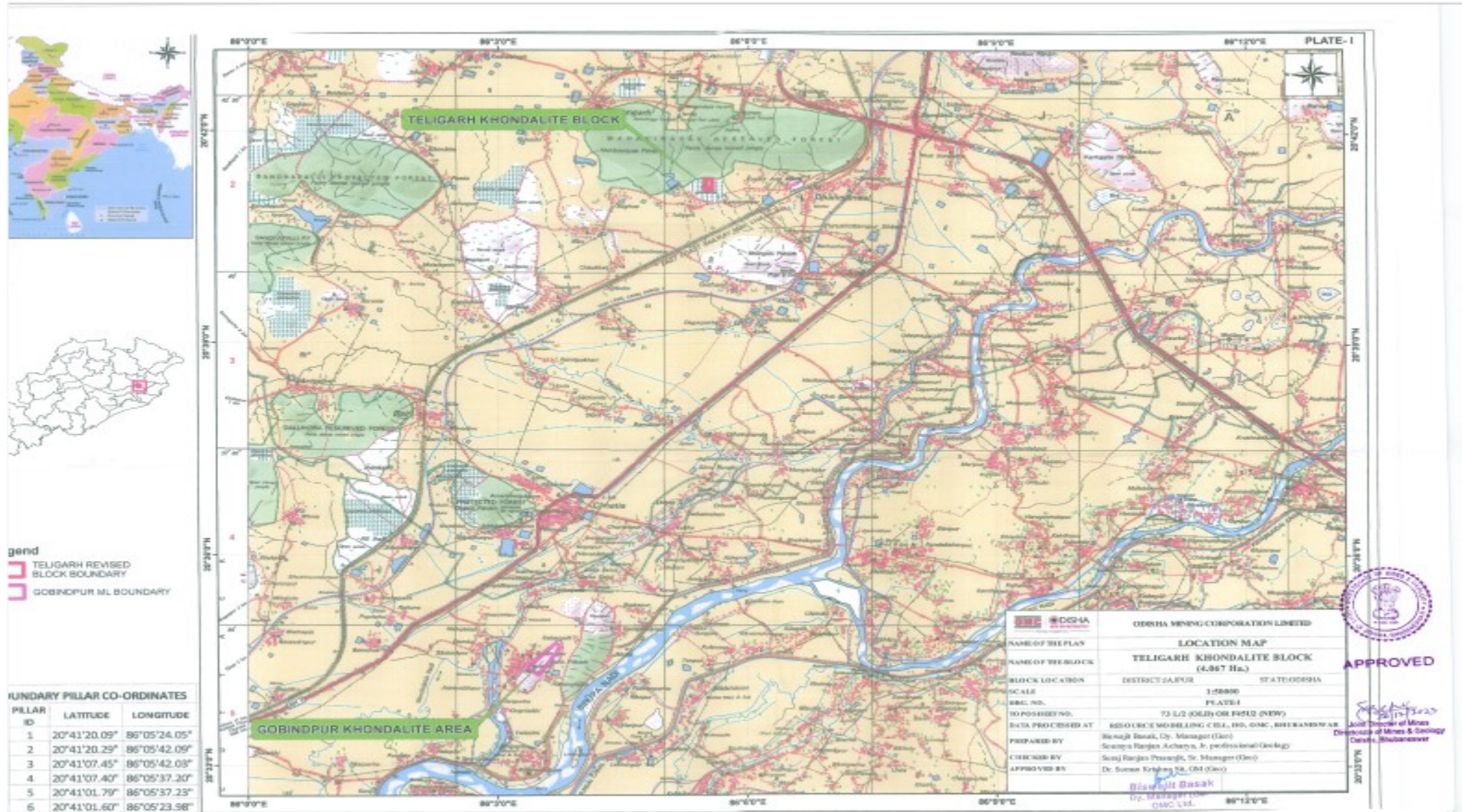


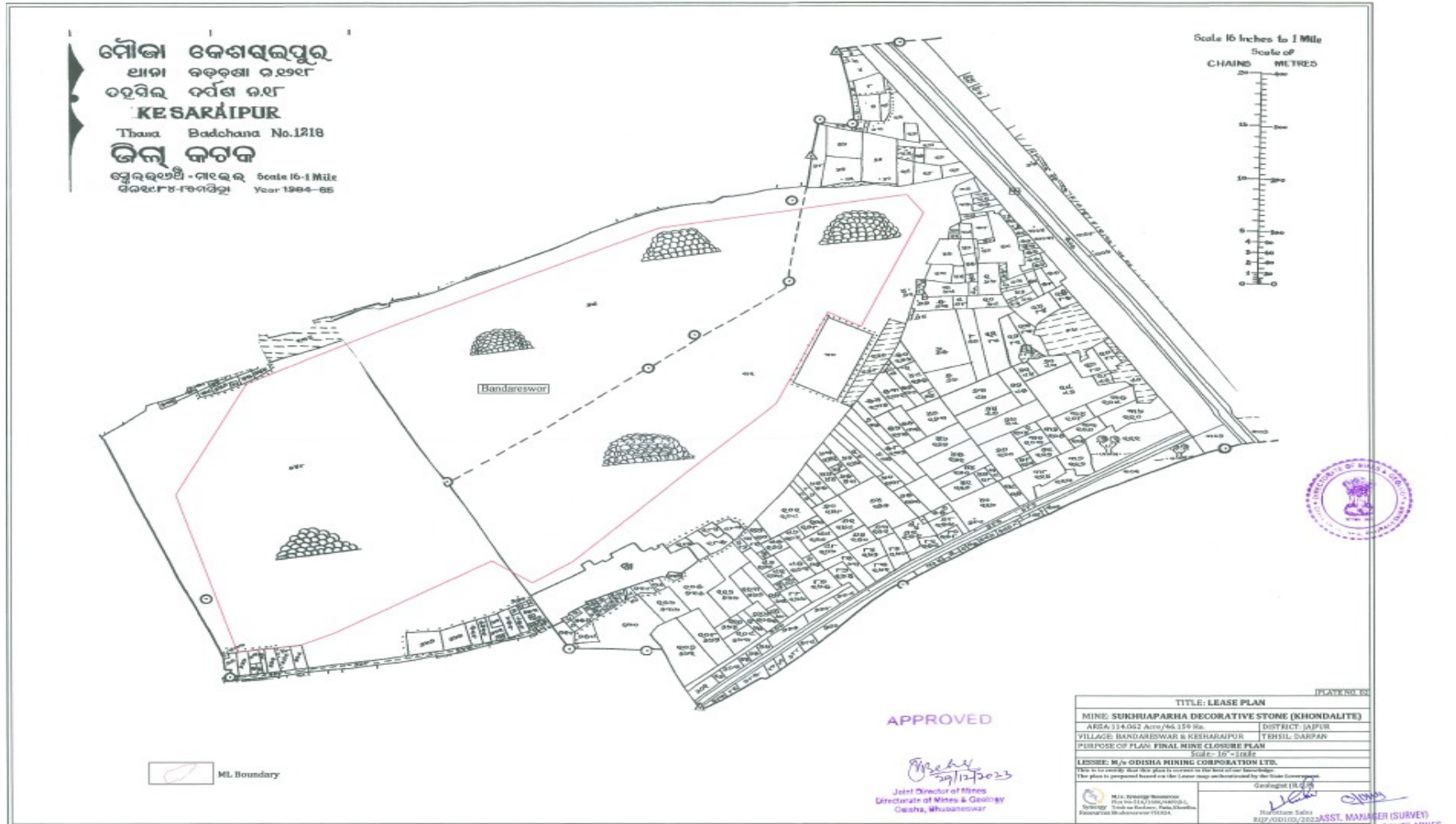
**TOPO-SHEET NO.- F45U6**

**LEGEND**

-  M.L. Boundary
-  5KM Radius Zone









**Lease Plan Teligarh Khondalite Block**

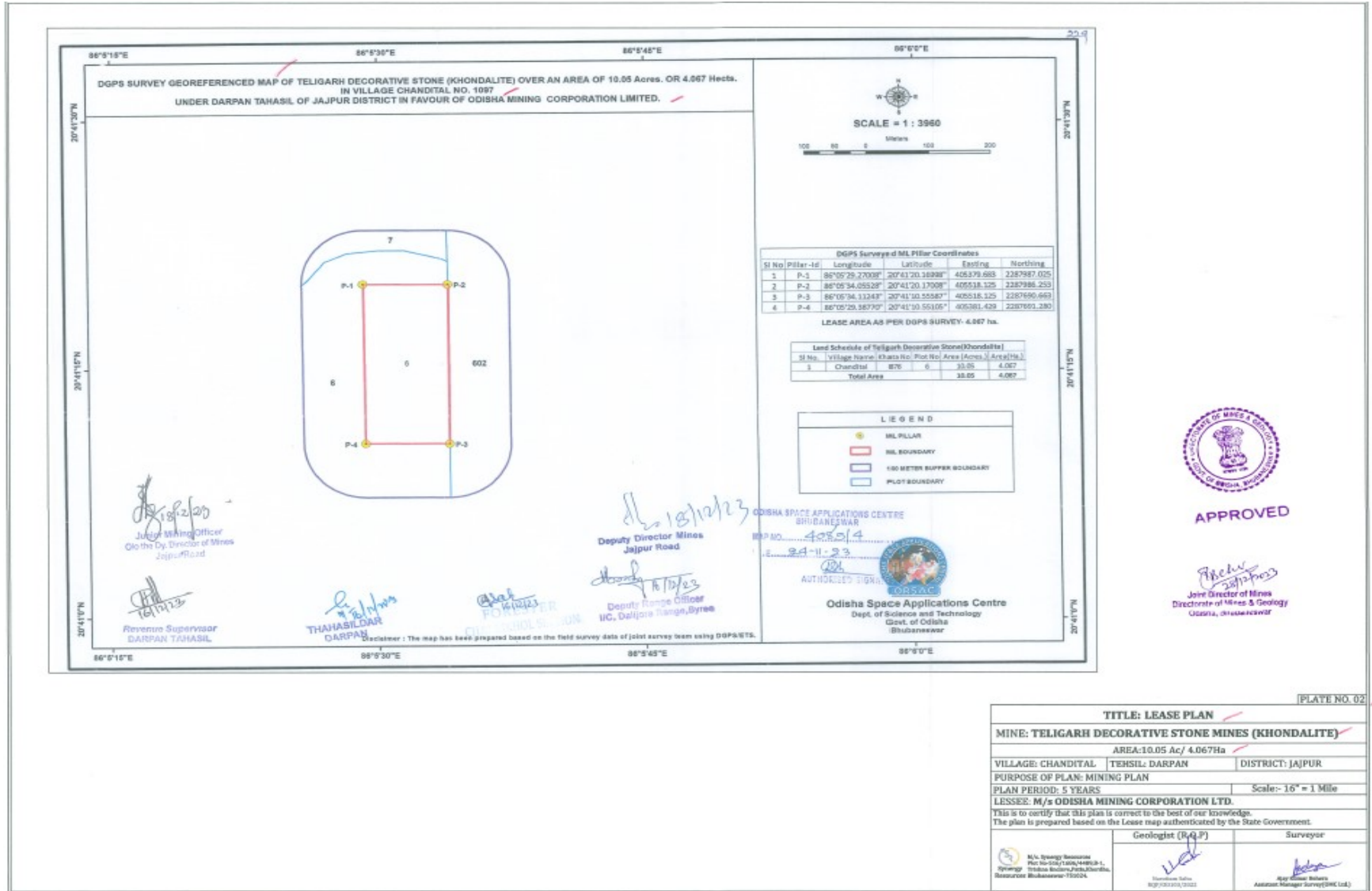


PLATE NO. 02

<b>TITLE: LEASE PLAN</b>		
<b>MINE: TELIGARH DECORATIVE STONE MINES (KHONDALITE)</b>		
AREA: 10.05 Ac / 4.067 Ha		
VILLAGE: CHANDITAL	TAHSIL: DARPAN	DISTRICT: JAJPUR
PURPOSE OF PLAN: MINING PLAN		
PLAN PERIOD: 5 YEARS	Scale: 1" = 1 Mile	
LESSEE: M/s ODISHA MINING CORPORATION LTD.		
This is to certify that this plan is correct to the best of our knowledge. The plan is prepared based on the Lease map authenticated by the State Government.		
Geologist (R.Q.P.)	Surveyor	
<i>[Signature]</i>	<i>[Signature]</i>	